

**CITY COUNCIL REGULAR MEETING AGENDA**City Hall - 10769 W State Street, Star, Idaho
Tuesday, October 04, 2022 at 7:00 PM

PUBLIC NOTICE: THIS MEETING IS RECORDED AND PLACED IN AN ONLINE FORMAT. PERSONS MAY EITHER VIEW OR LISTEN TO VIDEO / AUDIO OF THIS MEETING UNTIL SUCH TIME THE RECORDING IS DESTROYED UNDER THE CITY'S RETENTION POLICY.

1. **CALL TO ORDER** – Welcome/Pledge of Allegiance
2. **INVOCATION** – President Kristi Dyer – Star 1st Ward Relief Society
3. **ROLL CALL**
4. **PRESENTATIONS**
5. **CONSENT AGENDA (ACTION ITEM)** **All matters listed within the Consent Agenda have been distributed to each member of the Star City Council for reading and study, they are considered to be routine and will be enacted by one motion of the Consent Agenda or placed on the Regular Agenda by request.*
 - A. **Approval of Minutes:** September 20, 2022
 - B. **Findings of Fact:** Baron Properties Commercial Rezone (**FILE: RZ-22-02 / DA-20-28**)
6. **ACTION ITEMS:**
 - A. **SH-16 & Beacon Light Advanced Flasher:** Approval of Bid for Advanced Flasher using ITD Proportionate Share (**ACTION ITEM**)
 - B. **Ada County / Star Hazard Mitigation Plan Resolution Adoption:** Adopting the Ada County / Star City Multi-Hazard Mitigation Plan (**ACTION ITEM**)
 - C. **Holiday Décor Purchase:** Approval of purchase of decorations for Activities Committee Celebrations and booking the expense into FY 21/22 (**ACTION ITEM**)
7. **PUBLIC HEARINGS with ACTION ITEMS:** (The Council may move to approve, approve with conditions, delay, deny or table the application(s) to a date certain in the future)
 - A. **PUBLIC HEARING:** Madenford Estates Subdivision (**FILES: AZ-22-06; DA-22-06 & PP-22-11**) - The Applicant is seeking approval of an Annexation and Zoning (R-3), a Development Agreement, and Preliminary Plat for a proposed residential subdivision consisting of 15 residential lots and 3 common lots. The property is located at 3605 N. Pollard Lane in Star, Idaho, and consists of 5 acres with a proposed density of 3.0 dwelling units per acre. The parcel is part of a recent parcel division through Ada County. Access to the proposed development will be through a new subdivision that is currently under construction to the west (Cresta Del Sol Subdivision). (**ACTION ITEM**)
 - B. **PUBLIC HEARING:** Junction Crossing Subdivision #2 (**FILE: PP-22-08**) - The Applicant is seeking approval of a Preliminary Plat with 3 mixed-use lots, 3 commercial lots and 3 future buildable lots with 2 common lots. The property is located at 7884 W. State Street in Star, Idaho, and consists of 8.84 acres. (**ACTION ITEM**)
 - C. **PUBLIC HEARING:** The Quarry at River Park Estates Subdivision (**FILE: AZ-22-13 & DA-22-13**) - The Applicant is seeking approval of an Annexation and Zoning (Residential R-3 & Mixed-Use MU) and a Development Agreement for a proposed future residential development. The property is located at 21339 Blessinger Road in Star, Idaho, and consists of 185.93 acres. (**ACTION ITEM**)
 - D. **PUBLIC HEARING on Resolution TBD-2022 (Police & Fire Mitigation Fee):** The City Council will hear testimony on Approving a resolution of the City of Star creating a policy for the issuance of mitigation fees for Star Police and Mid-Star Fire Personnel on Residential and Multi-Family Building Permits; explaining the reasons for issuance of mitigation fees; encouraging other entities to repeal and replace or modify House Bill 389 (2021) (**ACTION ITEM**)
8. **Executive SESSION 74-206 (f):** To communicate with legal counsel for the public agency to discuss the legal ramifications of and legal options for pending litigation, or controversies not yet being litigated but imminently likely to be litigated.
ACTION ITEM - Actions after Executive Session
9. **ADJOURNMENT**



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The meeting can be viewed via a link posted to the City of Star website at staridaho.org. Information on how to participate in a public hearing remotely will be posted to staridaho.org under the meeting information. The public is always welcomed to submit comments in writing.

Land Use Public Hearing Process

Public signs up to speak at the public hearing

Mayor Opens the Public Hearing

Mayor asks council if there is any Ex Parte Contact

Applicant has up to **20 minutes** to present their project

Council can ask the applicant questions and staff questions

Public Testimony (**3 minutes per person**)

1. Those for the project speak
2. Those against the project speak
3. Those who are neither for or against but wish to speak to the project
4. Council may ask the individual speaking follow-up questions that does not count towards their 3 minutes

Applicant rebuttal (**10 minutes**)

Council can ask the applicant and staff questions

Mayor closes the public hearing

Council deliberates

Motion is made to approve, approve with conditions, deny or table the application to a date certain in the future

Thank you for coming to the Star City Council meeting, public involvement is fantastic and helps in shaping our city for the future. As this is a public hearing, there will be no cheering, clapping, jeering or speaking out during the hearing. Only the person at the podium has the floor to speak during their allotted time. If someone does speak out, cheer, claps, etc. they will be asked to leave the hearing and or escorted out of the hearing. We want to keep these hearings civil so everyone can be heard.

Thank you for your participation.

Mayor Trevor Chadwick

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1. CALL TO ORDER – Welcome/Pledge of Allegiance

Mayor Chadwick called the meeting to order at 7:00 p.m. and led the Pledge of Allegiance.

2. INVOCATION – Dylan Austin - LifeSpring Church

Pastor Dylan Austin with LifeSpring Church offered the invocation.

3. ROLL CALL

Council Members present: Council President Hershey, Council Members Wheelock, Salmonsens and Mayor Chadwick were present. Council Member Nielsen had an excused absence due to out-of-area travel.

City Staff present: Public Information Officer Partridge, Police Chief Hessing, Fire Chief Timinsky, City Contract Attorney Yorgason, City Planner Nickel, and Assistant Planner Field.

4. PRESENTATIONS**A. Domestic Violence Month Proclamation**

Mayor Chadwick read a proclamation in honor of Domestic Violence Month and mentioned that Council Member Salmonsens would attend an event on September 30th in support of ending Domestic Violence.

5. CONSENT AGENDA (ACTION ITEM)**A. Minutes - September 6, 2022 & April 19, 2022****B. Findings of Fact - Addington Subdivision (PP-22-02 / PR-22-01)****C. Final Plat - Greiner Hope Springs Subdivision #6 (FP-22-11)**

- Council Member Salmonsens moved to approve the Consent Agenda. Council Member Hershey seconded the motion. ROLL CALL VOTE: Hershey – aye; Wheelock – aye; Salmonsens - aye. Motion carried.

6. ACTION ITEMS:**A. City Hall Sign Proposal - Approve Capital Expense to replace the sign in front of Star City Hall.**

Mayor Chadwick gave an overview of the request to replace the aging sign in front of City Hall. He stated that if approved, funds would come from savings and the fiscal year would need to be adjusted. Chadwick stated that the goal of the proposed replacement was to improve messaging to citizens; the modern electronic sign will be placed higher for better visibility and messaging could be adjusted remotely if there were ever an emergency. He said the proposed cost for the new sign is \$31,650.00.

- Council Member Hershey moved to approve the proposed Capital Expense to fund a new sign for City Hall, in an amount not to exceed \$31,650.00. Council Member Salmonsens seconded the motion. ROLL CALL VOTE: Hershey – aye; Wheelock – aye; Salmonsens – aye. Motion carried.

7. PUBLIC HEARINGS with ACTION ITEMS:**A. PUBLIC HEARING: Baron Properties Commercial Rezone (RZ-22-02) (DA-22-05):** The Applicant is seeking approval of a Rezone (C-1 to C-2) and a Development Agreement for a parcel of land consisting of 11.38 acres. The property is located at 342 S. Calhoun Place in Star, Idaho. (*TABLED FROM SEPTEMBER 6, 2022, AT APPLICANT REQUEST) **(ACTION ITEM)**

Mayor Chadwick asked the Council if they had had any ex parte communication and, hearing none, opened the Public Hearing at 7:08 p.m.

Applicant presentation:

Applicant's counsel, Debra Nelson of Givens Pursley, LLP, advised that she had members of the applicant's team with her this evening and presented a summary of the request. Ms. Nelson explained that the property in question is on the corner of Calhoun and Wildbranch and fronts on West State Street and Highway 44. Nelson stated the property is already annexed within the City and is presently zoned for C1 Commercial Neighborhood and summarized what was zoned for in

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surrounding neighborhoods. Baron Properties is requesting a rezone to C2 Commercial General in order to enable the owner to market the property for appropriate commercial purposes consistent with the City's Comprehensive Plan. Specifically, Nelson pointed out that the proposed rezone matches with two components of the Star Comprehensive Plan, to encourage commercial businesses to locate on transportation corridors and to build a stronger community by enhancing and developing Star's economy. Nelson stated that there were no changes in dimensional standards or setbacks, and that increased opportunities through C2 zoning would benefit the general public as it allows for more diverse commercial use on this visible corner intersection. She noted that sewer and water were available, and that the property was within Star Police and Fire coverage areas. Nelson said the applicant is amenable to a condition of approval requiring them to provide written documentation that ITD has issued a permit for the proposed right-in/right out driveway onto SH-44 located East of Moyle Avenue and that it should be constructed consistent with ITD standards and approval. Nelson further made a request with respect to two requested changes on page 16 of the Staff Report. She stated the developer was asking for brewpub and wine-tasting to be allowed, and for building material/gardening equipment/supplies to be allowed as uses, noting that the property is a gateway property coming into the City of Star and proposing that it be approved as such and go through the Design Review Committee and come back to Council. Ms. Nelson stood for questions.

Mayor Chadwick asked for clarification on the zoning and called out a similarity; he said he recalled Paul Larsen's property was originally C1 under the old code and had been rezoned to C2. Staff verified this was correct.

Council Member Hershey inquired about the final review process and asked how approval would work if it went through Design Review and not a public hearing process. Council discussion surrounded design standards and whether Council needed to see it again. City Contract Attorney Yorgason guided that if it came back as a Consent Agenda item, it could still be pulled and discussed if there were remaining questions or concerns since Council will view the agenda packet materials in advance of the meeting. City Planner Nickel clarified that tonight was specifically for approving land use, and that in coming back it would only be design related.

Public Testimony:
None offered.

Applicant rebuttal:
None offered.

City Planner Nickel noted that Staff has reviewed the two items Ms. Nelson read into the record and is fine with it and would have City Staff work with them on contract revisions.

Mayor Chadwick closed the public hearing at 7:26 p.m.

Council Deliberations:

- Council Member Hershey moved to approve the Baron Properties Commercial Rezone (RZ-22-02) (DA-22-05) as requested, with a modification that the change in use be made to allow brewpub/wine-tasting and building materials/garden/supplies. Council Member Wheelock said he was not seconding and asked for the modification to remove building materials/garden/supplies from the motion, noting he would support leaving brewpub/wine-tasting in the motion. Council Member Salmonsens noted that she supported leaving Council Member Hershey's motion as-is. Council Member Yorgason verified the seconder could not change the motion; Council Member Wheelock clarified that he was not seconding. Council Member Salmonsens seconded the motion as made by Council Member Hershey. ROLL CALL VOTE: Hershey – aye; Wheelock – nay; Salmonsens – aye. Motion carried.

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- B. PUBLIC HEARING on Resolution TBD-2022 (Police & Fire Mitigation Fee):** The City Council will hear testimony on Approving a resolution of the City of Star creating a policy for the issuance of mitigation fees for Star Police and Mid-Star Fire Personnel on Residential and Multi-Family Building Permits; explaining the reasons for issuance of mitigation fees; encouraging other entities to repeal and replace or modify House Bill 389 (2021) **(ACTION ITEM)**

Mayor Chadwick opening the public hearing at 7:31 p.m. Chadwick summarized the background on the public hearing for a Police and Fire Mitigation Fee, stating House Bill 389 created challenges for the city to fund police and fire services at a rate that keeps up with the rapid growth. Mayor Chadwick said he has been working with Ken Burgess and Dave Yorgason and the Building Contractors Association (BCA) to help determine the best route. He stated the resolution will allow the city to collect mitigation fees. Chadwick explained that on the police side, it costs \$140,000.00 a year to hire and outfit a new police officer, which equates to 370 houses as we have one of the lowest per capita property tax rates in the Treasure Valley. He mentioned that two members of the BCA, Ken Burgess, and Dave Yorgason, had signed in support of the resolution, but declined to speak this evening. Mayor Chadwick mentioned the need to leave the public hearing open and continue until October 4, as it was not noticed correctly, so a decision will not be made until that date. Chadwick clarified that the resolution would apply to all residential building permits, and with respect to multi-family dwellings it will be per-door. Council Member Wheelock expressed concern that qualifier wording might be needed, such as "strive to," with respect to the wording on the Comprehensive Plan metrics "four minutes or less response time on Code 3." Mayor Chadwick verified the recommended wording came from the Comprehensive Plan and noted this would help get funding for personnel for the proposed new fire station on Floating Feather, as well as police personnel. Police Chief Hessing and Fire Chief Timinsky were present, but elected to wait to speak until the October 4, 2022, meeting.

- Council Member Hershey made a motion to continue the public hearing until the October 4, 2022, City Council meeting. Council Member Wheelock seconded the motion. ROLL CALL VOTE: Salmonsensen – aye; Wheelock – aye; Hershey – aye. Motion carried.
- **C. Executive Session 74-206(f):** To communicate with legal counsel for the public agency to discuss the legal ramifications of and legal options for pending litigation, or controversies not yet being litigated but imminently likely to be litigated. **(ACTION ITEM)**
- Council Member Hershey moved to enter into Executive Session under Idaho Code 74-206(f) to communicate with legal counsel for the public agency to discuss the legal ramifications of and legal options for pending litigation, or controversies not yet being litigated but imminently likely to be litigated. Council Member Wheelock seconded the motion. ROLL CALL VOTE: Wheelock-aye; Salmonsensen – aye, Hershey - aye. Motion carried.

Council retired to Executive Session at 7:39pm; with Wheelock, Chadwick, Salmonsensen, Hershey, City Contract Counsel Yorgasen, Special Counsel Nielsen, City Planner Nickel, Assistant Planner Field, and Public Information Officer Partridge.

The Star City Council reconvened in open session at 8:42pm after speaking about pending litigation.

ACTIONS AFTER EXECUTIVE SESSION: Any actions made after the executive session that may be disclosed will be approve by motion in open session but may be generalized. **(ACTION ITEM)**

- No actions were taken.

8. ADJOURNMENT:

Mayor Chadwick adjourned the Star City Council meeting at 8:42 pm.

Trevor A Chadwick, Mayor

ATTEST: _____
Dana Partridge, Public Information Office



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DRAFT

FINDINGS OF FACT AND CONCLUSIONS OF LAW
BARON PROPERTIES REZONE
FILE NO. RZ-22-02/DA-20-28

The above-entitled Rezone and Development Agreement application came before the Star City Council for their action on September 20, 2022, at which time public testimony was taken and the public hearing was closed. The Star City Council, having requested and taken oral and written testimony, and having duly considered the matter, does hereby make the following Findings of Fact and Conclusions of Law.

Procedural History:

A. Project Summary:

The Applicant is seeking approval of a Rezone (C-1 to C-2) and a Development Agreement for a parcel of land consisting of 11.38 acres. The property is located at 342 S. Calhoun Place in Star, Idaho. The subject property is generally located on the northeast corner of W. Wildbranch Street and S. Calhoun Place, on the south side of W. State Street. Ada County Parcel No S0416120900.

B. Application Submittal:

A neighborhood meeting was held on May 31, 2022, in compliance with the application submittal requirement of the Star Unified Development Code (Section 8-1 A-6 C). The Land Use application was deemed complete on June 22, 2022.

C. Notice of Public Hearing:

Notice of Public Hearing on the application for the City of Star Council was published in accordance with the requirements of Title 67, Chapter 65, Idaho Code and the Star Unified Development Code on August 14, 2022 and August 26, 2022. Notice of this public hearing was mailed to property owners within three-hundred feet (300') of the subject property in accordance with the requirements of Title 67, Chapter 65, Idaho Code and Star Unified Development Code on August 11, 2022. Notice was sent to agencies having jurisdiction in the City of Star on March 8, 2021. The property was posted in accordance with the Star Unified Development Code on August 6, 2021.

D. History of Previous Actions:

On April 4, 2017, the Council approved a rezone of the property from Rural Transition (RT) to C-1-DA (Ord 258).

From the records that are available, it appears that the property was originally annexed into the City sometime around 2009.

E. **Existing Site Characteristics:** The property is currently vacant.

F. **Irrigation/Drainage District(s):** - Pioneer Ditch Company
P.O. Box 70
Star, Idaho 83669

G. **Flood Zone:** This property is currently located in Flood Hazzard Area AE.
FEMA FIRM Panel Number: 16001C0130J
Effective Date: 6/19/2020

H. *On-Site Features:*

- ✪ Areas of Critical Environmental Concern – No known areas.
- ✪ Evidence of Erosion – No known areas.
- ✪ Fish Habitat – No known areas.
- ✪ Mature Trees – Yes.
- ✪ Riparian Vegetation – No known areas.
- ✪ Steep Slopes – None.
- ✪ Stream/Creek – Pioneer Canal runs through the property.
- ✪ Unique Animal Life – No unique animal life has been identified.
- ✪ Unique Plant Life – No unique plant life has been identified.
- ✪ Unstable Soils – No known issues.
- ✪ Wildlife Habitat – No wildlife habitat has been developed or will be destroyed.
- ✪ Historical Assets – No historical assets have been observed.

I. *Agencies Responding:*

The following agencies responded, and correspondence was attached to the staff report.

None

J. Staff received the following letters & emails for the development:

None

K. Development Features:

REZONE & POTENTIAL LAND USES:

The rezone from Commercial (C-1) to Commercial (C-2) will allow for the property zoning to be consistent with the Comprehensive Plan and provide the applicant with the ability to market the property for commercial uses intended to be located within the C-2 District. At this time, the applicant states that an end user has not yet been determined. The rezone will allow the property as much flexibility as possible for the applicant to attract potential businesses. Future uses may be subject to additional review from the City, either as a Conditional Use Permit or as a Certificate of Zoning Compliance staff review.

ADDITIONAL ITEMS FOR CONSIDERATION:

Site Development Plan:

Streetlights - All future lighting, including streetlights and parking lot lighting will need to be reviewed by staff and will be required to meet all Dark Sky lighting standards that may apply.

Sidewalks - With the surrounding properties also in the State Street commercial corridor and future development anticipated along W. State Street, providing safe pedestrian access and circulation to existing sidewalks through the Central Business District is a priority. Staff will require sidewalks be completed as part of any future development.

Fire -The Star Fire District has not provided a review of this rezone request. Any new use will be required to meet all requirements of the District regarding access and safety.

Land Uses – Specific land uses have not been proposed by the applicant as part of this application request. Future uses will need to be evaluated by staff , using the most current zoning ordinance, to determine if additional Council approval is necessary. This would be the case for any requested conditional uses in the Commercial (C-2) zone.

Staff is supportive of this proposal as submitted and believes that approval of this application by the Council will meet the intent of the Comprehensive Plan by encouraging continued economic growth in the State Street commercial corridor. Future uses will be required to meet the standards of the zoning ordinance that is in affect at the time of submittal for a future land use application, including conditional use permits and certificates of zoning compliance for principally permitted uses.

A future development site plan will need to provide details regarding the following:

- Landscape Plan – Street Trees, Buffer Landscaping
- Streetlights
- Fire District Approval
- Parking Lot/Spaces
- Buffering/Fencing between Commercial and Residential Uses

DEVELOPMENT AGREEMENT

Through the Development Agreement process, the applicant is proposing to work with the City to provide further insurances that the development will be built as presented and/or modified by the Council through the review process. In addition, the Development Agreement allows the Council to prohibit certain allowed uses outright or require Conditional Use approval should Council desire to have further input on the use. Items that can be considered by the applicant and Council include the following:

- Specific uses within the Commercial (C-2) zone that the Council may approve outright as part of the development agreement. The applicant has not proposed any specific uses at this time.

To be consistent with the intent of the Council on the recently approved commercial rezone of the Larson property to the west, and to protect this important commercial property at the entrance to the City, Staff is recommending similar conditions of approval be placed in the Development Agreement for this rezone request:

- **Uses in the C-2 zone subject to further Conditional Use approval:**
 - **Bar/tavern/lounge/drinking establishment**
 - **Brewery/Distillery**
 - **Brewpub/Wine Tasting**
 - **Building material, garden equipment and supplies**
 - **Hospital (Private)**
 - **Mortuary**
 - **Nursing or Residential Care Facility**
 - **Vehicle Sales or Rental and Services**
 - **Any other currently listed Conditional Uses**
- **Prohibited Uses in the proposed C-2 Zone:**
 - **Churches**
 - **Storage Facilities**
 - **Non-profit Hospitals**

L. *Comprehensive Plan and Unified Development Code Provisions:*

Comprehensive Plan:

8.2.3 Land Use Map Designations:

Commercial

Suitable primarily for the development of a wide range of commercial activities including offices, retail, and service establishments. Rezoning to this designation should not be allowed unless adequate ingress/egress to major transportation corridors are assured. Light industrial uses may be considered at the discretion of the City Council without amending this plan.

8.4 Objectives:

- Preserve the family friendly feel of Star.
- Implement the Land Use Map and associated policies as the official guide for development.
- Manage urban sprawl in order to minimize costs of urban services and to protect rural areas.
- Retain and encourage rural areas where it will not result in increased costs for urban services.
- Work to create a vibrant Central Business District.
- Encourage public participation in the land use planning process.
- Encourage land uses that are in harmony with existing resources, scenic areas, natural wildlife areas, and surrounding land uses.
- Require the conservation and preservation of open spaces and public access to the Boise River and BLM lands and interconnected pathways to be open to the public in new developments.
- Discourage development within the floodplain.
- Encourage commercial development that is consistent with a family friendly feel, not overburdening the community with big box and franchise uses and discourage the development of strip commercial areas.

8.5.6 Policies Related Mostly to the Commercial Planning Areas:

- Assist in the provision of coordinated, efficient, and cost-effective public facilities and utility services, carefully managing both residential and non-residential development and design, and proactively reinforcing downtown Star's role as the urban core while protecting existing property rights.
- Encourage commercial facilities to locate on transportation corridors.
- Locate neighborhood services within walking distance to residential development.
- Discourage the development of strip commercial areas.
- Maintain and develop convenient access and opportunities for shopping and employment activities.
- Commercial areas of five acres or less should be encouraged in residential land use designations with appropriate zoning to allow for commercial services for residential neighborhoods and to limit trip lengths. Such commercial areas should be submitted for approvals with a Conditional Use Permit or Development Agreement to assure that conditions are placed on the use to provide for compatibility with existing or planned

residential uses. These areas should be oriented with the front on a collector or arterial street.

- Allow for some light industrial uses within the commercial areas at the sole discretion of the City Council.

8.5.9 Additional Land Use Component Policies:

- Encourage flexibility in site design and innovative land uses.
- Encourage landscaping to enhance the appearance of subdivisions, structures, and parking areas.
- Work with Ada County Highway District (ACHD), Canyon Highway District #4 (CHD4), and Idaho Department of Transportation (ITD) for better coordination of roadway and access needs.
- Support well-planned, pedestrian-friendly developments.
- Dark sky provision should be adopted within the code to assure down style lighting in all developments and Star should consider joining the International Dark Sky Association.
- The City should utilize the 2018 Treasure Valley Tree Selection Guide when requiring trees within developments.

18.4 Implementation Policies:

E. Development Agreements allow the city to enter into a contract with a developer upon rezoning. The Development Agreement may provide the city and the developer with certain assurances regarding the proposed development upon rezoning.

Unified Development Code:

UNIFIED DEVELOPMENT CODE:

8-1B-1: ANNEXATION AND ZONING; REZONE:

B. Standards:

1. The subject property shall meet the minimum dimensional standards of the proper district.
2. The city may require a development agreement in conjunction with the annexation and zoning, or rezone, pursuant to Idaho Code section 67-6511A, which may include a concept plan. In addition to other processes permitted by city and state code, exceptions or waivers of standards, other than use, may be permitted through execution of a development agreement. A development agreement and concept plan shall be required for any rezone to a mixed-use zone, high density zone or land which includes steep slope (land over 25%) or floodway.

3. The termination of a development agreement shall result in the reversal of the official zoning map amendment approval and applicable development approval for any undeveloped portion of property subject to the development agreement. The undeveloped property subject to the development agreement shall be rezoned to the district classification as designated by the development agreement. When no designation is provided, the property shall revert to its original zoning or, if the original designation no longer exists, to the closest current equivalent zoning as determined by the current Comprehensive Plan Land Use Map designation.

4. An amendment or termination of a previously recorded development agreement shall be recorded in the office of the county recorder by the clerk.

5. An approved development agreement must be executed within ninety (90) days of the meeting at which the development agreement is approved by the city council. A one-time administrative extension of maximum thirty (30) days may be granted by the zoning administrator. Additional extensions may be approved by majority vote of the city council. Failure to execute the development agreement within the required timeframe will result in the denial of all related applications.

C. Required Findings: The council shall review the application at the public hearing. In order to grant an annexation and zoning or rezone, the council shall make the following findings:

1. The map amendment complies with the applicable provisions of the comprehensive plan;

2. The map amendment complies with the regulations outlined for the proposed district;

3. The map amendment shall not be materially detrimental to the public health, safety, and welfare; and

4. The map amendment shall not result in an adverse impact upon the delivery of services by any political subdivision providing public services within the city.

5. The annexation (as applicable) is in the best interest of city.

Section 8-3A-1 - ZONING DISTRICTS AND PURPOSE ESTABLISHED

District	Purpose
Commercial (C-2) General Business District	To provide for the establishment of areas for commercial uses allowed in other commercial zones and commercial uses which are more intensive than those permitted in other commercial zones, and typically located adjacent to arterial roadways and not immediately adjacent to residential, including the establishment of areas for travel related services such as hotels, motels, service stations, drive-in restaurants, offices, limited warehousing, commercial services and retail sales.
Development Agreement (DA)	This designation, following any zoning designation noted on the official zoning map of the city (i.e., C-2-DA), indicates that the zoning was approved by the city with a development agreement, with specific conditions of zoning.

TABLE 8-3A-3 - USES WITHIN ZONING DISTRICTS

ZONING DISTRICT USES

Section 5, Item B.

USES	C-1	C-2
Accessory structure - Residential or Commercial	A	A
Adult business/adult entertainment	N	N
Agriculture, forestry, fishing	N	N
Airport	N	N
Animal care facility ¹	P	P
Artist studio ¹	P	P
Arts, entertainment, recreation facility ¹	C	P
Asphalt plant ¹	N	N
Auction facility	N	C
Automated Teller Machine (ATM) ¹	A	A
Automotive hobby ¹	N	N
Automotive mechanical/electrical repair and maintenance	C	P
Bakery- Retail or Manufacturing	P	P
Bar/tavern/lounge/drinking establishment	C	P
Barbershop/styling salon	P	P
Bed and breakfast	P	P
Beverage bottling plant	N	N
Boarding house	N	N
Brewery/Distillery	C	P
Brewpub/Wine Tasting	C	P

Building material, garden equipment and supplies	C	P
Campground/RV park ₁	N	N
Caretaker Unit ₁	A	A
Cement or clay products manufacturing	N	N
Cemetery ₁	N	N
Chemical manufacturing plant ₁	N	N
Child Care center (more than 12) ₁	C	C
Child Care family (6 or fewer) ₁	A	A
Child Care group (7-12) ₁	C	C
Child Care-Preschool/Early Learning ₁	C	C
Church or place of religious worship ₁	P	P
Civic, social or fraternal organizations	P	P
	<u>C-1</u>	<u>C-2</u>
Concrete batch plant ₁	N	N
Conference/convention center	P	P
Contractor's yard or shop ₁	N	N
Convenience store	C	P
Dairy farm	N	N
Drive-through establishment/drive-up service window ₁	<u>C</u>	<u>C</u>
Dwelling:		
Multi-family ₁	N	N

Secondary ¹	N	N
Single-family attached	N	N
Single-family detached	N	N
Two-family duplex ¹	N	N
Live/Work Multi-Use ¹	N	N
<u>Single-family build to rent ¹</u>	<u>N</u>	<u>N</u>
Educational institution, private	C	C
Educational institution, public	C	C
Equipment rental, sales, and services	C	P
Events Center, public or private (indoor/outdoor)	C	C
Fabrication shop	N	P
Farm	N	N
Farmers' or Saturday market	C	C
Feedlot	N	N
Financial institution	P	P
Fireworks Stands	P	P
Flammable substance storage	N	N
Flex Space	C	P
Food products processing	C	C
Fracking	N	N
Gasoline, Fueling & Charging station with or without convenience store ¹	C	P

Golf course/Driving Range	C	C
Government office	P	P
Greenhouse, private	N	N
Greenhouse, commercial	C	P
Guesthouse/granny flat	N	N
Healthcare and social services	P	P
Heliport	N	N
Home occupation ¹	N	N
Hospital	C	P
Hotel/motel	C	P
Ice manufacturing plant	N	N
Industry, information	P	P
Institution	C	P
Junkyard	N	N
Kennel	N	C
Laboratory	P	P
Laboratory, medical	P	P
Lagoon	N	N
Laundromat	P	P
Laundry and dry cleaning	P	P
Library	P	P
Manufactured home ¹	N	N
Manufactured home park ¹	N	N

Manufacturing plant	N	C
Meatpacking plant	N	N
Medical clinic	P	P
Mining, Pit or Quarry (excluding accessory pit) ¹	N	N
Mining, Pit or Quarry (for accessory pit) ¹	A	A
Mortuary	C	P
Museum	P	P
Nursery, garden center and farm supply	P	P
Nursing or residential care facility ¹	P	P
Office security facility	P	P
Parking lot/parking garage (commercial)	C	C
Parks, public and private	P	P
Pawnshop	P	P
Personal and professional services	P	P
Pharmacy	P	P
Photographic studio	P	P
Portable classroom/modular building (for private & public Educational Institutions) ¹	<u>P</u>	<u>P</u>
Power plant	N	N
Processing plant	N	N

Professional offices	P	P
Public infrastructure; Public utility major, minor and yard ¹	C	C
Public utility yard	C	C
Recreational vehicle dump station	C	C
Recycling center	C	C
Research activities	P	P
Restaurant	C	P
Retail store/retail services	C	P
Retirement home	C	N
Riding Arena or Stable, Private/ Commercial	N	N
Salvage yard	N	N
Sand and gravel yard	N	N
Service building	P	P
Shooting range (<u>Indoor/Outdoor</u>)	C/N	C/N
Shopping center	C	P
Short Term Rentals ¹	N	N
Solid waste transfer station	N	N
Storage facility, outdoor (commercial) ¹	C	<u>C</u>
Storage facility, self-service (commercial) ¹	C	<u>C</u>
Swimming pool, commercial/public	P	P

Television station	N	C
Temporary living quarters ¹	N	N
Terminal, freight or truck ¹	N	C
Truck stop	N	C
Turf farm	N	N
Vehicle emission testing ¹	P	P
Vehicle impound yard ¹	N	N
Vehicle repair, major ¹	C	P
Vehicle repair, minor ¹	C	P
Vehicle sales or rental and service ¹	C	P
Vehicle washing facility ¹	C	P
Vehicle wrecking, junk, or salvage yard ¹	N	N
Veterinarian office	P	P
Vineyard	N	N
Warehouse and storage	N	P
Wholesale sales	P	P
Winery	N	C
Wireless communication facility ¹	C	C
Woodworking shop	N	P

Notes:

The table lists principal permitted (P), accessory uses (A), conditional (C), or prohibited (N) uses.

8-1B-1C ANNEXATION/REZONE FINDINGS:

1. The map amendment complies with the applicable provisions of the Comprehensive Plan.

The Council finds that the purpose of the Star Comprehensive Plan is to promote the health, safety, and general welfare of the people of the City of Star and its Impact Area.

Some of the prime objectives of the Comprehensive Plan include:

- ✓ *Protection of property rights.*
- ✓ *Adequate public facilities and services are provided to the people at reasonable cost.*
- ✓ *Ensure the local economy is protected.*
- ✓ *Encourage urban and urban-type development and overcrowding of land.*
- ✓ *Ensure development is commensurate with the physical characteristics of the land.*

The goal of the Comprehensive Plan for Commercial Districts is to encourage the development of a wide range of commercial activities including offices, retail, and service establishments. Rezoning to this designation should not be allowed unless adequate ingress/egress to major transportation corridors are assured. Light industrial uses may be considered at the discretion of the City Council without amending this plan. The Council finds that this rezone is in compliance with the Comprehensive Plan.

2. The map amendment complies with the regulations outlined for the proposed district, specifically, the purposes statement.

The Council finds that the proposal complies with the proposed district and purpose statement. The purpose of the General Business District is to provide for the establishment of areas for commercial uses allowed in other commercial zones and commercial uses which are more intensive than those permitted in other commercial zones, and typically located adjacent to arterial roadways and not immediately adjacent to residential, including the establishment of areas for travel related services such as hotels, motels, service stations, drive-in restaurants, offices, limited warehousing, commercial services and retail sales.

3. The map amendment shall not be materially detrimental to the public health, safety, and welfare; and

The Council finds that there is no indication from the material and testimony submitted that the rezoning of this property will be materially detrimental to the public health, safety or welfare.

4. The map amendment shall not result in an adverse impact upon the delivery of services by any political subdivision providing public services within the city including, but not limited to, school districts.

The Council finds that the City has not been presented with any information from agencies having jurisdiction that public services will be adversely impacted.

- 5. The annexation is in the best interest of the city.
The Council finds the property is already annexed. The rezone request is reasonably necessary for the continued, orderly development of the City.

Public Hearing of the Council:

- a. A public hearing on the application was heard by the City Council, at which time testimony was heard and the public hearing was closed. The City Council made their decision at that time.
- b. Oral testimony regarding the application was presented to the City Council by:
 - Deborah Nelson
- c. Written testimony in favor of or opposing the application was presented to the City Council at the hearing by:
None

Deliberations and Conclusions of Law:

The Council reviewed the particular facts and circumstances of this proposed rezone and preliminary plat application in accordance with the City of Star Title 8 (Unified Development Code), deliberated on the matter, resulting in review of the record, including the staff report, and discussions on the rezoning of the property. Review and discussion included allowed land uses. The Council concluded that the Applicant’s request meets the requirements for rezones. Council hereby incorporates the staff report dated September 20, 2021 into the official decision as part of these Findings of Fact, Conclusions of Law.

Statement of Compliance:

Council finds the Applicant has met all requirements of the Unified Development Code and the intent and purpose of the Comprehensive Plan and Map requirements.

Council added to the Development Agreement the following conditions of approval to their decision to approve the rezone application to include the following:

- Approved Conditional Uses allowed in this C-2 zone and hereby approved as Principally Permitted, subject to future Zoning Certificate and Design Review and future City Council review (review only):
 - Brewpub/Wine Tasting
 - Building material, garden equipment and supplies
- Prohibited Uses in all Commercial zones include:
 - Churches
 - Storage Facilities
 - Non-profit Hospitals

- Prior to the City of Star’s approval on any future development application for the commercial site, the applicant must provide written documentation that ITD has issued a permit for the proposed right-in/right-out driveway onto SH-44 located east of Moyle Avenue. The right-in/right-out driveway should be constructed consistent with ITD standards and approval.
- Staff will work with the applicant on the drafting of the Development Agreement.

Council Decision:

The Council voted 2-1 (Wheelock, no, Nielson absent) to approve the Rezone and Development Agreement for the Baron Properties Rezone on September 20, 2022.

Dated this 4th day of October 2022.

Star, Idaho

By: _____

Trevor A. Chadwick, Mayor

ATTEST:

Jacob M. Qualls, City Clerk



25 Hartman St. • Boise, ID 83704 • 208.323.1506
ID-ELE-14995 • RCE-3894 • PW-10947-U • OR-ELE-C1143 • CCB-134715

August 5, 2022

Idaho Transportation Department
P.O. Box 8028
Boise, ID 83707-2028

Attn: Justin Price
Project: SH-16 & Beacon Light Advanced Flasher

Power Plus Inc. appreciates the opportunity to bid the SH-16 & Beacon Light Advanced Flasher project in Ada County, Idaho. Below is our bid to install 600 ft. of trench, backfill, conduit, (2) junction boxes and (1) "A" foundation for flashing beacon and traffic control

Description:	Quantity:	Unit:	Unit Price:	Total:
Underground for Advanced Flashing Beacon	1	LS	\$ 9,981.00	\$ 9,981.00
			Total Bid:	\$ 9,981.00

The second price includes traffic control along with providing and installing (1) advanced warning flasher to include pole, breakaway base, (2) signs, (2) sign brackets, (1) signal head, IMSA 5C wire, ground wire and terminations.

Description:	Quantity:	Unit:	Unit Price:	Total:
Advanced Flasher Veacon	1	LS	\$ 8,243.00	\$ 8,243.00
			Total Sch. #2:	\$ 8,243.00

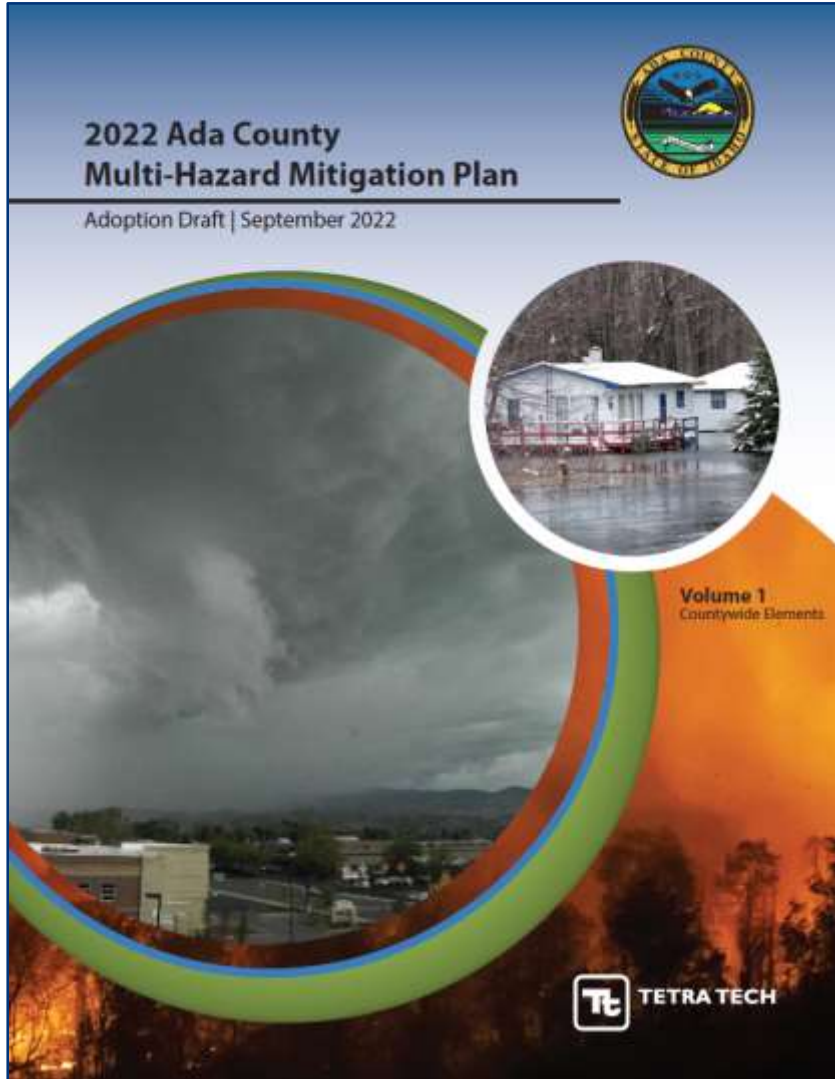
- Bid price **does not** include, survey, rock excavation, material testing, **abnormal material (commodities) cost escalations** or any associated Idaho Power Fees.

If you have any questions, please contact me at (208) 871-1362 or (208) 323-1506

Respectfully Submitted,

Jeremy Kuntz
Power Plus Inc.
jkuntz@pwrplusinc.com
Idaho Contractors License 14995C
Idaho Public Works No. 10947-U-1-4 (16000) (16700) (13850)
Contractors Registration No. REC-3894

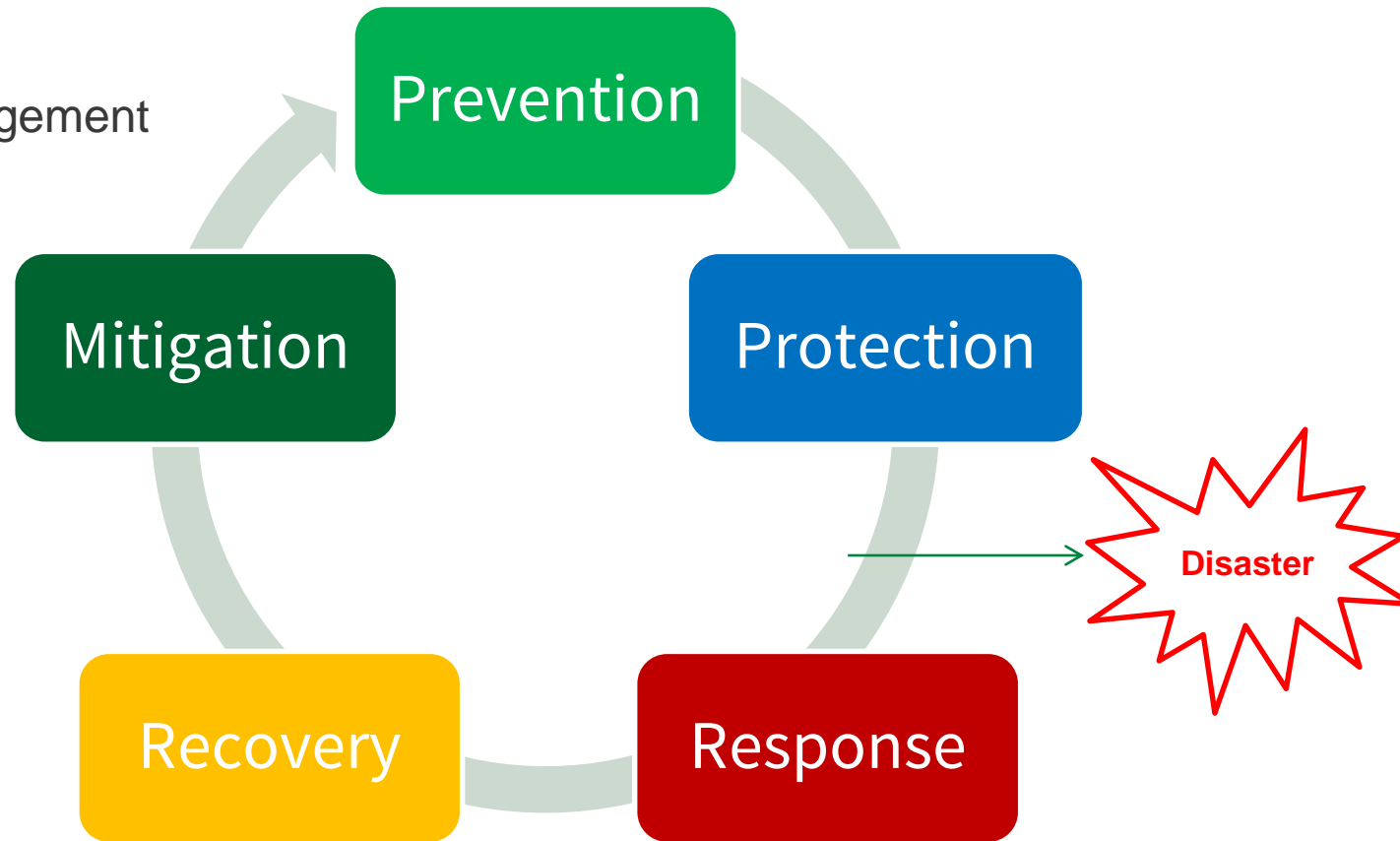
2022 Ada County Multi-Hazard Mitigation Plan



What is Mitigation?

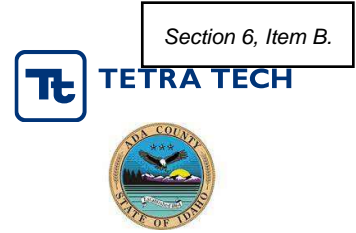


Five Phases of
Emergency Management



“Sustained action taken to reduce or eliminate long-term risk to life and property”

Disaster Mitigation Act of 2000



Federal legislation that establishes a pre-disaster hazard mitigation program and requirements for the national post disaster Hazard Mitigation Grant Program.

- Encourages and rewards local and state pre-disaster planning
- Integrates state and local planning
- Results in faster, more efficient allocation of funding and more efficient risk reduction projects
- Specific required plan elements:
 - Risk assessment
 - Public outreach and participation
 - Process for update
 - Formal Idaho Office of Emergency Management (IOEM) and FEMA review

Benefits of Hazard Mitigation Plans

- Establish and maintain eligibility for grant funds (\$\$\$ for projects)
- Improve understanding of risks and vulnerabilities
- Reduce negative impact of natural hazards
 - Actions save lives, reduce displacement, and speed recovery
- Encourage sustainable actions
 - Build strong, resilient, self-sufficient communities
- Foster collaboration between local jurisdictions and residents



Ada County Multi-Hazard Mitigation Plan



Volume 1 (468 pages)

- Part 1 – Planning Process & County Profile
- Part 2 – Risk Assessment
- Part 3 – Mitigation Strategy

Volume 2 (428 pages)

- Planning Partner Annexes – contains profiles and action items

Ada County Planning Partners



Municipalities

- Ada County (Unincorporated Areas)
- City of Boise
- City of Eagle
- City of Garden City
- City of Kuna
- City of Meridian
- City of Star

Special-Purpose Districts

- Ada County Highway District
- Eagle Fire District
- Eagle Sewer District
- Eagle Urban Renewal Agency
- Flood Control District #10
- Greater Boise Auditorium District
- Independent School District of Boise
- Joint School District #2
- Kuna Rural Fire Protection District
- Meridian Development Corporation
- North Ada County Fire and Rescue
- Star Joint Fire Protection District
- Star Sewer District
- Whitney Fire Protection District

Hazards Included in the Ada County MHMP



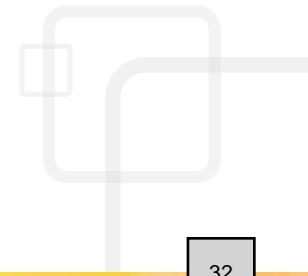
Hazards of Concern

- Dam/canal failure
- Drought
- Earthquake
- Extreme weather
- Flood
- Landslide
- Volcano (ash fall)
- Wildfire

Hazards of Interest

- Civil disturbance and terrorism
- Cyber disruption
- Hazardous materials release
- Public health emergency/pandemic
- Radiological event
- Utility failure

Climate is not assessed as an individual hazard, but a profile is provided describing how future climate conditions could affect the hazards of concern assessed in this plan.



Project Mission Statement and Goals



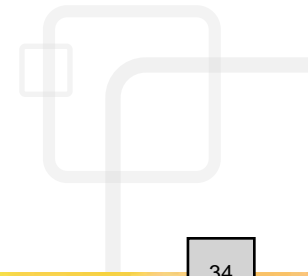
To reduce the vulnerability to natural hazards in order to protect the health, safety, welfare and economy of the Ada County community.

1. Protect lives and reduce hazard related injuries.
2. Minimize or reduce current and future damage from natural hazards to property, including critical facilities and environment.
3. Encourage the development and implementation of long-term, cost-effective mitigation projects that foster resilience for the whole community.
4. Maintain, enhance, and restore the natural environment's capacity to deal with the impacts of natural hazard events.
5. Improve emergency management preparedness, collaboration, and outreach within the planning area.

Public Engagement Process



- Open Steering Committee meetings
- Public meetings and events
- Social media coverage
- Information on <https://adacounty.id.gov/emergencymanagement/mitigation/> and other planning partner websites
- Public survey
- Draft Hazard Mitigation Plan 2-week public comment period



Status and What's Next

- IOEM and FEMA approved the Ada County Multi-Hazard Mitigation Plan in September 2022
- Ada County adopts the plan
- Each planning partner adopts Volume 1 and their annex in Volume 2
- Pursue grant funding opportunities made available by this plan!
 - [Grants | Office of Emergency Management \(idaho.gov\)](#)
 - [FEMA Grants | FEMA.gov](#)





FEMA

September 20, 2022

Ms. Susan Cleverley
State Hazard Mitigation Officer
Idaho Bureau of Homeland Security
4040 Guard Street, Building 600
Boise, Idaho 83705-5004

Dear Ms. Cleverley:

The Federal Emergency Management Agency (FEMA) Region 10 completed a pre-adoption review of the draft Ada County Hazard Mitigation Plan. The attached Mitigation Plan Review Tool documents the Region's review and compliance with all required elements of 44 CFR Part 201.6, as well as identifies the jurisdictions participating in the planning process. This letter serves as Region 10's commitment to approve the plan upon receiving documentation of its adoption by participating jurisdictions.

Formal adoption documentation must be submitted to FEMA Region 10 by at least one jurisdiction within one calendar year of the date of this letter, or the entire plan must be updated and resubmitted for review. Once FEMA approves the plan, the jurisdictions are eligible to apply for FEMA Hazard Mitigation Assistance grants.

Please contact Erin Cooper, Regional Mitigation Planning Program Manager, at erin.cooper@fema.dhs.gov with any questions.

Sincerely,

WENDY L SHAW

Digitally signed by WENDY L
SHAW
Date: 2022.09.20 16:14:22 -07'00'

Wendy Shaw, P.E.
Risk Analysis Branch Chief
Mitigation Division

Enclosures

KM:v1

RESOLUTION TBD-2022

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF STAR
AUTHORIZING THE ADOPTION OF THE
2022 ADA COUNTY MULTI-HAZARD MITIGATION PLAN**

WHEREAS, all of Ada County has exposure to natural hazards that increase the risk to life, property, environment, and the County’s economy; and

WHEREAS, pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property; and

WHEREAS, The Disaster Mitigation Act of 2000 (Public Law 106-390) established new requirements for pre- and post-disaster hazard mitigation programs; and

WHEREAS, a coalition of Ada County stakeholders with like planning objectives has been formed to pool resources and create consistent mitigation strategies to be implemented within each partners identified capabilities, within the Ada County Planning Area; and

WHEREAS, the coalition has completed a planning process that engages the public, assesses the risk and vulnerability to the impacts of natural hazards, develops a mitigation strategy consistent with a set of uniform goals and objectives, and creates a plan for implementing, evaluating, and revising this strategy.

NOW, THEREFORE, BE IT RESOLVED that the **CITY OF STAR**:

- 1.) Adopts in its entirety, Volume I, the **CITY OF STAR** annex, and appendices of Volume II of the 2022 Ada County Multi-Hazard Mitigation Plan.
- 2.) Will use the adopted and approved portions of the Hazard Mitigation Plan to guide pre- and post- disaster mitigation of the hazards identified.
- 3.) Will coordinate the strategies identified in the Hazard Mitigation Plan with other planning programs and mechanisms under its jurisdictional authority.
- 4.) Will continue its support of the on-going countywide mitigation efforts and continue to participate in the Planning Partnership as described by the Hazard Mitigation Plan.
- 5.) Will help to promote and support the mitigation successes of all Planning Partners.

PASSED AND ADOPTED on this 4th day of October 2022 by the following vote:

AYES:

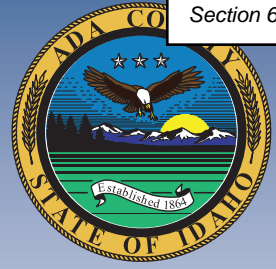
NAYES:

ABSENT:

ABSTAIN:

Trevor A Chadwick, Mayor, City of Star

ATTEST: _____
Jacob M Qualls, City Clerk-Treasurer, City of Star



2022 Ada County Multi-Hazard Mitigation Plan

Public Review Draft | July 2022



Volume 1
Countywide Elements



TETRA TECH

2022 Ada County Multi-Hazard Mitigation Plan

Volume 1—Countywide Elements

July 2022

PREPARED FOR

Ada County Emergency Management & Community Resilience

7200 Barrister Drive Phone: 208-577-4750
Boise ID 83704-9293 www.adacounty.id.gov/emergencymanagement

PREPARED BY

Tetra Tech

90 South Blackwood Avenue Phone: 208.939.4391
Eagle, ID 83616 Fax: 208.939.4402
tetratech.com

Tetra Tech Project #103S7664

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ACKNOWLEDGMENTS

Project Manager

Paul “Crash” Marusich, CEM
Deputy Director
Ada County Emergency Management & Community Resilience
7200 Barrister Dr., Boise, ID 83704
(208) 577-4750 office
Email: pmarusich@adaweb.net

Other Ada County Staff

- Joe Lombardo, Director, Ada County Emergency Management & Community Resilience

Consultants

- Rob Flaner, CFM, Project Manager/Lead Project Planner, Tetra Tech, Inc.
- Carol Bauman, GISP, Risk Assessment Lead, Tetra Tech, Inc.
- Megan Brotherton, Planner, Tetra Tech, Inc.
- Des Alexander, Planner, Tetra Tech, Inc.
- Dan Portman, Technical Editor, Tetra Tech, Inc.

Special Acknowledgments

The development of this plan would not have been possible without the dedication and commitment to this process by Stakeholder Steering Committee. The dedication of the steering committee volunteers who graciously allocated their time to this process is greatly appreciated. Citizens and all who participated in the public process are commended for their participation and contributions to this planning process.

DEFINITIONS

1 Percent Annual Chance Flood—The level of flooding that has a 1 percent chance of being equaled or exceeded in any given year. Though often referred to as the “100-year flood,” this event can occur more than once in a relatively short period of time.

Acre-Foot—An acre-foot is the amount of water it takes to cover 1 acre to a depth of 1 foot. This measure is used to describe the quantity of storage in a water reservoir. An acre-foot is a unit of volume. One acre foot equals 7,758 barrels; 325,829 gallons; or 43,560 cubic feet. An average household of four will use approximately 1 acre-foot of water per year.

Asset—An asset is any man-made or natural feature that has value, including, but not limited to, people; buildings; infrastructure, such as bridges, roads, sewers, and water systems; lifelines, such as electricity and communication resources; and environmental, cultural, or recreational features such as parks, wetlands, and landmarks.

Base Flood—The flood having a 1% chance of being equaled or exceeded in any given year, also known as the “100-year” or “1% chance” flood. The base flood is a statistical concept used to ensure that all properties subject to the National Flood Insurance Program (NFIP) are protected to the same degree against flooding.

Basin—A basin is the area within which all surface water—whether from rainfall, snowmelt, springs, or other sources—flows to a single water body or watercourse. The boundary of a river basin is defined by natural topography, such as hills, mountains and ridges. Basins are also referred to as “watersheds” and “drainage basins.”

Benefit/Cost Analysis—A benefit/cost analysis is a systematic, quantitative method of comparing projected benefits to projected costs of a project or policy. It is used as a measure of cost effectiveness.

Benefit—A benefit is a net project outcome and is usually defined in monetary terms. Benefits may include direct and indirect effects. For the purposes of benefit-cost analysis of proposed mitigation measures, benefits are limited to specific, measurable, risk reduction factors, including reduction in expected property losses (buildings, contents and functions) and protection of human life.

BLM—Bureau of Land Management

BRIC—Building Resilient Infrastructure and Communities

Building—A building is defined as a structure that is walled and roofed, principally aboveground, and permanently fixed to a site. The term includes manufactured homes on permanent foundations on which the wheels and axles carry no weight.

Capability Assessment—A capability assessment provides a description and analysis of a community’s current capacity to address threats associated with hazards. The assessment includes two components—an inventory of an agency’s mission, programs and policies, and an analysis of its capacity to carry them out. A capability assessment is an integral part of the planning process in which a community’s actions to reduce losses are identified, reviewed, and analyzed, and the framework for implementation is identified.

CDBG-DR—Community Development Block Grant Disaster Recovery grants

CDC—U.S. Centers for Disease Control and Prevention

CFR—Code of Federal Regulations

cfs—cubic feet per second

Community Rating System (CRS)—The CRS is a voluntary program under the NFIP that rewards participating communities (provides incentives) for exceeding the minimum requirements of the NFIP and completing activities that reduce flood hazard risk by providing flood insurance premium discounts.

COMPASS—Community Planning Association of SW Idaho

Critical Facility—A critical facility is one that is deemed vital to the Ada County planning area’s ability to provide essential services while protecting life and property. A critical facility may be a system or an asset, either physical or virtual, the loss of which would have a profound impact on the security, economy, public health or safety, environment, or any combination of thereof, across the planning area.

CRS—Community Rating System

Cubic Feet per Second (cfs)—Discharge or river flow is commonly measured in cfs. One cubic foot is about 7.5 gallons of liquid.

Dam Failure—Dam failure refers to a partial or complete breach in a dam (or levee) that impacts its integrity. Dam failures occur for a number of reasons, such as flash flooding, inadequate spillway size, mechanical failure of valves or other equipment, freezing and thawing cycles, earthquakes, and intentional destruction.

Dam—Any artificial barrier or controlling mechanism that can or does impound 10 acre-feet or more of water.

Debris Avalanche—A debris flow that travels faster than about 10 miles per hour (mph).

Debris Flow—Dense mixtures of water-saturated debris that move down-valley; looking and behaving much like flowing concrete. They form when loose masses of unconsolidated material are saturated, become unstable, and move down slope. The source of water varies but includes rainfall, melting snow or ice, and glacial outburst floods.

DFIRM—Digital Flood Insurance Rate Maps

Disaster Mitigation Act of 2000 (DMA); The DMA is Public Law 106-390 and is the latest federal legislation enacted to encourage and promote proactive, pre-disaster planning as a condition of

receiving financial assistance under the Robert T. Stafford Act. The DMA emphasizes planning for disasters before they occur. The DMA established a pre-disaster hazard mitigation program and new requirements for the national post-disaster hazard mitigation grant program.

DMA—Disaster Mitigation Act

Drainage Basin—A basin is the area within which all surface water- whether from rainfall, snowmelt, springs or other sources- flows to a single water body or watercourse. The boundary of a river basin is defined by natural topography, such as hills, mountains and ridges. Drainage basins are also referred to as **watersheds** or **basins**.

Drought—Drought is a period of time without substantial rainfall or snowfall from one year to the next. Drought can also be defined as the cumulative impacts of several dry years or a deficiency of precipitation over an extended period of time, which in turn results in water shortages for some activity, group, or environmental function. A hydrological drought is caused by deficiencies in surface and subsurface water supplies. A socioeconomic drought impacts the health, well-being, and quality of life or starts to have an adverse impact on a region. Drought is a normal, recurrent feature of climate and occurs almost everywhere.

Earthquake—An earthquake is defined as a sudden slip on a fault, volcanic or magmatic activity, and sudden stress changes in the earth that result in ground shaking and radiated seismic energy. Earthquakes can last from a few seconds to over 5 minutes, and have been known to occur as a series of tremors over a period of several days. The actual movement of the ground in an earthquake is seldom the direct cause of injury or death. Casualties may result from falling objects and debris as shocks shake, damage, or demolish buildings and other structures.

EMAP—Emergency Management Accreditation Program

EMCR—Ada County Emergency Management & Community Resilience

EPA—U.S. Environmental Protection Agency

ESA—Endangered Species Act

Exposure—Exposure is defined as the number and dollar value of assets considered to be at risk during the occurrence of a specific hazard.

Extent—The extent is the size of an area affected by a hazard.

FEMA—Federal Emergency Management Agency

FERC—Federal Energy Regulatory Commission

Fire Behavior—Fire behavior refers to the physical characteristics of a fire and is a function of the interaction between the fuel characteristics (such as type of vegetation and structures that could burn), topography, and weather. Variables that affect fire behavior include the rate of spread, intensity, fuel consumption, and fire type (such as underbrush versus crown fire).

Fire Frequency—Fire frequency is the broad measure of the rate of fire occurrence in a particular area. An estimate of the areas most likely to burn is based on past fire history or fire rotation in the area, fuel conditions, weather, ignition sources (such as human or lightning), fire suppression response, and other factors.

Firewise—National Fire Protection Association program encouraging local solutions for wildfire safety by involving homeowners, community leaders, planners, developers, firefighters and others in the effort to protect people and property from the risk of wildfire. The program is co-sponsored by the U.S. Forest Service, the U.S. Department of the Interior, and the National Association of State Foresters.

FIRM—Flood Insurance Rate Map

Flash Flood—A flash flood occurs with little or no warning when water levels rise at an extremely fast rate

Flood Insurance Rate Map (FIRM)—FIRMs are the official maps on which the Federal Emergency Management Agency (FEMA) has delineated the Special Flood Hazard Area (SFHA).

Flood Insurance Study—A report published by the Federal Insurance and Mitigation Administration for a community in conjunction with the community's Flood Insurance rate Map. The study contains such background data as the base flood discharges and water surface elevations that were used to prepare the FIRM. In most cases, a community FIRM with detailed mapping will have a corresponding flood insurance study.

Floodplain—Any land area susceptible to being inundated by flood waters from any source. A flood insurance rate map identifies most, but not necessarily all, of a community's floodplain as the Special Flood Hazard Area (SFHA).

Floodway—Floodways are areas within a floodplain that are reserved for the purpose of conveying flood discharge without increasing the base flood elevation more than 1 foot. Generally speaking, no development is allowed in floodways, as any structures located there would block the flow of floodwaters.

FMA—Flood Mitigation Assistance

FRCC—Fire Regime Condition Class

Freeboard—Freeboard is the margin of safety added to the base flood elevation.

Frequency—For the purposes of this plan, frequency refers to how often a hazard of specific magnitude, duration, and/or extent is expected to occur on average. Statistically, a hazard with a 100-year frequency is expected to occur about once every 100 years on average and has a 1 percent chance of occurring any given year. Frequency reliability varies depending on the type of hazard considered.

Geographic Information System (GIS)—GIS is a computer software application that relates data

regarding physical and other features on the earth to a database for mapping and analysis.

GIS—Geographic Information System

Goal—A goal is a general guideline that explains what is to be achieved. Goals are usually broad-based, long-term, policy-type statements and represent global visions. Goals help define the benefits that a plan is trying to achieve. The success of a hazard mitigation plan is measured by the degree to which its goals have been met (that is, by the actual benefits in terms of actual hazard mitigation).

Hazard Mitigation Grant Program (HMGP)—Authorized under Section 202 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the HMGP is administered by FEMA and provides grants to states, tribes and local governments to implement hazard mitigation actions after a major disaster declaration. The purpose of the program is to reduce the loss of life and property due to disasters and to enable mitigation activities to be implemented as a community recovers from a disaster

Hazard—A hazard is a source of potential danger or adverse condition that could harm people and/or cause property damage.

Hazus—Hazus is a GIS-based program used to support the development of risk assessments as required under the DMA. The Hazus software program assesses risk in a quantitative manner to estimate damages and losses associated with natural hazards. Hazus is FEMA’s nationally applicable, standardized methodology and software program and contains modules for estimating potential losses from earthquakes, floods and wind hazards. Hazus has also been used to assess vulnerability (exposure) for other hazards.

HMGP—Hazard Mitigation Grant Program

Hydraulics—Hydraulics is the branch of science or engineering that addresses fluids (especially water) in motion in rivers or canals, works and machinery

for conducting or raising water, the use of water as a prime mover, and other fluid-related areas.

Hydrology—Hydrology is the analysis of waters of the earth. For example, a flood discharge estimate is developed by conducting a hydrologic study.

IBC—International Building Code

IDWR—Idaho Department of Water Resources

Intensity—For the purposes of this plan, intensity refers to the measure of the effects of a hazard.

Inventory—The assets identified in a study region comprise an inventory. Inventories include assets that could be lost when a disaster occurs and community resources are at risk. Assets include people, buildings, transportation, and other valued community resources.

Landslide—Landslides can be described as the sliding movement of masses of loosened rock and soil down a hillside or slope. Fundamentally, slope failures occur when the strength of the soils forming the slope exceeds the pressure, such as weight or saturation, acting upon them.

Lightning—Lightning is an electrical discharge resulting from the buildup of positive and negative charges within a thunderstorm. When the buildup becomes strong enough, lightning appears as a “bolt,” usually within or between clouds and the ground. A bolt of lightning instantaneously reaches temperatures approaching 50,000°F. The rapid heating and cooling of air near lightning causes thunder. Lightning is a major threat during thunderstorms. In the United States, 75 to 100 Americans are struck and killed by lightning each year (see <http://www.fema.gov/hazard/thunderstorms/thunder.shtm>).

Liquefaction—Liquefaction is the complete failure of soils, occurring when soils lose shear strength and flow horizontally. It is most likely to occur in fine grain sands and silts, which behave like viscous fluids when liquefaction occurs. This situation is

extremely hazardous to development on the soils that liquefy, and generally results in extreme property damage and threats to life and safety.

Local Government—Any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity.

Magnitude—Magnitude is the measure of the strength of an earthquake and is typically measured by the Richter scale. As an estimate of energy, each whole number step in the magnitude scale corresponds to the release of about 31 times more energy than the amount associated with the preceding whole number value.

Mitigation Actions—Mitigation actions are specific actions to achieve goals and objectives that minimize the effects from a disaster and reduce the loss of life and property.

Mitigation—A preventive action that can be taken in advance of an event that will reduce or eliminate the risk to life or property.

NASA—National Aeronautics and Space Administration

NEHRP—National Earthquake Hazards Reduction Program

NFIP—National Flood Insurance Program

NOAA—National Oceanic and Atmospheric Administration

NRC—Nuclear Regulatory Commission

NWS—National Weather Service

Objective—For the purposes of this plan, an objective is defined as a short-term aim that, when combined with other objectives, forms a strategy or course of action to meet a goal. Unlike goals, objectives are specific and measurable.

PCB— Polychlorinated biphenyls

Peak Ground Acceleration—Peak ground acceleration (PGA) is a measure of the highest amplitude of ground shaking that accompanies an earthquake, based on a percentage of the force of gravity.

Performance Period—The five-year period after a local hazard mitigation plan is adopted before it expires and the adopting jurisdiction loses eligibility for some federal hazard mitigation funding

PGA—Peak ground acceleration

PIO—public information officer

Preparedness—Preparedness refers to actions that strengthen the capability of government, citizens and communities to respond to disasters.

Presidential Disaster Declaration—These declarations are typically made for events that cause more damage than state and local governments and resources can handle without federal government assistance. Generally, no specific dollar loss threshold has been established for such declarations. A Presidential Disaster Declaration puts into motion long-term federal recovery programs, some of which are matched by state programs, designed to help disaster victims, businesses and public entities.

Probability of Occurrence—The probability of occurrence is a statistical measure or estimate of the likelihood that a hazard will occur. This probability is generally based on past hazard events in the area and a forecast of events that could occur in the future. A probability factor based on yearly values of occurrence is used to estimate probability of occurrence.

Repetitive Loss Property—Any NFIP-insured property that, since 1978 and regardless of any changes of ownership during that period, has experienced four or more paid flood losses in excess of \$1000, or two paid flood losses in excess of \$1000 within any 10-year period since 1978, or three or more paid losses that equal or exceed the current value of the insured property.

Risk Assessment—Risk assessment is the process of measuring potential loss of life, personal injury, economic injury, and property damage resulting from hazards. This process assesses the vulnerability of people, buildings and infrastructure to hazards and focuses on (1) hazard identification; (2) impacts of hazards on physical, social and economic assets; (3) vulnerability identification; and (4) estimates of the cost of damage or costs that could be avoided through mitigation.

Risk Ranking—The relative rating of hazards based on their probability of occurrence and their expected impact on people, property and the economy.

Risk—Risk is the estimated impact that a hazard would have on people, services, facilities and structures in a community. Risk measures the likelihood of a hazard occurring and resulting in an adverse condition that causes injury or damage. Risk is often expressed in relative terms such as a high, moderate or low likelihood of sustaining damage above a particular threshold due to occurrence of a specific type of hazard. Risk also can be expressed in terms of potential monetary losses associated with the intensity of the hazard.

Riverine—Of or produced by a river. Riverine floodplains have readily identifiable channels. Floodway maps can only be prepared for riverine floodplains.

Robert T. Stafford Act—The Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 100-107, was signed into law on November 23, 1988. This law amended the Disaster Relief Act of 1974, Public Law 93-288. The Stafford Act is the statutory authority for most federal

disaster response activities, especially as they pertain to FEMA and its programs.

SFHA—Special Flood Hazard Area

Special Flood Hazard Area—The base floodplain delineated on a Flood Insurance Rate Map. The SFHA is mapped as a Zone A in riverine situations and zone V in coastal situations. The SFHA may or may not encompass all of a community’s flood problems

Stakeholder—Business leaders, civic groups, academia, non-profit organizations, major employers, managers of critical facilities, farmers, developers, special purpose districts, and others whose actions could impact hazard mitigation.

Steep Slope—Different communities and agencies define it differently, depending on what it is being applied to, but generally a steep slope is a slope in which the percent slope equals or exceeds 25%. For this study, steep slope is defined as slopes greater than 30%.

Stream Bank Erosion—Stream bank erosion is common along rivers, streams and drains where banks have been eroded, sloughed or undercut. However, it is important to remember that a stream is a dynamic and constantly changing system. It is natural for a stream to want to meander, so not all eroding banks are “bad” and in need of repair. Generally, stream bank erosion becomes a problem where development has limited the meandering nature of streams, where streams have been channelized, or where stream bank structures (like bridges, culverts, etc.) are located in places where they can actually cause damage to downstream areas. Stabilizing these areas can help protect watercourses from continued sedimentation, damage to adjacent land uses, control unwanted meander, and improvement of habitat for fish and wildlife.

TENORM—Technologically Enhanced Naturally Occurring Radioactive Material

Thunderstorm—A thunderstorm is a storm with lightning and thunder produced by cumulonimbus

clouds. Thunderstorms usually produce gusty winds, heavy rains, and sometimes hail. Thunderstorms are usually short in duration (seldom more than 2 hours). Heavy rains associated with thunderstorms can lead to flash flooding during the wet or dry seasons.

Tornado—A tornado is a violently rotating column of air extending between and in contact with a cloud and the surface of the earth. Tornadoes are often (but not always) visible as funnel clouds. On a local scale, tornadoes are the most intense of all atmospheric circulations, and winds can reach destructive speeds of more than 300 mph. A tornado’s vortex is typically a several hundred feet in diameter, and damage paths can be up to 1 mile wide and 50 miles long.

USDA—U.S. Department of Agriculture

USDM—U.S. Drought Monitor

USGS—U.S. Geological Survey

Vulnerability—Vulnerability describes how exposed or susceptible an asset is to damage. Vulnerability depends on an asset’s construction and contents, and the economic value of its functions. Like indirect damages, the vulnerability of one element of the community is often related to the vulnerability of another. For example, many businesses depend on uninterrupted electrical power. Flooding of an electric substation would affect not only the substation itself but businesses as well. Often, indirect effects can be much more widespread and damaging than direct effects.

Watershed—A watershed is an area that drains downgradient from areas of higher land to areas of lower land to the lowest point, a common drainage basin.

Wildfire—These terms refer to any uncontrolled fire occurring on undeveloped land that requires fire suppression. The potential for wildfire is influenced by three factors—the presence of fuel, topography and air mass. Fuel can include living and dead vegetation on the ground, along the surface as brush

and small trees, and in the air such as tree canopies. Topography includes both slope and elevation. Air mass includes temperature, relative humidity, wind speed and direction, cloud cover, precipitation amount, duration, and the stability of the atmosphere at the time of the fire. Wildfires can be ignited by lightning and, most frequently, by human activity including smoking, campfires, equipment use and arson.

Wildland-Urban Interface Area—The geographical area where structures and other human development meet or intermingle with wildland or vegetative fuels.

Windstorm—Windstorms are generally short-duration events involving straight-line winds or gusts exceeding 50 mph. These gusts can produce winds of sufficient strength to cause property damage. Windstorms are especially dangerous in areas with significant tree stands, exposed property, poorly constructed buildings, mobile homes (manufactured housing units), major infrastructure, and aboveground utility lines. A windstorm can topple trees and power lines; cause damage to residential, commercial, critical facilities; and leave tons of debris in its wake.

WUI—Wildland Urban Interface

Zoning Ordinance—The zoning ordinance designates allowable land use and intensities for a local jurisdiction. Zoning ordinances consist of two components—a zoning text and a zoning map.

EXECUTIVE SUMMARY

Hazard mitigation is the use of long-term and short-term policies, programs, projects, and other activities to alleviate the death, injury, and property damage that can result from a disaster. Ada County developed an updated hazard mitigation plan in partnership with the following local governments within the county:

- City of Boise
- City of Eagle
- City of Garden City
- City of Kuna
- City of Meridian
- City of Star
- Ada County Highway District
- Eagle Fire District
- Eagle Sewer District
- Eagle Urban Renewal Agency
- Flood Control District #10
- Greater Boise Auditorium District
- Independent School District of Boise
- Joint School District #2
- Kuna Rural Fire Protection District
- Meridian Development Corporation
- North Ada Co. Fire and Rescue
- Star Joint Fire Protection District
- Star Sewer District
- Whitney Fire Protection District

The hazard mitigation plan defines measures to reduce risks from natural disasters in the Ada County planning area, which consists of the entire county. The plan complies with federal and state hazard mitigation planning requirements to establish eligibility for funding under Federal Emergency Management Agency (FEMA) grant programs for all planning partners. It updates the County’s previous hazard mitigation plan, from 2017.

PREVIOUS HAZARD MITIGATION PLANNING IN ADA COUNTY

Ada County and a group of planning partners prepared an initial hazard mitigation plan that was approved by FEMA in 2006. Federal regulations require updates of hazard mitigation plans on a 5-year cycle to reevaluate recommendations, monitor the impacts of actions that have been accomplished, and determine if there is a need to change the focus of mitigation strategies. A jurisdiction covered by a plan that has expired is no longer in compliance with the federal requirements for hazard mitigation planning.

To meet the federal requirements for updating plans, the 2006 plan was comprehensively updated in 2011. The 2011 update represented a significant enhancement of the 2006 plan in content, scope and coverage. The 2017 updated the 2011 plan. The *2022 Ada County Multi-Hazard Mitigation Plan* updates the 2017 plan.

PLAN UPDATE PROCESS

Updating the plan consisted of the following phases:

- **Organize Resources**—A planning team was assembled for the plan update, consisting of staff from Ada County Emergency Management & Community Resilience (EMCR) and a technical consultant. The team conducted outreach to establish the planning partnership. A 20-member steering committee was assembled to oversee the plan update, consisting of planning partner staff, residents, and other stakeholders in the planning area. Coordination with other local, state and federal agencies involved in hazard mitigation occurred throughout the plan update process. This phase included a review of the existing plan and existing programs that may support hazard mitigation actions.
- **Engage the Public**—The planning team implemented a public involvement strategy developed by the Steering Committee. The strategy included in-person and virtual public events to present the risk assessment and the draft plan, presentations at various events and to community groups, a hazard mitigation survey, an EMCR-sponsored website, and multiple media releases.
- **Update Goals, Objectives and Actions**—The Steering Committee updated the goals from the 2017 plan and confirmed a set of objectives. The planning partnership selected a range of mitigation actions to work toward achieving the goals set forth in this plan update. Additionally, the Steering Committee selected a set of countywide mitigation actions. The mitigation actions recommended in this plan include some that address limitations in the modeling caused by insufficient data, such as digitizing maps of urban flooding issues and collecting perishable data, such as high water marks, after hazard events.
- **Develop Plan Implementation and Maintenance Strategy**—The Steering Committee developed a plan implementation and maintenance strategy that includes the establishment of a hazard mitigation working group, annual progress reporting, a strategy for continued public involvement, a commitment to plan integration with other relevant plans and programs, and a recommitment from the planning partnership to actively maintain the plan over the five-year performance period.
- **Assemble the Updated Plan**—The planning team and Steering Committee assembled a document to meet hazard mitigation planning requirements for all partners. The updated plan contains two volumes. Volume 1 contains components that apply to all partners and the broader planning area. Volume 2 contains all components that are jurisdiction-specific. Each planning partner has an annex in Volume 2.
- **Plan Adoption**—Once pre-adoption approval has been granted by FEMA, the final adoption phase will begin. Each planning partner will individually adopt the updated plan.
- **Plan Implementation**—Plan implementation will occur over the next five years as the planning partnership begins to implement the county-wide and jurisdiction-specific actions identified in this plan.

RISK ASSESSMENT RESULTS

Risk assessment is the process of measuring the potential loss of life resulting from natural hazards, as well as personal injury and property damage, in order to determine the vulnerability of a community. The Steering Committee used the risk assessment to rate risk and to gauge the potential impacts of each hazard of concern in the planning area. The risk assessment included the following:

- Hazard identification and profiling
- Assessment of the impact of hazards on physical, social, and economic assets
- Identification of particular areas of vulnerability
- Estimates of the cost of potential damage.

Based on the risk assessment, hazards were rated for the risk they pose to the overall planning area. Figure ES-1 shows the resulting scores and ratings for the entire Ada County planning area.

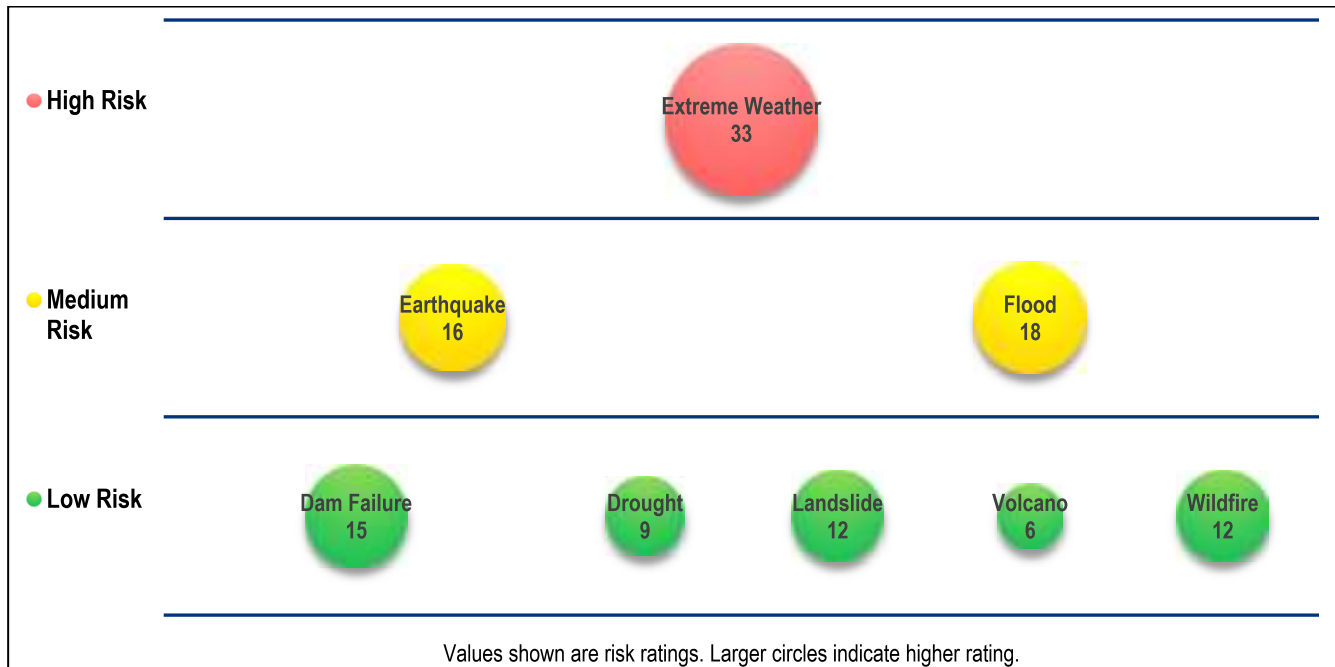


Figure ES-1. Countywide Hazard Risk Rating

Each planning partner also rated hazards for its own area. Figure ES-2 summarizes how the 20 participating planning partners rated each hazard. The results indicate the following general patterns:

- The extreme weather and flood hazards were most commonly ranked as high.
- The dam failure, earthquake, and flood hazards were most commonly ranked as medium.
- The landslide, drought, and volcano hazards were most commonly ranked as low.

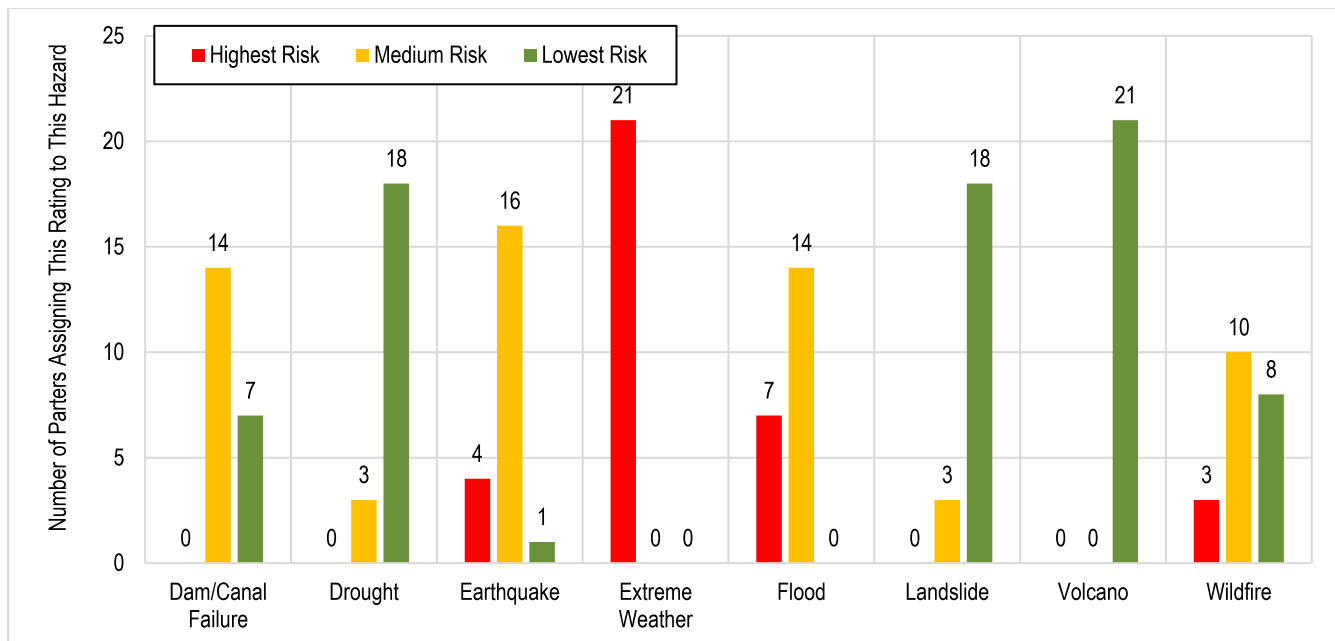


Figure ES-2. Summary of Risk Rating for Individual Planning Partners

MITIGATION MISSION STATEMENT, GOALS AND OBJECTIVES

The following mission statement guided the Steering Committee and the planning partnership in selecting the actions contained in this plan update:

To reduce the vulnerability to natural hazards in order to protect the health, safety, welfare and economy of the Ada County community.

The Steering Committee and the planning partnership established the following goals for the plan update:

- Protect lives and reduce hazard related injuries
- Minimize or reduce current and future damage from natural hazards to property, including critical facilities and environment
- Encourage the development and implementation of long-term, cost-effective mitigation projects that foster resilience for the whole community
- Maintain, enhance, and restore the natural environment's capacity to deal with the impacts of natural hazard events.
- Improve emergency management preparedness, collaboration, and outreach within the planning area.

The following objectives were identified that meet multiple goals, helping to establish priorities for recommended mitigation actions:

1. Minimize disruption of local government and commerce operations caused by the identified hazards.
2. Using best available data, science, and knowledge, continually improve understanding of the location and potential impacts of the identified hazards.
3. Based on willing participation, encourage retrofit, purchase, or relocation of real property, based on one or more of the following criteria: level of exposure, repetitive loss history, and previous damage from natural hazards.
4. Based on understanding of risk, prevent or discourage new development in hazardous areas; if building occurs in high-risk areas, ensure that it is done in such a way as to minimize risk.
5. Strengthen codes and code enforcement to ensure that new construction and redevelopment of property and infrastructure can withstand the impacts of hazards.
6. Integrate hazard mitigation policies into local government land use plans that not only protect the built environment, but also maintain or enhance the natural environment's ability to withstand and recover from disasters, with an emphasis on the promotion of regional consistency in policy.
7. Develop new, and improve existing, early warning emergency notification protocols, systems, and evacuation procedures.
8. Perform whole community engagement to educate the public on the area's potential hazards and ways to personally prepare, respond, recover and mitigate the impacts of these events.
9. Establish partnerships among all levels of government, the business community, and other stakeholders to improve and implement methods to protect life, property and the natural environment.
10. Increase the resilience and continuity of operations of identified critical facilities and infrastructure within the planning area to maintain delivery of essential services to the whole community.

MITIGATION ACTIONS

Mitigation actions presented in this update are activities designed to reduce or eliminate losses resulting from natural hazards. The update process resulted in the identification of more than 250 mitigation actions for implementation by individual planning partners, as presented in Volume 2 of this plan. In addition, the steering committee and planning partnership identified 15 countywide actions benefiting the whole partnership, as listed in Table ES-1.

Table ES-1. Countywide Mitigation Actions

Hazards Addressed	Lead Agency	Possible Funding Sources or Resources	Timeline	Objectives
<p>CW-1—Sponsor and maintain a natural-hazard informational website to include the following types of information:</p> <ul style="list-style-type: none"> • Hazard-specific information such as warning, private property mitigation alternatives, important facts on risk and vulnerability • Pre- and post-disaster information such as notices of grant funding availability • CRS creditable information • Links to planning partners’ pages, FEMA and Idaho Office of Emergency Management <p>Natural hazard mitigation plan information such as progress reports, mitigation success stories, update strategies, Steering Committee meetings.</p>				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	EMCR Operational Budget	Ongoing	2, 8, 9
<p>CW-2—Maintain the Steering Committee as a functioning body, under the ground rules established at its inception, to monitor progress of the plan, provide technical assistance to planning partners, and oversee the update of the plan according to schedule.</p>				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	Can be funded under existing programs	Ongoing	6, 8, 9
<p>CW-3—All planning partners that committed to the update effort will formally adopt this plan when pre-adoption approval has been granted by the Idaho Office of Emergency Management and FEMA Region 10. Each planning partner will adhere to the plan maintenance protocol identified in this plan. All actions under this action will be coordinated by EMCR.</p>				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	Can be funded under existing programs	Short-term	All
<p>CW-4—Continue to implement ongoing public outreach programs administered by EMCR. Seek opportunities to promote the mitigation of natural hazards within the planning area, using information contained in this plan.</p>				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	Can be funded under existing programs	Ongoing	2, 8, 9
<p>CW-5—Seek out and use the best available data, science and technology to update the risk assessment to this plan as that data, science, technology and funding resources become available.</p>				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	FEMA HMGP, RiskMAP, federal hazard analysis funding	Long-term	2, 9
<p>CW-6—Continue to support and coordinate with the Idaho Silver Jackets program.</p>				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	Can be funded under existing programs	Ongoing	2, 6, 8, 9
<p>CW-7—Provide technical support and coordination for available grant funding opportunities to the planning partnership.</p>				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	Can be funded under existing programs, FEMA HMGP	Short-term	2, 9
<p>CW-8—Participate as a cooperating partner with FEMA and other stakeholders in FEMA’s RiskMAP initiative.</p>				
Flood	EMCR	Can be funded under existing programs, RiskMAP initiative	Short-term	2, 9
<p>CW-9—Leverage public outreach partnering capabilities within the planning area to promote a uniform and consistent message on the importance of proactive hazard mitigation.</p>				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	EMCR Operational Budget	Ongoing	All

Hazards Addressed	Lead Agency	Possible Funding Sources or Resources	Timeline	Objectives
CW-10 —Coordinate mitigation planning and project efforts within the planning area to leverage all resources available to the planning partnership.				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	EMCR Operational Budget	Ongoing	1, 9, 10
CW-11 —Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect them from future damage, with repetitive and severe repetitive loss properties as a priority. Seek opportunities to leverage partnerships within the planning area in these pursuits.				
Dam/Canal Failure, Earthquake, Flood, Landslide, Extreme Weather, Wildfire	Planning Partners	FEMA HMGP, BRIC, FMA	Long-term	3, 9
CW-12 —Use information contained in the Ada County Multi-Hazard Mitigation Plan to support updates to other emergency management plans in effect within the planning area.				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	Can be funded under existing programs	Short-term	1, 2, 6, 10
CW-13 —Using the most current Hazus model and other data available, examine exposure and level of risk to the known hazards of concern for first responder facilities and identified potential sheltering sites.				
Dam/Canal Failure, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	Can be funded under existing programs	Long-term	2, 9
CW-14 —Based on identified risks, relocate or structurally harden first responder facilities as needed. Relocation may not be an option based on response requirements of the organization.				
Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	FEMA HMGP	Long-term	3, 9
CW-15 —Using the most current Hazus model and other data available, categorize potential sheltering sites from lowest to highest exposure to the known hazards of concern. Identify partners that own the sheltering sites and encourage building enhancements at those sites that would allow for operations during a major disaster event.				
Dam/Canal Failure, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire	EMCR	Can be funded under existing programs, FEMA HMGP	Long-term	2, 9

IMPLEMENTATION

Full implementation of the recommendations of this plan will require time and resources. The measure of the plan’s success will be its ability to adapt to changing conditions. Ada County and its planning partners will assume responsibility for adopting the recommendations of this plan and committing resources toward implementation. The framework established by this plan commits all planning partners to pursue actions when the benefits of a project exceed its costs. The planning partnership developed this plan with extensive public input, and public support of the actions identified in this plan will help ensure the plan’s success.

Part 1. PLANNING PROCESS AND COMMUNITY PROFILE

1. INTRODUCTION

1.1 WHY PREPARE THIS PLAN?

The inevitability of natural hazards in Ada County creates an urgent need to develop strategies, coordinate resources, and increase public awareness to reduce risk and prevent loss from future hazard events. Identifying risks posed by hazards and developing strategies to reduce the impact of a hazard event can assist in protecting life and property of citizens and communities. Local residents and businesses can work together with the County to create a plan that addresses the potential impacts of hazard events and ways to mitigate those impacts.

1.1.1 Federal Guidance

Hazard mitigation is defined as any action taken to reduce or alleviate the loss of life, personal injury, and property damage that can result from a disaster. It involves long- and short-term actions implemented before, during and after disasters. Hazard mitigation activities include planning efforts, policy changes, programs, studies, improvement projects, and other steps to reduce the impacts of hazards.

The federal Disaster Mitigation Act (DMA) emphasizes planning for disasters before they occur. The DMA requires state and local governments to develop hazard mitigation plans as a condition for federal disaster grant assistance. Regulations developed to fulfill the DMA's requirements are included in Title 44 of the Code of Federal Regulations (44 CFR).

The responsibility for hazard mitigation lies with not only with local, state, and federal governments, but also with private property owners and commercial and institutional interests. The DMA encourages cooperation among state and local authorities in pre-disaster planning. The enhanced planning network called for by the DMA helps local governments to articulate accurate needs for mitigation, resulting in faster allocation of funding and more cost-effective risk-reduction projects.

The DMA also promotes sustainability in hazard mitigation. To be sustainable, hazard mitigation needs to incorporate sound management of natural resources and address hazards and mitigation in the largest possible social and economic context.

1.1.2 Local Concerns

The *2022 Ada County Multi-Hazard Mitigation Plan* is the third comprehensive update to Ada County's hazard mitigation plan since its initial development in 2005; previous updates were completed in 2011 and 2017. Several factors initiated Ada County's ongoing efforts to plan for hazard mitigation:

- The Ada County area has significant exposure to numerous natural hazards that have caused millions of dollars in past damage.
- The County and its planning partners want to be proactive in preparing for the impacts of natural hazards.

- Local resources to undertake risk reduction initiatives are limited. Being able to leverage federal financial assistance is paramount to successful hazard mitigation.

Like all previous versions of this plan, the 2022 update was developed by Ada County in partnership with participating municipalities and special purpose districts within the county. One of the benefits of such multi-jurisdictional planning is the ability to pool resources and eliminate redundant activities within a planning area that has uniform risk exposure and vulnerabilities. The Federal Emergency Management Agency (FEMA) encourages multi-jurisdictional planning under its guidance for the DMA. The plan will help guide and coordinate mitigation activities throughout the planning area.

1.1.3 Plan Objectives

The main purpose of this planning effort was to identify risks posed by hazards and to develop strategies to reduce the impact of hazard events on people and property in Ada County; however, the plan was also developed to meet the following objectives:

- Meet or exceed requirements of the DMA.
- Enable all planning partners to continue using federal grant funding to reduce risk through mitigation.
- Meet the needs of each planning partner as well as state and federal requirements.
- Create a risk assessment that focuses on Ada County hazards of concern.
- Create a single planning document that integrates all planning partners into a framework that supports partnerships within the county, and puts all partners on the same planning cycle for future updates.
- Meet the planning requirements of FEMA's Community Rating System (CRS), allowing planning partners that participate in the CRS program to maintain or enhance their CRS classifications.
- Coordinate existing plans and programs so that high-priority actions to mitigate possible disaster impacts are funded and implemented.

1.2 WHO WILL BENEFIT FROM THIS PLAN?

This update identifies resources, information, and strategies for reducing risk from natural hazards. Elements and strategies in the plan were selected because they meet a program requirement and because they best meet the needs of the planning partners and their citizens.

All citizens and businesses of Ada County are the ultimate beneficiaries of this hazard mitigation plan. The plan reduces risk for those who live in, work in, and visit the county. It provides a viable planning framework for all foreseeable natural hazards that may impact the county. Participation in development of the plan by key stakeholders in the county helped ensure that outcomes will be mutually beneficial. The resources and background information in the plan are applicable countywide, and the plan's goals and recommendations can lay groundwork for the development and implementation of local mitigation activities and partnerships.

1.3 HOW TO USE THIS PLAN

This plan has been set up in two volumes so that elements that are jurisdiction-specific can easily be distinguished from those that apply to the whole planning area:

- **Volume 1**—Volume 1 includes all federally required elements of a disaster mitigation plan that apply to the entire planning area. This includes the description of the planning process, public involvement

strategy, goals and objectives, countywide hazard risk assessment, countywide mitigation actions, and a strategy for maintaining and implementing the plan. Appendices provided at the end of Volume 1 include information or explanations to support the main content of the plan.

- **Volume 2**—Volume 2 includes all federally required jurisdiction-specific elements, in annexes for each participating jurisdiction. It includes a description of the participation requirements established by the Steering Committee, as well as instructions and templates that the partners used to complete their annexes. Volume 2 also includes “linkage” procedures for eligible jurisdictions that did not participate in development of this plan but wish to adopt it in the future.

Each planning partner will adopt Volume 1 in its entirety, its own jurisdiction-specific annex in Volume 2, and at least the introduction and appendices to Volume 2. Partners may at their discretion adopt Volume 2 in its entirety.

2. PLAN UPDATE—WHAT HAS CHANGED?

2.1 PREVIOUS PLANS

2.1.1 The 2006 Plan

In 2005, Ada County led a planning effort to prepare the *Ada County All Hazards Mitigation Plan*. Ada County and 10 planning partners adopted that plan in October 2006. It received FEMA approval in November 2006, establishing compliance with the DMA for all participating planning partners. The plan addressed five identified hazards: flood, landslide, earthquake, extreme weather and wildfire.

A principal objective of the planning process was the integration of the National Fire Plan, the Idaho Statewide Implementation Strategy, the Healthy Forests Restoration Act, the Idaho State Hazard Mitigation Plan 2004, the Ada County Comprehensive Plan, and FEMA requirements for a hazard mitigation plan. The effort used the best science from all partners, integrating local and regional knowledge about hazards while meeting the needs of local citizens, the regional economy and the significance of this region to the rest of Idaho and the Inland West.

The plan was published in three volumes: Volume I addressed flood, landslide, earthquake and extreme weather; Volume II addressed wildfire; and Volume III contained appendices. The plan presented 37 strategies to address flood, landslide, earthquake and extreme weather and 44 strategies addressing wildfire mitigation.

2.1.2 The 2011 Plan

Ada County comprehensively revised the original hazard mitigation plan in 2011. This plan differed from its predecessor for a variety of reasons:

- Better guidance existed at the time of its development.
- Science and technology had improved since the development of the initial plan.
- Newly available data and tools provided for a more detailed and accurate risk assessment.
- The risk assessment was prepared to better support future grant applications by providing information to support the measurement of “cost-effectiveness” required under FEMA mitigation grant programs.
- The plan was developed such that it met program requirements of the Community Rating System for participating jurisdictions.
- The participating partners included special purpose districts not involved in the initial planning effort.
- The plan was prepared as a more user-friendly document that is understandable to the general public.
- The plan identified actions rather than strategies. Strategies provide direction, but actions are fundable under grant programs.

The 2011 update, with 22 participating jurisdictions, addressed eight identified hazards: dam or canal failure, drought, volcano (ash fall), flood, landslide, earthquake, extreme weather and wildfire. The plan identified and prioritized 230 actions to be implemented by the planning partnership. The update received FEMA approval on December 22, 2011, maintaining the partners' DMA compliance. The status of recommended actions was monitored by a plan maintenance strategy identified in the plan that included annual progress reporting.

2.1.3 The 2017 Plan

Ada County updated the 2011 plan in 2017 with the following changes:

- Public outreach was enhanced by using social media and a web-based community survey.
- New, updated data provided a more detailed and accurate risk assessment.
- Climate conditions were addressed as a stand-alone chapter describing their impact on the hazards of concern.
- Changes in risk due to new development since the previous plan was adopted were addressed for each hazard of concern.
- The 2017 Plan had 20 planning partners. Boise State University also prepared an annex to the plan as a non-eligible planning partner and contributing stakeholder.

2.1.4 Progress Reporting

The planning partnership for the 2017 plan has completed several progress reports since that plan was completed. For the progress reports, each planning partner reviewed the actions identified for their community and the progress made on each action. Each planning partner also reviewed the priority of each action to determine if that priority needed to be changed due to economic, political, capacity, or disaster related changes within their jurisdiction. All of the completed progress reports for the 2017 plan can be viewed on the Ada County website at: <https://adacounty.id.gov/ACEM/Mitigation>.

2.2 WHY UPDATE?

2.2.1 Federal Eligibility

Under 44 CFR, hazard mitigation plans must present a schedule for monitoring, evaluating, and updating the plan. This provides an opportunity to reevaluate recommendations, monitor the impacts of completed actions, and determine any need to change the mitigation strategies. Local jurisdictions have a five-year "performance period" from the time they adopt a plan until its expiration. A jurisdiction covered by a plan that has expired is not able to pursue elements of federal funding for which a current hazard mitigation plan is a prerequisite. Hazard mitigation plans that are updated and approved prior to their expiration can maintain continuous funding eligibility.

2.2.2 Changes in Development

Local jurisdictions must revise their hazard mitigation plans to reflect changes in development in order to continue to be eligible for federal mitigation project grant funding (44 CFR Section 201.6(d)(3)). This ensures that the mitigation strategy continues to address the risk and vulnerability of existing and potential development and takes into consideration possible future conditions that could impact vulnerability. The following are significant development and demographic changes in Ada County since the 2017 hazard mitigation plan update:

- According to the 2020 U.S. Census, the reported population for Ada County was 494,399—a 13.8 percent increase from the population reported in the 2017 Plan.
- The valuation of the general building stock increased by 31.84 percent (Ada County Assessor, 2022)
- The total number of structures within the planning area increased by 16.2 percent, as detailed in Table 2-1.

Table 2-1. Percent Increase in General Building Stock

Municipality	Building Count 2017 Plan	Building Count 2022 Plan	% Change
Boise	76,610	81,552	+6.1
Eagle	8,668	12,437	+30.3
Garden City	4,104	4,385	+6.4
Kuna	5,425	8,831	+38.6
Meridian	29,852	40,812	+26.9
Star	2,770	5,065	+45.3
Unincorporated County	19,019	21,720	+12.4
Total	146,448	174,802	+16.2

These numbers represent significant growth over five years. This plan update assumes that some of this new development occurred in hazard-prone areas. Because all such new development would have been regulated pursuant to local programs and codes, it is assumed that vulnerability did not increase even if exposure did. Ada County and its incorporated cities and towns have general/comprehensive plans that govern land-use decisions and policymaking, as well as building codes and flood-management regulations based on state and federal mandates. More detailed information on the types and location of new construction over the last five years is available in the city and county annexes in Volume 2 of this plan.

2.2.3 Emergency Management Accreditation Program

For the 2022 update, Ada County is pursuing accreditation under the Emergency Management Accreditation Program (EMAP). EMAP sets voluntary standards, assessments, and accreditation processes for disaster preparedness programs throughout the country.

2.3 THE UPDATED PLAN—WHAT IS DIFFERENT?

Due to the success of the prior plan update, no major changes were made to the format and function for this update. The plan has been enhanced using the best recently available data and technology, especially in the risk assessment portion. This plan update followed the same basic planning process as was used for the previous effort. A Steering Committee was once again the critical planning component in the process. Table 2-2 indicates the major changes between the two plans as they relate to 44 CFR planning requirements.

Table 2-2. Plan Changes Crosswalk

44 CFR Requirement	2017 Plan	Updated Plan
<p>Requirement §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:</p> <ol style="list-style-type: none"> 1. An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval; 2. An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and 3. Review and incorporation, if appropriate, of existing plans, studies, reports and technical information. 	<p>The 2017 plan followed an outreach strategy utilizing multiple media developed and approved by the Steering Committee. This strategy involved:</p> <ul style="list-style-type: none"> • Public participation on an oversight Steering Committee. • Establishment of a plan informational website. • Press releases. • Utilization of social media • Web deployed survey <p>Use of a public information survey Stakeholders were identified and coordinated with throughout the process. A comprehensive review of relevant plans and programs was performed by the planning team.</p>	<p>Public engagement enhancements for the 2022 plan included:</p> <ul style="list-style-type: none"> • Utilization of social media • Web deployed survey • Enhanced press coverage <p>As with the 2017 plan, the 2022 planning process identified key stakeholders and coordinated with them throughout the process. A comprehensive review of relevant plans and programs was performed by the core planning team.</p>
<p>§201.6(c)(2): The plan shall include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.</p>	<p>The 2017 plan included a comprehensive risk assessment of eight hazards of concern. Risk was defined as (probability x impact), where impact is the impact on people, property and economy of the planning area. All planning partners ranked risk as it pertains to their jurisdiction. The potential impacts of climate conditions are discussed for each hazard.</p>	<p>The 2022 plan update assessed the same natural hazards of concern as the 2017 plan and applied the same risk ranking protocol. To meet EMAP criteria, expanded profiles were developed for the following non-natural hazards:</p> <ul style="list-style-type: none"> • Civil disturbance and terrorism • Cyber disruption • Hazardous materials release • Public health emergency/pandemic • Radiological event • Utility failure
<p>§201.6(c)(2)(i): [The risk assessment shall include a] description of the ... location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.</p>	<p>The 2017 plan presented a risk assessment of each hazard of concern. Each chapter included the following components:</p> <ul style="list-style-type: none"> • Hazard profile, including maps of extent and location, historical occurrences, frequency, severity and warning time. • Secondary hazards • Exposure of people, property, critical facilities and environment • Vulnerability of people, property, critical facilities and environment. • Future trends in development • Scenarios • issues 	<p>The 2022 plan update applied the same methodology to describe the extent and location of the natural hazards assessed by the plan.</p>

44 CFR Requirement	2017 Plan	Updated Plan
<p>§201.6(c)(2)(ii): [The risk assessment shall include a] description of the jurisdiction’s vulnerability to the hazards described in paragraph (c)(2)(i). This description shall include an overall summary of each hazard and its impact on the community</p>	<p>Vulnerability was assessed for all hazards of concern. The Hazus computer model was used for the dam failure, earthquake and flood hazards. These were Level 2 analyses using city and county data. Site-specific data on County-identified critical facilities were entered into the Hazus model. Hazus outputs were generated for other hazards by applying an estimated damage function to an asset inventory extracted from Hazus.</p>	<p>The 2022 plan assessed vulnerability to all natural hazards using Hazus, updated with the best available data for the planning area. Hazus was used to model impacts from the dam failure, earthquake and flood hazards. Similar outputs were generated for the non-Hazus hazards using the same qualitative methodologies as used for the 2017 plan.</p>
<p>§201.6(c)(2)(ii): [The risk assessment] must also address National Flood Insurance Program insured structures that have been repetitively damaged floods</p>	<p>During the 2017 plan update there were no repetitive loss properties identified in the Ada County planning area. However, a comprehensive flood insurance analysis that looks at policy coverage and claims history was performed as part of the flood hazard risk assessment.</p>	<p>There was an expansion in this plan to address repetitive loss properties that have now been identified by FEMA in the Ada County planning area.</p>
<p>Requirement §201.6(c)(2)(ii)(A): The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure and critical facilities located in the identified hazard area.</p>	<p>A complete inventory of the numbers and types of buildings exposed was generated for each hazard of concern. The Steering Committee defined “critical facilities” for the planning area, and these were inventoried by exposure. Each hazard chapter provides a discussion on future development trends.</p>	<p>The 2022 plan includes a complete inventory of the numbers and types of buildings exposed for each hazard of concern. The Steering Committee defined “critical facilities” for the planning area, and these were inventoried by exposure. Each hazard chapter provides a discussion on future development trends.</p>
<p>Requirement §201.6(c)(2)(ii)(B): [The plan should describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) and a description of the methodology used to prepare the estimate.</p>	<p>Loss estimates were generated for all hazards of concern. These were generated by Hazus for the dam failure, earthquake and flood hazards. For the other hazards, loss estimates were generated by applying a regionally relevant damage function to the exposed inventory. In all cases, a damage function was applied to an asset inventory. The asset inventory was the same for all hazards and was generated in Hazus.</p>	<p>As was done with the 2017 plan, the 2022 plan includes loss estimates for all hazards of concern. These were generated by Hazus for the dam failure, earthquake and flood hazards. For the other hazards, loss estimates were generated by applying a regionally relevant damage function to the exposed inventory. The asset inventory was the same for all hazards and was generated in Hazus.</p>
<p>Requirement §201.6(c)(2)(ii)(C): [The plan should describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.</p>	<p>There is a discussion of future development trends as they pertain to each hazard of concern. This discussion looks predominantly at the existing land use and the current regulatory environment that dictates this land use.</p>	<p>The 2022 plan describes future development trends as they pertain to each hazard of concern. This discussion looks predominantly at existing land use and the current regulatory environment that dictates this land use.</p>

44 CFR Requirement	2017 Plan	Updated Plan
<p>§201.6(c)(3): The plan shall include a mitigation strategy that provides the jurisdiction’s blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.</p>	<p>The 2017 plan contained a mission statement, goals, objectives and actions. The mission statement, goals and objectives were regional and covered all planning partners. Each planning partner used the progress reporting from the plan maintenance and evaluated the status of actions identified in the 2011 plan. Actions that were completed or no longer considered to be feasible were removed. The balance of the actions were carried over to the 2017 plan and in some cases, new actions were added to the action plan. All objectives met multiple goals and stand alone as components of the plan. Each planning partner completed an assessment of its regulatory, technical and financial capabilities.</p>	<p>The 2022 plan includes a mission statement, goals, objectives, and actions. The mission statement, goals and objectives are regional and cover all planning partners. The Steering Committee made slight revisions to these components from the previous plan to better align with objectives for this update. Each planning partner used the progress reporting from the plan maintenance and evaluated the status of actions identified in the 2011 plan. Actions that were completed or no longer considered to be feasible were removed. The balance of the actions was carried over to the 2017 plan and in some cases, new actions were added to the action plan. Actions were prioritized using the same protocol that was applied for the 2017 plan.</p>
<p>Requirement §201.6(c)(3)(i): [The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.</p>	<p>The Steering Committee identified a mission statement, five goals and ten objectives. These were completely new goals and objectives targeted specifically for this hazard mitigation plan. They were not carried over from any other planning document and were identified based upon the capabilities of the planning partnership. These planning components supported the actions identified in the plan.</p>	<p>The Steering Committee identified a mission statement, five goals and 10 objectives. These were slightly enhanced and targeted specifically for this hazard mitigation plan. These planning components support the actions identified in the plan.</p>
<p>Requirement §201.6(c)(3)(ii): [The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.</p>	<p>The 2017 plan includes a hazard mitigation catalog that was developed through a facilitated process. This catalog identifies actions that manipulate the hazard, reduce exposure to the hazard, reduce vulnerability, or increase mitigation capability. The catalog further segregates actions by scale of implementation. A table in the action plan section analyzes each action by mitigation type to illustrate the range of actions selected.</p>	<p>The same mitigation catalog approach that was utilized with the 2017 plan was applied to the 2022 plan update.</p>
<p>Requirement: §201.6(c)(3)(ii): [The mitigation strategy] must also address the jurisdiction’s participation in the National Flood Insurance Program, and continued compliance with the program’s requirements, as appropriate.</p>	<p>All municipal planning partners that participate in the National Flood Insurance Program identified an action stating their commitment to maintain compliance and good standing under the program. Communities that participate in the Community Rating System have identified actions to maintain or enhance their standing under the CRS.</p>	<p>All municipal planning partners that participate in the National Flood Insurance Program identified an action stating their commitment to maintain compliance and good standing under the program. Communities that participate in the Community Rating System have identified actions to maintain or enhance their standing under the CRS.</p>

44 CFR Requirement	2017 Plan	Updated Plan
<p>Requirement §201.6(c)(3)(iii): [The mitigation strategy shall describe] how the actions identified in section (c)(3)(ii) will be prioritized, implemented and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.</p>	<p>Each recommended action was prioritized using a qualitative methodology based on the objectives the project will meet, the timeline for completion, how the project will be funded, the impact of the project, the benefits of the project and the costs of the project.</p>	<p>The same prioritization protocol that was utilized for the 2017 plan was applied to the 2022 plan update.</p>
<p>Requirement §201.6(c)(4)(i): [The plan maintenance process shall include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.</p>	<p>The 2017 plan details a plan maintenance strategy similar to that of the initial plan. There is additional detail addressing deficiencies observed during the initial performance period of the plan. This includes a more defined role for the Steering Committee in annual plan review.</p>	<p>The 2017 plan maintenance strategy was carried over to the 2022 plan update.</p>
<p>Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.</p>	<p>The 2017 plan details recommendations for incorporating the plan into other planning mechanisms such as:</p> <ul style="list-style-type: none"> • Comprehensive Plan • Emergency response plan • Capital Improvement Programs • Municipal Code • Continuity of Operations Plan 	<p>The 2017 plan maintenance strategy was carried over to the 2022 plan update.</p>
<p>Requirement §201.6(c)(4)(iii): [The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.</p>	<p>The 2017 plan details a strategy for continuing public involvement</p>	<p>The 2017 plan maintenance strategy was carried over to the 2022 plan update.</p>
<p>Requirement §201.6(c)(5): [The local hazard mitigation plan shall include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council).</p>	<p>The 2017 plan achieved DMA compliance for 21 planning partners. Resolutions for each partner adopting the plan are included in an Appendix.</p>	<p>The 2022 plan achieved DMA compliance for 21 planning partners. Resolutions for each partner adopting the plan are included in an appendix.</p>

3. PLAN DEVELOPMENT METHODOLOGY

3.1 FUNDING

This planning effort was funded by a grant from FEMA’s Emergency Management Performance Grant program. Ada County Emergency Management & Community Resilience (EMCR) was the applicant agent for the grant. The grant was applied for in 2020, and funding was appropriated in 2021.

3.2 FORMATION OF THE PLANNING TEAM

Ada County hired Tetra Tech, Inc. to assist with development and implementation of the plan update. The Tetra Tech project manager assumed the role of the lead planner, reporting directly to a County-designated project manager. A planning team was formed to lead the planning effort, made up of the following members:

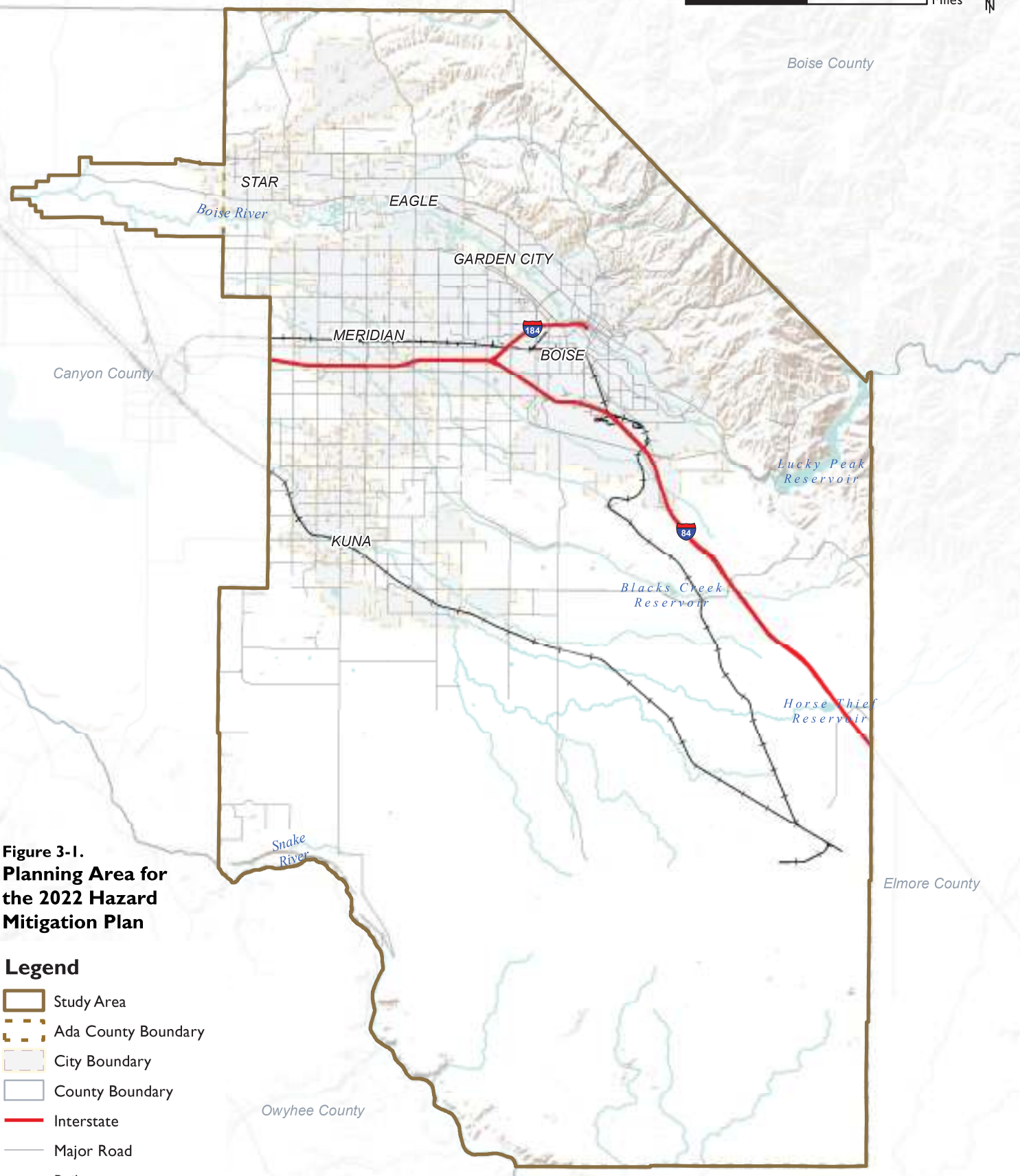
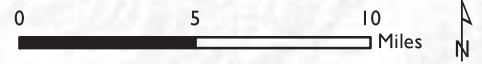
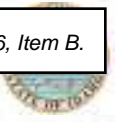
- Joe Lombardo (EMCR)—Director
- Paul Marusich (EMCR)—Deputy Director, County Project Manager
- Rob Flaner (Tetra Tech)—Project Manager, Lead Project Planner
- Carol Baumann (Tetra Tech)—Lead Risk Assessor
- Megan Brotherton (Tetra Tech)—Planner
- Desmian Alexander (Tetra Tech)—Planner

3.3 ESTABLISHMENT OF THE PLANNING PARTNERSHIP

Ada County opened this planning effort to all eligible local governments in the county. At a kickoff meeting on June 24, 2021, a presentation was made to introduce the plan update and solicit planning partner commitment. Each jurisdiction wishing to participate was asked to provide a “letter of intent” that designated a point of contact for the jurisdiction and confirmed the jurisdiction’s commitment to the process and understanding of expectations. Table 3-1 lists planning partners that provided a letter of intent to participate in the plan update process.

3.4 DEFINING THE PLANNING AREA

The planning area consists of all of Ada County plus the portion of Flood Control District #10 that extends into Canyon County, as shown in Figure 3-1. The portion of Flood Control District #10 outside of Ada County is included in the planning area so that this plan fully covers the district. However, risk assessments in this plan apply only to the area within the Ada County boundaries because the flood control district has no critical facilities and no jurisdiction over development within its boundaries.



**Figure 3-1.
 Planning Area for
 the 2022 Hazard
 Mitigation Plan**

- Legend**
- Study Area
 - Ada County Boundary
 - City Boundary
 - County Boundary
 - Interstate
 - Major Road
 - Rail
 - Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

Table 3-1. Planning Partners

Jurisdiction	Point of Contact	
	Name	Title
Cities/County		
Ada County	Paul Marusich	Deputy Director Ada County EMCR
City of Boise	Mallory Wilson	Emergency Manager
City of Eagle	Michael Williams	Floodplain Administrator/Planner III
City of Garden City	John Evans	Mayor
City of Kuna	Mike Borzick	GIS Manager
City of Meridian	Jason Korn	Environmental Programs Coordinator
City of Star	Jacob Qualls	City Clerk/Treasurer
Special Purpose Districts		
Ada County Highway District	Lloyd Carnegie	Maintenance Manager
Eagle Fire District	Tyler Lewis	Fire Chief
Eagle Sewer District	Neil Jenkins	General Manager
Eagle Urban Renewal Agency	Ashley Squyres	Administrator
Flood Control District #10	Mike Dimmick	District Manager
Greater Boise Auditorium District	Pat Rice	Executive Director
Independent School District of Boise	Bill McKitrick	Safety and Security Supervisor
Joint School District #2	Spencer McLean	Administrator Buildings and Grounds
Kuna Rural Fire Protection District	T.J. Lawrence	Fire Chief
Meridian Development Corporation	Ashley Squyres	Administrator
North Ada Co. Fire and Rescue	Shelley Young	Fire District Administrator
Star Joint Fire Protection District	Greg Timinsky	Fire Chief
Star Sewer District	Ryan V. Morgan	District Engineer
Whitney Fire Protection District	Renn Ross	Fire Chief

3.5 THE STEERING COMMITTEE

Hazard mitigation planning enhances collaboration and support among diverse parties whose interests can be affected by hazard losses. A steering committee was formed to oversee all phases of the plan update. The members of this committee included key planning partner staff, citizens and other stakeholders from within the planning area. The planning team assembled a list of candidates representing interests within the planning area that could have recommendations for the plan or be impacted by its recommendations. Table 3-2 lists the committee members.

Leadership roles and ground rules were established during the Steering Committee’s initial meeting on July 6, 2021. The Steering Committee agreed to meet monthly as needed throughout the course of the plan’s development. The planning team facilitated each Steering Committee meeting, which addressed a set of objectives based on the work plan established for the update. The Steering Committee met five times from July 2021 through March 2022. All Steering Committee meetings were open to the public, and agendas and meeting notes were posted to the hazard mitigation plan website, <https://adacounty.id.gov/emergencymanagement/mitigation/>. All open public meeting laws and policies were adhered to during the facilitation of these steering committee meetings.

Table 3-2. Steering Committee Members

Representing Jurisdiction/Agency	Primary Contact	Title	Alternate
Ada Co. Community Development	Zach Kirk	County Engineer	
Ada County Committee PIO	Elizabeth Duncan	Communications Manager	
Ada County EMCR	Paul “Crash” Marusich	Deputy Director	Joe Lombardo
Ada County Highway District	Lloyd Carnegie	Maintenance Manager	Dale Kuperus
Ada Fire-Adapted Communities	Jerry McAdams	Wildfire Mitigation Coordinator, Boise Fire Department	
Boise State University	Ben Wells	Assistant Director, Emergency Management	Barbara Beagles
City of Boise (Boise Fire/Emergency Management)	Mallory Wilson	Emergency Manager	Romeo Gervais, Jim Pardy
City of Eagle	Mike Williams	Floodplain Administrator/Planner III	Steve Noyes
City of Garden City	Jenah Thornborrow	Development Services Director	Colin Schmidt
City of Meridian	Jason Korn	Environmental Programs Coordinator	Joanna Hopson
Community Planning Association of Southwest Idaho (COMPASS)	Lila Klopfenstein	Assistant Planner	Hunter Mulhall
Fire Districts	Scott Buck	Deputy Chief/Fire Marshal, Eagle Fire Protection District	
Flood Control District #10	Mike Dimmick	District Manager	
General Public	Phil Bandy	Public Citizen	
Idaho Office of Emergency Management	Lorrie Pahl	Mitigation Planner	Susan Cleverley
Idaho Power	Marci Anderson	VP, Corporate Services and Communications	Chris Davidson
Land Trust of the Treasure Valley	Eric Grace	Executive Director	
Micron	Kelly Armstrong	Emergency Services Program Coordinator/EMT	Kelly Terashima
U.S. Army Corps of Engineers	Brandon Hobbs	Project Manager/Idaho Outreach Coordinator	
Water District 63	Mike Meyers	Watermaster	Rex Barrie

Due to the ongoing COVID-19 pandemic, the Steering Committee met virtually throughout the course of the plan’s development, and all meetings were open to the public on line. Protocols for handling public comments were established in the ground rules developed by the Steering Committee.

3.6 COORDINATION WITH OTHER AGENCIES

44 CFR requires that opportunities for involvement in the planning be provided to neighboring communities, agencies involved in hazard mitigation, agencies that regulate development, businesses, academia and other private interests (Section 201.6.b.2). The initial coordination activity was an invitation to agencies to provide representatives to participate on the Steering Committee. As the plan update process proceeded, the following agencies were invited to participate and were kept apprised of plan development milestones:

- Idaho Office of Emergency Management
- Idaho Department of Water Resources (IDWR)
- Idaho Department of Lands
- Idaho Rivers United
- Boise River Enhancement Network
- Ada County Irrigation Districts
- Community Planning Association of Southwest Idaho (COMPASS)

- Idaho Silver Jackets
- National Weather Service
- U.S. Army Corps of Engineers
- U.S. Bureau of Land Management.

These agencies received meeting announcements, meeting agendas, and meeting minutes by e-mail throughout the plan update process. They supported the effort by attending meetings or providing feedback on issues. All were provided an opportunity to comment on this plan update, primarily through the hazard mitigation plan website. Each was sent an e-mail message informing them that draft portions of the plan were available for review.

The complete draft plan was sent to FEMA Region X, the Idaho Office of Emergency Management, Idaho Department of Lands and the Insurance Service Office for a pre-adoption review to ensure program compliance.

3.7 REVIEW OF EXISTING PROGRAMS

44 CFR states that hazard mitigation planning must include review and incorporation, if appropriate, of existing plans, studies, reports and technical information (Section 201.6.b(3)). Chapter 5 of this plan provides a review of laws and ordinances in effect within the planning area that can affect hazard mitigation actions. In addition, the following programs can affect mitigation within the planning area:

- Ada County Comprehensive Plan (2019 update)
- The comprehensive plans for each of the incorporated city planning partners
- Idaho State Hazard Mitigation Plan (2018)
- The Ada County Hazard Inventory and Vulnerability Analysis (2010)
- Ada County Threat/Hazard Identification and Risk Assessment (2018)
- The Ada County Emergency Operations Plan (2018)
- Ada County Flood Response Plan (2018)
- Ada County Wildfire Response Plan (May 2018)
- Ada County Failure Dam Response Plan (2018)
- Boise River Enhancement Plan (2015)

An assessment of all planning partners' regulatory, technical and financial capabilities to implement hazard mitigation actions is presented in the individual jurisdiction-specific annexes in Volume 2. Many of these relevant plans, studies and regulations are cited in the capability assessments.

3.8 PUBLIC INVOLVEMENT

Broad public participation in the planning process helps ensure that diverse points of view about the planning area's needs are considered and addressed. The public must have opportunities to comment on disaster mitigation plans during the drafting stages and prior to plan approval (44 CFR, Section 201.6(b)(1)). The Community Rating

System expands on these requirements by making CRS credits available for optional public involvement activities. The strategy for involving the public in this plan update emphasized the following elements:

- Include members of the public on the Steering Committee.
- Use a questionnaire to determine if the public's perception of risk and support of hazard mitigation has changed since the initial planning process.
- Utilize social media tools to expand messaging
- Utilize/leverage existing public outreach efforts implemented by EMCR
- Attempt to reach as many planning area citizens as possible using multiple media.
- Identify and involve planning area stakeholders.

3.8.1 Stakeholders and the Steering Committee

Stakeholders are the individuals, agencies and jurisdictions that have a vested interest in the recommendations of the hazard mitigation plan, including planning partners. All planning partners are stakeholders in the process. The diversity brought to the table by special purpose districts and private non-profit entities creates an opportunity to leverage partnerships between entities that typically do not work together in the field of hazard mitigation.

The effort to include stakeholders in this plan update included stakeholder participation on the Steering Committee. All members of the Steering Committee live or work within the planning area. Two members of the committee represented Ada County citizens and property owner interests or represented public special interest groups (Land Trust of the Treasure Valley and Phil Bandy). Two members represented private sector interests. Boise State University provided a representative to the committee to represent the academic interests of this planning effort, and Water District # 63 represented irrigation district interest.

3.8.2 Hazard Mitigation Survey

Building upon the successful survey effort of the 2017 plan, the Steering Committee decided to deploy a survey again for the 2022 planning effort. The decision to survey was driven by the principal objective of gaining more responses from all portions of the County. A hazard mitigation survey (see Figure 3-2) developed by the planning team, with guidance from the Steering Committee, was used to gauge household preparedness for natural hazards and the level of knowledge of tools and techniques that assist in reducing risk and loss from natural hazards.

This questionnaire was designed to help identify areas vulnerable to one or more natural hazards. Responses helped guide the Steering Committee in selecting goals, objectives and mitigation strategies. A web-based survey tool was used to develop and track the results of the survey. The survey was disseminated by electronic means, principally via the hazard mitigation plan website as well as social media (Facebook, Twitter, Next-Door). The survey and the website were advertised via multiple means during the survey period.

The survey was conducted from October 28, 2021, through April 30, 2022. More than 3,500 surveys were completed, covering all geographic locations in the County. This response was much greater than the 2,300 surveys received for the 2017 planning effort. This success is attributed to the power of social media tools such as Facebook, Twitter and Nextdoor. The survey questionnaire and a summary of results are in Appendix A.



Figure 3-2. Sample Page from the Public Survey

The planning team reviewed the findings from the surveys received and provided the following feedback to the Steering Committee:

- Surveys were received from all six incorporated cities as well as unincorporated areas of the County.
- 46 percent of respondents noted that they are very concerned or extremely concerned about drought, followed by air quality (43 percent), climate change (39 percent), disease/epidemic (31 percent), and wildfire (30 percent).
- 73 percent of respondents have experienced a pandemic, followed by severe weather (60 percent), earthquake (52 percent), and drought (40 percent).
- 76 percent of respondents indicated that hazard information is effectively provided through the internet, followed by social media and TV news (both 61 percent), smart phone (58 percent), and radio (56 percent).
- More than half of the respondents support restrictions on land use in known high hazard areas.
- The concept of incentives to promote hazard mitigation actions on a personal scale was strongly supported, with 57 percent supporting an insurance premium discount and 53 percent supporting a rebate program to encourage them to spend money to retrofit their homes.

- 84 percent of respondents do not have flood insurance coverage; 82 percent do not have earthquake insurance.

3.8.3 Public Meetings and Events

With support of the Steering Committee, EMCR coordinated virtual and in-person public outreach events to educate the public on the hazards of concern and mitigation activities taking place around the community. These events provided the public unprecedented access to the plan update process. The sections below summarize the public meetings.

EMCR sponsored an outreach event at Micron on May 16 and 20. Micron is one of the largest private employers in Ada County and is also represented on the Steering Committee. The event promoted emergency preparedness and the hazard mitigation plan update. The booth, staffed by Greg Stone, Lori Beck, and Crash Marusich (EMCR) and Lindsey Samotis (Tetra Tech), reached 161 members of the public over the two-day event. Available handouts included *Emergency Preparedness Pointer* (Figure 3-3), *Family Emergency Preparedness* (72-hour kits, household communication/evacuation planning, pet preparedness etc.) and the *Hazards Affecting Ada County*.

3.8.4 Press and Social Media Coverage

Press releases distributed over the course of the plan's development and social media posts about the planning process triggered multiple levels of press coverage. Press releases and social media posts included the following:

- August 13, 2021—Initial press release on Facebook, Twitter, Nextdoor, and the EMCR and Ada County websites promoting the plan update and the public Steering Committee Meeting
- December 1, 2021—Ada County EMCR Tweet public survey promotion
- December 8, 2021—Ada County EMCR Tweet public survey promotion
- January 12, 2022—Ada County EMCR Tweet public survey promotion (see Figure 3-4)
- January 14, 2022—Ada County EMCR Tweet public survey promotion
- February 1, 2022—Ada County EMCR Tweet public survey promotion
- February 1, 2022—Emergency Preparedness Pointer distribution on Facebook, Twitter, Nextdoor, and the EMCR website
- April 20, 2022—City of Boise Nextdoor public survey promotion

3.8.5 Internet

The EMCR hazard mitigation webpage was utilized as the primary means for public access to all phases of this plan update process. This website has been maintained by EMCR during each plan update and is a robust data source for all aspects of emergency management in the Ada County planning area (see Figure 3-5):

<https://adacounty.id.gov/emergencymanagement/mitigation/>

The site's address was publicized in all press releases, mailings, questionnaires and public meetings. Information on the plan update process, the Steering Committee, the questionnaire and phased drafts of the plan was made available to the public on the site throughout the process. EMCR will continue to maintain this website as part of its overall public outreach program during the performance period for this plan update.

ADA COUNTY EMERGENCY MANAGEMENT & COMMUNITY RESILIENCE

EMERGENCY PREPAREDNESS POINTER

HAZARD MITIGATION

What is Hazard Mitigation?

Hazard Mitigation is the cornerstone of emergency management. It is defined as “sustained action that reduces or eliminates long-term risk to people and property from natural hazards and their effects.”

Often, actions to enhance mitigation require an initial investment. Studies have indicated that these investments produce a solid return following a disaster. Estimates show that for every 1 dollar spent on mitigation, 6 dollars are saved from future losses.

The Mitigation Process

People today don't think much about putting on a seatbelt when they get in a vehicle; it is just what they do. But it was not always that way. It took well documented research and public outreach to convince people that wearing a seatbelt would greatly reduce the risk of injury or death in an accident. Eventually the practice became law in all fifty states. The process of identifying a hazard, developing measures to reduce the effects or eliminate a hazard, and then implementing those measures is called mitigation. Seatbelts are an example of how a physical aspect (the seatbelt), a policy aspect (seatbelt law) and an educational element (public outreach) were implemented to achieve the goal of risk reduction. Currently, local jurisdictions and taxing districts are updating the Ada County Multi-Hazard Mitigation Plan (MHMP), which uses a similar type of process to address the natural hazards of our area.

Multi-Hazard Mitigation Plan

The Ada County Multi-Hazard Mitigation Plan discusses mitigation efforts for the entire county. This plan goes through an updating process every 5 years

to ensure that the latest information and analysis relevant to hazard mitigation in Ada County is captured in the plan. The next update is set to finish in 2022.

We Need Your Help

The process of updating the Multi-Hazard Mitigation Plan is a group effort involving various stakeholders from around the county. One of the most important stakeholders in this process is you, the public. We need your help to better understand the public's view of our most prevalent hazards, risk exposure, and community preparedness.

We are all in this together to mitigate the impact hazards may have in our neighborhoods, communities, and the entire county. Recently, there was a survey available to help gather public input. Taking this survey allowed the public to get involved in this important project.


Public Outreach

The recent Hazard Mitigation Survey ran through April 30, 2022. This survey was completely anonymous and allowed the public to share their thoughts on how Ada County could become a safer, more resilient place to live, work, and play. In addition to the survey, public outreach events were held to allow the public to receive emergency preparedness information and discuss the Multi-Hazard Mitigation Plan with local experts.



Hazard Mitigation Resources

Interested in learning more about Multi-Hazard Mitigation? Check out the following resources:

- FEMA Mitigation for Homeowners Fact Sheet
- www.adacounty.id.gov/emergencymanagement/mitigation/
- www.ready.gov/risk-mitigation



Ada County Emergency Management & Community Resilience
 Address: 7200 Barrister Drive, Boise, ID, 83704
 Phone: (208) 577-4750 E-mail: gstone@adacounty.id.gov
 FAX: (208) 577-4759 Website: www.adaprep.id.gov




Figure 3-3. Public Outreach Handout



Figure 3-4. January 12, 2022, EMCR Tweet

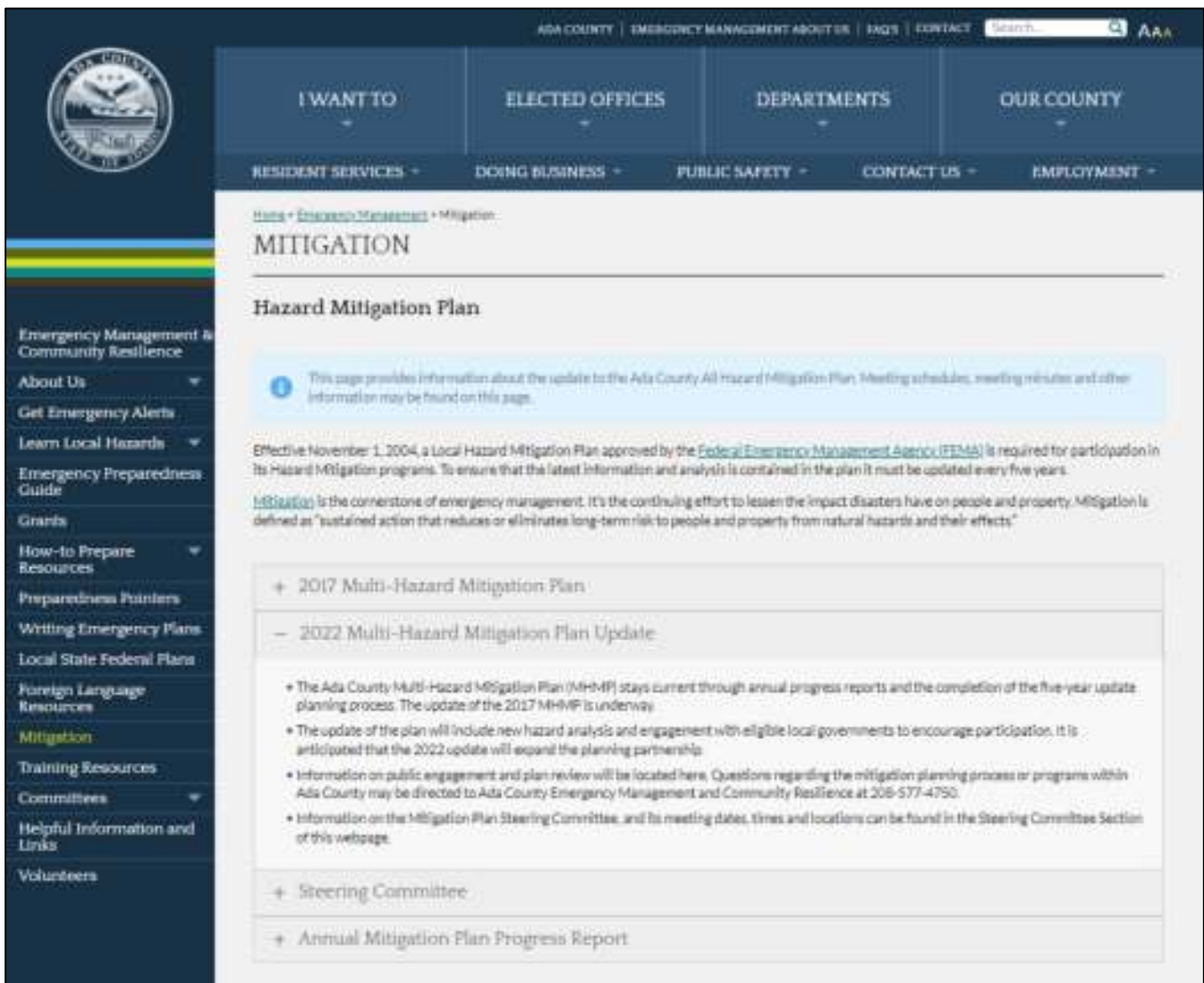


Figure 3-5. Sample Page from Multi-Hazard Mitigation Plan Web Site

3.9 PLAN DEVELOPMENT CHRONOLOGY/MILESTONES

Table 3-3 summarizes important milestones in the development of the plan update.

Table 3-3. Plan Development Milestones			
Date	Event	Description	Attendance
2021			
5/5	County procures Tetra Tech to facilitate plan update	<ul style="list-style-type: none"> Facilitation contractor secured 	N/A
5/14	Core Planning team identified	<ul style="list-style-type: none"> Formation of the planning team 	N/A
6/16	Steering Committee	<ul style="list-style-type: none"> Steering Committee membership confirmed 	N/A
6/24	Planning Partner Kickoff meeting (Virtual)	<ul style="list-style-type: none"> The Planning Team The Disaster Mitigation Act FEMA requirements for Natural Hazard Mitigation Plan update Our work plan to complete the update Steering Committee Planning Partner expectations 	22
7/6	Steering Committee Meeting #1	<ul style="list-style-type: none"> Review purposes for update Organize Steering Committee Plan review EMAP overview Hazards of concern review Public outreach strategy Jurisdictional Annex overview 	12
8/13	Public Outreach	<ul style="list-style-type: none"> Press release to all media outlets announcing the plan update process 	N/A
8/17	Steering Committee Meeting #2	<ul style="list-style-type: none"> Assess data needs Goal setting Public involvement strategy 	34
9/21	Steering Committee Meeting #3	<ul style="list-style-type: none"> Phase 1 jurisdictional annex update, Phase 2 deployment date Review/approve mission, goals and objectives Finalize critical facilities definition Public involvement strategy 	22
10/19	Steering Committee Meeting #4	<ul style="list-style-type: none"> Phase 2 jurisdictional annex update Risk assessment update Public involvement strategy Core capability exercise Upcoming grant opportunity 	21
10/28	Public Outreach	<ul style="list-style-type: none"> Hazard mitigation survey deployed 	3,537
2022			
3/15	Steering Committee Meeting #5	<ul style="list-style-type: none"> Risk assessment and repetitive loss properties update Plan review observations Plan maintenance strategy Confirm countywide initiatives 	18
4/1	Public Outreach	<ul style="list-style-type: none"> Hazard mitigation survey closed 	3,537
5/16	Public Outreach	<ul style="list-style-type: none"> Hazard mitigation outreach event at Micron 	60
5/20	Public Outreach	<ul style="list-style-type: none"> Hazard mitigation outreach event at Micron 	101
7/19	Steering Committee Meeting #6	<ul style="list-style-type: none"> 	
TBD	Public Outreach	<ul style="list-style-type: none"> 	N/A

Date	Event	Description	Attendance
TBD	Public Outreach	<ul style="list-style-type: none"> Initiation of final public comment period 	N/A
TBD	Public Outreach	<ul style="list-style-type: none"> Closure of the final public comment period 	N/A
TBD	Plan Submittal	<ul style="list-style-type: none"> Submittal of Draft Plan to Idaho Office of Emergency Management 	
TBD	Plan Approval	<ul style="list-style-type: none"> Approval pending adoption (APA) provided by FEMA 	N/A
TBD	Adoption	<ul style="list-style-type: none"> Adoption window of final plan opens 	N/A

4. ADA COUNTY PROFILE

4.1 GEOGRAPHIC OVERVIEW

Ada County covers 1,060 square miles in southwestern Idaho's Treasure Valley. It is bounded on the north by Gem and Boise Counties, on the east by Elmore County, on the south by Owyhee County and on the west by Canyon County. Ada County is the most populous county Idaho. It has six incorporated cities:

- Boise, the county seat and state capital, is the most populous city in Ada County and the region. Boise serves as a retail and business center as well as the cultural and entertainment hub of the region.
- Meridian, the County's second largest city and the fastest growing city in the state, was established in 1891 and incorporated in 1903. Most of its residential neighborhoods are new, due to fast population growth in the last 20 years.
- Eagle, a bedroom community of Boise, is situated between the Boise Foothills and the Boise River. Eagle maintains its rural charm with open space, parks and access to the Boise River Greenbelt System.
- Garden City owes much of its early existence to gambling. Today, the small village adjacent to Boise has since capitalized on the rediscovery of the river and the natural environment.
- Kuna is a community rooted in agriculture in the southwestern portion of Ada County.
- Star is Ada County's smallest and newest incorporated city, though it was one of the earliest communities developed in the Boise River Valley. Varied growth and development rates over time have resulted in the un-incorporation and re-incorporation of this rural community.

The cities lie within the broad mountain valley and are close to Interstate 84, the primary transportation route through southern Idaho. Each is expected to grow with the regional development of the Treasure Valley.

4.2 HISTORICAL OVERVIEW

The Shoshone-Bannock tribe moved into the region between 4,000 and 5,000 years ago as hunters following large game migrating to the north. The Shoshone tribes were organized as a collection of extended families referred to as a band. Having occupied the Great Basin for centuries, the Shoshone were skilled at living in inhospitable arid deserts. Southern Idaho offered food resources across a vast region and at varying elevations. In the 1700s, Shoshone bands acquired horses, which expanded their trading opportunities with other tribes. Shoshone trade routes became trail routes used by migrants during the American westward movement of the mid-19th century.

The fur trade brought white settlers into Southern Idaho in the early 1800s. British fur traders were the first European explorers in the Boise Valley. In 1834, the British established Old Fort Boise at the mouth of the Boise River, but they abandoned it after two decades. Gold was discovered in 1862 in the Boise Basin, resulting in the establishment of small gold rush settlements and boom towns.

Though early encounters between natives and explorers were amiable, encroachment, settlement and cultural conflict irrevocably changed the native way of life. By the end of the 19th century, much of the Shoshone population had been forced onto reservations or had succumbed to diseases introduced by explorers and settlers.

Over the years, Boise became an important crossroads and trading center. Miners traveled through town on their way to mining settlements and many others traveling the Old Oregon Trail found the crossing at Boise River to be easier than other river crossings. The arrival of stagecoach and freight lines made the Boise area a regional transportation hub. With growing population and political influence, Boise incorporated in 1864. The territorial capital was relocated from Lewiston to Boise in the mid-1860s. The U.S. Army built Fort Boise in 1863, on what is now the northeastern part of Boise.

Ada County was formed December 22, 1864, with Boise as the county seat. The County was named after Ada Riggs, the first child born to Pioneer H.C. Riggs, a co-founder of the city of Boise. Soon after the formation of the County, population and industry began to grow, particularly around Boise. Boise developed as a key government center and the federal, state and local offices located there enhanced the County's ability to grow and prosper.

Timber was an important industry in Ada County at the turn of the 20th century. The first sawmill was established on the Boise River just east of Boise in 1905 by the Barber Lumber Company. A wooden dam was constructed across the river to provide a holding pond for logs and an electrical plant. A few other mills followed on the river and other tributaries in the County.

Ada County's economic base shifted to agriculture in the 1900s. The Boise Project resulted in the irrigation and cultivation of the formerly arid, sagebrush plains of central Ada County. Some of the first farms in the County were established along the low-lying floodplains of the Boise River and early irrigation systems were constructed around Garden City, Eagle Island, Dry Creek and Star. Post-war development included the construction of Anderson Ranch Dam to increase irrigation capabilities, produce power and reduce flooding in the valley.

As communities were platted and developed, streetcars and light rail trolley systems connected the towns of Star, Middleton, Kuna, Nampa, Boise, Eagle and Caldwell. The rail lines provided a means for local transportation and to ship freight and produce beyond the region. Invention of the car and construction of state and federal highways marked the end of the trolley system in Ada County by the 1920s.

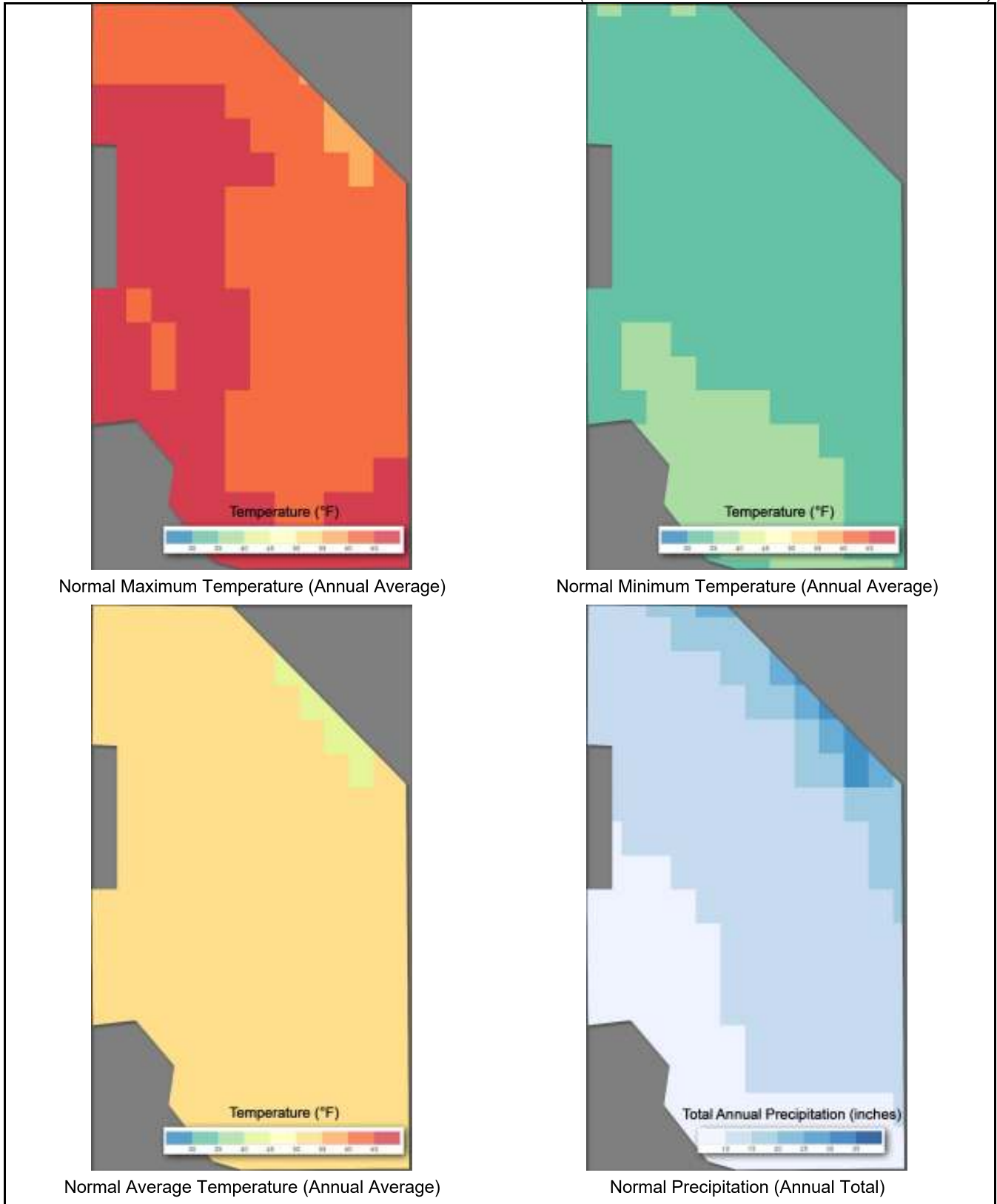
The J. R. Simplot Company agricultural processing business was founded in 1929 near the small agricultural community of Declo. The first Albertson's grocery store opened in Boise in 1939. Today, Albertson's and Simplot remain among the county's largest employers.

4.3 PHYSICAL SETTING

4.3.1 Climate

Ada County has a four-season climate with generally mild temperatures. Average daily temperatures reach the 70s in July and August and fall to about freezing in December and January. Precipitation is heaviest during winter and spring and drops off in summer. On average, Boise receives about 12 inches of precipitation annually, including about 18 inches of snowfall a year. Figure 4-1 shows the countywide distribution of average temperatures and precipitation for 1991 through 2020. Figure 4-2 shows the monthly average temperatures and precipitation at the Boise Air Terminal for 1991 through 2020.

Source: (National Centers for Environmental Information n.d.)



Normal Maximum Temperature (Annual Average)

Normal Minimum Temperature (Annual Average)

Normal Average Temperature (Annual Average)

Normal Precipitation (Annual Total)

Figure 4-1. 1991 – 2020 Normal Annual Temperatures and Precipitation Countywide

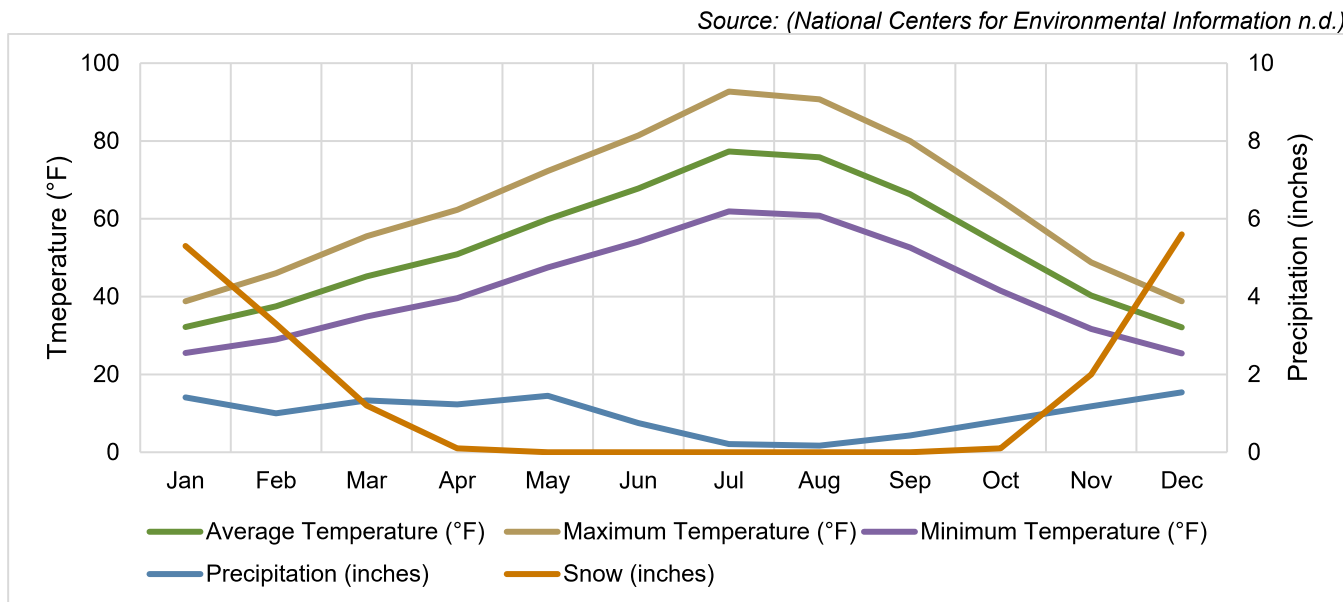


Figure 4-2. 1991 – 2020 Normal Monthly Temperatures and Precipitation for Boise Air Terminal

4.3.2 Hydrology

Treasure Valley, formerly known as the Lower Snake River Valley or the Boise River Valley, is a broad basin where the Payette, Boise, Weiser, Malheur and Owyhee Rivers drain into the Snake River. The Boise River is an important contributor to Ada County’s quality of life, identity and economy. The Snake River, Ada County’s largest river, meanders through the southern portion of the county, forming part of the county’s boundary. These rivers, their impoundments, and their tributaries provide boating, fishing, bird watching and other water recreation activities. The major rivers and creeks, along with their tributary streams, gulches, canals and drainages, have contributed to local development but have also been the source of many flood events in Ada County.

The largest river in Ada County is the Snake River, which passes through the southern portion of the County. The Boise River, a tributary of the Snake River with headwaters in the mountains east and northeast of the County, is important to the County’s quality of life, identity and economy. It is the county’s primary source of irrigation water and a major source of drinking water. It also offers numerous recreational opportunities as well as important wildlife habitat. A system of dams and canals connected to the Boise River provides flood control for the majority of the Treasure Valley and irrigates 354,000 acres of lands in Ada County and other parts of the Treasure Valley.

Ada County’s water supply comes from surface water, deep aquifers and shallow groundwater. The Treasure Valley Hydrologic Project indicates that the deep aquifers and shallow groundwater are separated from each other by clay zones that prevent the shallow water from recharging the deep aquifer in many, but not all, areas. Irrigation and canals are a major source of shallow groundwater recharge. The Treasure Valley Hydrologic Project estimates that 1 million acre-feet of water flows out of the Treasure Valley basin every year.

The depth to groundwater varies from 2 feet below surface level in western Ada County to 300 feet or more in the southern and eastern parts of the county. This, plus the area’s relatively permeable soils, raises concerns about contamination of the Boise aquifer. The aquifer can be protected through the use of central sewage facilities, rather than individual septic systems, and best management practices for stormwater management.

4.3.3 Terrain

Ada County features streams, mountain ranges, extensive foothills and open space. Much of the county's landscape is dry grassland or sagebrush, with a few pockets of timbered land. Terrain ranges from 5,750 feet above sea level at the northern mountains to about 2,200 feet along the southern floodplains. This southern portion of the County is largely undeveloped as much of the land belongs to the federal government. The long time agricultural valley is bounded to the northwest by the foothills of the Boise Front.

4.3.4 Geology

Ada County's terrain consists of a series of northwest trending mountains and valleys formed by thousands of years of tectonic plate movement, all part of the western Snake River Plain. On the south are extensive Quaternary gravel deposits that overlie Quaternary basalt. Recent cinder cones line the Snake River near Swan Falls. On the northeast is the Cretaceous Idaho batholith, home to Bogus Basin ski area. The batholith is a mountainous area that forms the northeast margin of the western Snake River Plain.

In the Boise foothills is a complex assemblage of sandstones and lake beds formed within or on the edges of Lake Idaho in the last 10 million years. Table rock sandstone, quarried since the mid-1800s, belongs to these strata. The City of Boise lies in the alluvial valley of the Boise River. The broad, flat valley floor sharply contrasts with the bold mountains and dissected foothills that are typical of most of southwest Idaho's terrain.

4.3.5 Soils

Soils at higher elevations in the northeastern part of the county are sloping to very steep, moderately deep and very deep, and well-drained. They are used mainly as rangeland and wildlife habitat and for recreation. Slope, inaccessibility and depth to rock are the main limitations to engineering uses.

Soils on lacustrine foothills above the Boise River are nearly level to very steep and well-drained to excessively drained. Erosion and sedimentation hazards are limitations to the use of these soils because of the fragile vegetative cover and the highly erosive nature of the soils. Flash flooding in major drainage ways during summer cloudbursts increases the potential for debris flows.

The soils in the central and southern parts of Ada County are on alluvial terraces, basalt plains and alluvial fans. The natural vegetation is predominantly sagebrush and bunchgrass. These soils are shallow to very deep; and they are somewhat poorly drained, well-drained, and somewhat excessively drained. They are used mainly for farming and as rangeland and wildlife habitat. A significant acreage is used for urban development. The gentle slopes in these areas generally have significant erosion potential, even when vegetation is removed by wildfire. Where excessively drained soils exist on sloped areas, erosion potential is somewhat higher. However, this combination is only found occasionally in the southern portion of the county.

4.4 DEVELOPMENT

4.4.1 Land Ownership and Use

According to Ada County's Comprehensive Plan, 48 percent of the land in the County is privately owned, 2 percent is held by local government, 7 percent belongs to state government, and 43 percent is owned by the federal government, primarily the Bureau of Land Management (BLM).

A key element in risk assessment is to look at land use in hazard areas that have a delineated extent (dam failure, flood, landslide and wildfire). For example, an agricultural, low-density use of the floodplain is a lower risk use than a high density, residential use. Figure 4-3 shows Ada County land use taken from the County’s most recent comprehensive plan (Ada County 2019).

4.4.2 Building Count, Occupancy Class and Estimated Replacement Value

Table 4-1 presents planning area building counts by building occupancy class. Table 4-2 summarizes estimated replacement value for building structures and contents combined.

Table 4-1. Planning Area Building Counts by Occupancy Class

	Number of Buildings							Total
	Residential	Commercial	Industrial	Agricultural	Religion	Government	Education	
City of Boise	76,386	4,824	27	35	165	71	44	81,552
City of Eagle	11,810	601	1	2	8	11	4	12,437
City of Garden City	3,664	705	0	4	6	4	2	4,385
City of Kuna	8,663	145	0	1	13	5	4	8,831
City of Meridian	39,226	1,463	8	15	62	14	24	40,812
City of Star	4,957	97	0	1	8	2	0	5,065
Unincorporated	21,506	162	7	10	28	5	2	21,720
Total	166,212	7,997	43	68	290	112	80	174,802

Table 4-2. Estimated Replacement Value of Planning Area Buildings

Jurisdiction	Estimated Total Replacement Value (Structure and Contents)
City of Boise	\$61,280,836,767
City of Eagle	\$9,838,649,929
City of Garden City	\$3,705,101,875
City of Kuna	\$3,886,826,099
City of Meridian	\$28,959,315,273
City of Star	\$2,845,160,473
Unincorporated	\$12,472,792,807
Total	\$122,988,683,223

4.4.3 Critical Facilities

Critical facilities are those that are essential to the health and welfare of the population. These become especially important after any hazard event. Also included are facilities that hold or carry significant amounts of hazardous materials with a potential to impact public health and welfare during a hazard event. The risk assessment for each hazard in this plan discusses that hazard’s potential impact on critical facilities. Through a facilitated exercise, the Steering Committee crafted the following definition of “critical facilities” for this plan:

A critical facility is one that is deemed vital to the Ada County planning area’s ability to provide essential services while protecting life and property. A critical facility may be a system or an asset, either physical or virtual, the loss of which would have a profound impact on the security, economy, public health or safety, environment, or any combination of thereof, across the planning area.

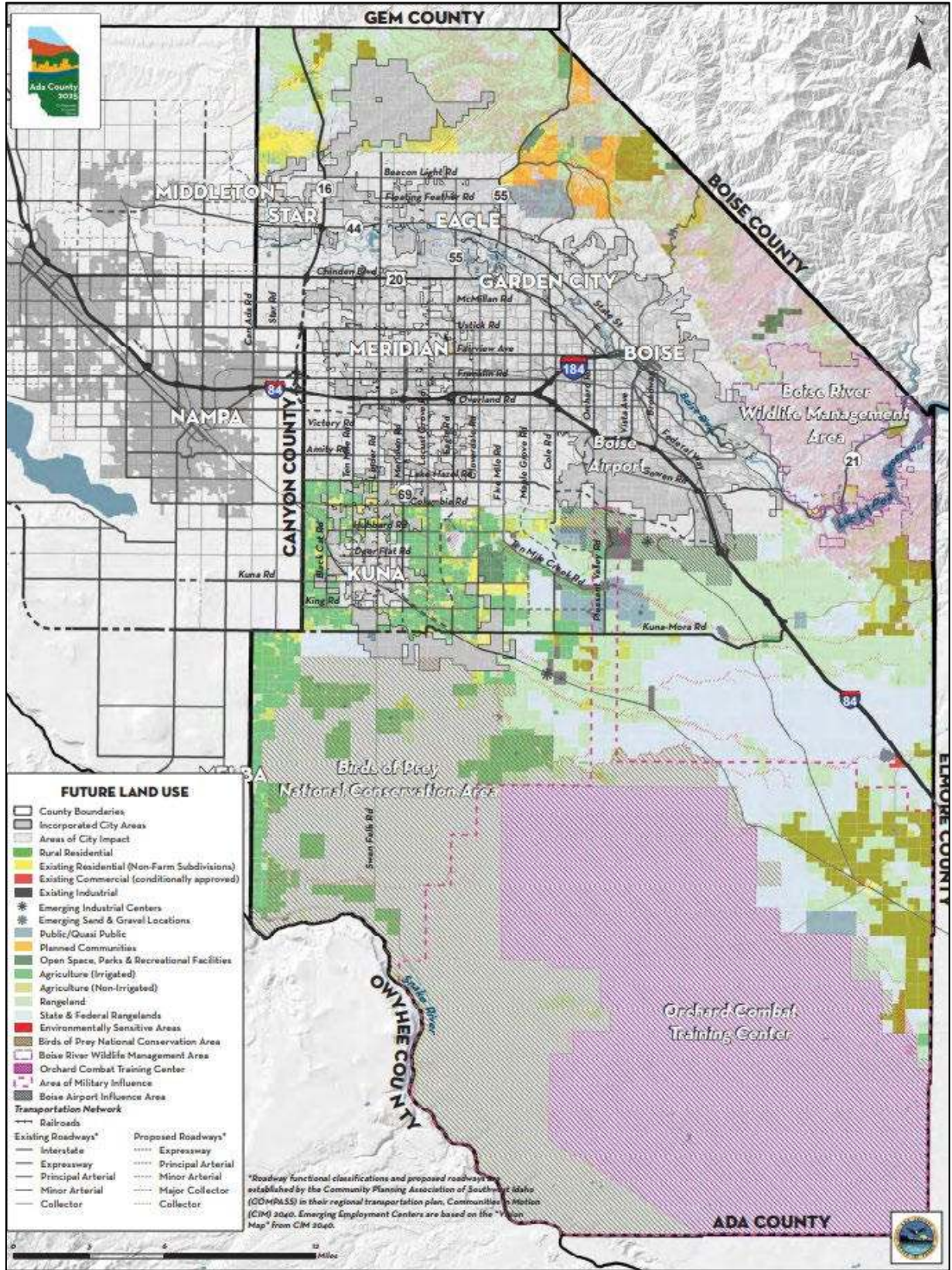


Figure 4-3. Future Ada County Land Use

For some hazards, potential damage to critical facilities was estimated using FEMA’s Hazus computer model. For this reason, the list of critical facilities was categorized using categories that are defined in the Hazus model:

- **Safety and Security**—Law Enforcement/Security, Search and Rescue, Fire Services, Government Service, Responder Safety, and Imminent Hazard Mitigation
- **Food, Water and Sheltering**—Evacuations, Schools, Food/Potable Water, Shelter, Durable Goods, Water Infrastructure, and Agriculture
- **Health and Medical**—Medical Care/Hospitals: Patient Movement, Public Health, Fatality Management, Health Care, and Supply Chain
- **Energy**—Power (Grid), Temporary Power and Fuel
- **Communications**—Infrastructure, Alerts, Warnings, Messages, 911 and Dispatch, Responder Communications and Financial Services
- **Transportation**—Highway/Roadway, Mass Transit, Railway, Aviation, Maritime and Pipeline
- **Hazardous Materials**—Facilities, Hazardous Debris, Pollutants and Contaminants

Table 4-3 summarizes the number of critical facilities by Hazus-defined category, based on the best data available on critical facilities at the time of this plan update. The County and its planning partners consider this information to be subject to change as new information about critical facilities becomes available during the performance period for this plan. Due to the sensitivity of this information, a detailed list of facilities is not provided. The location of critical facilities in unincorporated areas of the county is shown on Figure 4-4 and Figure 4-5.

Table 4-3. Planning Area Critical Facilities

	Number of Facilities							Total
	Communications	Energy	Food, Water, Shelter	Hazardous Material	Health & Medical	Safety & Security	Transportation	
City of Boise	194	37	187	30	66	263	239	1,016
City of Eagle	14	2	34	1	5	17	39	112
City of Garden City	71	0	19	4	4	6	10	114
City of Kuna	9	4	14	0	4	17	22	70
City of Meridian	45	7	38	6	29	53	100	278
City of Star	2	0	8	0	1	8	25	44
Unincorporated	103	31	118	4	6	25	201	488
Total	438	81	418	45	115	389	636	2,122

4.4.4 Development Trends

Ada County continues to experience rapid growth. Land use in the planning area will continue to be directed by comprehensive plans adopted under Idaho’s land use regulation law. The County and each city have adopted comprehensive plans that govern land use and policy making for their jurisdictions. This hazard mitigation plan will work together with these programs to support wise land use in the future by providing vital information on the risk associated with natural hazards in Ada County. All municipal planning partners have included actions in their action plans to consider incorporating the Ada County Multi-Hazard Mitigation Plan into their comprehensive plans by reference. This would ensure that all future trends in development could include the benefits of the information on risk and vulnerability to natural hazards identified in this plan.

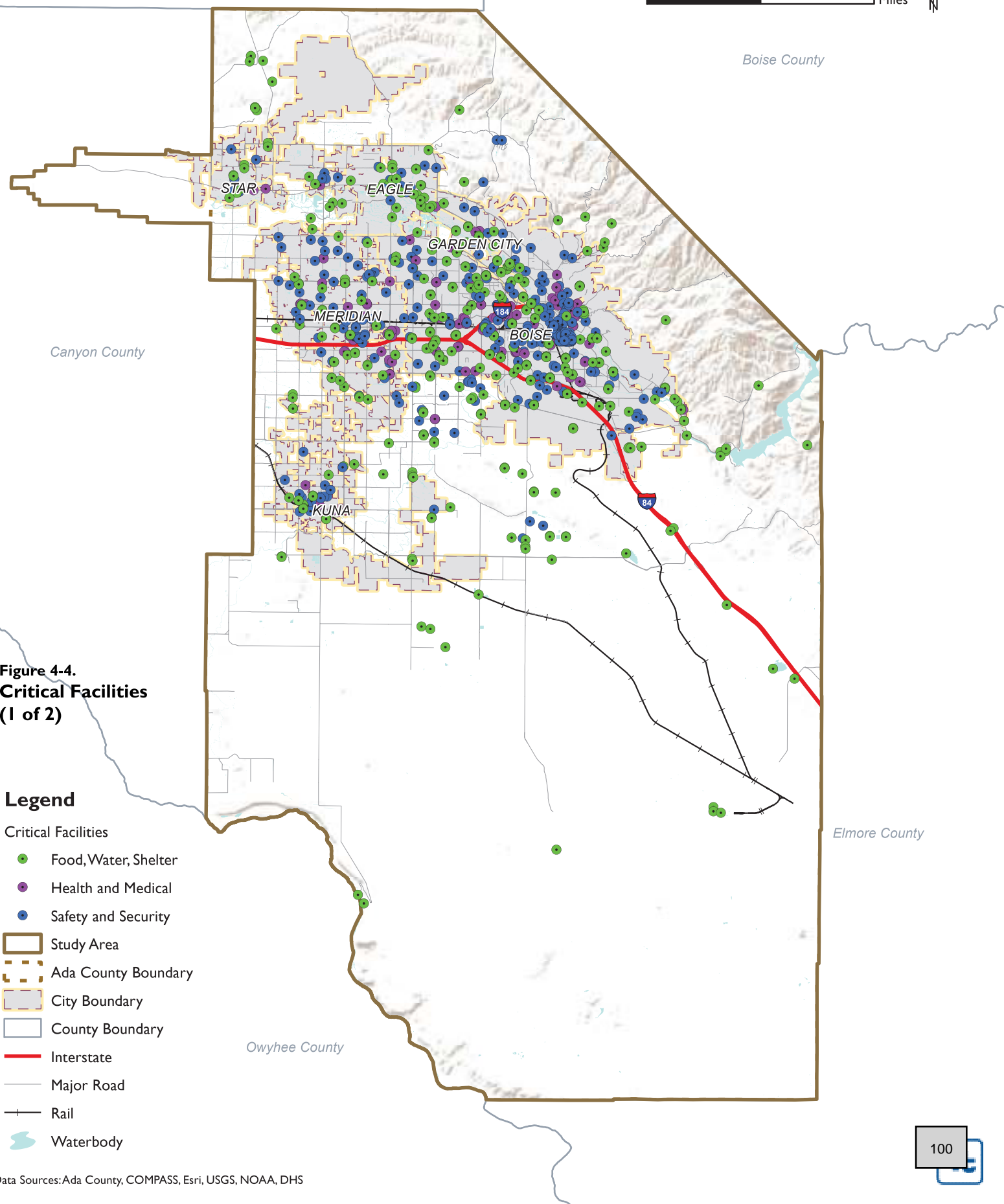
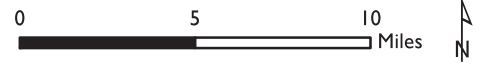
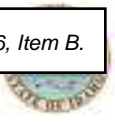


Figure 4-4.
Critical Facilities
 (1 of 2)

- Legend**
- Critical Facilities
 - Food, Water, Shelter
 - Health and Medical
 - Safety and Security
 - Study Area
 - Ada County Boundary
 - City Boundary
 - County Boundary
 - Interstate
 - Major Road
 - | Rail
 - Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, DHS

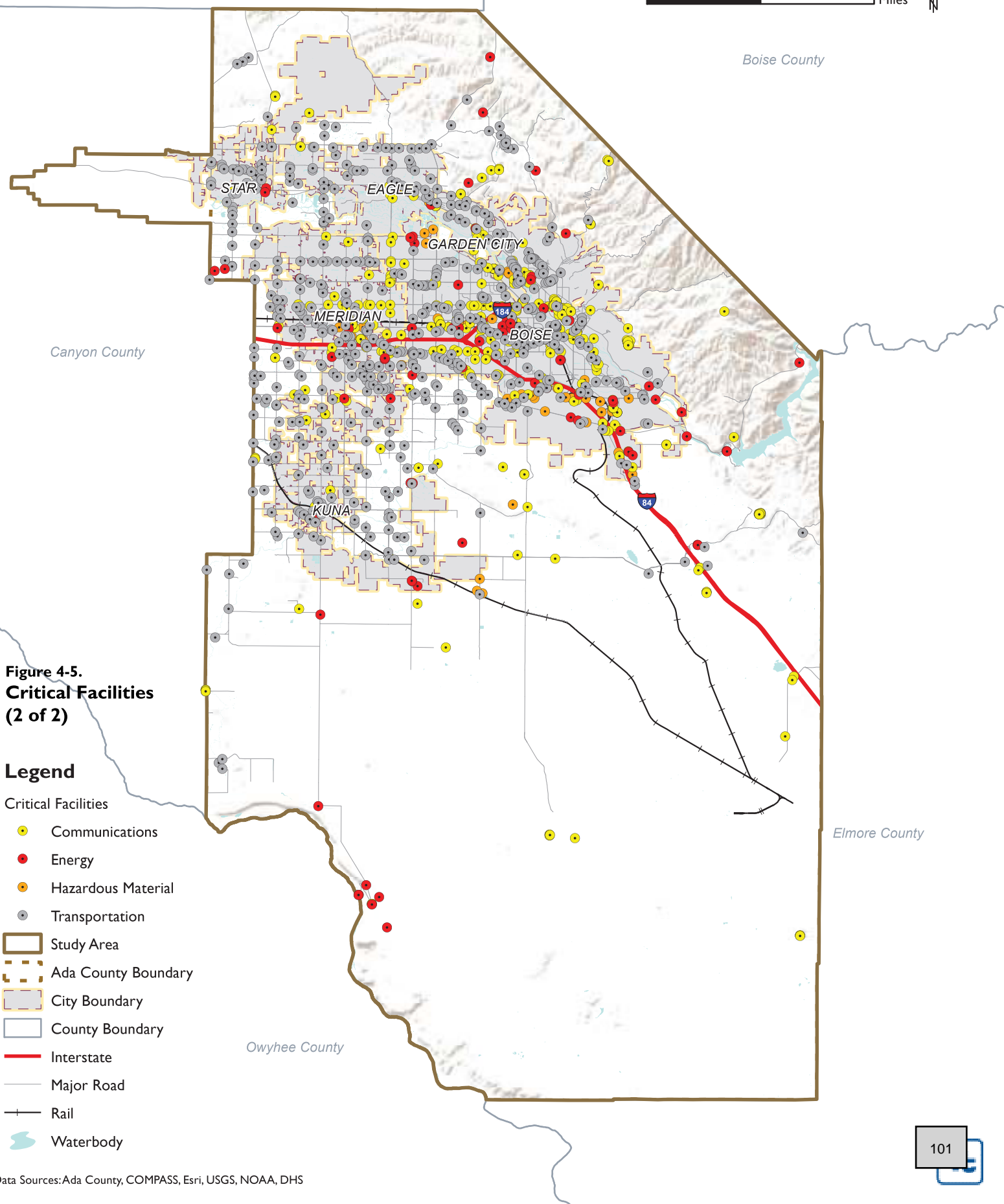
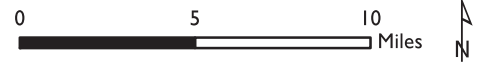
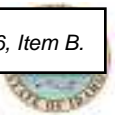


Figure 4-5.
Critical Facilities
(2 of 2)

Legend

- Critical Facilities
- Communications
 - Energy
 - Hazardous Material
 - Transportation
- Study Area
 - Ada County Boundary
 - City Boundary
 - County Boundary
 - Interstate
 - Major Road
 - Rail
 - Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, DHS

4.5 DEMOGRAPHICS

4.5.1 Population Characteristics

Total Current Population

Ada County is the largest of Idaho’s 44 counties. COMPASS (Community Planning Association of Southwest Idaho) estimated Ada County’s population at 532,710 as of 2022.

Historical Population Trends

Population changes are useful socio-economic indicators. A growing population generally indicates a growing economy, while a decreasing population signifies economic decline. Table 4-4 shows the population of incorporated municipalities and the combined unincorporated areas in Ada County from 1940 to 2022. In 2022, about 12.4 percent of Ada County’s residents lived outside incorporated areas. Overall growth in incorporated areas was 86.9 percent from 2000 to 2022, while the unincorporated areas of the county grew about 29.1 percent during the same timeframe.

Table 4-4. City and County Population Data

	Boise	Eagle	Garden City	Kuna	Meridian	Star	Unincorporated County	Ada County Total
1940	26,130	--	--	443	1,465	--	22,363	50,401
1950	34,393	--	764	534	1,810	--	33,148	70,649
1960	34,481	--	1,681	516	2,081	--	54,701	93,460
1970	74,990	--	2,368	593	2,616	--	31,663	112,230
1980	120,249	2,620	4,571	1,767	6,658	--	37,260	173,125
1990	125,738	3,327	6,369	1,952	9,596	648	58,145	205,775
2000	185,787	11,085	10,624	5,382	34,919	1,795	51,312	300,904
2010	205,671	19,908	10,972	15,210	75,092	5,781	59,731	392,365
2011	209,280	20,432	11,112	15,852	77,855	5,995	60,574	401,100
2012	212,244	21,009	11,234	16,191	80,369	6,196	61,648	408,891
2013	214,234	21,651	11,304	16,532	83,515	6,614	62,706	416,556
2014	216,282	22,502	11,420	16,999	87,743	7,280	64,010	426,236
2015	223,670	24,600	12,060	17,320	91,310	7,930	61,780	438,660
2016	226,900	25,510	11,420	18,430	91,420	8,150	61,020	442,850
2017	228,930	26,930	11,500	19,700	98,300	9,290	59,760	454,400
2018	232,300	29,910	11,880	20,740	106,410	10,310	59,390	470,930
2019	236,310	31,270	12,240	23,140	114,680	10,990	59,040	487,660
2020	235,684	30,346	12,316	24,011	117,635	11,117	63,868	494,967
2021	241,590	34,470	12,570	27,570	127,890	13,400	60,820	518,300
2022	243,570	33,960	13,040	27,480	133,470	14,950	66,240	532,710

Data Sources:

1940 – 2000, from Ada County, 2011

2010 – 2014, from Idaho Department of Labor, 2015

2011 – 2019, 2021, 2022 from COMPASS

2020 U.S. Census

Figure 4-6 shows the growth rate of Ada County from 2000 to 2022 compared to that of the State of Idaho. Over the period, Idaho’s population grew by 46.6 percent (about 2.1 percent per year) while Ada County’s population increased by 43.5 percent (2 percent per year). From 2010 to 2022, the County’s population increased 26.1 percent, an average of 2.2 percent per year.

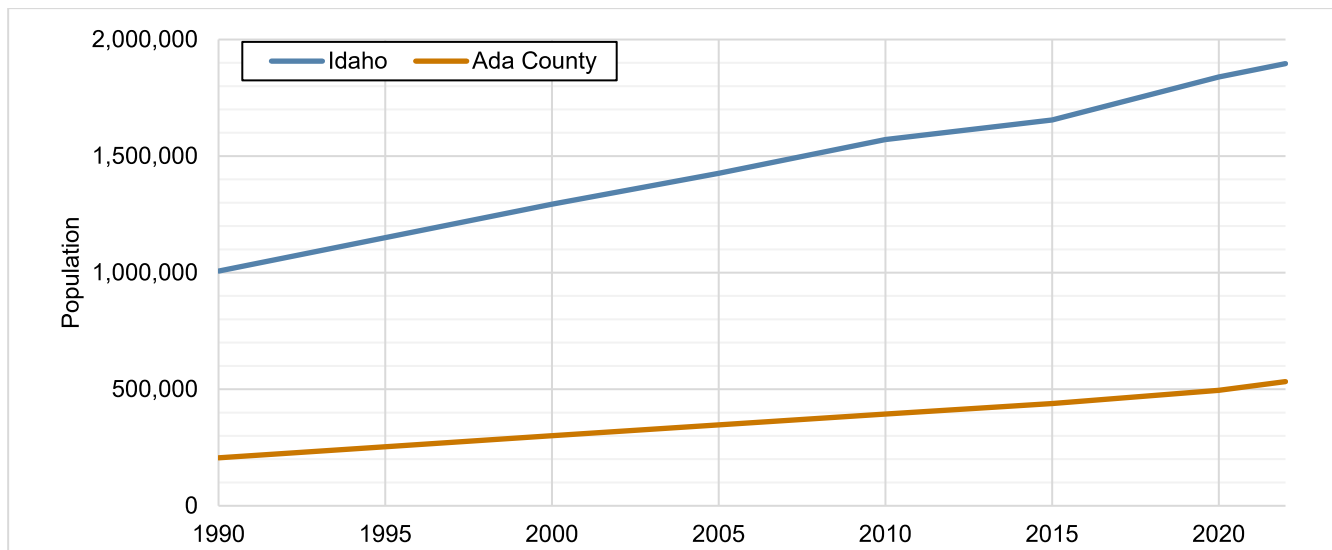


Figure 4-6. Idaho and Ada County Population Growth

4.5.2 Demographic Indicators for Social Vulnerability

Some populations are at greater risk from hazard events because of decreased resources or physical abilities. People living near or below the poverty line, the elderly, individuals with disabilities, women, children, ethnic minorities, and renters all experience, to some degree, more severe effects from disasters than the general population. These vulnerable populations may vary from the general population in risk perception, living conditions, access to information before, during and after a hazard event, capabilities during an event, and access to resources for post-disaster recovery. Indicators of vulnerability—such as disability, age, poverty, and minority race and ethnicity—often overlap spatially and often in the geographically most vulnerable locations. Detailed spatial analysis to locate areas where there are higher concentrations of vulnerable community members can help to extend focused public outreach and education to the most vulnerable community members.

Indicators from Census data are commonly used to assess social vulnerability. For the social vulnerability demographic profile component for this plan, the following indicators were selected:

- **Population Under 15 Years of Age**—Children, especially in the youngest age groups, often cannot protect themselves during a disaster because they lack the necessary resources, knowledge, or life experiences to effectively cope with the situation. Hazard mitigation planning needs to be tailored such that the community is prepared to ensure that children are safe during disaster events and that families with children have access to necessary information and tools.
- **Population Over 65 years of Age**—People 65 years old and older are likely to require financial support, transportation, medical care, or assistance with ordinary daily activities, especially during disasters. They are more likely to be vision, hearing, and/or mobility impaired, more likely to experience mental impairment or dementia, and more likely to live in assisted-living facilities where emergency preparedness is at the discretion of facility operators. Hazard mitigation needs to account for such needs.

- **People of Color**—Social and economic marginalization of certain racial and ethnic groups, including real estate discrimination, has resulted in greater vulnerability of these groups to all types of hazards. Based on data from a number of studies, African Americans, Native Americans, and populations of Asian, Pacific Islander, or Hispanic origin are likely to be more vulnerable than the broader community. Research shows that minorities are less likely to be involved in pre-disaster planning and experience higher mortality rates during disaster events. Post-disaster recovery often exhibits cultural insensitivity. Since higher proportions of ethnic minorities live below the poverty line than the majority white population, poverty can compound vulnerability. Hazard mitigation plans need to identify the spatial distribution of these population groups and direct resources to reduce their vulnerability to hazards.
- **Limited English-Speaking Households**—For populations with limited English proficiency, disaster communication may be difficult, especially in communities for whom translators and accurate translations of advisories may be scarce. Such households are likely to rely on relatives and local social networks (i.e., friends and neighbors) for information for preparing for a disaster event.
- **Persons with Disabilities**—Persons with disabilities or other access and functional needs are more likely to have difficulty responding to a hazard event than the general population. Family, neighbors, and local government are the first level of response to assist these individuals, and coordination of efforts to meet their access and functional needs is paramount to life safety efforts. Emergency managers need to distinguish between functional and medical needs to plan for incidents that require evacuation and sheltering. Knowing the percentage of population with access and functional needs allows emergency management personnel and first responders to anticipate the services needed by that population.
- **Families Below the Poverty Level**—Economically disadvantaged families have limited ability to absorb losses due to hazard impacts. Wealth enables families to absorb and recover from losses more quickly, due to insurance, savings, and often the availability of low-cost credit. People with lower incomes tend not to have access to these resources. At the same time, poorer families are likely to inhabit poor quality housing and reside in locations that are most vulnerable to hazard events. Economically disadvantaged neighborhoods are also likely to have relatively poor infrastructure and facilities, which exacerbate the disaster consequences for community members there.

These indicators were selected based on the availability of datasets at a small enough resolution to determine probable characteristics of populations within identified hazard areas. The following sections estimate the age, race, language, and disability indicators for Ada County; poverty levels are presented in Section 4.6.1.

Age Distribution

The overall age distribution for Ada County is illustrated in Figure 4-7. Based on U.S. Census data estimates, 14 percent of Ada County's population is 65 or older, compared to the state average of 16.2 percent. According to U.S. Census data, 29 percent of the County's over-65 population has disabilities of some kind and 9.2 percent have incomes below the poverty line. Of children under 18 in the county, 11.7 percent are below the poverty line. It is also estimated that 18.9 percent of the County's population is 14 or younger, compared to the state average of 18.7 percent.

Race, Ethnicity and Language

According to the U.S. Census, the racial composition of Ada County is predominantly white, at about 90.2 percent. The largest non-white racial groups are two-or-more-races, at 3.6 percent, and Asian, at 2.3 percent. Figure 4-8 shows the racial distribution in Ada County.

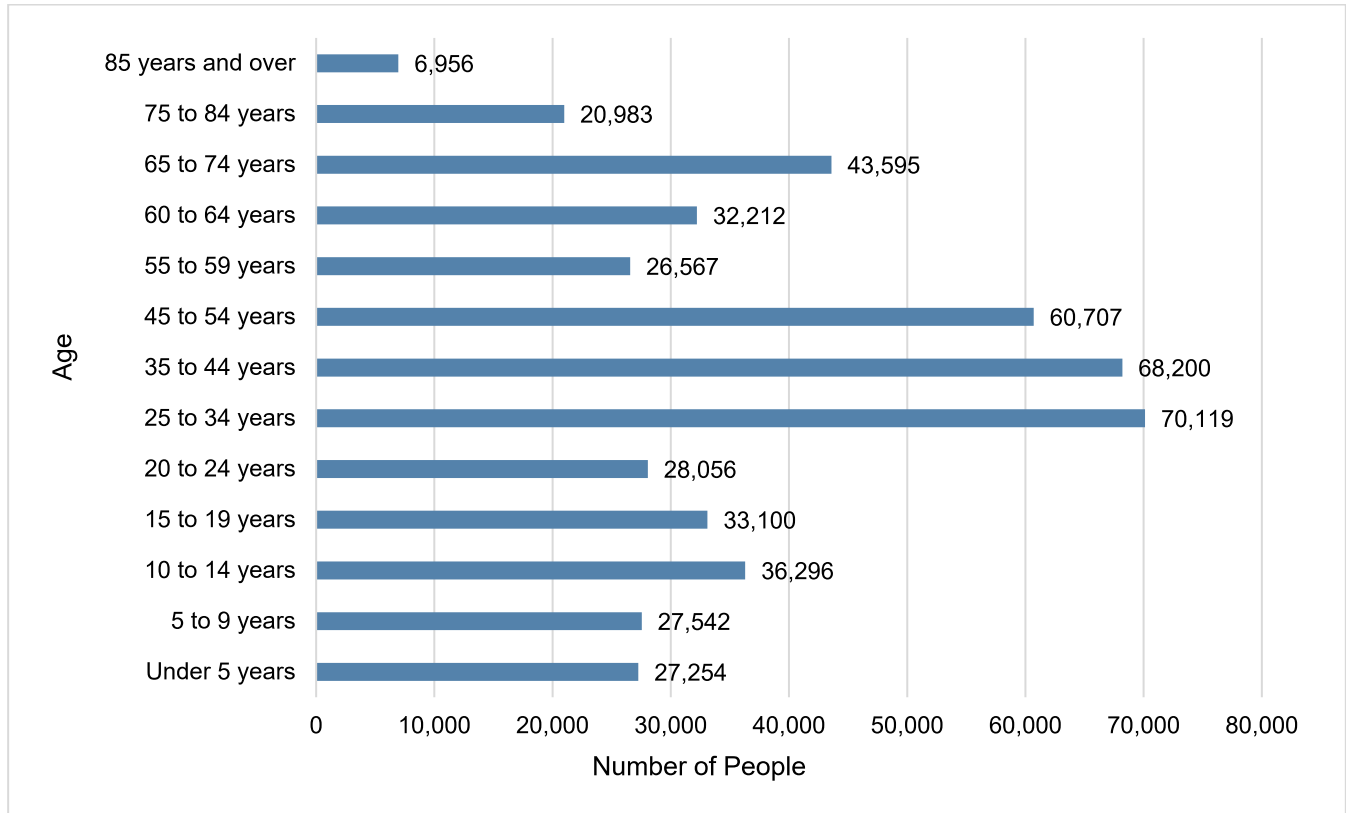


Figure 4-7. Ada County Age Distribution

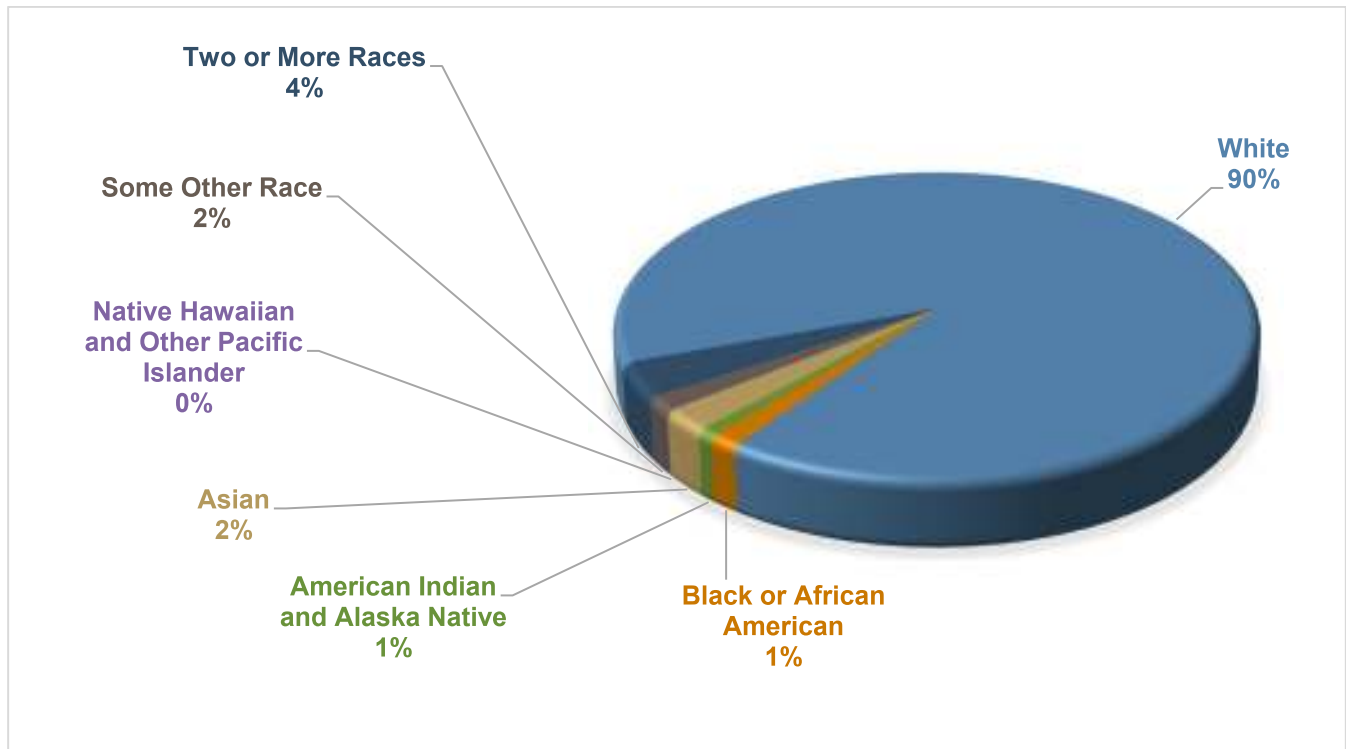


Figure 4-8. Ada County Race Distribution

The Hispanic population makes up 8.5 percent of the total population of Ada County. The County has a 6.2-percent foreign-born population. Other than English, the most commonly spoken language in Ada County is Spanish. The census estimates 3.0 percent of the county’s residents speak English “less than very well.”

Disabled Populations

According to U.S. Census data, 10.7 percent of the County’s total population has a disability. Table 4-5 summarizes estimates of disabled people in Ada County by age group.

Table 4-5. Disability Status of Non-Institutionalized Population

Age	Persons with a Disability	Percent of Age Group
Under Age 18 years	3,520	3.1%
Age 18 to 64 years	26,722	9.2%
Age 65 years and over	20,388	29%

4.6 ECONOMY

4.6.1 Income

Based on U.S. Census Bureau estimates, per capita income in Ada County in 2019 was \$37,297, and the median household income was \$72,021. About 12 percent of the households in Ada County make less than \$25,000 per year. Households with incomes of \$150,000 or more account for 16.8 percent of total households.

The Census Bureau uses a set of income thresholds that vary by family size and composition to determine who is in poverty. If the family’s total income is below the threshold, they are considered in poverty. The Census estimates that 7.7 percent of all persons in the planning area are below the poverty line.

4.6.2 Employment

Employment Levels

According to U.S. Census American Community Survey 5-year estimates for 2020, 68.0 percent of Ada County’s population over the age of 16 is in the labor force—62.3 percent of women and 73.7 percent of men. Figure 4-9 compares Idaho’s and Ada County’s unemployment trends from 2010 through 2021. Ada County’s unemployment rate was lowest in 2018, at 2.5 percent. The COVID-19 pandemic resulted in high unemployment, rising to 12.1 percent in April 2020. The rate fell back to 3.3 percent in 2021 (U.S. Bureau of Labor Statistics 2022).

Employment by Company, Industry Sector, and Occupation

Figure 4-10 and Figure 4-11 show the breakdown of employment in Ada County by industry sector and occupation type, respectively.

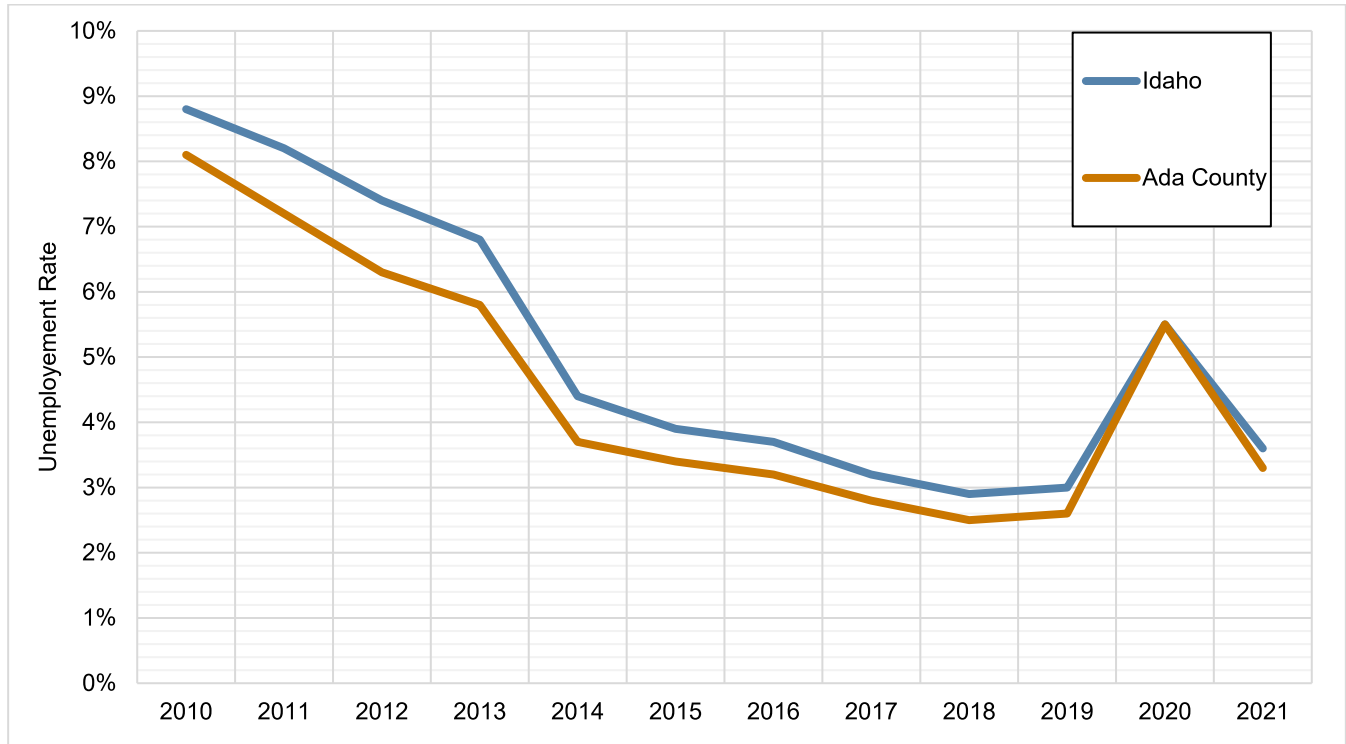


Figure 4-9. Idaho and Ada County Unemployment Rate

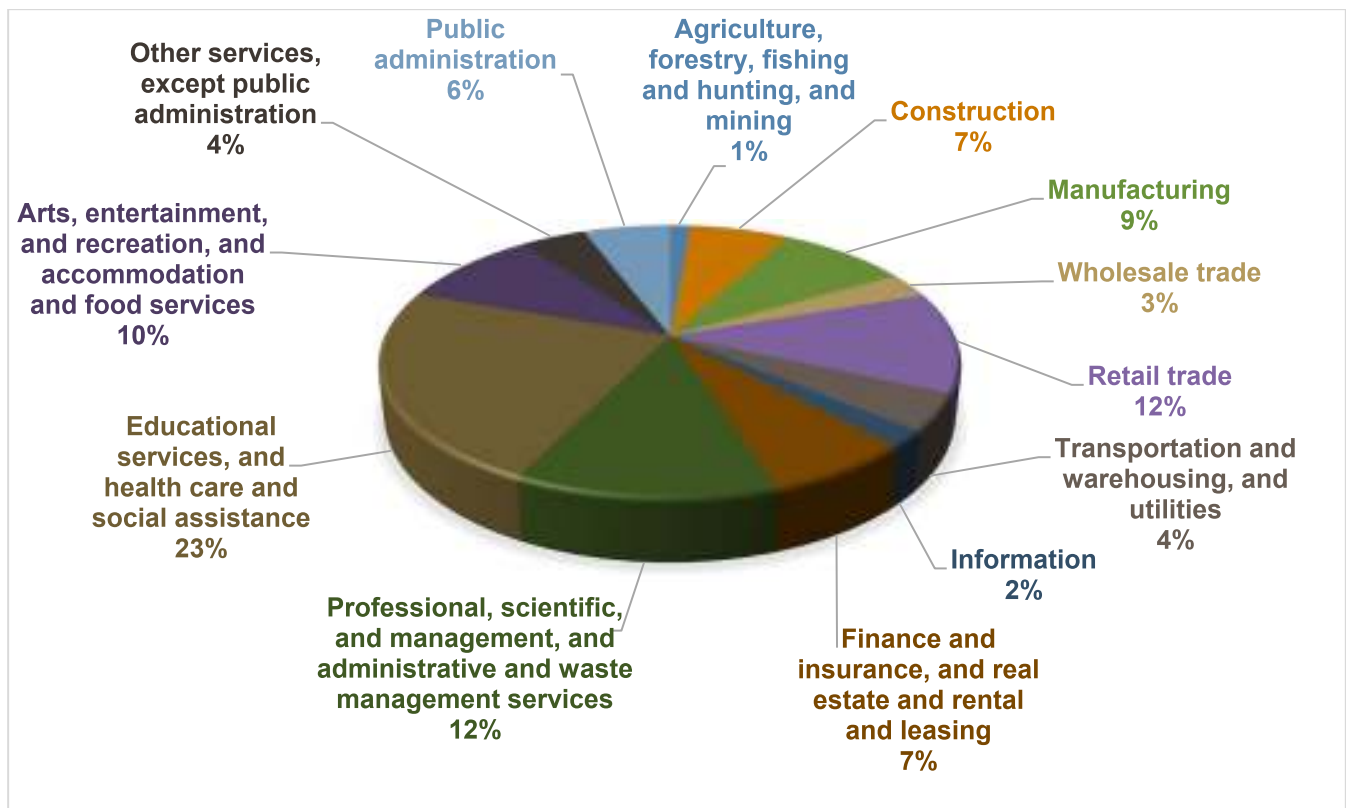


Figure 4-10. Employment by Industry in Ada County

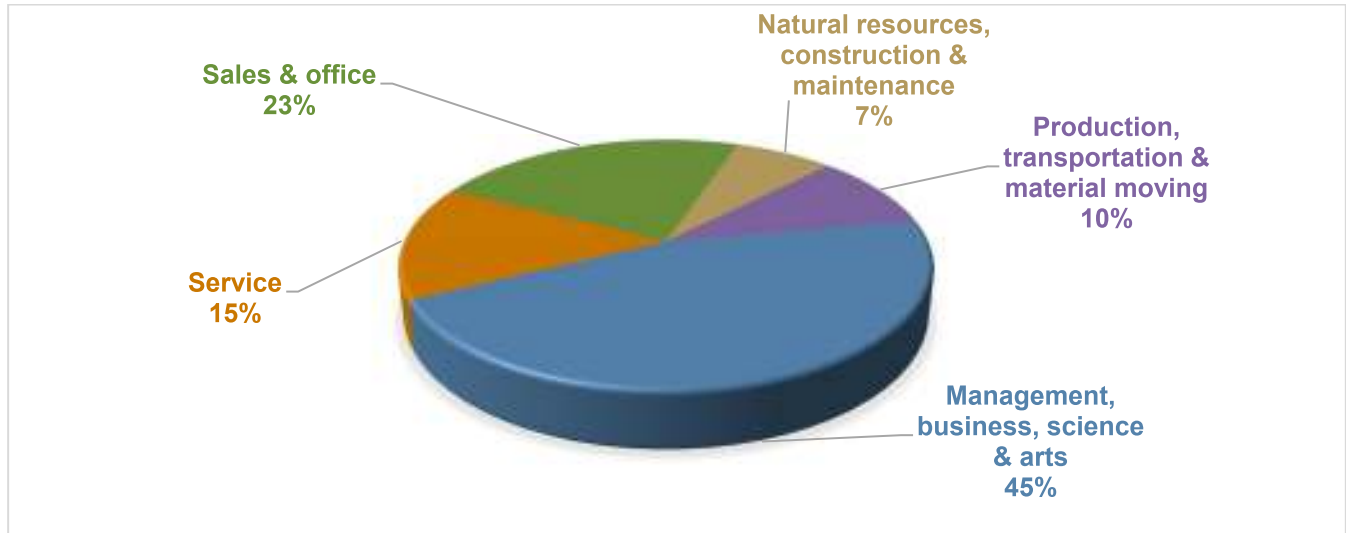


Figure 4-11. Employment by Occupation Type in Ada County

The Idaho Department of Labor identifies the following as major private employers in Ada County (listed in alphabetical order):

- Albertsons
- Micron Technology, Inc.
- Blue Cross of Idaho
- Saint Alphonsus Health System
- Fred Meyer
- St. Luke’s Regional Medical Center
- Hewlett-Packard
- Wal-Mart
- Idaho Power Co.
- Wells Fargo

The State of Idaho is also a major employer in Ada County, as Boise, the state capitol, is in the county.

4.6.3 Commuting

According to the Idaho Department Labor, almost all workers living in Ada County also work in the County, with most of those who work elsewhere commuting to employment in Canyon County. The U.S. Census estimates that 80.6 percent of Ada County workers commute alone (by car, truck or van) to work, and mean travel time to work is 21.4 minutes (the state average is 21.5 minutes).

5. HAZARDS OF CONCERN

5.1 MAJOR PAST HAZARD EVENTS

Presidential disaster declarations are typically issued for hazard events that cause more damage than state and local governments can handle without federal assistance. A presidential disaster declaration puts federal recovery programs into motion to help disaster victims, businesses and public entities. The State of Idaho has experienced 32 declared events since 1956, as listed in Table 5-1. Four of these events were specifically identified as impacting Ada County (impacted counties were not identified for disasters declared prior to 1964).

Table 5-1. Presidential Disaster Declarations in Idaho for Ada County Hazards of Concern

Type of Event	Date	Disaster Declaration	Counties Impacted ^a
Flood	4/21/1956	DR-55	n/a
Flood	5/27/1957	DR-76	n/a
Wildfires	7/22/1960	DR-105	n/a
Flood	6/26/1961	DR-116	n/a
Flood	2/14/1962	DR-120	n/a
Flood	2/14/1963	DR-143	n/a
Heavy rains & flooding	12/31/1964	DR-186	Ada, Bannock, Benewah, Blaine, Boise, Bonneville, Butte, Camas, Caribou, Cassia, Clearwater, Elmore, Gem, Gooding, Idaho, Jerome, Kootenai, Latah, Lewis, Lincoln, Minidoka, Nez Perce, Owyhee, Payette, Power, Shoshone, and Washington.
Forest Fires	8/30/1967	DR-231	Benewah, Bonner, Boundary, Clearwater, Idaho, Kootenai, Latah, Lewis, Nez Perce, and Shoshone
Severe storms, extensive flooding	3/2/1972	DR-324	Latah
Severe storms, snowmelt, flooding	1/25/1974	DR-415	Adams, Benewah, Bonner, Boundary, Clearwater, Kootenai, Latah, Shoshone, and Washington
Dam collapse	6/6/1976	DR-505	Bingham, Bonneville, Fremont, Jefferson, and Madison
Volcanic eruption, Mt. St. Helens	5/22/1980	DR-624	Benewah, Bonner, Boundary, Clearwater, Kootenai, Latah, Nez Perce, and Shoshone
Earthquake	11/18/1983	DR-694	Butte, Custer, and Gooding
Ice jams, flooding	2/16/1984	DR-697	Lemhi
Storms/flooding	2/11/1996	DR-1102	Benewah, Bonner, Boundary, Clearwater, Idaho, Kootenai, Latah, Lewis, Nez Perce, and Shoshone
Severe storms/flooding	1/4/1997	DR-1154	Adams, Benewah, Boise, Bonner, Boundary, Camas, Clearwater, Elmore, Gem, Idaho, Kootenai, Latah, Nez Perce, Owyhee, Payette, Shoshone, Valley, and Washington
Flood	6/13/1997	DR-1177	Benewah, Bingham, Bonner, Bonneville, Boundary, Butte, Custer, Fremont, Jefferson, Kootenai, Madison, and Shoshone

Type of Event	Date	Disaster Declaration	Counties Impacted ^a
Wildfires	9/1/2000	DR-1341	Ada, Bannock, Bingham, Blaine, Boise, Clearwater, Custer, Elmore, Fort Hall Indian Reservation, Idaho, Jerome, Lemhi, Lewis, Lincoln, Power, and Valley
Heavy rains and flooding	7/6/2005	DR-1592	Nez Perce County and Nez Perce Indian Reservation.
Severe storms and flooding	2/27/2006	DR-1630	Owyhee
Flooding	7/31/2008	DR-1781	Kootenai, and Shoshone
Severe storms and flooding	7/27/2010	DR-1927	Adams, Gem, Idaho, Lewis, Payette, Valley, and Washington
Flooding, landslides, and mudslides	5/20/2011	DR-1987	Nez Perce Indian Reservation
Severe Storm and Straight Line Winds	12/23/2015	DR-4246	Benewah County, Bonner County, Boundary County, Coeur d'Alene Indian Reservation and Kootenai County.
Severe Winter Storms	2/01/2016	DR-4252	Benewah County, Bonner County and Kootenai County.
Severe Winter Storms and Flooding	4/21/2017	DR-4310	Bingham, Cassia, Elmore, Franklin, Gooding, Jefferson, Jerome, Lincoln, Minidoka, Twin Falls, Washington
Severe Storms, Flooding, Landslides, and Mudslides	5/18/2017	DR-4313	Benewah, Bonner, Boundary, Clearwater, Idaho, Kootenai, Latah, Shoshone, Valley
Flooding, Landslides, and Mudslides	8/27/2017	DR-4333	Blaine, Camas, Custer, Elmore, Gooding
Flooding	10/7/2017	DR-4342	Ada, Canyon
Severe Storms, Flooding, Landslides, and Mudslides	6/12/2019	DR-4443	Adams, Idaho, Latah, Lewis, Nez Perce Indian Reservation, Valley
COVID-19 Pandemic	4/9/2020	DR-4534	Ada, Adams, Bannock, Bear Lake, Benewah, Bingham, Blaine, Boise, Bonner, Bonneville, Boundary, Butte, Camas, Canyon, Caribou, Cassia, Clark, Clearwater, Custer, Elmore, Franklin, Fremont, Gem, Gooding, Idaho, Jefferson, Jerome, Kootenai, Latah, Lemhi, Lewis, Lincoln, Madison, Minidoka, Nez Perce, Oneida, Owyhee, Payette, Power, Shoshone, Teton, Twin Falls, Valley, Washington
Straight-Line Winds	3/4/2021	DR-4589	Benewah, Bonner, Kootenai, Shoshone

- a. Federal disaster declarations were not issued by county until 1964. Declarations prior to that date are statewide
- b. In Idaho, as in many other states, the Hurricane Katrina disaster declaration was related to the need to assist evacuees.

Review of these events helps identify targets for risk reduction and ways to increase a community’s capability to avoid large-scale events in the future. Still, many natural hazard events do not trigger federal disaster declaration protocol but have significant impacts on their communities. These events are also important to consider in establishing recurrence intervals for hazards of concern.

5.2 IDENTIFIED HAZARDS OF CONCERN

For this update, the Steering Committee considered the full range of natural hazards that could impact the planning area and then ranked the hazards that present the greatest concern. The process incorporated review of state and local hazard planning documents, as well as local, state and federal information on the frequency, magnitude and costs associated with hazards that have impacted or could impact the planning area. Anecdotal information regarding natural hazards and the perceived vulnerability of the planning area’s assets to them was also used. Based on the review, this plan update addresses the following natural hazards of concern:

- Dam/canal failure
- Drought

- Earthquake
- Extreme weather
- Flood
- Landslide
- Volcano (ash fall)
- Wildfire.

Climate is not assessed as an individual hazard, but a profile is provided describing how future climate conditions could affect the hazards of concern assessed in this plan.

In addition to the natural hazards of concern, this plan update addresses non-natural (human-caused) hazards that are of most concern for the planning area. These hazards of concern are either addressed in the Ada County Threat Hazard Inventory and Risk Assessment prepared and maintained by EMCR or included to meet the emergency management standard criteria for the Emergency Management Accreditation Program (EMAP). EMAP fosters excellence and accountability in emergency management and homeland security programs by establishing credible standards applied in a peer review accreditation process. EMAP also provides emergency management programs the opportunity to be recognized for compliance with industry standards and to demonstrate accountability in emergency management. The discussion of the following non-natural hazards highlights the extensive capability within the planning area to address non-natural hazards:

- Civil disturbance and terrorism
- Cyber disruption
- Hazardous materials release
- Public health emergency/pandemic
- Radiological event
- Utility failure.

6. REGULATIONS AND PROGRAMS

Existing laws, ordinances and plans at the federal, state and local level can support or impact hazard mitigation actions identified in this plan. Hazard mitigation plans are required to include a review and incorporation, if appropriate, of existing plans, studies, reports, and technical information as part of the planning process (44 CFR, Section 201.6(b)(3)). Pertinent federal and state laws are described below. Each planning partner has individually reviewed existing local plans, studies, reports, and technical information in its jurisdictional annex, presented in Volume 2.

6.1 RELEVANT FEDERAL AND STATE AGENCIES, PROGRAMS AND REGULATIONS

State and federal regulations and programs that need to be considered in hazard mitigation are constantly evolving. For this plan, a review was performed to determine which regulations and programs are currently most relevant to hazard mitigation planning. The findings are summarized in Table 6-1 and Table 6-2. Short descriptions of each program are provided in Appendix B.

Table 6-1. Summary of Relevant Federal Agencies, Programs and Regulations

Agency, Program or Regulation	Hazard Mitigation Area Affected	Relevance
Americans with Disabilities Act	Action Plan Implementation	FEMA hazard mitigation project grant applications require full compliance with applicable federal acts.
Bureau of Land Management	Wildfire Hazard	The Bureau funds and coordinates wildfire management programs and structural fire management and prevention on BLM lands.
Civil Rights Act of 1964	Action Plan Implementation	FEMA hazard mitigation project grant applications require full compliance with applicable federal acts.
Clean Water Act	Action Plan Implementation	FEMA hazard mitigation project grant applications require full compliance with applicable federal acts.
Community Development Block Grant Disaster Resilience Program	Action Plan Funding	This is a potential alternative source of funding for actions identified in this plan.
Community Rating System	Flood Hazard	This voluntary program encourages floodplain management activities that exceed the minimum National Flood Insurance Program requirements.
Disaster Mitigation Act	Hazard Mitigation Planning	This is the current federal legislation addressing hazard mitigation planning.
Emergency Relief for Federally Owned Roads Program	Action Plan Funding	This is a possible funding source for actions identified in this plan.
Emergency Watershed Program	Action Plan Funding	This is a possible funding source for actions identified in this plan.
Endangered Species Act	Action Plan Implementation	FEMA hazard mitigation project grant applications require full compliance with applicable federal acts.

Agency, Program or Regulation	Hazard Mitigation Area Affected	Relevance
Federal Energy Regulatory Commission Dam Safety Program	Dam Failure Hazard	This program cooperates with a large number of federal and state agencies to ensure and promote dam safety.
Federal Wildfire Management Policy and Healthy Forests Restoration Act	Wildfire Hazard	These documents mandate community-based collaboration to reduce risks from wildfire.
National Dam Safety Act	Dam Failure Hazard	This act requires a periodic engineering analysis of most dams in the country
National Environmental Policy Act	Action Plan Implementation	FEMA hazard mitigation project grant applications require full compliance with applicable federal acts.
National Fire Plan (2001)	Wildfire Hazard	This plan calls for joint risk reduction planning and implementation by federal, state and local agencies.
National Flood Insurance Program	Flood Hazard	This program makes federally backed flood insurance available to homeowners, renters, and business owners in exchange for communities enacting floodplain regulations
National Incident Management System	Action Plan Development	Adoption of this system for government, nongovernmental organizations, and the private sector to work together to manage incidents involving hazards is a prerequisite for federal preparedness grants and awards
National Landslide Preparedness Act	Risk Assessment of Landslide Hazard	This act authorized a national landslide hazards reduction program and a 3D elevation program, providing tools and data to assess the landside hazard.
Presidential Executive Order 11988 (Floodplain Management)	Flood Hazard	This order requires federal agencies to avoid long and short-term adverse impacts associated with modification of floodplains
Presidential Executive Order 11990 (Protection of Wetlands)	Action Plan Implementation	FEMA hazard mitigation project grant applications require full compliance with applicable presidential executive orders.
U.S. Army Corps of Engineers Dam Safety Program	Dam Failure Hazard	This program is responsible for safety inspections of dams that meet size and storage limitations specified in the National Dam Safety Act.
U.S. Army Corps of Engineers Flood Hazard Management	Flood Hazard, Action Plan Implementation, Action Plan Funding	The Corps of Engineers offers multiple funding and technical assistance programs available for flood hazard mitigation actions
U.S. Bureau of Reclamation Safety Evaluation of Existing Dams Program	Dam Failure Hazard	The basic objective of the program is to identify dams that pose an increased threat to the public, and to quickly complete analyses to expedite corrective action decisions.
U.S. Fire Administration	Wildfire Hazard	This agency provides leadership, advocacy, coordination, and support for fire agencies and organizations.
U.S. Fish and Wildlife Service	Wildfire Hazard	This service's fire management strategy employs prescribed fire throughout the National Wildlife Refuge System to maintain ecological communities.

Table 6-2. Summary of Relevant State Agencies, Programs and Regulations

Agency, Program or Regulation	Hazard Mitigation Area Affected	Relevance
State and Local Building Codes	Mitigation actions involving new or rehabilitated structures	All actions will be required to comply with applicable building codes
Subdivision Regulations	Mitigation actions involving development	Subdivision regulations can specify requirements for layout and location of infrastructure, lots and other facilities in hazard prone areas as land is developed.
Comprehensive Plans and Zoning	Hazard mitigation planning	In Idaho, a comprehensive plan is required to include a section on hazards
Floodplain Zoning	Flood hazard	State law authorizes Idaho communities to adopt floodplain zoning to regulate any mapped or unmapped flood hazard area.
Idaho Department of Water Resources Dam Safety Program	Dam failure hazard	The Dam Safety Program monitors dams at the state level, currently regulating nearly 600 water storage dams and more than 20 mine tailings impoundment structures.
Idaho Disaster Preparedness Act of 1975	Mitigation actions involving disaster preparedness	This act makes it a state policy to plan and prepare for disasters and emergencies.
Idaho Silver Jackets Program	Flood hazard	Silver Jackets Program is the state-level implementation of the Army Corps of Engineers National Flood Risk Management Program

6.2 EMERGENCY MANAGEMENT ACCREDITATION PROGRAM

EMAP establishes voluntary standards, assessment, and an accreditation process for disaster preparedness programs throughout the country. The accreditation process evaluates emergency management programs on compliance with requirements in the following areas:

- Administration, coordination, administration and finance, and laws and authorities
- Hazard identification, risk assessment and consequence analysis
- Hazard mitigation
- Prevention
- Operational planning and procedures
- Incident management
- Resource management, mutual aid and logistics
- Communications and warning
- Facilities
- Training
- Exercises, evaluations, and corrective actions, and
- Emergency public information and education.

EMAP defines “emergency management” to include organizations involved in prevention of, mitigation against, preparedness for, response to, and recovery from disasters or emergencies (Emergency Management Accreditation Program 2019).

6.3 LOCAL PROGRAMS

All participating jurisdictions compiled an inventory and analysis of existing authorities and capabilities called a “capability assessment.” A capability assessment creates an inventory of a jurisdiction’s mission, programs, and policies and evaluates its capacity to carry them out. This assessment identifies potential gaps in the jurisdiction’s capabilities.

The planning partnership views all core jurisdictional capabilities as fully adaptable to meet a jurisdiction’s needs. Every code can be amended, and every plan can be updated. Such adaptability is itself considered to be an overarching capability. If the capability assessment identified an opportunity to add a missing core capability or expand an existing one, then doing so has been selected as an action in the jurisdiction’s action plan, which is included in the individual annexes presented in Volume 2 of this plan.

Capability assessments for each planning partner are presented in the jurisdictional annexes in Volume 2. The sections below describe the capabilities evaluated in the assessment.

6.3.1 Planning and Regulatory Capabilities

Jurisdictions have the ability to develop policies and programs and to implement rules and regulations to protect and serve residents. Local policies are typically identified in a variety of community plans, implemented via a local ordinance, and enforced through a governmental body.

Jurisdictions regulate land use through the adoption and enforcement of zoning, subdivision, and land development ordinances, building codes, building permit ordinances, floodplain, and stormwater management ordinances. When effectively prepared and administered, these regulations can lead to hazard mitigation.

6.3.2 Fiscal Capabilities

Assessing a jurisdiction’s fiscal capability provides an understanding of the ability to fulfill the financial needs associated with hazard mitigation projects. This assessment identifies both outside resources, such as grant-funding eligibility, and local jurisdictional authority to generate internal financial capability, such as through impact fees.

6.3.3 Administrative and Technical Capabilities

Planning, regulatory, and fiscal capabilities provide the backbone for successfully developing a mitigation strategy; however, without appropriate personnel, the strategy may not be implemented. Administrative and technical capabilities focus on the availability of personnel resources responsible for implementing all the facets of hazard mitigation. These resources include technical experts, such as engineers and scientists, as well as personnel with capabilities that may be found in multiple departments, such as grant writers.

6.3.4 Compliance with National Flood Insurance Program

Flooding is the costliest natural hazard in the United States and, with the promulgation of recent federal regulation, homeowners throughout the country are experiencing increasingly high flood insurance premiums. Community participation in the National Flood Insurance Program (NFIP) opens up opportunity for additional grant funding associated specifically with flooding issues. Assessment of the jurisdiction’s current NFIP status

and compliance provides planners with a greater understanding of the local flood management program, opportunities for improvement, and available grant funding opportunities.

6.3.5 Public Outreach Capability

Regular engagement with the public on issues regarding hazard mitigation provides an opportunity to directly interface with community members. Assessing this outreach and education capability illustrates the connection between the government and community members, which opens a two-way dialogue that can result in a more resilient community based on education and public engagement.

6.3.6 Community Classifications

Other programs, such as the Community Rating System, StormReady, and Firewise USA, can enhance a jurisdiction's ability to mitigate, prepare for, and respond to natural hazards. These programs indicate a jurisdiction's desire to go beyond minimum requirements set forth by local, state, and federal regulations in order to create a more resilient community. These programs complement each other by focusing on communication, mitigation, and community preparedness to save lives and minimize the impact of natural hazards on a community.

6.3.7 Development and Permitting Capability

Identifying previous and future development trends is achieved through a comprehensive review of permitting since completion of the previous plan and in anticipation of future development. Tracking previous and future growth in potential hazard areas provides an overview of increased exposure to a hazard within a community.

6.3.8 Integration Opportunity

The assessment looked for opportunities to integrate this mitigation plan with the planning and regulatory capabilities identified. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. Planning partners considered actions to implement this integration as described in their jurisdictional annexes.

6.3.9 Expansion of Existing Capabilities

Local hazard mitigation plans are required to document each jurisdiction's ability to expand on and improve existing policies and programs. For this plan update, all planning partners reviewed their existing capabilities through the jurisdictional annex process (see Volume 2) and developed mitigation actions to address identified gaps in their capabilities or to expand on or improve existing capabilities. In the analysis to assign each mitigation action to a defined category (see Section 26.3), these actions are classified as "community capacity building" actions, which are defined as follows:

Actions that increase or enhance local capabilities to adjust to potential damage, to take advantage of opportunities, or to respond to consequences. Includes staff training, memorandums of understanding, development of plans and studies, and monitoring programs.

Part 2. RISK ASSESSMENT

7. RISK ASSESSMENT METHODOLOGY

The risk assessments in this plan describe the risks associated with each identified hazard of concern. The following steps were used to define the risk of each hazard:

- **Identify and profile each hazard**—The following information is given for each hazard:
 - A summary of past events that have impacted the planning area
 - Geographic areas most affected by the hazard
 - Event frequency estimates
 - Severity descriptions
 - Warning time likely to be available for response.
- **Determine exposure to each hazard**—Exposure was assessed by overlaying hazard maps with an inventory of structures, facilities, and systems to decide which of them would be exposed to each hazard.
- **Assess the vulnerability of exposed facilities**—Vulnerability of exposed structures and infrastructure was evaluated by interpreting the probability of occurrence of each event and assessing structures, facilities, and systems that are exposed to each hazard. Tools such as geographic information systems (GIS) and Hazus were used for this assessment for the dam failure, earthquake, and flood hazards. Outputs similar to those from Hazus were generated for other hazards, using data generated through GIS.

7.1 RISK ASSESSMENT TOOLS

7.1.1 Mapping

National, state, and local databases were reviewed to locate spatially based data relevant to this planning effort. Maps were produced using GIS software to show the spatial extent and location of hazards when such datasets were available. These maps are included in the hazard profile chapters of this document and the jurisdiction-specific annexes in Volume 2. Appendix C provides details on the mapping data sources and methodologies.

7.1.2 Modeling

Overview

FEMA developed the GIS-based software program Hazus (Hazards U.S.) to estimate losses caused by earthquakes, hurricanes, floods, and tsunamis. Hazus is used to support risk assessments, mitigation planning, and emergency planning and response. It provides a range of inventory data, (such as demographics, building stock, critical facilities, transportation and utility infrastructure) and multiple models to estimate losses from natural disasters. The program maps and calculates hazard data and damage and economic loss estimates for buildings and infrastructure. Its advantages include the following:

- Provides a consistent methodology for assessing risk across geographic and political entities.
- Provides a way to save data so that it can readily be updated as population, inventory, and other factors change and as mitigation planning efforts evolve.
- Facilitates the review of mitigation plans because it helps to ensure that FEMA methodologies are incorporated.
- Supports grant applications by calculating benefits using FEMA definitions and terminology.
- Produces hazard data and loss estimates that can be used in communication with local stakeholders.
- Is administered by the local government and can be used to manage and update a hazard mitigation plan throughout its implementation.

Levels of Detail for Evaluation

Hazus provides default data for inventory, vulnerability, and hazards; this default data can be supplemented with local data to provide a more refined analysis. The model can carry out three levels of analysis, depending on the format and level of detail of information about the planning area:

- **Level 1**—All of the information needed to produce an estimate of losses is included in the software’s default data. This data is derived from national databases and describes in general terms the characteristic parameters of the planning area.
- **Level 2**—More accurate estimates of losses require more detailed information about the planning area. To produce Level 2 estimates of losses, detailed information is required about local geology, hydrology, hydraulics and building inventory, as well as data about utilities and critical facilities. This information is needed in a GIS format.
- **Level 3**—This level of analysis generates the most accurate estimate of losses. It requires detailed engineering and geotechnical information to customize it for the planning area.

7.2 RISK ASSESSMENT APPROACH

7.2.1 Hazard Profile Development

Hazard profiles were developed through web-based research and review of previous reports and plans, including community general plans and state and local hazard mitigation plans. Frequency and severity indicators include past events and the expert opinions of geologists, emergency management specialists, and others.

7.2.2 Exposure and Vulnerability

Dam Failure, Earthquake, and Flood

Community exposure and vulnerability to the following hazards were evaluated using Hazus:

- **Dam Failure and Flood**—A Level 2 user-defined analysis was performed for general building stock and for community lifelines using the flood module. Current mapping for the planning area was used to delineate hazard areas for flood and dam failure and estimate potential losses. To estimate damage that would result from these inundation-based hazards, Hazus uses pre-defined relationships between water depth at a structure and resulting damage, with damage given as a percent of total replacement value. Curves defining these relationships have been developed for damage to structures and for damage to

typical contents within a structure. By inputting inundation depth data and known property replacement cost values, dollar-value estimates of damage were generated.

- **Earthquake**—A Level 2 analysis was performed to assess earthquake risk and exposure for two scenario events and two probabilistic events:
 - A Magnitude-7.03 event on the Squaw Creek fault with an epicenter 36 miles north of Boise.
 - A Magnitude-6.81 event on the Big Flat Jakes Creek fault with an epicenter 45 miles north-northwest of Boise.
 - The standard Hazus 100- and 500-year probabilistic events.

Extreme Weather, Landslide, Volcano and Wildfire

Historical datasets were not adequate to model future losses for landslide, extreme weather, volcano and wildfire. However, areas and inventory susceptible to some of the hazards of concern were mapped by other means to evaluate exposure. A qualitative analysis was conducted for other hazards using the best available data and professional judgment.

Drought

The risk assessment methodologies used for this update focus on damage to structures. Because drought does not impact structures, the risk assessment for drought was more limited and qualitative than the assessment for the other hazards of concern.

7.3 SOURCES OF DATA USED IN MODELING AND EXPOSURE ANALYSIS

7.3.1 Building and Cost Data

Replacement cost is the cost to replace the entire structure with one of equal quality and utility. Replacement cost is based on industry-standard cost-estimation models published in the 2021 *RS Means Square Foot Costs*. It is calculated using the RS Means square foot cost for a structure, which is based on the Hazus occupancy class (i.e., multi-family residential or commercial retail trade), multiplied by the square footage of the structure from the tax assessor data. The construction class and number of stories for single-family residential structures also factor into determining the square foot costs.

Replacement cost values and detailed structure information derived from parcel and tax assessor data provided by Ada County were loaded into Hazus. When available, an updated inventory was used in place of the Hazus defaults for community lifelines.

7.3.2 Hazus Data Inputs

The following hazard datasets were used for the Hazus Level 2 analysis conducted for the risk assessment:

- **Flood**—The effective Digital Flood Insurance Rate Map (DFIRM) for the planning area was used to delineate flood hazard areas and estimate potential losses from the FEMA 1-percent-annual chance and 0.2-percent-annual-chance (100- and 500-year) flood events. Using the DFIRM floodplain boundaries and base flood elevation information and the best available digital elevation model data, flood depth grids were generated and integrated into the Hazus model.

- **Dam Failure**—Dam failure inundation area boundaries and depth grids data for Blacks Creek and Lucky Peak were provided by the Idaho Department of Water Resources and the U.S. Army Corps of Engineers, respectively. The individual dam depth grids were integrated into the Hazus model.
- **Earthquake**—Earthquake ShakeMaps and probabilistic data prepared by USGS were used for the analysis of this hazard. National Earthquake Hazard Reduction Program (NEHRP) soils and liquefaction maps for the Boise metro area, from the Idaho Geological Survey, were also integrated into the Hazus model.

7.3.3 Other Local Hazard Data

Locally relevant information on hazards was gathered from a variety of sources. Data sources for specific hazards were as follows:

- **Drought**—No GIS format drought hazard area datasets were identified for Ada County.
- **Extreme weather**—No GIS format extreme weather area datasets were identified for Ada County.
- **Landslide**—A dataset of steep slopes was generated using data from a combination of the Boise Foothills 1-foot digital elevation model and the U.S. Geological Survey (USGS) 10-meter digital elevation model. Two slope classifications were created: 15 to 30 percent; and greater than 30 percent. These two categories were used in the risk assessment.
- **Volcano**—No GIS format volcano hazard area datasets were identified for Ada County.
- **Wildfire**—Base hazard data from the 2016 Enhanced Wildfire Risk Map Project was provided by Ada County. High and moderate base hazard rating areas were used in the exposure analysis.

7.3.4 Data Source Summary

Table 7-1 summarizes the data sources used for the risk assessment for this plan.

7.4 LIMITATIONS

Loss estimates, exposure assessments and hazard-specific vulnerability evaluations rely on the best available data and methodologies. Uncertainties are inherent in any loss estimation methodology and arise in part from incomplete scientific knowledge concerning natural hazards and their effects on the built environment.

Uncertainties also result from the following:

- Approximations and simplifications necessary to conduct a study
- Incomplete or outdated inventory, demographic or economic parameter data
- The unique nature, geographic extent and severity of each hazard
- Mitigation measures already employed
- The amount of advance notice residents have to prepare for a specific hazard event.

These factors can affect loss estimates by a factor of two or more. Therefore, potential exposure and loss estimates are approximate and should be used only to understand relative risk. Over the long term, Ada County and its planning partners will collect additional data to assist in estimating potential losses associated with other hazards.

Table 7-1. Hazus Model Data Documentation

Data	Source	Date	Format
Residential and commercial parcel characteristics	Ada County	2021	Digital
Condos	Ada County	2021	Digital (GIS)
Property parcels	Ada County	2021	Digital (GIS)
U.S. Building Footprints—Boise metro area	Microsoft	2019-20	Digital (GIS)
U.S. Building Footprints—Other areas	Microsoft	2012	Digital (GIS)
Building replacement (square foot) costs	RS Means	2021	Digital (pdf)
Lucky Peak Dam failure inundation area and depth grid	U.S. Army Corps of Engineers	2020	Digital (GIS)
Blacks Creek Dam failure inundation area and depth grid	Idaho Department of Water Resources	2020	Digital (GIS)
ShakeMap – Big Flat-Jakes Creek M6.81	USGS	2017	Digital (GIS)
ShakeMap – Squaw Creek M7.03	USGS	2017	Digital (GIS)
Probabilistic peak ground acceleration data	Hazus v5.1	2018	Digital (GIS)
Boise Metro Area NEHRP Site Class	Idaho Geological Survey	2011	Digital (GIS)
Boise Metro Area Liquefaction	Idaho Geological Survey	2011	Digital (GIS)
Digital Flood Insurance Rate Map (DFIRM) – Ada County effective 6/19/2020 with latest LOMR effective date 10/14/2021	FEMA	2021	Digital (GIS)
Percent slope (generated from Boise Foothills 1-foot DEM and USGS 10-meter DEM)	2017 Ada County Hazard Mitigation Plan	2017	Digital (GIS)
Wildfire base hazard data (2016 Enhanced Wildfire Risk Map Project)	Ada County	2017	Digital (GIS)
USGS 10-meter DEM	U.S. Geological Survey	unknown	Digital (GIS)
USGS 2-meter DEM	U.S. Geological Survey	unknown	Digital (GIS)
2015 Boise Foothills DEM (1-foot)	Ada County	2015	Digital (GIS)
2020 Boise River DEM FCD10	Flood Control District #10	2020	Digital (GIS)
2015 Boise River DEM	Boise State University	2015	Digital (GIS)

8. CIVIL DISTURBANCE AND TERRORISM

8.1 GENERAL BACKGROUND

8.1.1 Description

Civil Disturbance

Civil disturbance can include acts of civil disobedience, such as demonstrations, riots, labor unrest, and rebellion often spontaneous, that involve large numbers of persons and are generally caused by political grievances, urban economic conflicts, or a decrease in the supply of essential goods and services. Civil disturbance is often a form of protest, arising from highly emotional social and economic issues.

Civil disturbance severity depends on the nature of the disturbance. The homicide of George Floyd on May 25, 2020, led to months of protests to address racism at all levels of society (Center for Disaster Philanthropy 2021). Between May 25 and Nov. 18, 2020, protests occurred in more than 4,446 cities worldwide, including in all states, territories and Washington, D.C., and internationally in more than 60 countries (Center for Disaster Philanthropy 2021). Throughout summer and fall 2020, there were also protests and rallies connected to the COVID-19 pandemic and the 2020 Presidential Election (Center for Disaster Philanthropy 2021). It is not possible to predict the potential severity of civil disturbance; however, it is necessary to think about the potential of such a disturbance. Incidents like these are less likely to occur in smaller cities.

Mob violence, such as riots, lynching, and vigilantism, is typically associated with disorder and lack of respect for the law on the part of masses of people who are uncontrolled, unorganized, angry, and emotional.

Terrorism

The Federal Bureau of Investigation (FBI) defines two types of terrorism (Federal Bureau of Investigation n.d.):

- International terrorism—Violent, criminal acts committed by individuals and/or groups who are inspired by, or associated with, designated foreign terrorist organizations or nations (state-sponsored). For example, an Uzbek national living in Boise was sentenced to 25 years in a federal prison for attempting to provide material support to a designated terrorist organization and possessing an unregistered destructive device (U.S. Immigration and Customs Enforcement 2016).
- Domestic terrorism—Violent, criminal acts committed by individuals and/or groups to further ideological goals stemming from domestic influences, such as those of a political, religious, social, racial, or environmental nature. For example, the January 6, 2021, storming of the U.S. Capitol building was described as an act of terrorism by the director of the FBI (Federal Bureau of Investigation 2021).

For a discussion of cyberterrorism, see Section 9.1.1.

8.1.2 Assessing Severity of the Hazard

Civil Disturbance

The following levels of severity can be associated with the civil disturbance hazard:

- A high hazard severity rating is assigned to an event where an emotionally charged and highly contentious business or police action engenders the outrage of a segment of the population. While the hazard severity is high, there is a moderate vulnerability in such an event and low probability. Therefore, a low risk rating is assigned to a high severity civil disturbance.
- A moderate hazard severity rating would be assigned to a localized event that resulted in damage to property, police action, or some physical harm to the people involved, either protesters or police. In that the vulnerability to such an event is moderate, the severity is moderate, and the probability is moderate, a moderate risk rating is assigned to a moderate civil disturbance event.
- A low hazard rating would be assigned to a localized event that resulted in minimal to no property damage, no police action (though potential police presence), and no physical harm to participants, bystanders, or police. While there may be a high probability rating for such forms of civil disturbance, and while the vulnerability rating may be moderate, a low severity hazard would be given a low risk rating.

Such disturbances may originate from a political rally, a sport event celebration getting out of control, or demonstrations by environmental protestors. Dispatching police to control traffic corridors or intrusion on private property is considered a low severity civil disturbance. Disruption of businesses and potential property damage are assessed as a moderate civil disturbance. In these cases, police intervention would be required to restore order without employing chemical agents or physical force. A high civil disturbance would involve rioting, arson, looting, and assault, where aggressive police action (tear gas, curfews, and mass arrests) may be required.

Terrorism

The National Terrorism Advisory System issues alerts to communicate timely, detailed information about the risk of terrorism to the American public at any given time (U.S. Department of Homeland Security 2022).

8.1.3 Secondary Hazards

Civil Disturbance

The overall extent of secondary hazards will vary significantly based on the extent and nature of the civil unrest. Civil disturbances may lead to widespread urban fire, utility failure, transportation interruption, and environmental hazards. There is potential for a mass casualty incident to occur during the course of a civil disturbance event should rioters or protestors become violent and clash with law enforcement or opposing groups. The most significant secondary hazard associated with civil unrest is the interruption of continuity of government, which can also lead to several of the aforementioned secondary hazards.

Civil disturbances generally do not influence the initiation of natural hazards. However, humans could be the cause of a wildfire. During any natural hazard event, some homeowners worried about any ongoing civil disturbance may choose not to evacuate, causing first responders more danger when responding to the disaster.

Terrorism

Secondary hazards of terrorism can include falling debris, utility failure, or transportation interruption. Terrorist attacks on a dam or canal can cause it to fail and inundate the area it was designed to protect.

8.2 HAZARD PROFILE

8.2.1 Past Events

Civil Disturbance

The following episodes of civil disturbance occurred in Ada County over the past decade:

- **2011**—Occupy Boise, an episode of civil disturbance, launched from the Occupy movement that started with the Occupy Wall Street protest in New York City. Local officials expended time and resources planning for contingencies and dealing with permit issues. The protest against corporate entities for political reasons remained peaceful (Idaho Office of Emergency Management 2018).
- **February 3, 2014**—Gay-rights activists were arrested in Boise for a silent protest to draw attention to anti-discrimination legislation. The protestors blocked all entrances to the Senate chambers for more than two hours. Police took 43 people into custody after the demonstrators prevented lawmakers from getting past (Idaho Office of Emergency Management 2018).
- **March 4, 2014**—Twenty-three gay rights activists were arrested after they blocked the entrance to the governor’s office inside the Idaho Statehouse. Four were charged with trespassing, 18 with unlawful assembly and one with resisting arrest (Idaho Office of Emergency Management 2018).
- **May and June 2020**—Protests and a vigil were attended by 5,000 to 6,000 people in response to the killing of George Floyd and other instances of police violence and racism toward African Americans nationwide. The protests did not lead to rioting, but U.S. Postal Service boxes were removed from areas near the State Capitol building as a precaution.
- **June 30, 2020**—During a protest at Boise City Hall, fights broke out between a small group of protesters from the organization Black Lives Matter Boise, who were scheduled to hold a “defund the police” rally, and a much larger group of counter protesters.
- **July 21, 2020**—A Black Lives Matter Boise group demonstrated in front of Boise City Hall. The event was met with counter protesters, but the police set up barriers before the event to manage the crowds (Idaho Press 2020).
- **March 6, 2021**—About 100 demonstrators burned masks outside the State Capitol in Boise as a statement against pandemic restrictions. No one was arrested, and the organizers had permits, but the rally was under review because an open fire is not allowed on State Capitol grounds (NBC News 2021).
- **March 15, 2022**—St. Luke’s Boise Medical Center went on lockdown for about an hour after an activist urged supporters to go to the hospital to protest a child protection case.

Terrorism

In 2016, an Uzbek national living in Boise was sentenced for conspiring and attempting to provide material support to the Islamic Movement of Uzbekistan and procuring bomb-making materials in the interest of executing a terrorist attack. He was fined \$250,000 and sentenced to 25 years in federal prison and three years of supervised release. He faces possible deportation after his sentence (U.S. Immigration and Customs Enforcement 2016).

8.2.2 Location

Civil Disturbance

Information is key for civil disturbances. There must be knowledge of who the demonstrators are, when, where, and why they are demonstrating, what their capabilities are, and what their possible course of action is. Because of their often spontaneous nature, it is difficult to identify specifics.

Government facilities, landmarks, prisons, and universities are common sites where crowds and mobs may gather. Correctional facilities, treatment units, and youth development centers, as well as local and private facilities throughout Idaho that may be targets for civil unrest. Civil disorder can erupt anywhere, but the most likely locations are those areas with large population groupings or gatherings. Civil disorder can also occur near where a “trigger event” occurred, as was the case in 2014 Ferguson, Missouri unrest.

The severity of a civil disturbance coincides with the level of public outrage. It can take the form of small gatherings or large groups blocking access to buildings or disrupting normal activities. Civil disturbances can be peaceful sit-ins or full scale riots (Idaho Office of Emergency Management 2018).

Terrorism

Terrorism can occur anywhere; however, targets are typically in urbanized areas where the attack will cause the most damage and fear.

8.2.3 Frequency

Civil Disturbance

It can be assumed that civil disturbances will occur in the future, but these events are difficult to predict. Some forms of civil disturbance are potentially anticipated. In the case of the race riots that erupted after legal verdicts, the ensuing civil disturbances could have been predicted.

Terrorism

While not historically as frequent as civil disturbances, it can be assumed that terrorism events will occur in the future. The frequency is difficult to predict.

8.2.4 Severity

Civil Disturbance

Civil disturbance severity depends on the nature of the disturbance. The protests after George Floyd’s death took place in 140 U.S. cities; the arson, vandalism and looting that occurred will result in at least \$1 billion to \$2 billion of paid insurance claims—eclipsing the record set in Los Angeles in 1992 after the acquittal of the police officers who brutalized Rodney King (Kingston 2020).

Terrorism

The severity of an act of terrorism depends on whether the event is fully carried out or the instigators are apprehended before they can follow through with their plans.

8.2.5 Warning Time

Civil Disturbance

Because of their often spontaneous nature, it is difficult to identify specifics; however, information gathered in advance may warn officials and provide locations of future civil disturbances. Civil disturbances often occur with little to no warning; however, certain events may trigger riots. Planned demonstrations can turn into riots as a result of controversial court rulings, unfair working conditions, or general unrest. Riots can also be triggered as a result of favorable or unfavorable sports outcomes. Generally, there is a degree of warning time that a riot may occur; however, achieving certainty that an incident is imminent is not possible. Intelligence sharing with regards to crowd size and behavior, as well as known group presence, can assist authorities in determining the possibility of an organized nonviolent demonstration turning violent.

Terrorism

The National Terrorism Advisory System communicates information about terrorist threats. Bulletins are issued on the system's website regarding heightened threat environments across the United States, often in relation to public events such as the presidential inauguration, the anniversary of notable terrorist attacks, religious holidays and associated mass gatherings.

8.3 EXPOSURE AND VULNERABILITY

The entire county is vulnerable to the civil disturbance and terrorism hazard. However, government facilities, landmarks, and universities are common sites where crowds and mobs may gather. Facilities, such as homes, businesses, and other essential infrastructure, such as dams, utilities sites, and other public common areas are vulnerable to civil disturbance and terrorism. Civil violence and terrorism are most often directed at objects that reflect civil values—property, industry, and services.

The systems most likely impacted by civil disturbance include community systems, such as police, fire departments, and emergency medical teams. Straining such limited services, particularly in rural counties, could be disastrous. Transportation systems could be impacted if transit routes are blocked, such as major corridors through Ada County including Interstate 84 or Highway 55, or if the civil disturbance renders part of the city unsafe, like the Capitol building in Boise. Given its role as the state's capital and the high concentration of state buildings, the City of Boise is considered more vulnerable to this hazard than other areas of the county (State of Idaho Hazard Mitigation Plan 2018).

8.4 DEVELOPMENT TRENDS

Future population growth will impact the County's vulnerability to civil disturbance and terrorism. The population of Ada County is projected to increase by 37 percent between 2020 and 2040 (COMPASS 2021).

8.5 SCENARIO

A worst-case scenario for the civil disturbance and terrorism hazard would be a large protest event in the Capitol with a crowd numbering in the thousands, similar to the events in May/June 2020, with the added element of a terrorist attack targeting the mass gathering.

8.6 ISSUES

Much of Ada County is rural and not as impacted by issues concerning civil disturbance and terrorism. The issue in the population centers includes the lack of a civil disturbance policy.

9. CYBER DISRUPTION

9.1 GENERAL BACKGROUND

9.1.1 Description

Cyberattacks

A cyberattack is an intentional and malicious crime that compromises the digital infrastructure of a person or organization, often for financial or terror-related reasons. Such attacks vary in nature and are perpetrated using digital mediums or sometimes social engineering to target human operators. Generally, attacks last minutes to days, but large-scale events and their impacts can last much longer. As information technology continues to grow in capability and interconnectivity, cyberattacks become increasingly frequent and destructive. The FBI's *2020 Internet Crime Report* includes information from 791,790 complaints of suspected internet crime—an increase of more than 300,000 complaints from 2019—and reported losses exceeding \$4.2 billion (FBI National Press Office 2021).

Cyberattacks can lead to loss of money, theft of personal information, and damage to personal reputation and safety. Cyber-threats differ by motive, attack type and perpetrator profile. Motives range from the pursuit of financial gain to political or social aims. Attack types include using viruses to erase entire systems, breaking into systems and altering files, using someone's personal computer to attack others, or stealing confidential information. Such threats having a wide range of effects on individuals, communities, and organizations.

Computer systems can experience a variety of cyberattacks, from blanket malware infection to targeted attacks on system capabilities. Cyberattacks seek to breach information technology security measures designed to protect an individual or organization. The initial attack is followed by more severe attacks for the purpose of causing harm, stealing data, or financial gain. Organizations are prone to different types of attacks that can be either automated or targeted in nature. Table 9-1 describes the most common cyberattack mechanisms faced by organizations today.

Cyberterrorism

Cyberterrorism is the use of computers and information, particularly over the Internet, to recruit others to an organization's cause, cause physical or financial harm, or cause a severe disruption of infrastructure service. Such disruptions can be driven by religious, political, or other motives. Like traditional terrorism tactics, cyberterrorism seeks to evoke very strong emotional reactions, but it does so through information technology rather than a physically violent or disruptive action.

Table 9-1. Common Mechanisms for Cyberattacks

Type	Description
Cross-Site Scripting	An attack that sends malicious scripts into content from reliable websites.
Denial of Service Attack	An attack that focuses on disrupting service to a network in which attackers send high volumes of data until the network becomes overloaded and can no longer function.
Internet of Things Attacks	Internet connectivity across commonly used devices presents a growing number of access points for attackers to exploit. The interconnectedness of things makes it possible for attackers to breach an entry point and use it as a gate to exploit other devices in the network.
Malware	“Malware” refers to various types of attacks, including spyware, viruses, and worms. Malware uses a vulnerability to breach a network when a user clicks a planted dangerous link or email attachment, which is used to install malicious software inside the system.
Man in the Middle	Man-in-the-middle attacks mirror victims and endpoints for online information exchange. In this type of attack, the attacker communicates with the victims, who believe they are interacting with a legitimate endpoint website. The attacker is also communicating with the actual endpoint website by impersonating the victim. As the process goes through, the attacker obtains entered and received information from both the victim and endpoint.
Password Attacks	Passwords are the most widespread method of authenticating access to a secure information system, making them an attractive target for cyber attackers. By accessing a person’s password, an attacker can gain entry to confidential or critical data and systems, including the ability to manipulate and control them.
Phishing	Malicious email messages that ask users to click a link or download a program. Phishing attacks may appear as legitimate emails from trusted third parties.
Rootkits	Rootkits are installed inside legitimate software, where they can gain remote control and administration-level access over a system. The attacker then uses the rootkit to steal passwords, keys, and credentials and retrieve critical data.
SQL Injection	This occurs when an attacker inserts malicious code into a server using server query language (SQL), forcing the server to deliver protected information. This type of attack usually involves submitting malicious code into an unprotected website comment or search box.
Zero-day Exploit	A zero-day exploit refers to exploiting a network vulnerability when it is new and recently announced—before a patch is released and/or implemented.

Source: (Datto 2022)

Cyberterrorism has three main types of objectives:

- **Organizational**—Cyberterrorism with an organizational objective includes specific functions outside of or in addition to a typical cyberattack. Terrorist groups today use the internet on a daily basis. This daily use may include recruitment, training, fundraising, communication, or planning. Organizational cyberterrorism can use platforms such as social media as a tool to spread a message beyond country borders and instigate physical forms of terrorism. Additionally, organizational goals may use systematic attacks as a tool for training new members of a faction in cyber-warfare.
- **Undermining**—Cyberterrorism with undermining as an objective seeks to hinder the normal functioning of computer systems, services, or websites. Such methods include defacing, denying, and exposing information. While undermining tactics are typically used due to high dependence on online structures to support vital operational functions, they typically do not result in grave consequences unless undertaken as part of a larger attack. Undermining attacks on computers include the following (Waldron 2011):
 - Directing conventional kinetic weapons against computer equipment, a computer facility, or transmission lines to create a physical attack that disrupts the reliability of equipment.
 - Using electromagnetic energy, most commonly in the form of an electromagnetic pulse, to create an electronic attack against computer equipment or data transmissions. By overheating circuitry or jamming communications, an electronic attack disrupts the reliability of equipment and the integrity of data.

- Using malicious code directed against computer processing code, instruction logic, or data. Malicious code is unwanted files or programs that can cause harm to a computer or compromise data stored on a computer (Cybersecurity & Infrastructure Security Agency 2019). This type of cyberattack can disrupt the reliability of equipment, the integrity of data, and the confidentiality of communications.
- **Destructive**—The destructive objective for cyberterrorism is what organizations fear most. Through the use of computer technology and the Internet, the terrorists seek to inflict destruction or damage on tangible property or assets, and even death or injury to individuals. There are no cases of pure cyberterrorism as of the date of this plan.

9.1.2 Secondary Hazards

Cyber disruptions can impact all human-caused hazards in numerous and unforeseen ways. Malicious software could harm critical infrastructure operations, including power systems. Cyber disruptions cannot directly influence natural hazards, but it is possible for related systems to be affected. For instance, any computerized systems that manage flood control systems could be impacted by a cyber-event, causing a flood event. Cyber disruptions could impact the environment in a number of ways, as affected systems could stop functioning as intended.

Cyber disruption could also be caused by several other hazards. Earthquakes, flooding, and extreme weather such as severe storms can cause any number of cyber disruption issues through availability of the cyber network. If hardware, computer systems, networks, servers, and backups are damaged due to other hazards, it will cause a cyber disruption for that specific area damaged (State of Idaho Hazard Mitigation Plan 2018).

9.2 HAZARD PROFILE

9.2.1 Past Events

Ada County has been subject to cyberattacks in the past. In May 2019, both the FBI and the Department of Homeland Security were brought in to investigate a ransomware attack that shut down the computer systems of the Ada County Highway District for about 30 hours (Harding 2019). In August 2021, Idaho's governor announced the formation of a new task force to advance cybersecurity initiatives in Idaho (Lewis 2021).

9.2.2 Location

This hazard is not geography-based. Attacks can originate from any computer to affect any other computer in the world. If a system is connected to the Internet or operating on a wireless frequency, it is susceptible to exploitation. Targets of cyberattacks can be individual computers, networks, organizations, business sectors, or governments. Financial institutions and retailers are often targeted to extract personal and financial data that can be used to steal money from individuals and banks. The most affected sectors are finance, energy and utilities, and defense and aerospace, as well as communication, retail, and health care. Both public and private operations are threatened on a near-daily basis by the engineered cyberattacks developed to automatically seek technological vulnerabilities.

9.2.3 Frequency

Cyberattacks are experienced on a daily basis, often without being noticed. Up-to-date virus protection software used in public and private sectors prevents most cyberattacks from becoming successful. Programs that promote

public education on virus protection are an effective way to mitigate cyber-threats. The COVID-19 pandemic resulted in a 600 percent increase in cybercrime, with much of the increase coming from phishing email schemes (Purplesec 2021).

9.2.4 Severity

There is no index for measuring the severity of a cyberattack. If it were measured as a country, then cybercrime—which is predicted to inflict damages totaling \$6 trillion globally in 2021—would be the world’s third-largest economy after the U.S. and China. Experts predict that global cybercrime costs will grow by 15 percent per year over the next five years, reaching \$10.5 trillion annually by 2025—more profitable than the global trade of all major illegal drugs combined. This represents the greatest transfer of economic wealth in history, risks the incentives for innovation and investment, is exponentially larger than the damage inflicted from natural disasters in a year (Morgan 2020).

9.2.5 Warning Time

There is no warning time for cyberattacks. The top vector for spreading cyber-ransom threats is email.

9.3 EXPOSURE AND VULNERABILITY

The entire population of Ada County and all critical assets operated by a computer system are exposed to cyberattacks. Any areas where technological systems exist or are utilized are vulnerable to cyber disruption. This includes county and municipal buildings and infrastructure. All critical facilities operated by electricity and/or a computer system are vulnerable to cyberattacks. Cyberattacks may affect structures if any critical electronic systems suffer service disruption. For instance, a cyberattack may cripple the electronic system that controls a cooling system or pressure system within critical infrastructure. This may result in physical damage to the structure from components overheating, or an explosion if pressure relief systems are rendered inoperable. Such failures may not be immediately recognizable as cyberattacks, appearing at first to be attributable to mechanical malfunctions.

If an attack targets critical infrastructure (such as the power grid) impacting life support systems in a healthcare facility, the effects on life, health, and safety could be dire. Likewise, if a cyberattack affects the emergency response system, such as by rendering a 911 call center or the radio network inoperable, emergency services at the county and local level could be hindered, which may result in increased injury or loss of life during emergency situations. If a cyber-disruption impacts the power or utility grid, individuals with medical needs would be impacted the most. These populations are most vulnerable because many of the life-saving systems they rely on require power. Power redundancy is recommended for the essential and critical facilities that serve vulnerable populations.

Economic impacts can be far-reaching if a cyberattack is prolonged for a week or longer. Cyberattacks can have extensive fiscal impacts. Companies and government services can lose large sums of unrecoverable revenue from site downtime and possible compromise of sensitive confidential data. The average amount of money it takes to recover one record of data is \$120, and the average medium size business recovery costs about \$50,000. Cyber-incidents could result in the theft or modification of important data—including personal, agency, or corporate information—and the sabotage of critical processes, including the provision of basic services by government or private-sector entities.

Ada County will continue to be impacted by cyberattacks in the future. The nature of these attacks is projected to evolve in sophistication over time. The reality remains that many computers and networks in organizations of all sizes and industries around the U.S. will continue to suffer intrusion attempts on a daily basis from viruses and malware that are passed through websites and emails (State of Idaho Hazard Mitigation Plan 2018).

9.4 DEVELOPMENT TRENDS

Development trends across the county can greatly influence and impact future cyber events. As the population increases, the number of connected devices will increase, thus increasing the number of people potentially impacted.

9.5 SCENARIO

A worst-case scenario of cyber disruption would involve an interruption of all critical assets in the County. This would cripple functions in the County, including utilities, emergency services, communication, and vital records. Such an event could last for days or weeks and cost millions of dollars to remedy.

9.6 ISSUES

Issues relating to cyber disruption include the efforts of emergency management to keep up with the rapid advancements made by cyber criminals to hack and disable systems.

10. DAM/CANAL FAILURE

10.1 GENERAL BACKGROUND

10.1.1 Causes of Dam Failure

Partial or full failure of dams has the potential to cause massive destruction to the ecosystems and communities located downstream. Partial or full failure can occur as a result of one or a combination of the following reasons (Federal Emergency Management Agency 2016):

- Overtopping caused by floods that exceed the dam capacity (inadequate spillway capacity)
- Prolonged periods of rainfall and flooding
- Deliberate acts of sabotage (terrorism)
- Structural failure of materials used in dam construction
- Movement and/or failure of the foundation supporting the dam
- Settlement and cracking of concrete or embankment dams
- Piping and internal erosion of soil in embankment dams
- Inadequate or negligent operation, maintenance, and upkeep
- Failure of upstream dams on the same waterway
- Earthquake (liquefaction/landslides).

Many dam failures in the United States have been secondary results of other disasters. The most common causes are earthquakes, landslides, extreme storms, equipment malfunction, structural damage, foundation failures, and sabotage. Poor construction, lack of maintenance and repair, and deficient operational procedures are preventable or correctable by a program of regular inspections. Terrorism and vandalism are serious concerns that all operators of public facilities must plan for; these threats are under continuous review by public safety agencies.

The potential for catastrophic flooding due to dam failures led to passage of the National Dam Safety Act (Public Law 92-367), which requires a periodic engineering analysis of every major dam in the country. The goal of this FEMA-monitored effort is to identify and mitigate the risk of dam failure so as to protect the lives and property of the public.

10.1.2 Irrigation Canals

Much of the arid land of Southwest Idaho was developed through reclamation projects of the early 1900s. These projects included dams to collect water and provide flood control and canals to deliver water to agricultural areas.

Many canals crisscross the state, but they are not generally perceived as flood hazards. New development has encroached on the canals and the areas around them. Numerous housing developments in Ada County lie below large-capacity canals. This proximity creates risk to life, safety and property. Because of widespread ownership issues (private canals, irrigation districts, etc.) data for canal failure events is not readily obtainable. The Silver Jackets technical advisory group has expressed strong interest in monitoring this issue and the Idaho Office of Emergency Management anticipates further discussions regarding this hazard.

10.1.3 Secondary Hazards

Dam failure can cause severe downstream flooding, depending on the magnitude of the failure. Other potential secondary hazards of dam failure are landslides around the reservoir perimeter, bank erosion on the rivers, and destruction of downstream habitat.

10.2 HAZARD PROFILE

10.2.1 Past Events

According to the 2018 State of Idaho Hazard Mitigation Plan, the following dam failures have historically occurred within the State Idaho, some of which impacted the planning area:

- **Ridenbaugh Canal Failure, 1973**—On May 26, 1973, a 30-foot wide break in the Ridenbaugh Canal flooded southeast Boise. Waist deep water flooded 15 homes and the Triangle dairy as water flowed from the breach toward the Boise River.
- **Teton Dam Failure, 1976**—On June 5, 1976, Teton Dam in Fremont County failed (see Figure 10-1). An estimated 80 billion gallons of water were released into the Upper Snake River Valley from the reservoir. Devastating flooding occurred in Wilford, Sugar City, Rexburg, and Roberts; additional significant flooding occurred in Idaho Falls and Blackfoot. At the time of its failure, Teton Dam was brand new, stood 305 feet high, with a crest length of 3,100 feet and a base width of 1,700 feet. The dam was a zoned earth-fill structure with a volume of 10 million cubic yards. The floodwaters threatened American Falls Dam downstream on the Snake River. Dam managers opened the outlet works on American Falls to empty the reservoir and to save American Falls Dam and the string of dams farther down the Snake River.
- **Oakley Dam, 1984**—Oakley Dam nearly overtopped; a canal was constructed to mitigate flooding.
- **Twin Falls County Dam, 1984**—Salmon Falls Creek release caused flooding.
- **Kirby Dam Failure, 1991**—In the summer of 1990, the old log crib structure of the Kirby Dam near Atlanta became unsound and was in jeopardy of failing. The possibility of failure was of special concern due to the large quantity of mine runoff and tailings that had collected behind the dam over the years. A strategy to stabilize the dam developed by the IDWR and the U.S. Forest Service was unsuccessful. On May 26, 1991, Kirby Dam collapsed, cutting off electrical power and blocking the primary access bridge to Atlanta. Sediments containing arsenic, mercury and cadmium were released into the Middle Fork of the Boise River.
- **Brown's Pond Dam, 2010**—Browns Pond Dam overtop and breach during rain on snow event; federal declaration DR-1927.



Figure 10-1. Teton Dam Failure, 1976

10.2.2 Location

Dams

According to Idaho's Dam Safety Program, there are 26 dams in Ada County that impound approximately 1.3 million acre-feet of water. These dams are listed in Table 10-1. Five are operated by federal agencies, and the rest are under the jurisdiction of the state.

Dam failure inundation mapping is not available for every dam in the County. The planning team secured inundation mapping from the Corps of Engineers for the Lucky Peak Reservoir and Blacks Creek Reservoir, which are the dams whose failure is most likely to have the largest impact on the planning area. This inundation area is the focus of the risk assessment for the dam failure hazard. It reflects the normal high pool and maximum inundation area associated with dam operations. Figure 10-2 and Figure 10-3 show the Lucky Peak Dam and Blacks Creek Dam inundation areas, respectively, as used for the risk assessment. The mapped inundation area within each municipality is listed in Table 10-2.

Table 10-1. Dams That Impact Ada County

Name	National ID #	County	Year Built	Dam Type	Purpose	Crest Length (feet)	Height (feet)	Storage Capacity (acre-feet)	Downstream Hazard Potential
Anderson Ranch	ID00279	Elmore	1950	Earth	Multi-use	1350	456	503,500	High
Arrowrock	ID00280	Elmore	1915	Arch	Multi-use	1150	350	283,700	High
Barber	ID00207	Ada	1906	Timber	Multi-use	1225	26	200	High
Blacks Creek	ID00208	Ada	1915	Earth	Multi-use	1700	51.5	3,640	High
Boise Diversion	ID00281	Ada	1908	Gravity	Multi-use	500	57	1,200	High
C J Strike	ID00054	Elmore	1952	Earth	Hydro	3220	115	250,000	High
City of Kuna	ID00688	Ada	2001	Earth	Multi-use	940	18	15	Low
Cottonwood Creek Lower	ID00477	Ada	1961	Earth	Flood Control	1710	15	88	High
Cottonwood Creek Middle	ID00567	Ada	1961	Earth	Flood Control	1210	20	40	High
Cottonwood Creek Upper	ID00565	Ada	1961	Earth	Flood Control	840	18	17	High
Crane Creek Main Dam	ID00478	Ada	1998	Earth	Flood Control	204	64	56,800	Significant
Crane Gulch East Dam	ID00479	Ada	1998	Earth	Flood Control	316	60.4	28	Significant
Hidden Hollow Detention	ID00564	Ada	1997	Earth	Other	375	23	20	Low
Hidden Springs Cell 1A	ID00699	Ada	2007	Earth	Multi-use	--	26	9	Low
Hidden Springs Cell 3A	ID00695	Ada	2007	Earth	Multi-use	--	42.5	81.3	High
High Plains Estates	ID00691	Ada	2005	Erath	Multi-use	340	16	19	Significant
Hubbard	ID00376	Ada	1902	Earth	Irrigation	6000	23	4060	High
IDC-Effluent Storage	ID00490	Ada	1998	Earth	Irrigation	3125	23	105	Significant
Lucky Peak	ID00288	Ada	1954	Earth	Multi-use	2340	340	307,043	High
Micron Dam No 1	ID00415	Ada	1984	Earth	Multi-use	550	14	48	Low
Micron WWT Lagoon No 2	ID00561	Ada	1991	Earth	Other	1720	12	30	Significant
Micron WWT Lagoon No 3	ID00560	Ada	1997	Earth	Other	1540	13	30	Low
Orchard	ID00206	Ada	1902	Earth	Multi-use	2800	43	2,035	Significant
Stewart Gulch Main Fork	ID00480	Ada	1998	Earth	Flood Control	570	76.3	61	High
Swan Falls	ID00049	Ada	1901	Gravity	Hydro	1187	38	7,500	Significant
Terteling	ID00562	Ada	1973	Earth	Multi-use	1770	16	20	Low

Sources: (U.S. Army Corps of Engineers 2020), (Idaho Department of Water Resources 2022)

Table 10-2. Area Within the Mapped Inundation Area

	Area in Lucky Peak Dam Inundation Area (acres)	Area in Blacks Creek Dam Inundation Area (acres)
Boise	11,499	0
Eagle	6,290	0
Garden City	2,702	0
Kuna	0	0
Meridian	1	860
Star	3,222	0
Unincorporated	9,480	1,611
Total	33,195	2,470

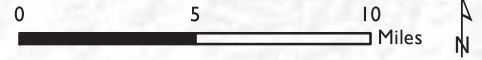
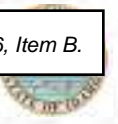











Figure 10-2.
Lucky Peak Dam Failure Inundation Area

Legend

-  Maximum Pool Inundation Area
Area inundated by dam failure occurring when pool elevation is at the top of the impounding structure.
-  Study Area
-  Ada County Boundary
-  City Boundary
-  County Boundary
-  Interstate
-  Major Road
-  Rail
-  Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, IDWR

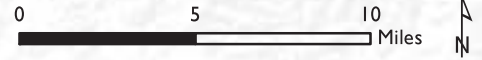
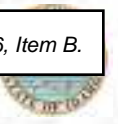


Figure 10-3.

Blacks Creek Dam Failure Inundation Area

Legend

- Maximum Pool Inundation Area
Area inundated by dam failure occurring when pool elevation is at the top of the impounding structure.
- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Road
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, IDWR

Canals

With a water delivery system that includes over 400 miles of canals (see Figure 10-4), Ada County and the Boise area have the highest urban canal density in the United States. These canals are generally well-maintained by their owners/operators because it is their livelihood. However, these facilities can convey flows as high as 2,800 cubic feet per second (cfs), and they have not been evaluated according to engineering standards. The assessment of risk associated with canals is limited in this plan. Canal owners/operators were invited to participate in this plan update process but chose not to at this time. Future updates should continue to seek participation from these entities to better understand the risk posed by these facilities.

10.2.3 Frequency

Dam failure events are infrequent and usually coincide with events that cause them, such as earthquakes, landslides and excessive rainfall and snowmelt. There is a “residual risk” associated with dams. Residual risk is the risk that remains after safeguards have been implemented. For dams, the residual risk is associated with events beyond those that the facility was designed to withstand. However, the probability of any type of dam failure is low in today’s regulatory and dam safety oversight environment.

10.2.4 Severity

The Idaho Dam Safety Program classifies dams and reservoirs in a three-tier hazard rating system based on the potential consequences to downstream life and property that would result from a failure of the dam and sudden release of water (Idaho Department of Water Resources 2021):

- **High Hazard**—A high-hazard rating does not indicate that a dam suffers from an increased risk of failure. This rating means that if failure were to occur, the resulting consequences likely would be a direct loss of human life and extensive property damage. All high-hazard dams must be properly designed, and at all times responsibly maintained and safely operated because the consequences of failure are so great. IDWR considers the inundation of residential structures with flood water from a dam break to a depth greater than or equal to 2 feet to be a sufficient reason for assigning to a dam a high-hazard rating. An up-to-date emergency action plan is a requirement for all owners of high hazard dams.
- **Significant Hazard**—Significant hazard dams are those whose failure would result in significant damage to developed downstream property and infrastructure or that may result in an indirect loss of human life. An example of the latter would be a scenario where a roadway is washed out and people are killed or injured in an automobile crash caused by the damaged pavement.
- **Low Hazard**—Low hazard dams typically are located in sparsely populated areas that would be largely unaffected by a dam breach. Although the dam and works may be totally destroyed, damage to downstream property would be restricted to undeveloped land, with minimal impact on infrastructure.

Table 10-3 shows the Corps of Engineers classification system for the hazard potential of dam failures. The Idaho and Corps of Engineers hazard rating systems are both based only on the potential consequences of a dam failure; neither system takes into account the probability of such failures.

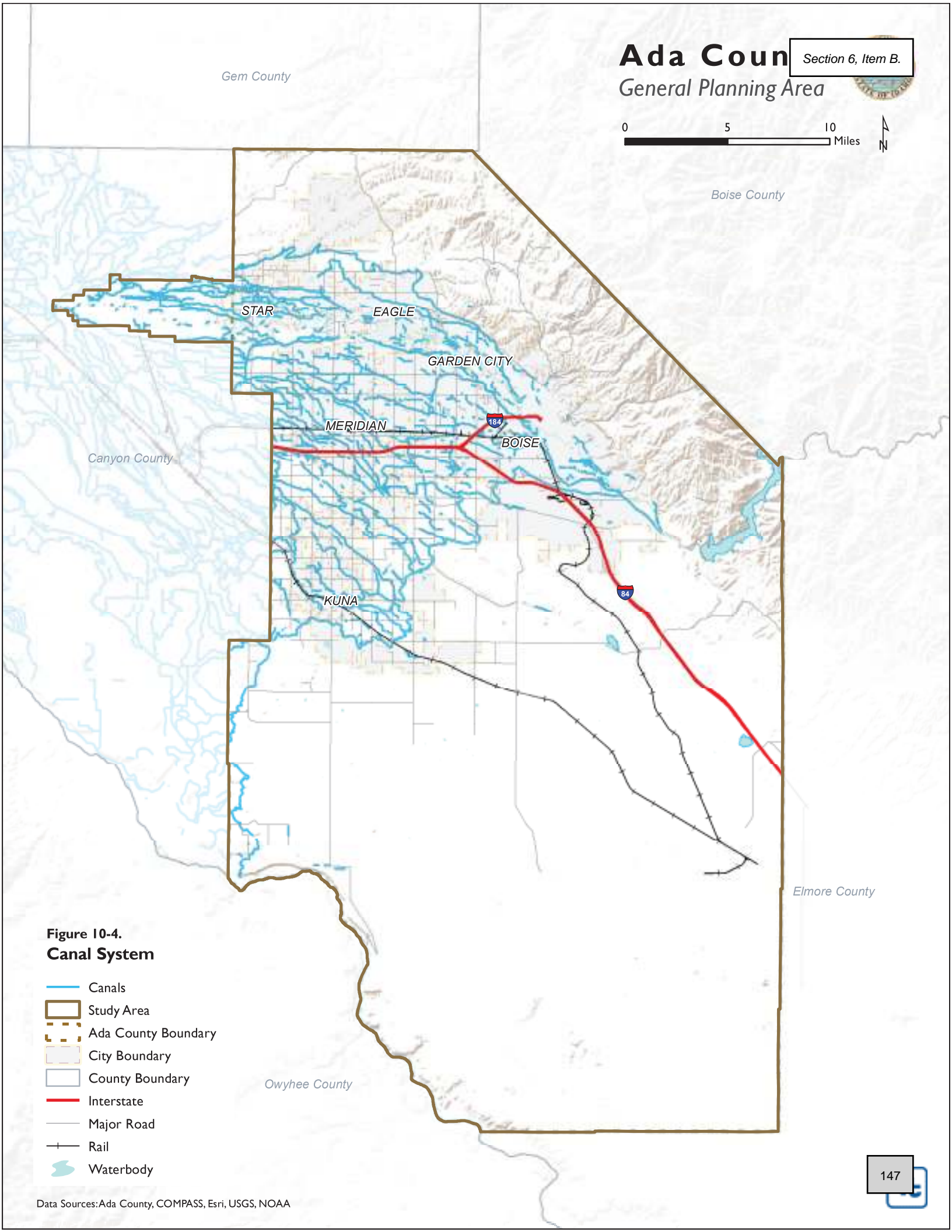
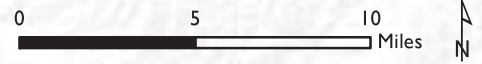
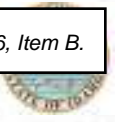


Figure 10-4.
Canal System

- Canals
- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Road
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

Table 10-3. Hazard Potential Classification

Hazard Category ^a	Direct Loss of Life ^b	Lifeline Losses ^c	Property Losses ^d	Environmental Losses ^e
Low	None (rural location, no permanent structures for human habitation)	No disruption of services (cosmetic or rapidly repairable damage)	Private agricultural lands, equipment, and isolated buildings	Minimal incremental damage
Significant	Rural location, only transient or day-use facilities	Disruption of essential facilities and access	Major public and private facilities	Major mitigation required
High	Certain (one or more) extensive residential, commercial, or industrial development	Disruption of essential facilities and access	Extensive public and private facilities	Extensive mitigation cost or impossible to mitigate

- a. Categories are assigned to overall projects, not individual structures at a project.
- b. Loss of life potential based on inundation mapping of area downstream of the project. Analyses of loss of life potential should take into account the population at risk, time of flood wave travel, and warning time.
- c. Indirect threats to life caused by the interruption of lifeline services due to project failure or operational disruption; for example, loss of critical medical facilities or access to them.
- d. Damage to project facilities and downstream property and indirect impact due to loss of project services, such as impact due to loss of a dam and navigation pool, or impact due to loss of water or power supply.
- e. Environmental impact downstream caused by the incremental flood wave produced by the project failure, beyond what would normally be expected for the magnitude flood event under which the failure occurs.

Source: U.S. Army Corps of Engineers, 1995

10.2.5 Warning Time

Warning time for dam failure depends on the cause of the failure. In events of extreme precipitation or massive snowmelt, evacuations can be planned with sufficient time. In the event of a structural failure due to earthquake, there may be no warning time. A dam’s structural type also affects warning time. Earthen dams do not tend to fail instantaneously. Once a breach is initiated, discharging water erodes the dam until either the reservoir water is depleted or the breach resists further erosion. Concrete dams also tend to begin with a partial breach, formed over a few minutes or a few hours (U. S. Army Corps of Engineers 2019). The approximate travel time for water released from Lucky Peak Dam to Capitol Boulevard Bridge in Boise is 2 hours (Ada County Emergency Management 2018). EMCR protocols for flood warning and response to imminent dam failure are included in the the Ada County Flood Response Plan. These protocols are tied to emergency action plans for each dam.

10.3 EXPOSURE

The flood module of Hazus was used for a Level 2 assessment of dam failure. Where possible, the Hazus data was enhanced using GIS data from county, state and federal sources.

10.3.1 Population

All populations living in the mapped dam failure inundation zone would be exposed to the risk of a dam failure. Figure 10-5 and Figure 10-6 summarize the population living in the mapped dam-failure inundation areas for the Lucky Peak Dam and Blacks Creek Dam, respectively.

10.3.2 Property

The value of exposed buildings and contents in each jurisdiction is summarized in Figure 10-7 and Figure 10-8 for the Lucky Peak Dam and Blacks Creek Dam, respectively. Figure 10-9 summarizes the number of structures in the mapped Lucky Peak Dam inundation area by jurisdiction and occupancy class.

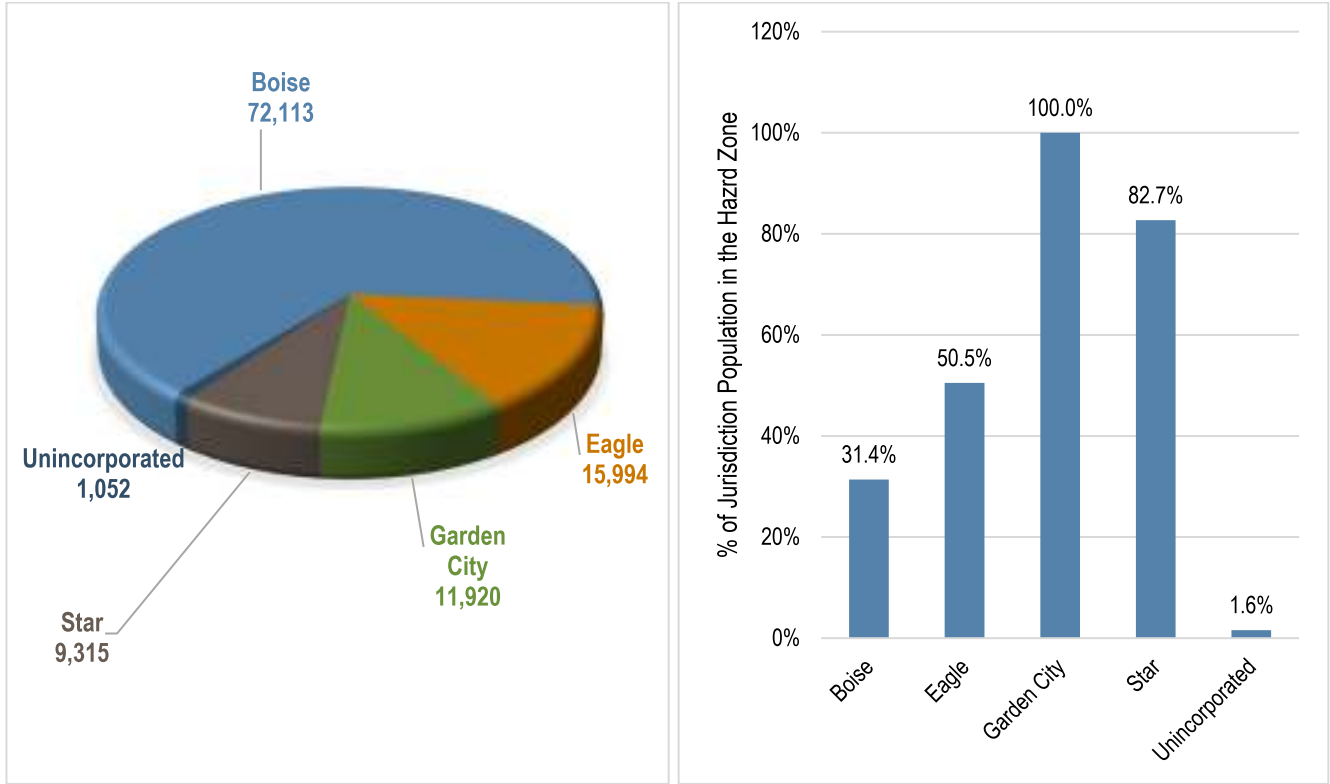


Figure 10-5. Population in the Lucky Peak Dam Failure Inundation Area

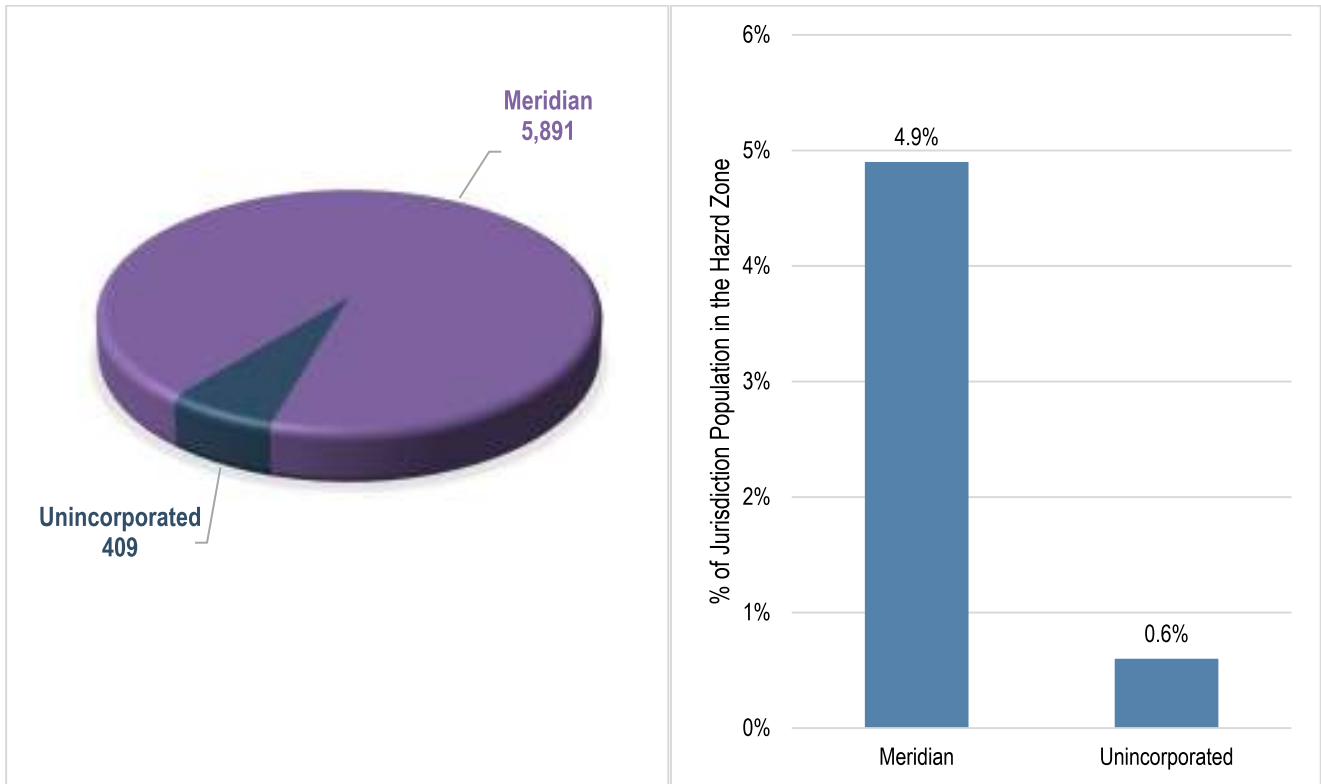


Figure 10-6. Population in the Blacks Creek Dam Failure Inundation Area

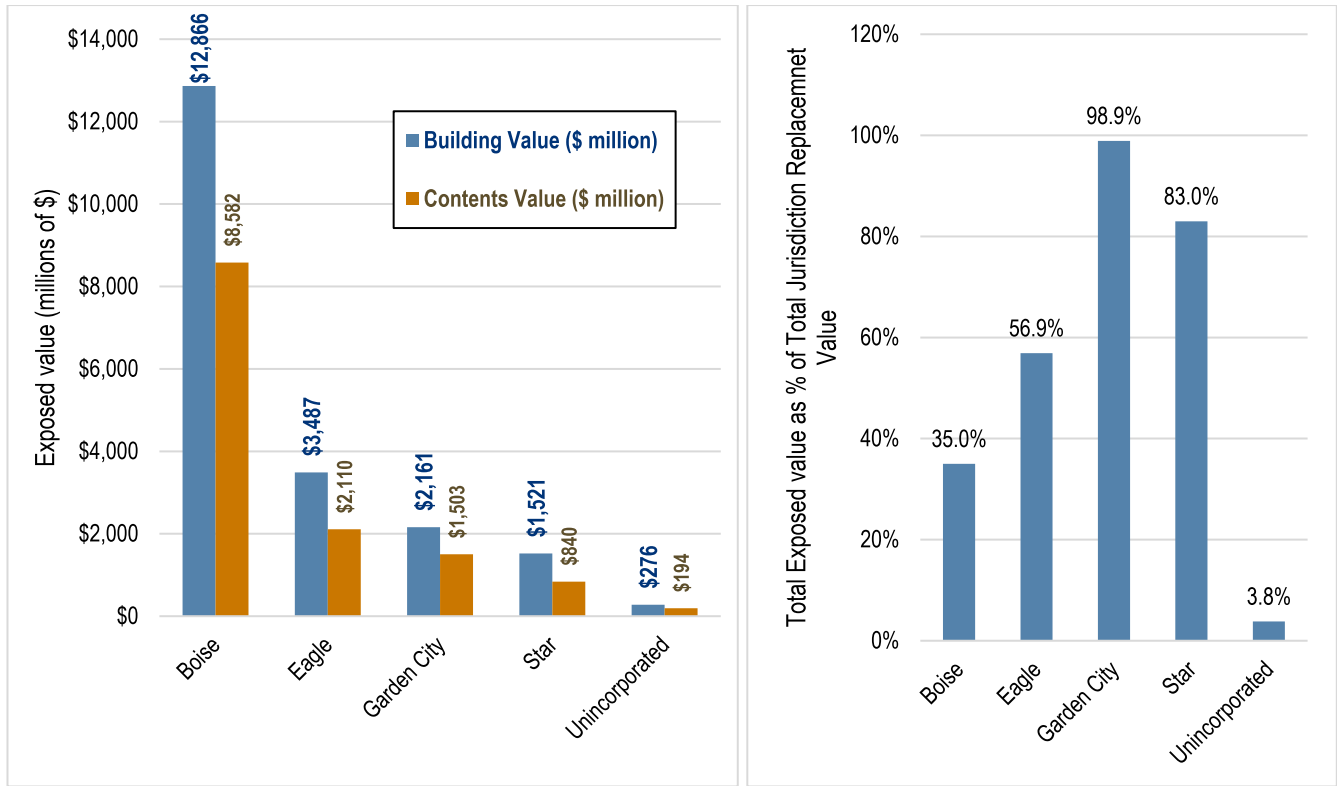


Figure 10-7. Value of Property in the Lucky Peak Dam Failure Inundation Area

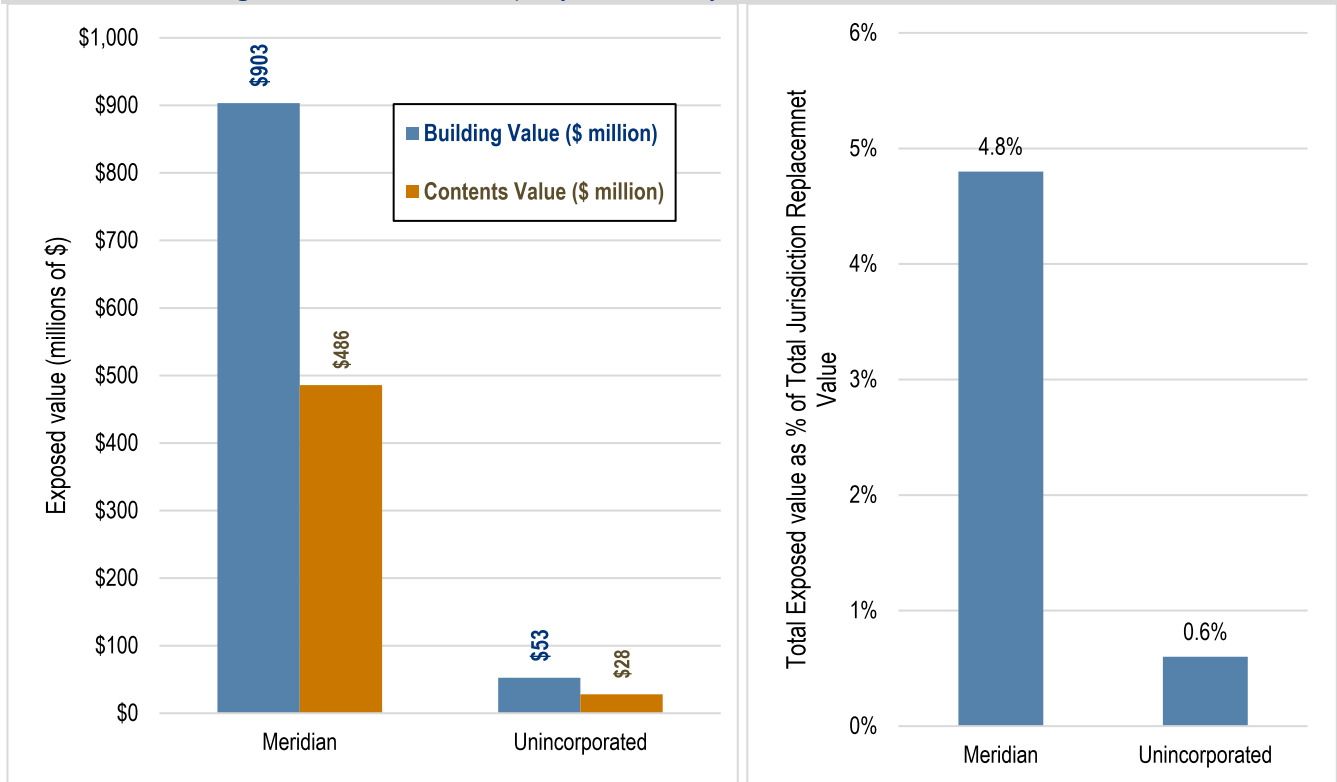


Figure 10-8. Value of Property in the Blacks Creek Dam Failure Inundation Area

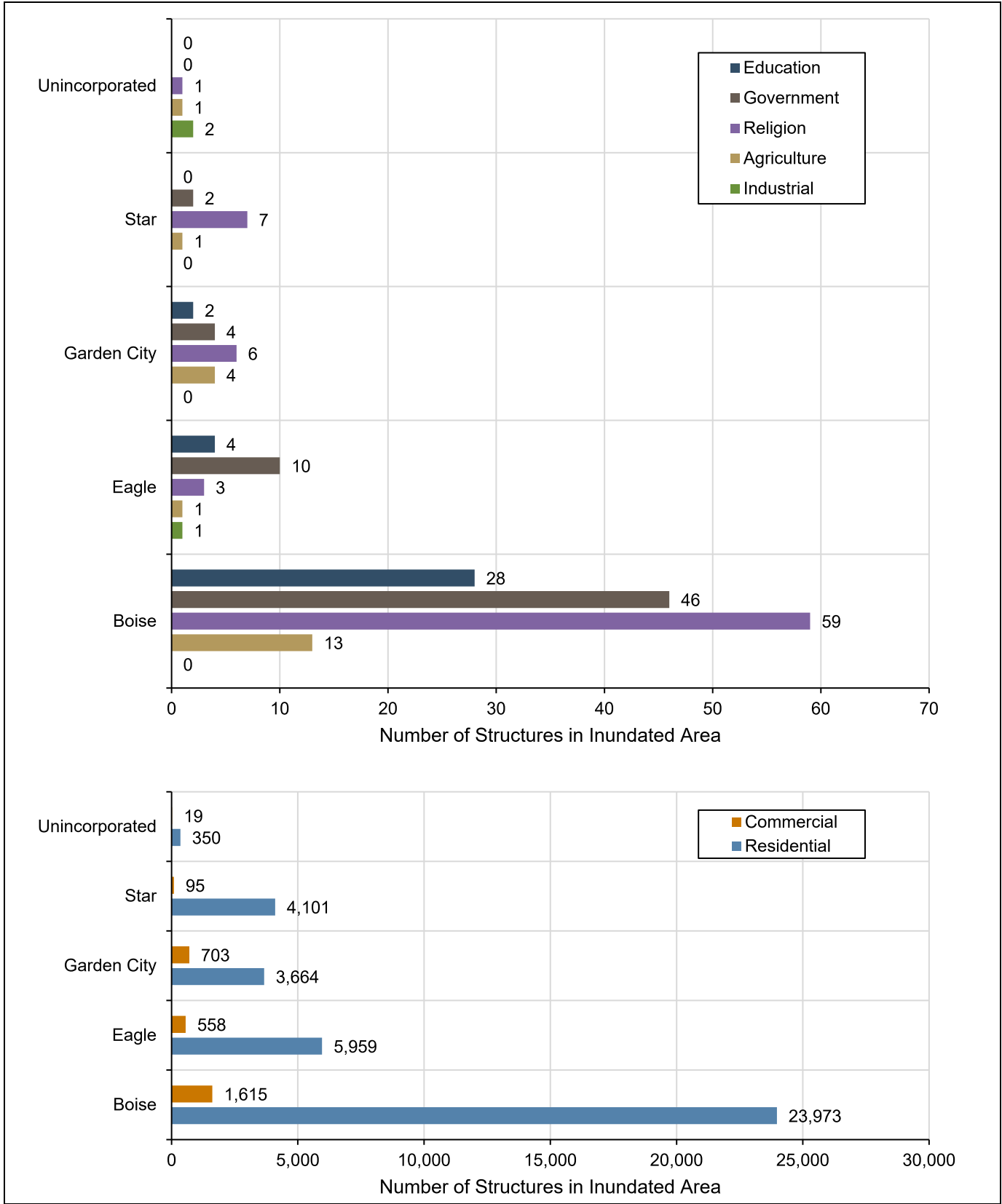


Figure 10-9. Number of Structures Within the Lucky Peak Dam Failure Inundation Area

For the Blacks Creek Dam, the mapped failure inundation area encompasses only the following numbers of structures:

- In unincorporated Ada County—2 agricultural, 2 commercial, 136 residential
- In Meridian—1 education, 1 religion, 8 commercial, 1,907 residential

10.3.3 Critical Facilities

GIS analysis determined that 702 of the planning area’s critical facilities (33 percent of the planning area total) are in the mapped Lucky Peak Dam inundation area and 22 (1 percent) are in the mapped Blacks Creek Dam inundation area. Figure 10-10 summarizes critical facilities in the inundation area for the countywide planning area. Detailed results by jurisdiction are provided in Appendix D.

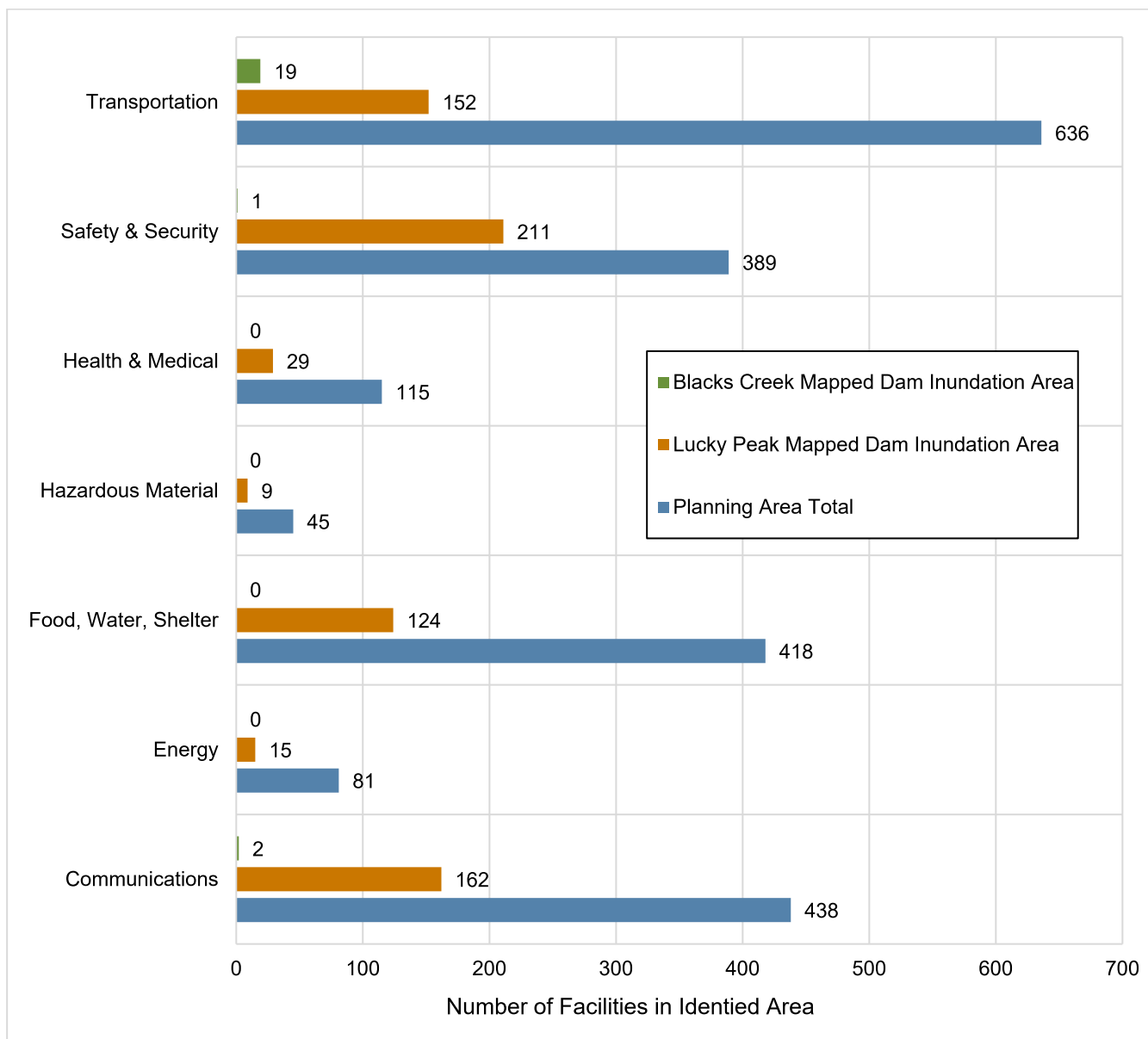


Figure 10-10. Critical Facilities in Dam Failure Inundation Zones and Countywide

10.3.4 Environment

Reservoirs held behind dams affect many ecological aspects of a river. River topography and dynamics depend on a wide range of flows, but rivers below dams often experience long periods of very stable flow conditions or saw-tooth flow patterns caused by releases followed by no releases. Water releases from dams usually contain very little suspended sediment; this can lead to scouring of riverbeds and banks.

The environment would be exposed to a number of risks in the event of dam failure. The inundation could introduce many foreign elements into local waterways. This could result in destruction of downstream habitat and could have detrimental effects on many species of animals, especially endangered species such as salmon.

10.4 VULNERABILITY

The vulnerability of people, property, and critical facilities was evaluated for the combined dam inundation area. Detailed results by jurisdiction are included in Appendix D.

10.4.1 Population

Impacts on persons and households for the combined dam inundation area are estimated through the Level 2 Hazus analysis. Table 10-4 summarizes the results. Vulnerable populations include the elderly and young who may be unable to get themselves out of the inundation area. The vulnerable population also includes those who would not have adequate warning from a television, radio emergency warning system, siren, or cell phone alert.

Table 10-4. Estimated Dam Failure Impacts on Population

	Number of Displaced Residents	Number of Residents Requiring Short-Term Shelter
Lucky Peak Dam Failure Inundation Area		
Boise	66,414	2,577
Eagle	12,642	547
Garden City	11,701	487
Kuna	0	0
Meridian	0	0
Star	9,065	285
Unincorporated	580	38
Total	100,402	3,933
Blacks Creek Dam Failure Inundation Area		
Boise	0	0
Eagle	0	0
Garden City	0	0
Kuna	0	0
Meridian	2,302	161
Star	0	0
Unincorporated	68	7
Total	2,370	168

10.4.2 Property

Figure 10-11 and Figure 10-12 summarize the Level 2 Hazus for property damage from the dam failure hazard for the Lucky Peak Dam and Blacks Creek Dam, respectively.

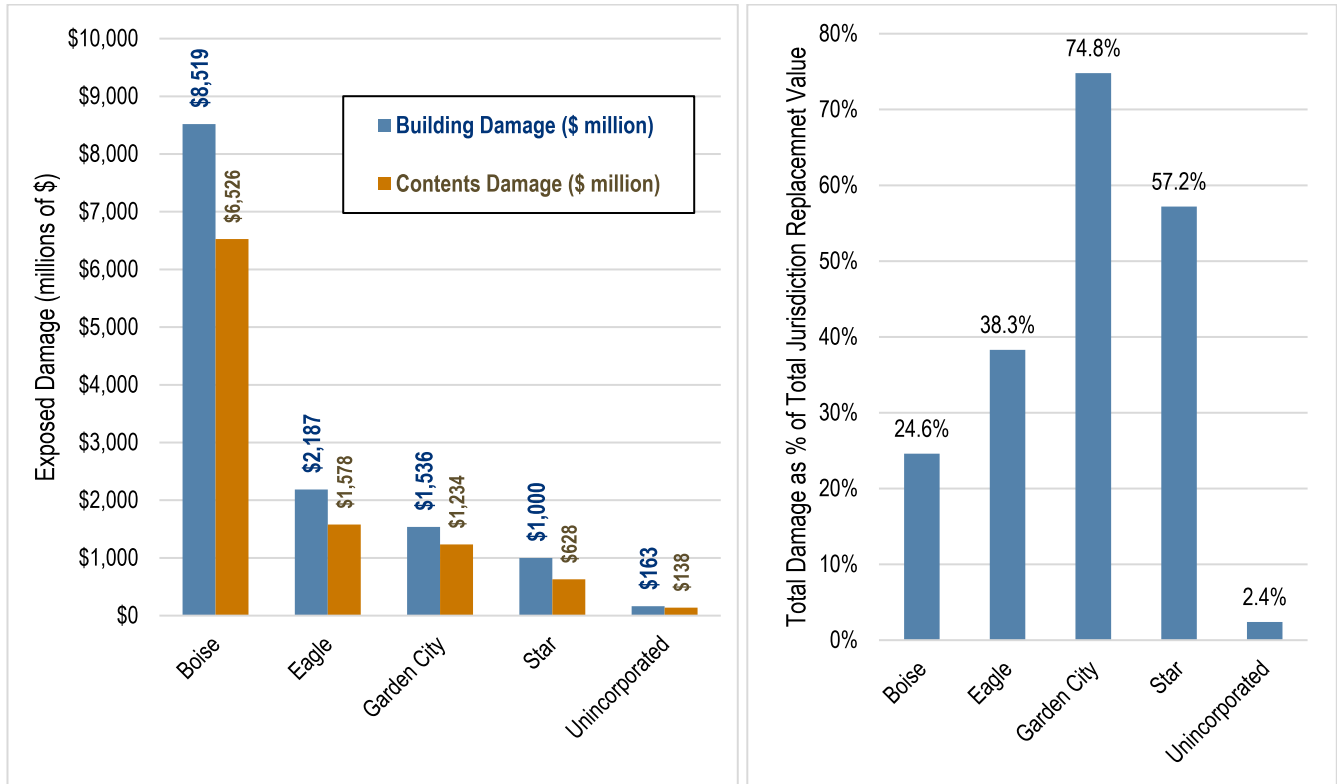


Figure 10-11. Estimated Damage to Property in the Lucky Peak Dam Failure Inundation Area

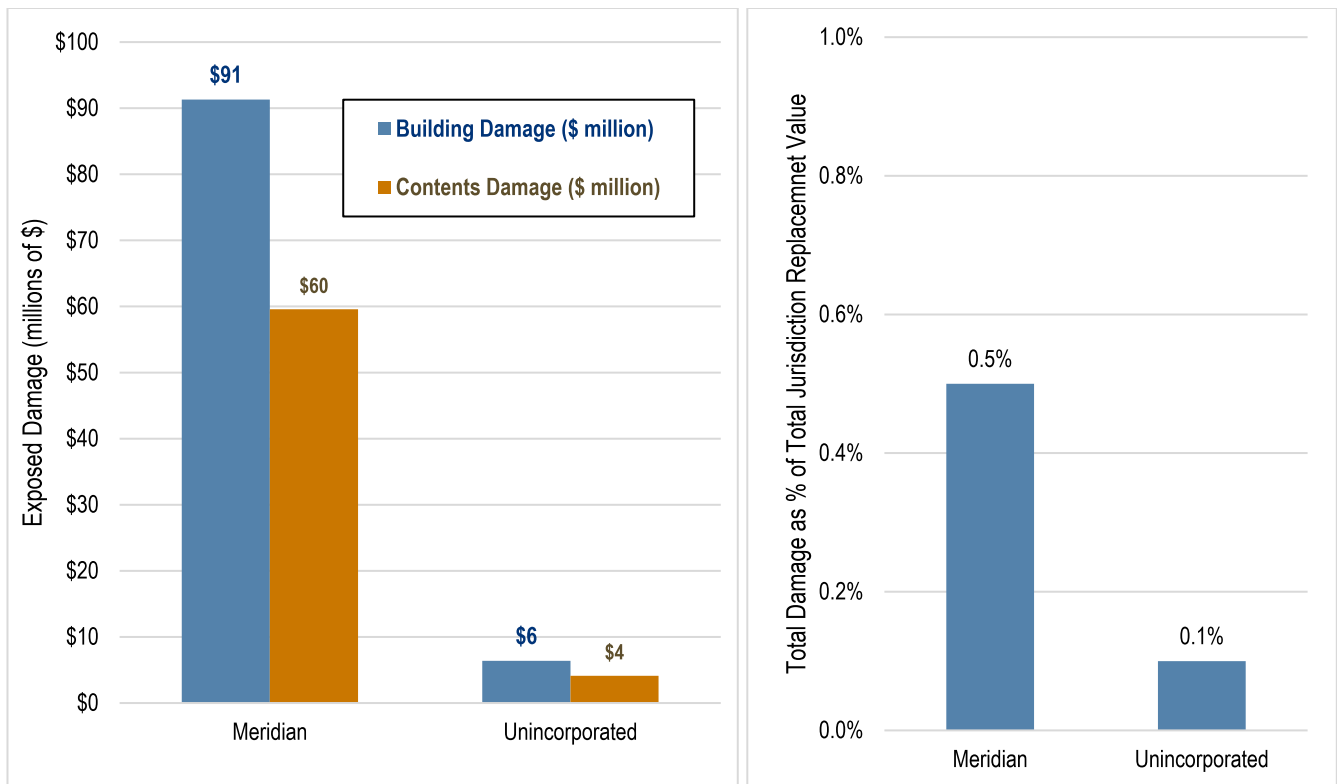


Figure 10-12. Estimated Damage to Property in the Blacks Creek Dam Failure Inundation Area

10.4.3 Critical Facilities

Hazus estimated damage to critical facilities in the dam failure inundation zones is summarized in Figure 10-13 and Figure 10-14.

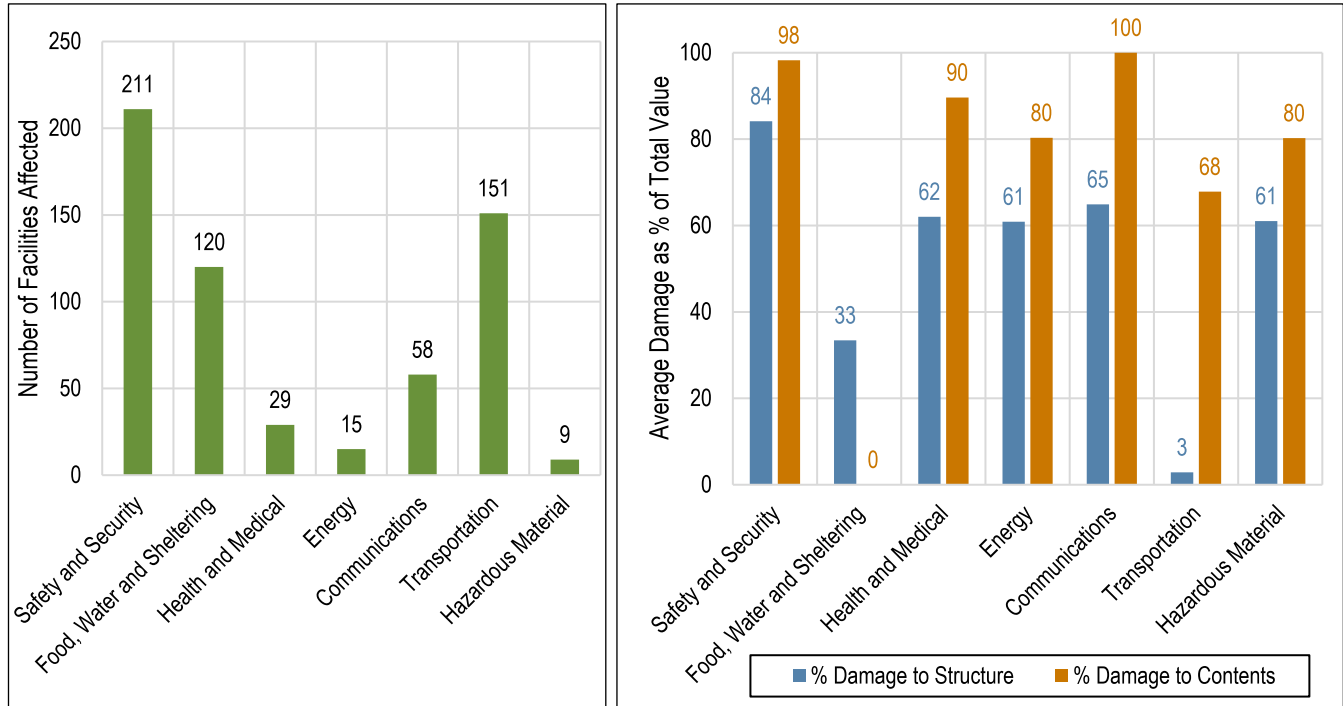


Figure 10-13. Estimated Damage to Critical Facilities from Lucky Peak Dam Failure

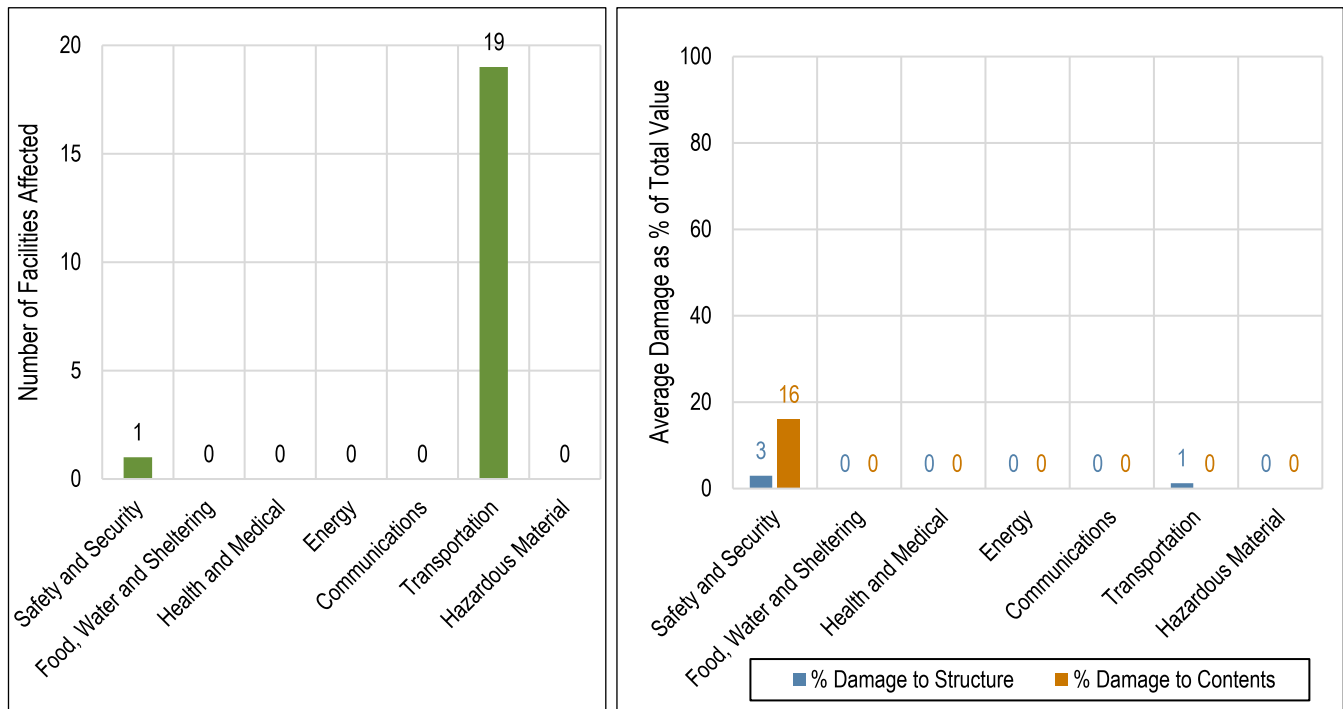


Figure 10-14. Estimated Damage to Critical Facilities from Blacks Creek Dam Failure

10.4.4 Environment

The environment would be vulnerable to a number of risks in the event of dam failure. The inundation could introduce foreign elements into local waterways, resulting in destruction of downstream habitat and detrimental effects on many species of animals, especially endangered species such as coho salmon. The extent of the vulnerability of the environment is the same as the exposure of the environment.

10.5 DEVELOPMENT TRENDS

The value of planning area properties exposed to the dam failure hazard has increased by 0.56 percent (\$132.3 million) since the last hazard mitigation plan update in 2017. This increase in risk exposure can be attributed to the wide extent of the dam failure hazard and a countywide population growth of 13.6 percent in the same period (see Section 4.5.1).

While dam and canal failures are not generally hazards addressed in comprehensive plans, the risk assessment in this plan creates an opportunity for Ada County and its planning partners to consider the inclusion of dam/canal hazards in their comprehensive plans. The municipal planning partners have established comprehensive policies regarding sound land use in identified flood hazard areas. Most of the areas vulnerable to the greatest impacts from dam failure intersect the mapped flood hazard areas. Flood-related policies in the comprehensive plans will help to reduce the risk associated with the dam failure hazard for all future development in the planning area. Future updates to comprehensive plans in the planning area may provide enhancements to floodplain management policies considering the potential impacts from dam or canal failures.

10.6 SCENARIO

An earthquake in the region could lead to liquefaction of soils around a dam. This could occur without warning during any time of the day. A human-caused failure such as a terrorist attack also could trigger a catastrophic failure of a dam.

While the probability of dam failure is very low, the probability of flooding associated with changes to dam operational parameters in response to future climate conditions is higher. Dam designs and operations are developed based on hydrographs from historical records. If these hydrographs experience significant changes over time due to the impacts of future climate conditions, dam design and operations may no longer be valid for the changed condition. This could have significant impacts on dams that provide flood control. Specified release rates and impound thresholds may have to be changed. This would result in increased discharges downstream of these facilities, increasing the probability and severity of flooding.

10.7 ISSUES

Flooding as a result of a dam or canal failure would significantly impact properties and populations in the inundation zones. There is often limited warning time for such failures. These events are frequently associated with other natural hazard events such as earthquakes, landslides or extreme weather, which limits their predictability and compounds the hazard. Important issues associated with dam and canal failure hazards include the following:

- The true level of risk associated with canals in the planning area is not known. The lack of regulatory oversight of these facilities results in a void in the level of available information that can be used to assess risk and vulnerability.
- Owners of canals need to be educated on the benefits of participation in hazard mitigation planning. Their lack of participation in these planning efforts creates a gap in the coverage of these plans.
- Federally regulated dams have an adequate level of oversight and sophistication in the development of emergency action plans for public notification in the unlikely event of failure. However, the protocol for notification of downstream citizens of imminent failure needs to be tied to local emergency response planning.
- Mapping for federally regulated dams is already required and available; however, mapping for non-federally regulated dams that estimates inundation depths is needed to better assess the risk associated with dam failure from these facilities.
- Most dam failure mapping required at federal levels requires determination of the probable maximum flood. While the probable maximum flood represents a worst-case scenario, it is generally the event with the lowest probability of occurrence. For non-federally regulated dams, mapping of dam failure scenarios that are less extreme than the probable maximum flood but have a higher probability of occurrence can be valuable to emergency managers and community officials downstream of these facilities. This type of mapping can illustrate areas potentially impacted by more frequent events to support emergency response and preparedness.
- The concept of residual risk associated with structural flood control projects should be considered in the design of capital projects and the application of land use regulations.
- Addressing security concerns and the need to inform the public of the risk associated with dam failure is a challenge for public officials.
- A buildable-lands analysis that looks at vacant lands and their designated land use would be a valuable tool in helping decision-makers make wise decisions about future development.
- The risk analysis for Blacks Creek Dam is likely overstated due to the approximate methods that were used to generate the inundation mapping. To better understand the true risk from this facility, more detailed mapping and analysis is needed.

11. DROUGHT

11.1 GENERAL BACKGROUND

Drought is a significant decrease in water supply relative to what is needed to sufficiently meet typical demand in each location. It is a normal phase in the climactic cycle of most geographical regions, originating from a deficiency of precipitation over an extended period, usually a season or more. This leads to a water shortage for some activity, group, or environmental sector.

Droughts originate from a deficiency of precipitation resulting from an unusual weather pattern. If the weather pattern lasts a short time (a few weeks or a couple months), the drought is considered short-term. If the weather pattern becomes entrenched and the precipitation deficits last for several months or years, the drought is considered to be long-term. It is possible for a region to experience a long-term circulation pattern that produces drought, and to have short-term changes in this long-term pattern that result in short-term wet spells. Likewise, it is possible for a long-term wet circulation pattern to be interrupted by short-term weather spells that result in short-term drought.

Drought in Idaho is generally associated with a sustained period of low winter snowfall. Such periods result from a temporary change in the large-scale weather patterns in the western United States. Limited snowpacks result in reduced stream flows and groundwater recharge.

Water supply is controlled not only by precipitation, but also by other factors, including evaporation (which is increased by higher than normal heat and winds), transpiration (the use of water by plants), and human use. Idaho’s system of reservoirs and natural storage can buffer the effects of minor events over a few years, but a series of dry winters (or an especially pronounced single low snowfall year) will result in a water shortage. Extended periods of above-average temperatures during spring and summer can increase the impacts of low snowpacks.

11.1.1 Types of Drought

Drought is generally defined based on four ways of measuring it (National Integrated Drought Information Center n.d.):

- **Meteorological drought**—When dry weather patterns dominate an area
- **Agricultural drought**—When crops become affected by drought
- **Hydrological drought**—When low water supply becomes evident in the water system
- **Socioeconomic drought**—When the supply and demand of various commodities is affected by drought
- **Ecological drought**—When natural ecosystems are affected by drought

11.1.2 Monitoring and Rating Drought

National Oceanic and Atmospheric Administration Drought Indices

The National Oceanic and Atmospheric Administration (NOAA) has developed several indices to measure the impacts and severity of meteorological, agricultural, and hydrological drought and to map their extent and locations:

- The *Crop Moisture Index* measures short-term drought weekly to assess impacts on agriculture.
- The *Palmer Z Index* measures short-term drought on a monthly scale.
- The *Palmer Drought Severity Index* is based on long-term weather patterns. The intensity of drought in a given month is dependent on current weather plus the cumulative patterns of previous months. Weather patterns can change quickly, and the Palmer Drought Severity Index can respond fairly rapidly.
- The *Palmer Hydrological Drought Index* quantifies hydrological effects (reservoir levels, groundwater levels, etc.), which take longer to develop and last longer. This index responds more slowly to changing conditions than the Palmer Drought Index.
- The *Standardized Precipitation Index* considers only precipitation. A value of zero indicates the median precipitation amount; the index is negative for drought and positive for wet conditions. The Standardized Precipitation Index is computed for time scales ranging from one month to 24 months.

Each of these indices is meaningful for different sectors of society and the economy. For example an urbanized areas that uses water from reservoirs would be sensitive to hydrological drought characterized by the Palmer Hydrological Drought Index, while unirrigated grazing land would be sensitive to meteorological drought characterized by the Crop Moisture Index. Maps of these indices show drought conditions nationwide at a given point in time. They are not necessarily indicators of any given area's long-term susceptibility to drought. Recent examples of these maps are shown on Figure 11-1.

U.S. Drought Monitor

The U.S. Drought Monitor (USDM) is a map that is updated weekly to show the location and intensity of drought across the country. The USDM uses a five-category system (U.S. Drought Monitor 2022):

- D0—Abnormally Dry
 - Short-term dryness slowing planting, growth of crops
 - Some lingering water deficits
 - Pastures or crops not fully recovered
- D1—Moderate Drought
 - Some damage to crops, pastures
 - Some water shortages developing
 - Voluntary water-use restrictions requested
- D2—Severe Drought
 - Crop or pasture loss likely
 - Water shortages common
 - Water restrictions imposed

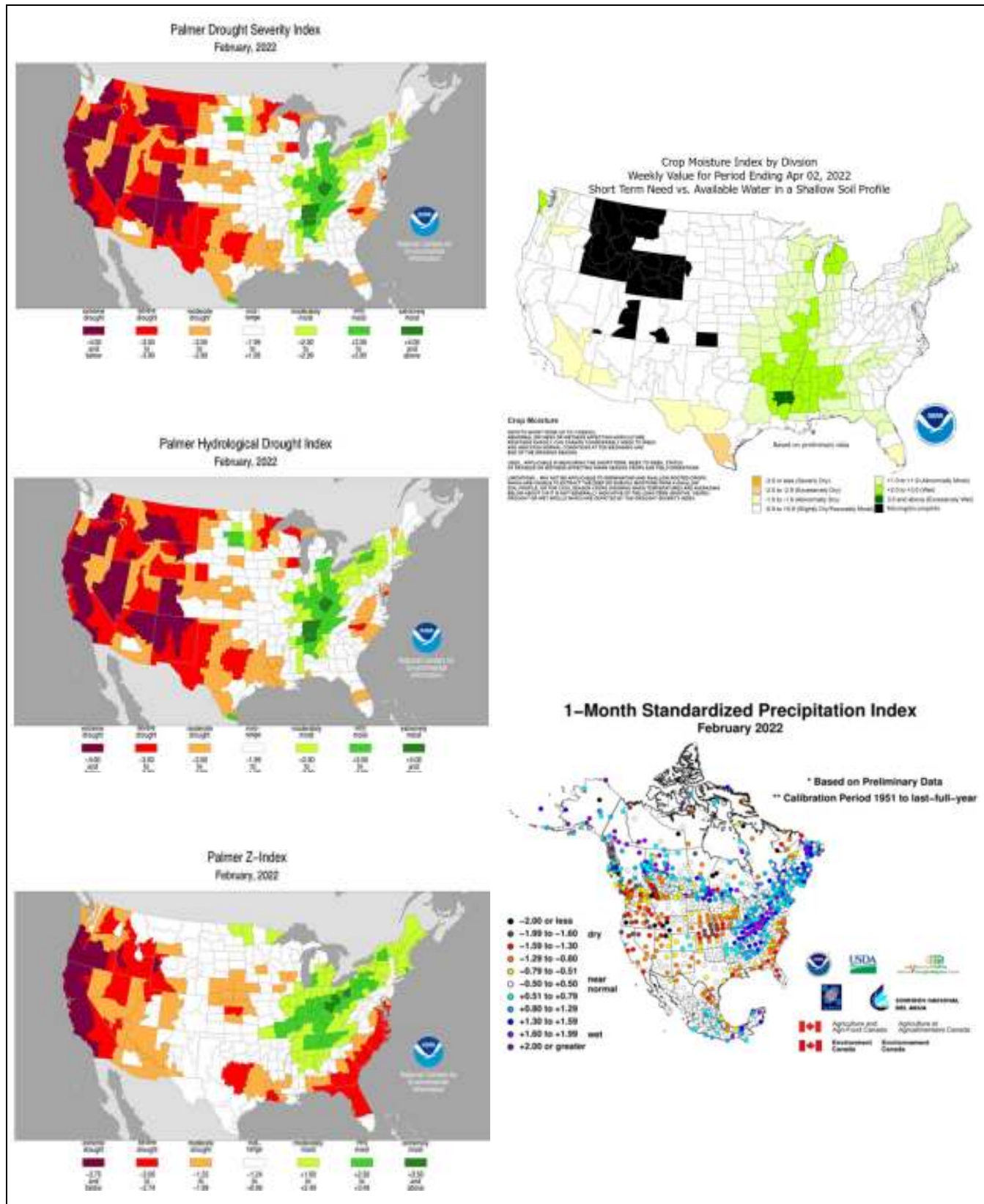


Figure 11-1. Example Drought Index Maps (for February and April 2022)

- D3—Extreme Drought
 - Major crop/pasture losses
 - Widespread water shortages or restrictions
- D4—Exceptional Drought
 - Exceptional and widespread crop/pasture losses
 - Shortages of water creating water emergencies

The USDM categories show experts' assessments of conditions related to drought. These experts check variables including temperature, soil moisture, stream flow, water levels in reservoirs and lakes, snow cover, and meltwater runoff. They also check whether areas are showing drought impacts such as water shortages and business interruptions. Associated statistics show what proportion of various geographic areas are in each category of dryness or drought, and how many people are affected. U.S. Drought Monitor data go back to 2000.

11.1.3 Drought Impacts

Drought can have a widespread impact on the environment and the economy, although it typically does not result in loss of life or damage to structures, as do other natural disasters. The National Drought Mitigation Center uses three categories to describe likely drought impacts:

- **Economic Impacts**—These impacts of drought cost people (or businesses) money. Farmers' crops are destroyed; low water supply necessitates spending on irrigation or drilling of new wells; water-related businesses (such as sales of boats and fishing equipment) may experience reduced revenue; power shutoffs may occur.
- **Environmental Impacts**—Plants and animals depend on water. When a drought occurs, their food supply can shrink, and their habitat can be damaged. Drought also has the potential to increase the risk of wildfire.
- **Social Impacts**—Social impacts include public safety, health, power failures, conflicts between people when there is not enough water to go around, and changes in lifestyle.

The demand that society places on water systems and supplies—such as expanding populations, irrigation, and environmental needs—contributes to drought impacts. Drought can lead to difficult decisions regarding the allocation of water, as well as stringent water use restrictions, water quality problems, and inadequate water supplies for fire suppression. There are also issues such as growing conflicts between agricultural uses of surface water and in-stream uses, surface water and groundwater interrelationships, and the effects of growing water demand on uses of water.

Vulnerability of an activity to drought depends on its water demand and the water supplies available to meet the demand. The impacts of drought vary between sectors of the community in both timing and severity:

- **Water supply**—The water supply sector encompasses urban and rural drinking water systems that are affected when a drought depletes ground water supplies due to reduced recharge from rainfall.
- **Power supply**—Production of all types of energy requires water. Because the energy sector is dependent on water availability, drought can severely impact energy systems.
- **Agriculture and commerce**—The agriculture and commerce sector includes the reduction of crop yield and livestock sizes due to insufficient water supply for crop irrigation and maintenance of ground cover for grazing.

- Environment, public health, and safety**—The environmental, public health, and safety sector is affected by wildfires, which are detrimental to the forest ecosystem and hazardous to the public. It also experiences the impacts of desiccating streams, such as the reduction of in-stream habitats for native species.

11.1.4 Secondary Hazards

The secondary hazard most commonly associated with drought is wildfire. A prolonged lack of precipitation dries out vegetation, which becomes increasingly susceptible to ignition as the drought continues.

11.2 HAZARD PROFILE

11.2.1 Past Events

According to the Idaho State Hazard Mitigation Plan, Ada County has been impacted by drought conditions five times since 1977. The U.S. Department of Agriculture (USDA) issued drought declarations for Ada County in eight of the past 10 years (see Table 11-1). The most prolonged drought in Idaho was during the 1930s. For most of the state, this drought lasted for 11 years (1929-41) despite greater than average stream flows in 1932 and 1938.

Table 11-1. Historical Droughts in Ada County

Year	USDA Drought Declaration(s)	State Drought Emergency Declaration	Part of Federal Disaster Declaration?
2001	Unknown	Yes	No
2005	Unknown	Yes	No
2013	Yes	No	No
2014	Yes	No	No
2015	Yes	No	No
2016	Yes	No	No
2018	Yes	No	No
2019	Yes	No	No
2021	Yes	No	No
2022	Yes	No	No

Sources: (Idaho Department of Water Resources 2021), (FEMA 2022), (State of Idaho Hazard Mitigation Plan 2018)

Of all the statewide drought emergency declarations, only one was also a federal disaster: 1977, the worst single year on record. This event was part of a more widespread water shortage faced by the United States. In Idaho, a lack of winter snowfall resulted in the lowest runoff on record at most gages in the state. Ski resorts were closed for much of the ski season. Irrigation ditches were closed well before the end of the growing season, and crop yields were below normal. Domestic wells in the Big and Little Wood River basins became dry early in April 1977, and many shallow wells in six western Idaho counties became dry in June. Ada County was not included in this drought declaration.

11.2.2 Location

Drought can have the broadest effect of all of Idaho’s hazards, sometimes affecting all regions of the state simultaneously. Although deaths and injuries are rarely direct results, drought can have significant impacts on the

economic, environmental, and social well-being of the state. Idaho’s arid climate predisposes it to periodic drought. Some areas of the state, however, have a greater potential for drought than others. The Idaho Department of Water Resources reports that, based on analyses of historical stream flow records, southeastern Idaho and the upper portions of the Snake River Plain appear to have the highest probability for persistent, severe stream flow deficits.

11.2.3 Frequency

Drought has a high probability of occurrence in the planning area. From January 2000 to April 12, 2022, some part of Ada County experienced a USDM rating of D1 or higher in 655 out of 1,163 weeks (see Figure 11-2). Ada County has also been included in USDA drought disaster declarations eight times since 2012. Historical drought data for the planning area indicate there have been four significant multi-year droughts in the last 40 years (1981 to 2021), amounting to a severe drought every 10 to 11 years on average.

Source: (U.S. Drought Monitor 2022)

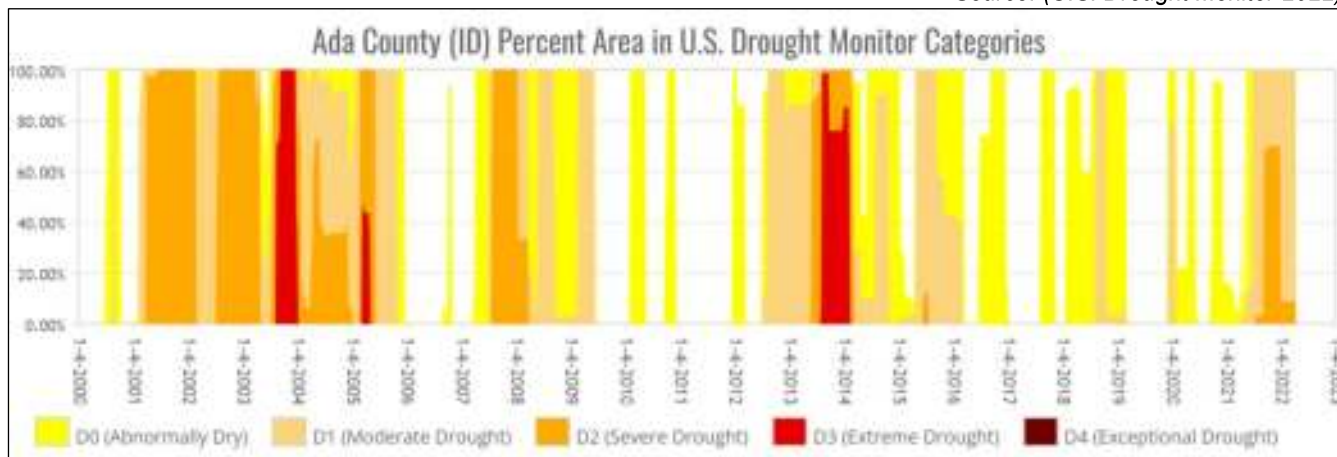


Figure 11-2. Percent of Ada County Affected by Each USDM Rating, 2000 – 2022

11.2.4 Severity

The severity of a drought depends on many factors. Driving factors are the amount and timing of precipitation, duration of below average rainfall, and the size and location of the affected area. The longer the duration of the drought and the larger the area impacted, the more severe the potential impacts.

U.S. Drought Monitor Ratings

Ada County has a history of severe droughts. As shown in Figure 11-2, at least part of the county has experienced severe (D2) or extreme (D3) droughts more than once since 2000.

Drought Impact Reporter

The National Drought Mitigation Center developed the Drought Impact Reporter in response to the need for a national drought impact database for the United States. Information comes from a variety of sources: on-line, drought-related news stories and scientific publications, members of the public who visit the website and submit a

drought-related impact for their region, members of the media, and staff of government agencies. The database is being populated beginning with the most recent impacts and working backward in time.

The Drought Impact Reporter indicates 111 impacts from drought that specifically affected Ada County from January 2011 through March 2022 (National Drought Mitigation Center 2022). The following are the reported numbers of Ada County impacts by category (some incidents are assigned to more than one impact category):

- Agriculture—64
- Business & Industry—4
- Fire—17
- Plants and Wildlife—32
- Relief, Response & Restrictions—62
- Society & Public Health—9
- Tourism & Recreation—9
- Water Supply and Quality—56

11.2.5 Warning Time

Predicting drought depends on the ability to forecast precipitation and temperature. Only generalized warning can take place due to the numerous variables that scientists have not pieced together well enough to make accurate and precise predictions. Determination of when drought begins is based on impacts on water users and assessments of available water supply, including water stored in reservoirs or groundwater basins. Different water agencies have different criteria for defining drought. Some issue drought watch or drought warning announcements.

It is difficult to predict how long a drought will last. Anomalies of precipitation and temperature may last from several months to several decades. How long they last depends on interactions between the atmosphere and the oceans, soil moisture and land surface processes, topography, internal dynamics, and the accumulated influence of weather systems on the global scale.

11.3 EXPOSURE

All people, property and environments in the Ada County planning area would be exposed to some degree to the impacts of moderate to extreme drought conditions.

11.4 VULNERABILITY

11.4.1 Population

The entire population of the county is vulnerable to drought events. Drought can affect people's health and safety, including health problems related to low water flows, poor water quality, or dust. Other possible impacts include recreational risks; effects on air quality; diminished living conditions related to energy, air quality, and hygiene; compromised food and nutrition; and increased incidence of illness and disease (Centers for Disease Control and Prevention 2020).

The planning partnership has the ability to minimize any impacts on residents and water consumers in the county should several consecutive dry years occur. This would be accomplished through proactive water conservation and identification and utilization of alternative water supplies. No significant life or health impacts are anticipated as a result of drought within the planning area.

11.4.2 Property

No structures will be directly affected by drought conditions, though some structures may become vulnerable to wildfires, which are more likely following years of drought. Droughts can also have significant impacts on landscapes, which could cause a financial burden to property owners. However, these impacts are not considered critical in planning for impacts from the drought hazard.

11.4.3 Critical Facilities

Critical facilities as defined for this plan will continue to be operational during a drought. The risk to the critical facilities inventory will be largely aesthetic. For example, when water conservation measures are in place, landscaped areas will not be watered and may die. These aesthetic impacts are not considered significant.

11.4.4 Environment

Groundwater and Streams

Drought generally does not affect groundwater sources as quickly as surface water supplies, but groundwater supplies generally take longer to recover. Reduced precipitation during a drought means that groundwater supplies are not replenished at a normal rate. This can lead to a reduction in groundwater levels and problems such as reduced pumping capacity or wells going dry. Shallow wells are more susceptible than deep wells. Reduced replenishment of groundwater affects streams, especially during the summer when there is little or no precipitation. Reduced groundwater levels mean that even less water will enter streams when stream flows are lowest. Where stream flows are reduced, development that relies on surface water may seek to establish new groundwater wells, which could further increase groundwater depletion.

Other Potential Losses

Environmental losses from drought are associated with damage to plants, animals, wildlife habitat, and air and water quality; forest and range fires; degradation of landscape quality; loss of biodiversity; and soil erosion. Some of the effects are short-term and conditions quickly return to normal following the end of the drought. Other environmental effects linger for some time or may even become permanent. Although environmental losses are difficult to quantify, growing public awareness and concern for environmental quality has forced public officials to focus greater attention and resources on these effects. The following are potential impacts of drought:

- Wildlife habitat may be degraded through the loss of wetlands, lakes and vegetation. The degradation of landscape quality, including increased soil erosion, may lead to a more permanent loss of biological productivity.
- Drought conditions greatly increase the likelihood of wildfires, a major threat to timber resources, structures, and other property.
- Water shortages and severe drought conditions would have a significant impact on Native American tribes' way of life in fishing and farming subsistence.

- Scenic resources in the county are vulnerable to the increased likelihood of wildfires associated with droughts.
- Drying up or dying off of forests could reduce ecological and eco-tourist values.
- Shortage of water supply can have significant economic impacts.
- Drought conditions often are associated with harmful algal blooms—specifically cyanobacteria that can cause severe illness and death in mammals.

11.4.5 Economic Impact

Drought causes the most significant economic impacts on industries that use water or depend on water for their business, most notably agriculture and related sectors (forestry, fisheries, and waterborne activities), power plants (including geothermal power production), and oil refineries. In addition to losses in yields in crop and livestock production, drought is associated with increased insect infestations, plant diseases, and wind erosion. Drought can lead to other losses because so many sectors are affected—losses that include reduced income for farmers and reduced business for retailers and others who provide goods and services to farmers. This leads to unemployment, increased credit risk for financial institutions, capital shortfalls, and loss of tax revenue. Prices for food, energy, and other products may also increase as supplies decrease.

11.5 DEVELOPMENT TRENDS

Because all of the planning area is exposed to the drought hazard, the increase in exposed population and property since the last hazard mitigation plan update is equal to the countywide trends since then: a 13.6 percent increase in population, a 19.4 percent increase in number of general building stock structures, and a 46.7 percent increase in assessed property value. However, since droughts typically do not cause physical harm to people or structures, there would be no increase in vulnerability to drought from this increased exposure.

The principal resource impacted by drought conditions is water. The Ada County 2025 Comprehensive Plan has established goals and policies to preserve and protect groundwater and surface waters. These goals and policies equip the county to deal with the impacts of future droughts on future development.

11.6 SCENARIO

An extreme multiyear drought could impact the region. Combinations of low precipitation and unusually high temperatures could occur over several consecutive years. Intensified by such conditions, extreme wildfires could break out throughout Ada County, increasing the need for water. Surrounding communities, also in drought conditions, could increase their demand for water supplies relied upon by the planning partnership, causing social and political conflicts. If such conditions persisted for several years, the economy of Ada County could experience setbacks, especially in water dependent industries.

11.7 ISSUES

The planning team has identified the following drought-related issues:

- Identification and development of alternative water supplies
- Utilization of groundwater recharge techniques to stabilize the groundwater supply

- The probability of increased drought frequencies and durations due to future climate conditions
- The promotion of active water conservation even during non-drought periods.
- Public education on water conservation.

12. EARTHQUAKE

12.1 GENERAL BACKGROUND

An earthquake is the vibration of the earth's surface that follows a release of energy in the earth's crust. This energy can be generated by a sudden dislocation of segments of the crust or by a volcanic eruption. Most destructive quakes are caused by dislocations of the crust. The crust may first bend and then, when the stress exceeds the strength of the rocks, break and snap to a new position. In the process of breaking, vibrations called "seismic waves" are generated. These waves travel outward from the source of the earthquake along the surface and through the earth at varying speeds, depending on the material through which they move.

12.1.1 Earthquake Location

The location of an earthquake is commonly described by its focal depth and the geographic position of its epicenter. The focal depth of an earthquake is the depth from the Earth's surface to the region where an earthquake's energy originates (the focus or hypocenter). The epicenter of an earthquake is the point on the Earth's surface directly above the hypocenter.

12.1.2 Earthquake Geology

Faults

Earthquakes tend to occur along faults, which are zones of weakness in the earth's crust. Even if a fault zone has recently experienced an earthquake, there is no guarantee that all the stress has been relieved. Another earthquake could still occur. In fact, relieving stress along one part of a fault may increase stress in another part.

Small, local faults produce lower magnitude quakes, but ground shaking can be strong and damage can be significant in areas close to the fault. In contrast, large regional faults can generate earthquakes of great magnitudes but, because of their distance and depth, they may result in only moderate shaking in an area.

Faults are more likely to have future earthquakes on them if they have more rapid rates of movement, have had recent earthquakes along them, experience greater total displacements, and are aligned so that movement can relieve the accumulating tectonic stresses. Geologists classify faults by their relative hazards. "Active" faults, which represent the highest hazard, are those that have ruptured to the ground surface during the Holocene period (about the last 11,000 years). "Potentially active" faults are those that displaced layers of rock from the Quaternary period (the last 1,800,000 years).

Determining if a fault is "active" or "potentially active" depends on geologic evidence, which may not be available for every fault. Most of the seismic hazards are associated with well-known active faults. However,

inactive faults or concealed faults (referred to as “blind-thrust” faults), where no displacements have been recorded, also have the potential to reactivate or experience displacement along a branch sometime in the future.

Horizontal Extension

Most earthquakes occur at the boundaries of Earth’s tectonic plates. Idaho is not on a plate boundary, but many faults in the state have produced large earthquakes. Tectonic forces in the western part of the North American plate combine with high heat from the underlying mantle to stretch the crust in a northeast-southwest direction. In response, the rigid crust breaks and shifts along faults, and the fault movement produces earthquakes. Stretching, or horizontal extension, of the crust produces a type of dipping fault called a “normal” fault (Figure 12-1).

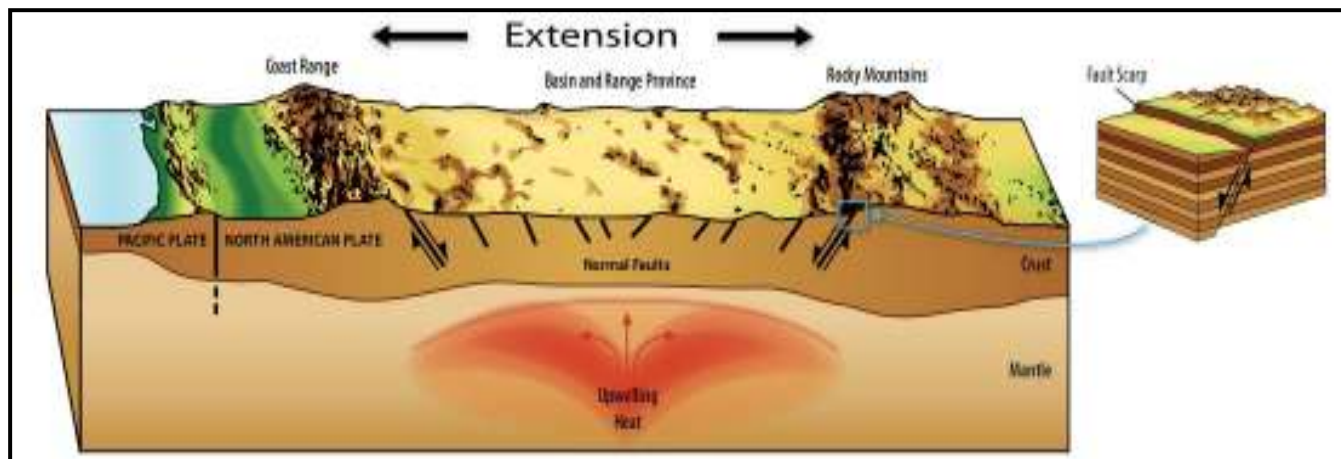


Figure 12-1. Horizontal Extension Creates Normal Faults

The movement of normal faults is characterized by the crust above the fault plane moving down relative to the crust below the fault plane. This up/down movement differs from movement on strike-slip faults like the San Andreas Fault in California, where the crust on one side of the fault slides horizontally past the crust on the other side. Earthquakes in Idaho can be generated by movement on a variety of types of faults, but the faults that are considered capable of generating large surface-faulting earthquakes are mainly normal faults.

Seismic Conditions in Idaho

Most earthquakes in Idaho occur along a belt of seismicity called the Intermountain Seismic Belt that extends from the northwest corner of Montana, along the Idaho-Wyoming border, through Utah, and into southern Nevada. Along most of its length, the Intermountain Seismic Belt straddles the boundary between the Basin and Range Province to the west and more stable parts of North America to the east.

The eastern Snake River Plain formed as the North American continent passed over a “hotspot” of hot rock rising from the earth’s mantle. This plume is called the “Yellowstone hotspot” because it is presently located in the Yellowstone National Park area. Beginning along the Oregon-Nevada-Idaho border about 14.5 million years ago and continuing as recently as 600,000 years ago in Yellowstone, the hotspot melted crustal rocks passing over it, creating huge volumes of magma that erupted to form explosive calderas. These calderas are progressively younger to the northeast because of the continuous movement of the North American continent over the hotspot.

In an area around the eastern Snake River Plain, the Yellowstone hotspot has interacted with the Basin and Range Province to create a pattern of earthquakes and mountain building called the Yellowstone Tectonic Parabola (Figure 12-2). A major branch of the Intermountain Seismic Belt extends from the Yellowstone area westward across central Idaho. This zone includes at least eight major active faults and has been the site of numerous earthquake swarms and seismic events, including the two largest historic earthquakes in the Intermountain West.

The pattern of earthquake activity in eastern and central Idaho seems to be related to interactions between the Yellowstone hotspot and the Basin and Range Province to the west. Geologists divide the region into five tectonic belts based on historical earthquake activity and the age and amount of movement on prehistoric faults. Within the Snake River Plain, earthquake activity is very low. Earthquake activity increases and faults become younger away from the Plain, culminating in a band of active faults that forms the tectonic parabola on the east.

12.1.3 Earthquake Classifications

Earthquakes are typically classified in one of two ways: By the amount of energy released, measured as magnitude; or by the impact on people and structures, measured as intensity.

Magnitude

An earthquake's magnitude is a measure of the energy released at the source of the earthquake. It is commonly expressed by ratings on the moment magnitude scale (M_w). Most people have heard about the Richter scale, but the moment magnitude scale is a more accurate measure of magnitude (U.S. Geological Survey 2021). It is based on the product of the distance a fault moved and the force required to move it.

An earthquake's magnitude is a measure of the energy released at the source of the earthquake. Magnitude is commonly expressed by ratings on the moment magnitude scale (M_w), the most common scale used today (U.S. Geological Survey 2021). This scale is based on the total moment release of the earthquake (the product of the distance a fault moved and the force required to move it). The scale is as follows:

- Great— $M_w > 8$
- Major— $M_w = 7.0 - 7.9$
- Strong— $M_w = 6.0 - 6.9$
- Moderate— $M_w = 5.0 - 5.9$
- Light— $M_w = 4.0 - 4.9$
- Minor— $M_w = 3.0 - 3.9$
- Micro— $M_w < 3$

Intensity

The most used intensity scale is the modified Mercalli intensity scale. Ratings of the scale as well as the perceived shaking and damage potential for structures are shown in Table 12-1.

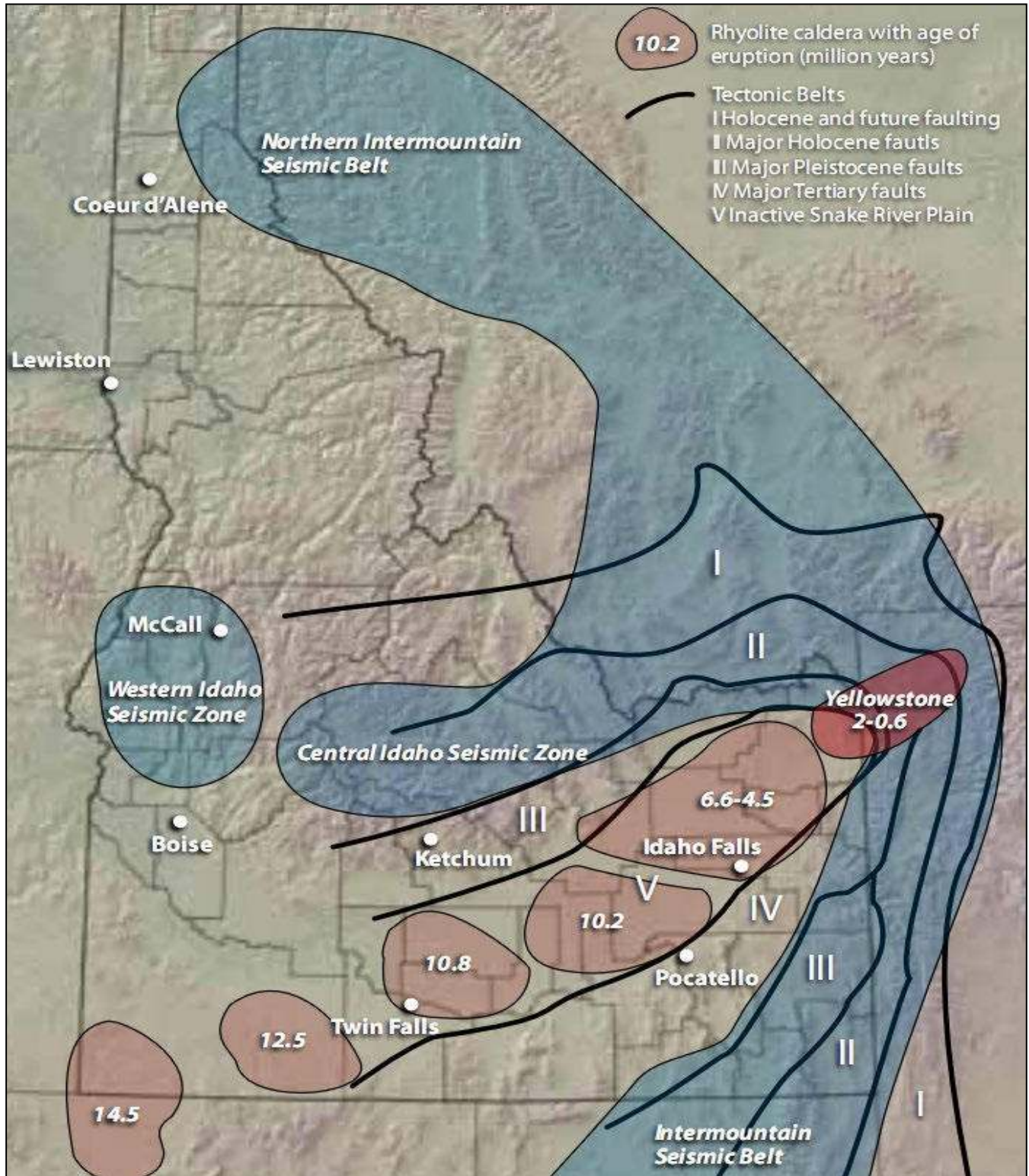


Figure 12-2. Volcanic and Tectonic Features of the Yellowstone-Snake River Plain System

Table 12-1. Mercalli Scale and Peak Ground Acceleration Comparison

Modified Mercalli Scale	Perceived Shaking	Potential Structure Damage		Estimated PGA ^a (%g)
		Resistant Buildings	Vulnerable Buildings	
I	Not Felt	None	None	<0.17%
II-III	Weak	None	None	0.17% - 1.4%
IV	Light	None	None	1.4% - 3.9%
V	Moderate	Very Light	Light	3.9% - 9.2%
VI	Strong	Light	Moderate	9.2% - 18%
VII	Very Strong	Moderate	Moderate/Heavy	18% - 34%
VIII	Severe	Moderate/Heavy	Heavy	34% - 65%
IX	Violent	Heavy	Very Heavy	65% - 124%
X – XII	Extreme	Very Heavy	Very Heavy	>124%

a. PGA = peak ground acceleration. Measured in percent of g, where g is the acceleration of gravity
 Sources: (U.S. Geological Survey 2021); (U.S. Geological Survey 2011)

The modified Mercalli intensity scale is generally represented visually using shake maps, which show the expected ground shaking at any given location produced by an earthquake with a specified magnitude and epicenter. An earthquake has only one magnitude and one epicenter, but it produces a range of ground shaking at sites throughout the region, depending on the distance from the earthquake, the rock and soil conditions at sites, and variations in the propagation of seismic waves from the earthquake due to complexities in the structure of the earth’s crust. A shake map shows the variation of ground shaking in a region immediately following significant earthquakes (for technical information about shake maps see (U.S. Geological Survey 2021)).

12.1.4 Ground Motion

Earthquake hazard assessment is based on expected ground motion. During an earthquake when the ground is shaking, it also experiences acceleration. The peak acceleration is the largest increase in velocity recorded by a particular station during an earthquake. Estimates are developed of the annual probability that certain ground motion accelerations will be exceeded; the annual probabilities can then be summed over a time period of interest.

The most commonly mapped ground motion parameters are horizontal and vertical peak ground accelerations (PGA) for a given soil type. PGA is a measure of how hard the earth shakes, or accelerates, in a given geographic area. Instruments called accelerographs record levels of ground motion due to earthquakes at stations throughout a region. PGA is measured in g (the acceleration due to gravity) or expressed as a percent acceleration force of gravity (%g). These readings are recorded by state and federal agencies that monitor and predict seismic activity.

Maps of PGA values form the basis of seismic zone maps that are included in building codes such as the International Building Code. Building codes that include seismic provisions specify the horizontal force due to lateral acceleration that a building should be able to withstand during an earthquake. PGA values are directly related to these lateral forces that could damage “short period structures” (e.g. single-family dwellings). Longer period response components determine the lateral forces that damage larger structures with longer natural periods (apartment buildings, factories, high-rises, bridges). Table 12-1 lists damage potential and perceived shaking by PGA factors, compared to the Mercalli scale.

12.1.5 USGS Earthquake Mapping Programs

National Seismic Hazard Map

National maps of earthquake shaking hazards provide information for creating and updating seismic design requirements for building codes, insurance rate structures, earthquake loss studies, retrofit priorities and land use planning. After thorough review of the studies, professional organizations of engineers update the seismic-risk maps and seismic design requirements contained in building codes (Brown et al., 2001). The USGS updated the National Seismic Hazard Maps in 2018. New seismic, geologic, and geodetic information on earthquake rates and associated ground shaking were incorporated into these revised maps. The 2018 map, shown in Figure 12-3, represents the best available data as determined by the USGS.

Source: (U.S. Geological Survey 2021)

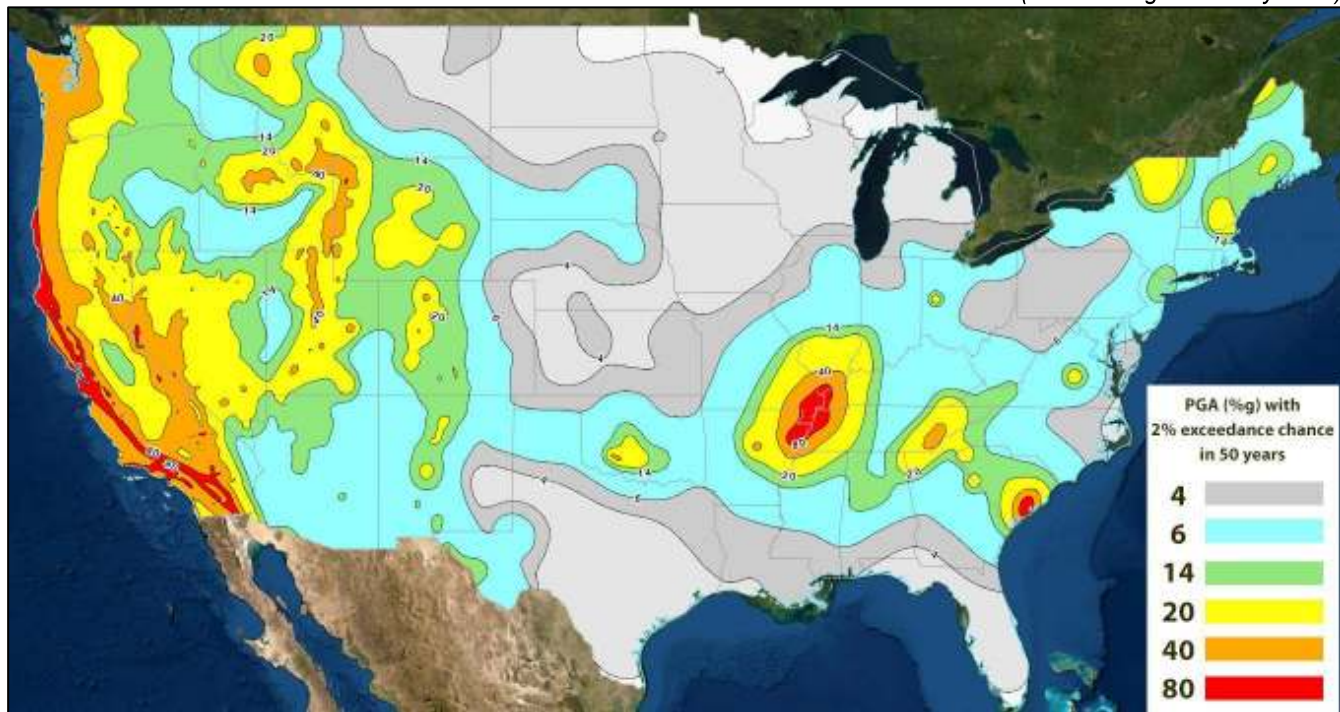


Figure 12-3. Peak Acceleration (%g) with 2% Probability of Exceedance in 50 Years

ShakeMaps

The USGS Earthquake Hazards Program produces maps called ShakeMaps that map ground motion and shaking intensity following significant earthquakes. ShakeMaps focus on the ground shaking caused by the earthquake, rather than on characteristics of the earthquake source, such as magnitude and epicenter. An earthquake has only one magnitude and one epicenter, but it produces a range of ground shaking at sites throughout the region, depending on the distance from the earthquake, the rock and soil conditions at sites, and variations in the propagation of seismic waves from the earthquake due to complexities in the structure of the earth’s crust.

A ShakeMap shows the extent and variation of ground shaking immediately across the surrounding region following significant earthquakes. Such mapping is derived from peak ground motion amplitudes recorded on seismic sensors, with interpolation where data are lacking based on estimated amplitudes. Color-coded

instrumental intensity maps are derived from empirical relations between peak ground motions and Modified Mercalli intensity. In addition to the maps of recorded events, the USGS creates the following:

- Scenario ShakeMaps of hypothetical earthquakes of an assumed magnitude on known faults
- Probabilistic ShakeMaps, based on predicted shaking from all possible earthquakes over a 10,000-year period. In a probabilistic map, information from millions of scenario maps is combined to make a forecast for the future. The maps indicate the ground motion at any given point that has a given probability of being exceeded in a given timeframe, such as a 100-year (1-percent-annual chance) event.

12.1.6 Liquefaction and Soil Types

Soil liquefaction occurs when water-saturated sands, silts or gravelly soils are shaken so violently that the individual grains lose contact with one another and float freely in the water, turning the ground into a pudding-like liquid. Building and road foundations lose load-bearing strength and may sink into what was previously solid ground. Unless properly secured, hazardous materials can be released, causing significant damage to the environment and people.

The National Earthquake Hazard Reduction Program (NEHRP) creates maps based on soil characteristics to help identify locations subject to liquefaction. The maps classify soils as follows (Federal Emergency Management Agency 2022a):

- Type A—Hard rock (igneous rock).
- Type B—Rock (volcanic rock).
- Type C—Very dense soil and soft rock (sandstone).
- Type D—Stiff soil (mud).
- Type E—Soft soil (artificial fill).
- Type F—Soils requiring site-specific evaluations.

The areas that are commonly most affected by ground shaking have NEHRP Soils D, E and F. In general, these areas are also most susceptible to liquefaction.

12.1.7 Secondary Hazards

The actual movement of the ground in an earthquake is seldom the direct cause of injury or death. Casualties generally result from falling objects and debris as the shocks shake buildings and other structures. Disruption of communications, electrical power supplies and gas, sewer and water lines should be expected. Earthquakes may trigger fires, dam failures, landslides or releases of hazardous material, compounding their disastrous effects.

12.2 HAZARD PROFILE

12.2.1 Past Events

The historical record demonstrates that earthquakes can occur throughout Idaho. Most earthquakes felt by Idaho residents have occurred within the Yellowstone Tectonic Parabola. Notable exceptions include large earthquakes in northern Nevada, eastern Washington and western Montana. The 2008 magnitude-6.0 Wells, Nevada earthquake was felt by thousands in Boise, Twin Falls and Pocatello. Because large earthquakes are felt over hundreds of miles, the locations of some early events not recorded by seismographs are uncertain. Table 12-2 lists past seismic events felt in Idaho.

Table 12-2. Historical Earthquakes 5.0+ Strongly Felt in Idaho

Year	Magnitude	Location	Description
1872	7.4	Lake Chelan, WA	Largest quake in Washington State; felt strongly in north Idaho.
1884	6.0	Bear Lake Valley	The earthquake damaged houses considerably in Paris, Idaho.
1905	6.0	SW Idaho or NE NV	Considerable damage at Shoshone, Idaho.
1913	5.0	Adams County	Broke windows and dishes.
1914	6.0	UT-ID State Line	Intensity VII; between Ogden, Utah and Montpelier, Idaho.
1915	7.75	Pleasant valley, NV	Considerable damage in southwest Idaho a hundred miles from epicenter.
1916	6.0	North of Boise	Boise residents rushed into the street; chimneys fell.
1918	5.0	North Idaho	Widely felt near Sandpoint.
1925	6.6	SW Montana	Felt throughout Idaho.
1927	5.0	Connor Creek	On Idaho-Oregon border west of Cascade.
1934	6.6	Hansel valley, UT	Largest Utah event on record; 20 miles south of Idaho border. 2 fatalities.
1935	6.25	Helena, MT	Extensive damage. Multiple large events throughout Idaho. 4 fatalities.
1936	6.4	Walla Walla, WA	Damaging earthquake; widely felt in Idaho.
1942	5.0	Sandpoint area	Cracked plaster; rock fall onto railroad tracks.
1944	6.0	Central Idaho	Knocked people to ground in Custer County.
1945	6.0	Central Idaho	Epicenter near Clayton. Slight damage in Idaho City and Weiser.
1947	6.25	Southwest Montana	Epicenter in Gravelly range, 10 miles north of Idaho border.
1947	5.0	Central Idaho	Several large cracks formed in a well-constructed brick building.
1959	7.3	Hebgen Lake, MT	Major event, extensive fault scarps. 20 miles from Idaho. 29 fatalities.
1960	5.0	Soda Springs	Foundations and plaster cracked.
1962	5.7	Cache Valley	Heavily damaged older buildings.
1963	5.0	Clayton	Plaster cracked and windows broken.
1969	5.0	Ketchum	Cement floors cracked.
1975	6.1	NW Yellowstone	Widely felt in Yellowstone region.
1975	6.1	Pocatello Valley	Some 520 homes damaged in Ridgedale and Malad City.
1983	6.9	Borah Peak	Major event, 21 mile surface scarp, 11 buildings destroyed, 2 fatalities.
1984	5.0	Challis	Largest of many Borah Peak aftershocks.
1994	5.9	Draney Peak	Remote area on Wyoming border. One injury from falling flower pot.
1999	5.3	Lima, MT	In Red Rock valley just north of Idaho border.
2005	5.6	Dillon, MT	Felt across Idaho.
2008	6.0	Wells, NV	Felt strongly throughout southern Idaho.
2014	7.4	Near Challis, ID	Sequence of earthquakes about 15 miles northwest of a portion of the Lost River Fault.
2015	5	Near Challis, ID	Tremors were felt across Idaho, from McCall to the Treasure Valley.
2017	5.8	Near Lincoln, MT	No damage or injuries.
2017	5.3	Near Soda Springs, ID	Moderate shaking in southeast Idaho. No reports of damage or death.
2017	5.0	Near Georgetown, ID	Aftershock of the magnitude 5.3 earthquake near Soda Springs.
2020	6.5	Stanley, ID	No injuries and only minor damage reported.

Sources: (State of Idaho Hazard Mitigation Plan 2018); (U.S. Geological Survey 2022)

12.2.2 Location

Faults

Ada County is situated near two fault zones: the western Idaho fault system and Owyhee Mountains fault system. The Squaw Creek, Big Flat and Jake Creek faults are active structures near Emmett, about 25 miles north of Boise. The most important of these, the Squaw Creek fault, has geologic evidence for movement as recently as 7,600 years ago. About 57 miles southeast of Boise and 13 miles from Grand View is the Water Tank fault. Recently discovered in 1997, this fault was active as recently as 3,000 years ago. Other faults present in and around Ada County do not appear to be active.

NEHRP Soils

NEHRP soil types define locations that will be significantly impacted by an earthquake. NEHRP soils data is available for a portion of the Ada County planning area, as shown in Figure 12-4. In general, areas with NEHRP Soils D, E and F are also susceptible to liquefaction.

Liquefaction Zones

Liquefaction mapping is available for the same portion of the Ada County planning area as the NEHRP soil mapping, as shown in Figure 12-5.

12.2.3 Frequency

Thousands of earthquakes have been recorded in Idaho. Table 12-3 summarizes statistics for the past three years. The 3,501 events in that period represent an average of 1,167 per year. This average includes the many aftershocks that occur after large earthquakes. The number of small earthquakes (magnitude less than 3) is greatly under-reported in Idaho because of limited seismic monitoring.

Table 12-3. Idaho Earthquake Statistics 2019-2021

	Number of Events		Number of Events
Magnitude 2-3	3,053	Magnitude 5-6	0
Magnitude 3-4	418	Magnitude 6-7	1
Magnitude 4-5	29	Total	3,501

Source: (Volcano Discovery 2022)

Seismologists use a historical distribution of extreme values to estimate the probability of shaking at or above a given intensity over a 50-year year exposure time. Using this methodology, Idaho Geological Survey has estimated the maximum shaking on unstable sites within 300 miles of Boise as follows:

- A >50-percent chance of a midrange intensity event (VI or greater) in any 50-year period.
- A 33-percent chance of intensity VII in any 50-year period.
- An 18-percent chance of intensity VIII in any 50-year period
- A 10-percent chance of intensity IX in any 50-year period

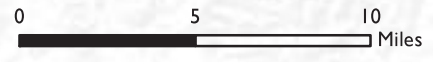











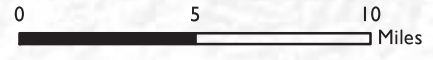
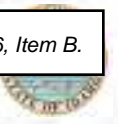


Figure 12-4.
NEHRP Soil Classes

-  C (Dense soil/soft rock)
-  D (Stiff soil)
-  E (Soft clay)
-  Study Area
-  Ada County Boundary
-  City Boundary
-  County Boundary
-  Interstate
-  Major Road
-  Rail
-  Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, Idaho Geological Survey



Boise County

Canyon County

STAR

EAGLE

GARDEN CITY

MERIDIAN






BOISE









KUNA

Elmore County

Owyhee County

Figure 12-5.
Liquefaction Susceptibility

-  Very Low
-  Low
-  Moderate
-  High
-  Very High

-  Study Area
-  Ada County Boundary
-  City Boundary
-  County Boundary
-  Interstate
-  Major Road
-  Rail
-  Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, Idaho Geological Survey



12.2.4 Severity

The severity of an earthquake can be expressed in terms of intensity or magnitude (see Section 12.1.3). It is directly correlated to the stability of the ground close to the event's epicenter. The difference in severity between intensity ranges can be immense. A poorly built structure on a stable site is far more likely to survive a large earthquake than a well-built structure on an unstable site. Thorough geotechnical site evaluations should be the rule of thumb for new construction in the planning area until credible soils mapping becomes available.

The USGS creates ground motion maps based on current information about fault zones, showing the PGA that has a certain probability (2 percent or 10 percent) of being exceeded in a 50-year period. The PGA is measured in numbers of g's (the acceleration associated with gravity). Figure 12-6 shows the PGAs with a 2-percent exceedance chance in 50 years in southern Idaho. Ada County is in a medium-risk area.

Source: (U.S. Geological Survey 2014)

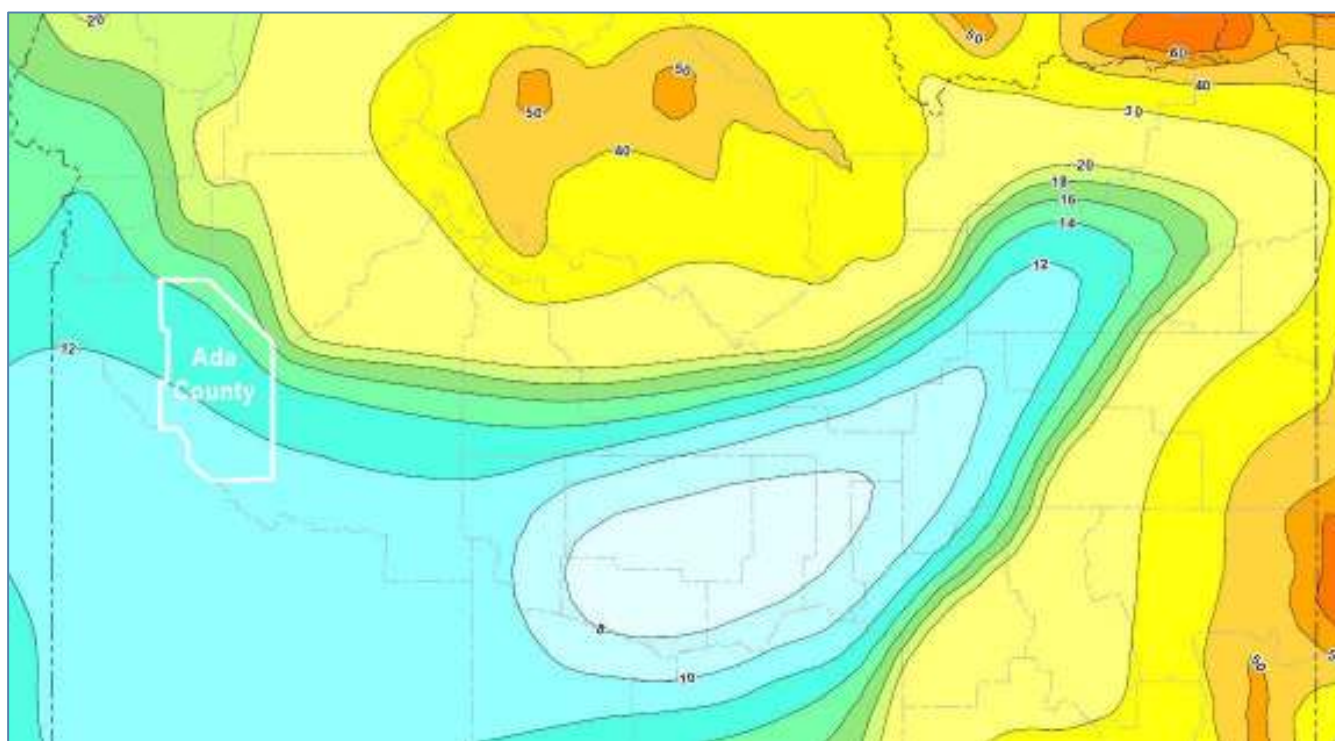


Figure 12-6. PGA (in %g) with 2-Percent Probability of Exceedance in 50 Years

12.2.5 Warning Time

Earthquakes can last from a few seconds to over five minutes. They may be one-time events or occur as a series of tremors over several days. There is currently no reliable way to predict the day or month that an earthquake will occur at any given location. Research is being done with warning systems that use the low energy waves that precede major earthquakes. These potential warning systems give approximately 40 seconds notice that a major earthquake is about to occur. The warning time is very short, but it could allow for someone to get under a desk, pause hazardous or high-risk work, or initiate protective automated systems in structures or critical infrastructure.

12.3 EXPOSURE

12.3.1 Population

The entire population of the planning area is potentially exposed to direct damage from earthquakes or indirect impacts such as business interruption, road closures, and loss of function of utilities.

12.3.2 Property

The Ada County Assessor reports 174,802 buildings in Ada County, with a total assessed value of \$123 billion. Most of the buildings (94.8 percent) are residential. All buildings are considered to be exposed to the earthquake hazard.

12.3.3 Critical Facilities

Since the entire planning area has exposure to the earthquake hazard, all critical facilities components are considered to be exposed. The breakdown of the numbers and types of facilities is presented in Table 4-3. Critical facilities constructed on NEHRP Type D and E soils are particularly at risk from seismic events.

12.3.4 Environment

The entire planning area is exposed to the earthquake hazard, including all natural resources, habitat, and wildlife.

12.4 VULNERABILITY

Earthquake vulnerability data for the risk assessment was generated using a Hazus Level 2 (user-defined) analysis for the for the events listed in Table 12-4. The countywide analysis results are summarized in the sections below. Detailed results by jurisdiction can be found in Appendix D.

Table 12-4. Earthquakes Modeled for Risk Assessment

Event	Magnitude	Focal Depth	Epicenter Location	PGA
100-Year Probabilistic Earthquake	N/A	N/A	N/A	Figure 12-7
500-Year Probabilistic Earthquake	N/A	N/A	N/A	Figure 12-8
Squaw Creek Fault Scenario	7.03	9.0 km	44.146°N 116.238°W	Figure 12-9
Big Flat Jake Creek Scenario	6.81	9.0 km	44.259°N 116.347°W	Figure 12-10

12.4.1 Population

Estimated Impacts on Persons and Households

Hazus estimated impacts on persons and households in the planning area for the four selected earthquake scenarios as summarized in Table 12-5.

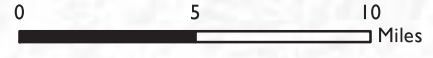
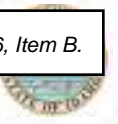


Figure 12-7.
100-Year Probabilistic Event

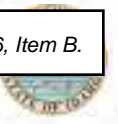
Legend

Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Road
- ++ Rail
- Waterbody



Boise County

Canyon County

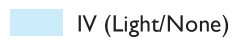

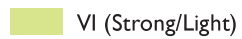



Elmore County

Owyhee County









Figure 12-8.
500-Year Probabilistic Event

Legend

Mercalli Intensity Scale

-  IV (Light/None)
-  V (Moderate/Very Light)
-  VI (Strong/Light)
-  VII (Very Strong/Moderate)
-  VIII (Severe/Moderate-Heavy)
-  IX (Violent/Heavy)

Intensity scale described as:
(perceived shaking / potential damage)

-  Study Area
-  Ada County Boundary
-  City Boundary
-  County Boundary
-  Interstate
-  Major Road
-  Rail
-  Waterbody

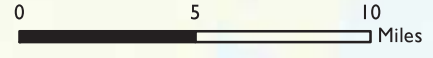
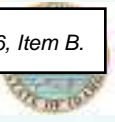


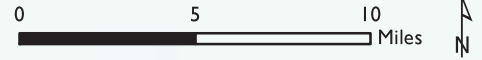
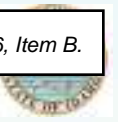
Figure 12-9.
Squaw Creek Fault
M7.03 Earthquake
Scenario

Legend

- Mercalli Intensity Scale
- IV (Light/None)
 - V (Moderate/Very Light)
 - VI (Strong/Light)
 - VII (Very Strong/Moderate)
 - VIII (Severe/Moderate-Heavy)
 - IX (Violent/Heavy)

Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Road
- + Rail
- Waterbody



STAR

EAGLE

GARDEN CITY

MERIDIAN

BOISE

KUNA

Figure 12-10.

Big Flat Jake Creek Fault M6.81 Earthquake Scenario

Legend

Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Road
- + Rail
- Waterbody

Table 12-5. Estimated Earthquake Impact on Persons

Scenario	Number of Displaced Households	Number of Persons Requiring Short-Term Shelter
100-Year Earthquake	0	0
500-Year Earthquake	5	3
Squaw Creek Scenario	2	1
Big Flat Jake Creek Scenario	0	0

12.4.2 Property

Building Age

Building codes were not state-mandated in Idaho until 2008. However, the Ada County planning area has had a strong influence of building code enforcement as modern building codes have evolved nationally. Seismic code requirements have principally come from California, due to that state's immense seismic risk. The California State Building Code Council has identified significant milestones in building and seismic code requirements that can be used as a gauge of structural integrity of existing building stock. Using these time periods, the planning team used Hazus to identify the number of structures in the County by date of construction. Table 12-6 shows the results of this analysis.

Table 12-6. Age of Structures in Ada County

Time Period	Number of Current County Structures Built in Period	Significance of Time Frame
Pre-1933	5,717	Before 1933, there were no explicit earthquake requirements in building codes. State law did not require local governments to have building officials or issue building permits.
1933-1940	2,346	In 1940, the first strong motion recording was made.
1941-1960	13,336	In 1960, the Structural Engineers Association of California published guidelines on recommended earthquake provisions.
1961-1975	16,642	In 1975, significant improvements were made to lateral force requirements.
1976-1994	37,816	In 1994, the Uniform Building Code was amended to include provisions for seismic safety.
1995—present	98,945	Seismic code is currently enforced.
Total	174,802	

The number of structures does not reflect the number of total housing units, as many multi-family units and attached housing units are reported as one structure. Structures constructed after the Uniform Building Code was amended in 1994 to include seismic safety provisions account for 57 percent of the planning area's structures. Approximately 3 percent were built before 1933 when there were no building permits, inspections or seismic standards.

Loss Potential

Table 12-7 summarizes Hazus estimates of earthquake damage in the planning area for the modeled earthquake scenarios. Detailed results by jurisdiction are included in Appendix D. The debris estimates include only structural debris; they do not include additional debris that may accumulate, such as from trees. In addition, these estimates do not include losses that would occur from any fires stemming from an earthquake.

Table 12-7. Estimated Impact of Earthquake Scenario Events in the Planning Area

	Estimated Loss			% of Total Planning Area Replacement Value	Structural Debris (tons)
	Structural	Contents	Total		
100-Year Probabilistic Earthquake	\$623,125	\$543,636	\$1,166,761	0%	1.81
500-Year Probabilistic Earthquake	\$76,774,603	\$52,067,050	\$128,841,653	0.1%	27.28
Squaw Creek Fault Scenario	\$555,907,389	\$258,961,047	\$814,868,435	0.7%	29.68
Big Flat Jake Creek Scenario	\$76,293,829	\$49,040,497	\$125,334,326	0.1%	6.99

12.4.3 Critical Facilities

Level of Damage

Hazus classifies the vulnerability of critical facilities to earthquake as no damage, slight damage, moderate damage, extensive damage, or complete damage. Hazus was used to assign a category to each critical facility in the planning area for the assessed earthquake scenarios. shows the average probability of being damaged at a given level for all facilities in each critical facilities category is shown in Figure 12-11 through Figure 12-14

Time to Restore Critical Facilities to Functionality

Hazus estimates the time to restore critical facilities to fully functional use. Results are presented as probability of being functional at specified time increments: 1, 3, 7, 14, 30 and 90 days after the event. For example, Hazus may estimate that a facility has 5 percent chance of being fully functional at Day 3, and a 95 percent chance of being fully functional at Day 90. The analysis of critical facilities in the planning area was performed for the assessed earthquake scenarios. The results are summarized in Figure 12-15 through Figure 12-18. These figures show the average functionality for all critical facilities in each category.

12.4.4 Environment

Environmental problems as a result of an earthquake can be numerous. Secondary hazards will likely have some of the most damaging effects on the environment. Earthquake-induced landslides can significantly damage surrounding habitat. It is also possible for streams to be rerouted after an earthquake. Rerouting can change the water quality, possibly damaging habitat and feeding areas. Streams fed by groundwater wells can dry up because of changes in underlying geology.

12.5 DEVELOPMENT TRENDS

Because all of the planning area is exposed to the earthquake hazard, the increase in exposed population and property since the last hazard mitigation plan update is equal to the countywide trend over that time period: a 13.6-percent increase in population, a 19.4-percent increase in number of general building stock structures, and a 46.7-percent increase in assessed property value.

The entire planning area is under the influence of the International Building Code as mandated by the State of Idaho since 2008. This is a significant capability for the planning area in the management of seismic risk in future development. Strict adherence and enforcement of the seismic provisions of the International Building Code (IBC) will play a significant role in the management of seismic risk for new development in the future.

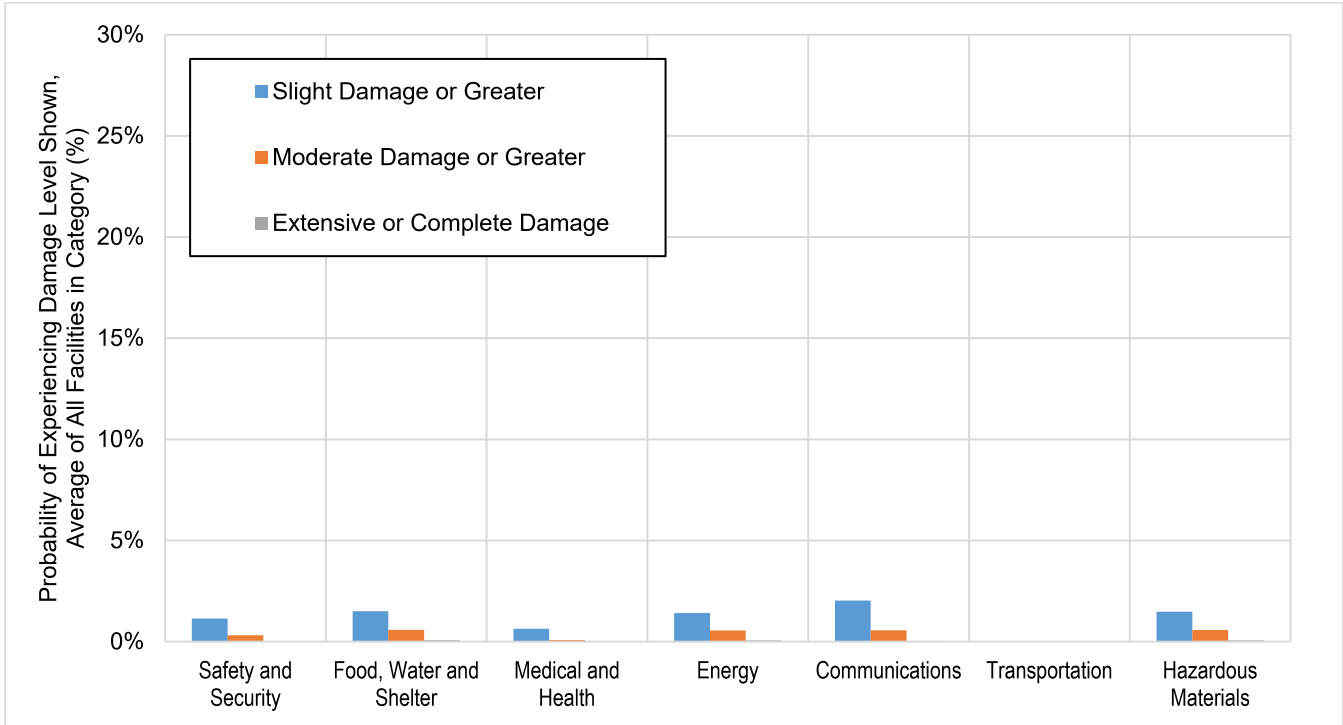


Figure 12-11. Critical Facility Damage Potential, 100-Year Probabilistic Earthquake

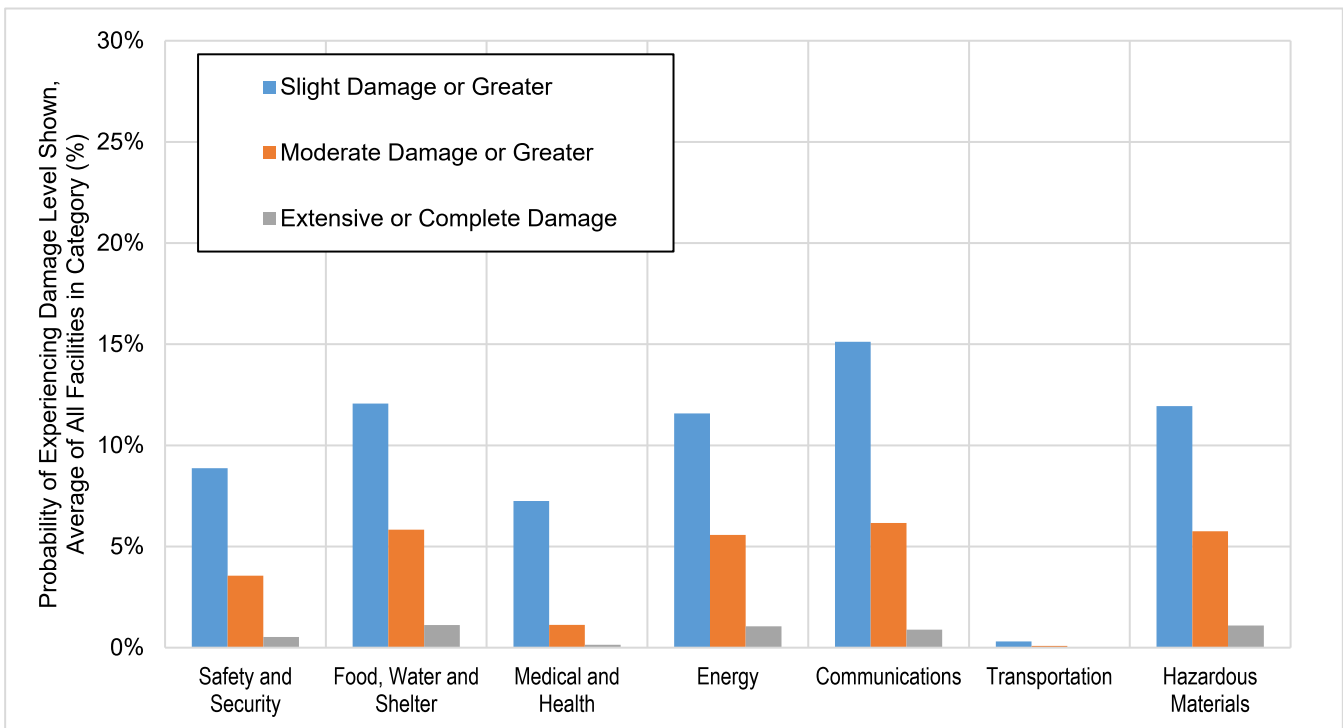


Figure 12-12. Critical Facility Damage Potential, 500-Year Probabilistic Earthquake

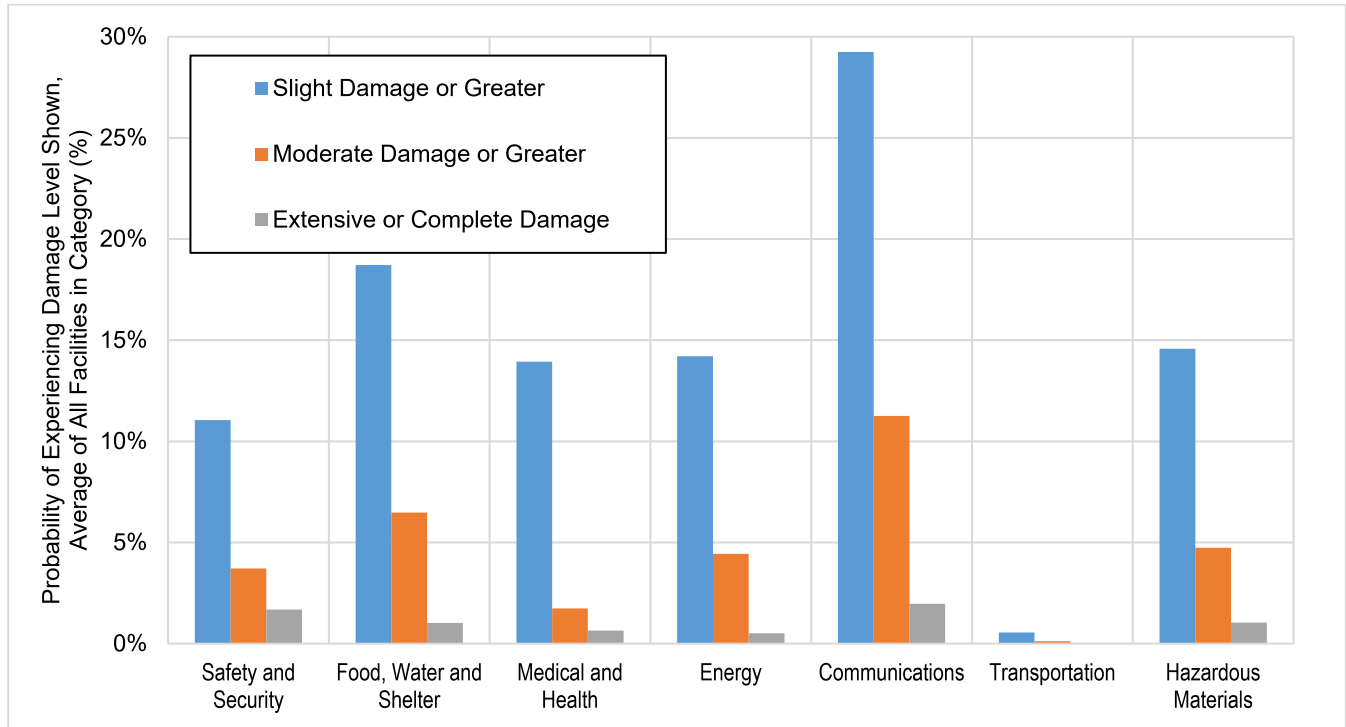


Figure 12-13. Critical Facility Damage Potential, Squaw Creek Fault Scenario

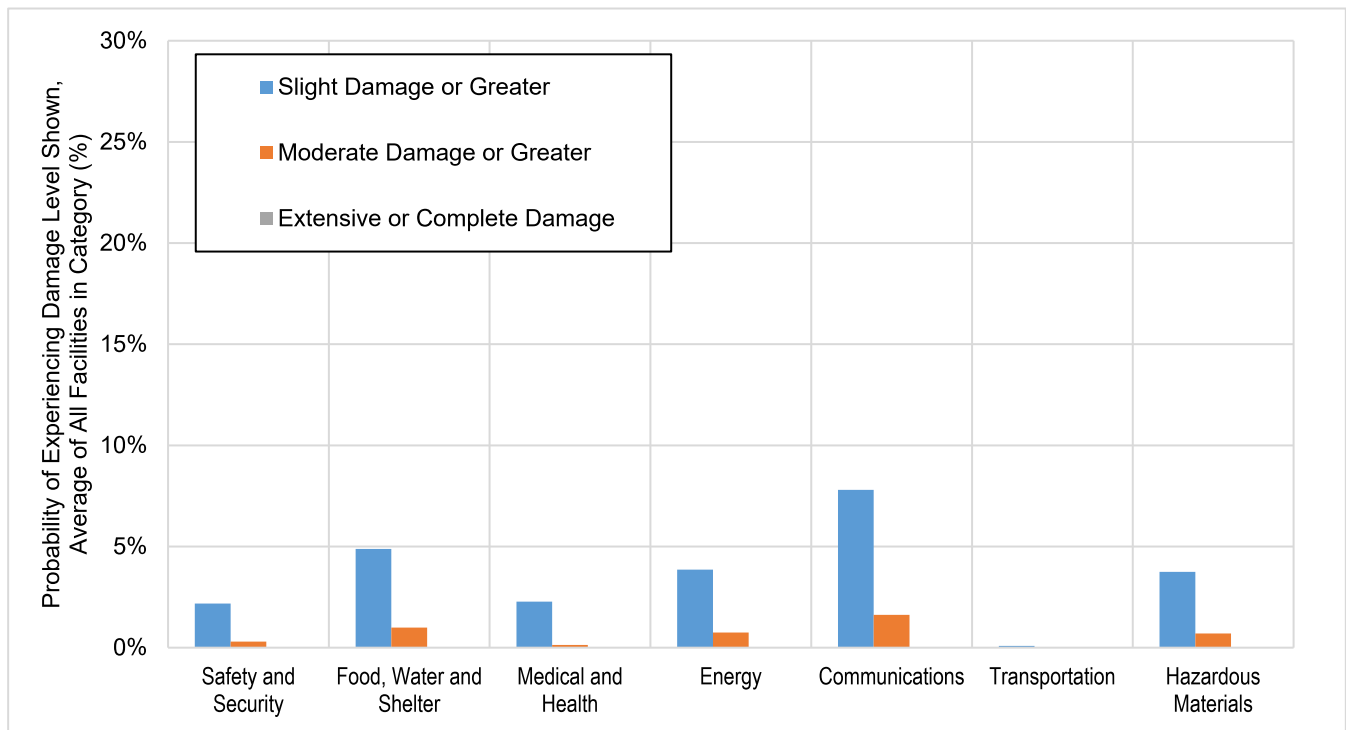


Figure 12-14. Critical Facility Damage Potential, Big Flat Jake Creek Fault Scenario

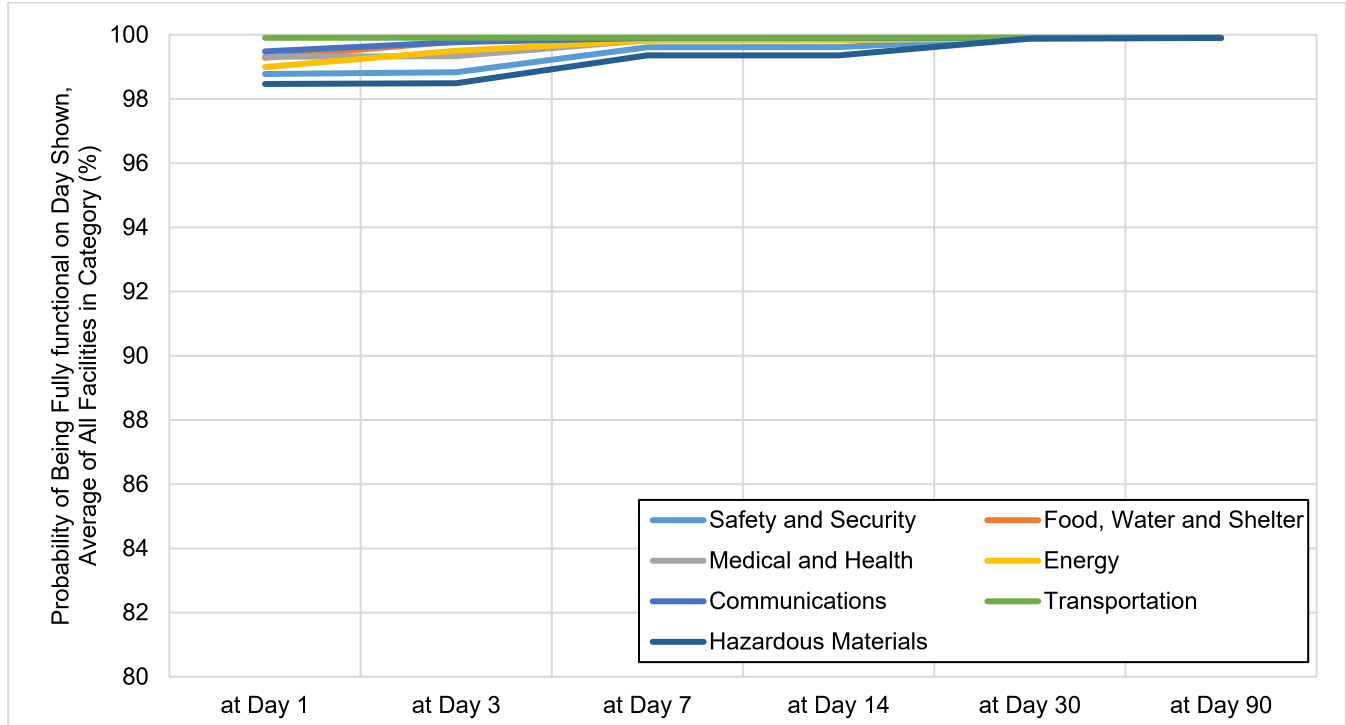


Figure 12-15. Critical Facility Functionality, 100-Year Probabilistic Earthquake

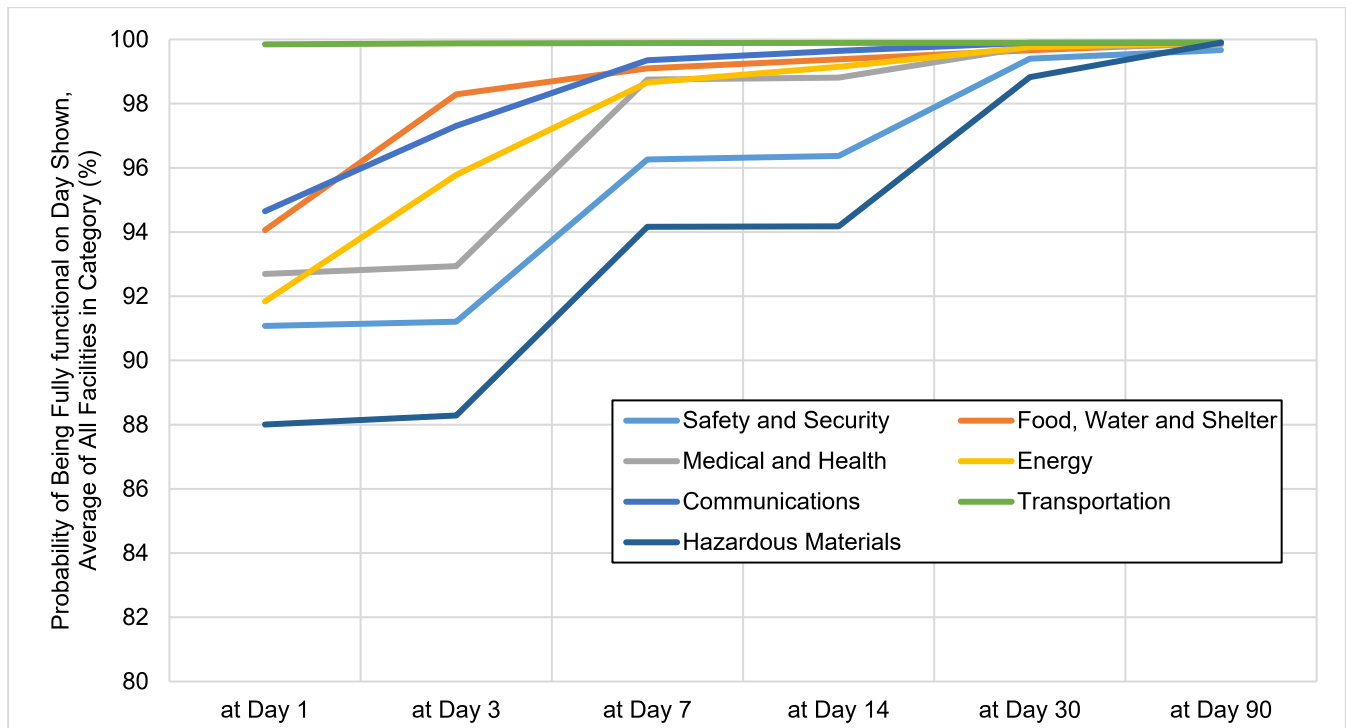


Figure 12-16. Critical Facility Functionality, 500-Year Probabilistic Earthquake

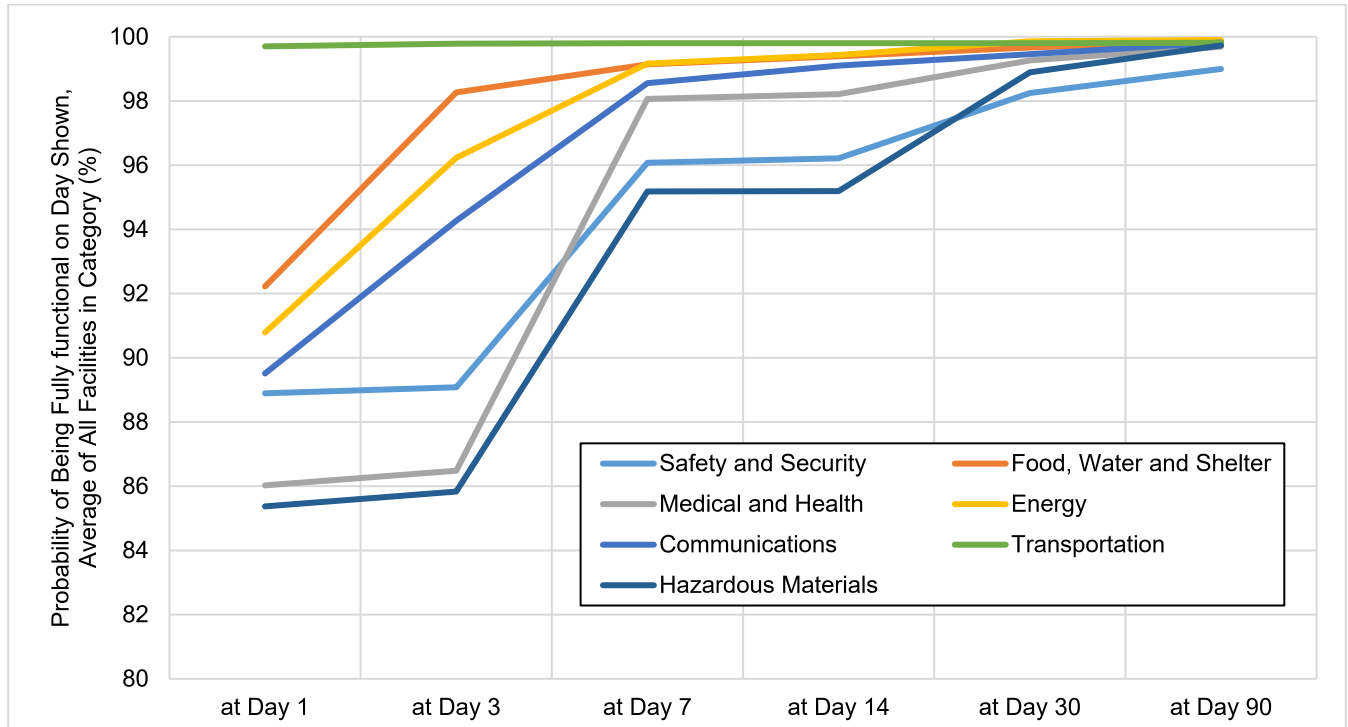


Figure 12-17. Critical Facility Functionality, Squaw Creek Fault Scenario

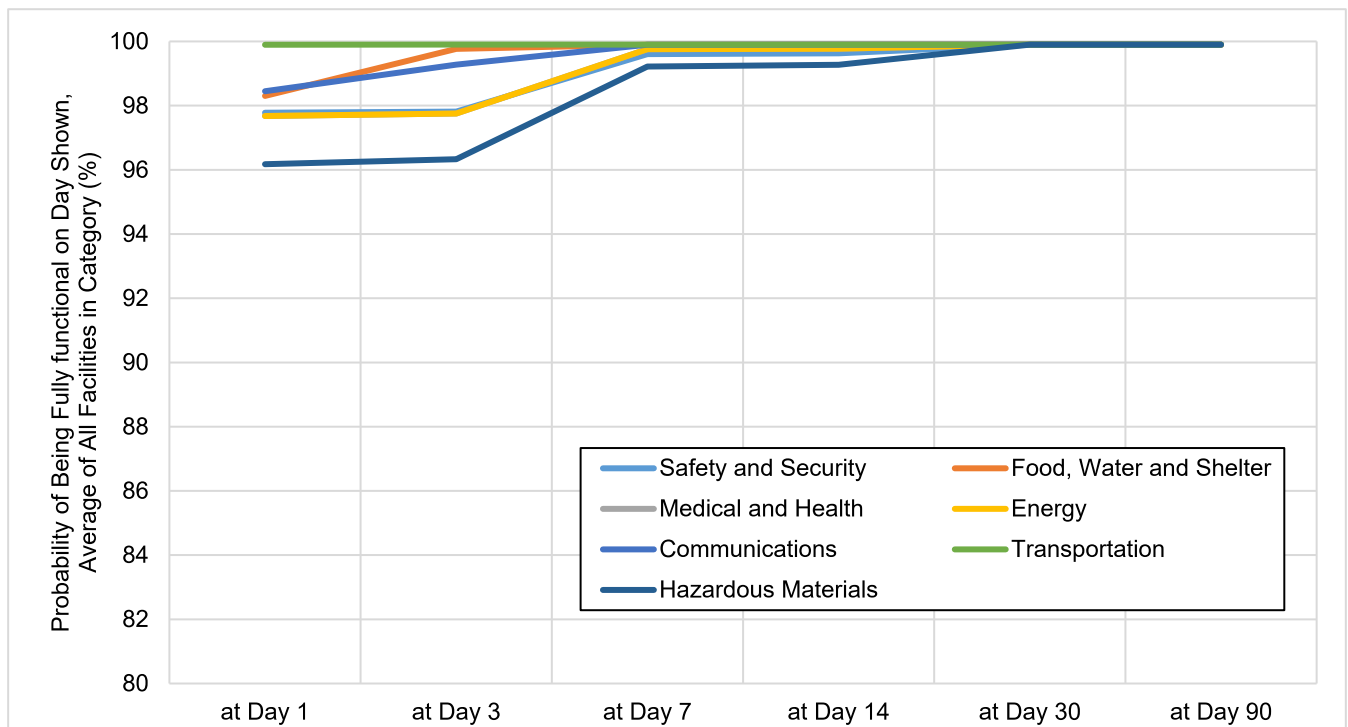


Figure 12-18. Critical Facility Functionality, Big Flat Jake Creek Fault Scenario

12.6 SCENARIO

Any seismic activity of 6.0 or greater on faults within the planning area would have significant impacts throughout Ada County. The seismic event likely to have the largest impact is a 7.1 magnitude or greater event on the Squaw Creek fault. Potential warning systems could give 40 seconds' notice that a major earthquake is about to occur; this would not provide adequate time for preparation. Earthquakes of this magnitude or higher would lead to massive structural failure of property on unstable soils. With the abundance of imported fill used to elevate building pads for homes in the Boise River floodplain, liquefaction impacts in these areas could be widespread. Un-engineered canal embankments would likely fail, representing a loss of critical infrastructure. The structural integrity of Lucky Peak Dam could be jeopardized as well. These events could cause secondary hazards, including landslides and mudslides. River valley hydraulic-fill sediment areas are also vulnerable to slope failure, often as a result of loss of cohesion in clay-rich soils. Soil liquefaction would occur in water-saturated sands, silts or gravelly soils.

12.7 ISSUES

Important issues associated with an earthquake include but are not limited to the following:

- NEHRP soils mapping is not available for the entire planning area. Acquiring this data in areas it does not currently exist would enhance the accuracy of future risk assessments for the planning area.
- Shake maps should be developed for the Squaw Creek and Water Tank fault scenarios.
- Approximately 22 percent of the planning area's building stock was built prior to 1975, when seismic provisions became uniformly applied through building codes.
- Critical facility owners should be encouraged to create or enhance Continuity of Operations Plans using the information on risk and vulnerability contained in this plan.
- Geotechnical standards should be established that take into account the probable impacts from earthquakes in the design and construction of new or enhanced facilities.
- The County has over 400 miles of canals that were not constructed to engineering standards. The structural integrity of these facilities as it pertains to seismic impacts is not known.
- Earthquakes could trigger other natural hazard events such as dam failures and landslides, which could severely impact the county.
- Dam failure warning and evacuation plans and procedures should be updated to reflect the earthquake risk associated with a large number of earthen dams in the planning area.
- Hazard mitigation plan survey results indicate that the public does not perceive a significant seismic risk in the planning area.
- Unreinforced masonry structures in the planning area are particularly vulnerable to the earthquake hazard.
- It is difficult to develop seismic retrofit projects that are cost-effective for FEMA hazard mitigation grant programs, due to the lack of state and federal risk data to support FEMA benefit-cost methodologies.

13. EXTREME WEATHER

13.1 GENERAL BACKGROUND

Extreme weather refers to unusual weather events at the extremes of the historical distribution for a given area. It involves any dangerous meteorological phenomena with the potential to cause damage, serious social disruption, or loss of human life. It includes thunderstorms, damaging winds, tornadoes, extreme temperatures, and severe winter weather.

13.1.1 Thunderstorms, Lightning and Hail

A thunderstorm is a rain event that includes thunder and lightning. A thunderstorm is classified as “severe” when it contains one or more of the following: hail with a diameter of three-quarter inch or greater, winds gusting in excess of 50 knots (57.5 mph), or tornado. Approximately 10 percent of the 100,000 thunderstorms that occur nationally every year are classified as severe (NOAA n.d.).

Storm Development

Three factors cause thunderstorms to form: moisture, rising unstable air (air that keeps rising when disturbed), and a lifting mechanism to provide the disturbance. The sun heats the surface of the earth, which warms the air above it. If this warm surface air is forced to rise (hills or mountains can cause rising motion, as can the interaction of warm air and cold air or wet air and dry air) it will continue to rise as long as it weighs less and stays warmer than the air around it. As the air rises, it transfers heat from the surface of the earth to the upper levels of the atmosphere (the process of convection). The water vapor it contains begins to cool and it condenses into a cloud.

The cloud eventually grows upward into areas where the temperature is below freezing. Some of the water vapor turns to ice and some of it turns into water droplets. Both have electrical charges. Ice particles usually have positive charges, and rain droplets usually have negative charges. When the charges build up enough, they are discharged in a bolt of lightning, which causes the sound waves heard as thunder.

Storm Types

There are four types of thunderstorms:

- **Single-Cell Thunderstorms**—Single-cell thunderstorms usually last 20 to 30 minutes. A true single-cell storm is rare, because the gust front of one cell often triggers the growth of another. Most single-cell storms are not usually severe, but a single-cell storm can produce a brief extreme weather event. When this happens, it is called a pulse severe storm.

- **Multi-Cell Cluster Storm**—A multi-cell cluster is the most common type of thunderstorm. The multi-cell cluster consists of a group of cells, moving as one unit, with each cell in a different phase of the thunderstorm life cycle. Mature cells are usually found at the center of the cluster and dissipating cells at the downwind edge. Multi-cell cluster storms can produce moderate-size hail, flash floods and weak tornadoes. Each cell in a multi-cell cluster lasts only about 20 minutes; the multi-cell cluster itself may persist for several hours. This type of storm is usually more intense than a single cell storm.
- **Multi-Cell Squall Line**—A multi-cell line storm, or squall line, consists of a long line of storms with a continuous well-developed gust front at the leading edge. The line of storms can be solid, or there can be gaps and breaks in the line. Squall lines can produce hail up to golf-ball size, heavy rainfall, and weak tornadoes, in addition to strong downdrafts. Occasionally, a strong downburst will accelerate a portion of the squall line ahead of the rest of the line to produce a bow echo. Bow echoes can develop with isolated cells as well as squall lines. Bow echoes are easily detected on radar but are difficult to observe visually.
- **Super-Cell Storm**—A super-cell is similar to a single-cell storm in that it has one main updraft, but the updraft is extremely strong, reaching speeds of 150 to 175 miles per hour. Super-cells are rare. The main characteristic that sets them apart from other thunderstorms is the presence of rotation. The rotating updraft of a super-cell (called a mesocyclone when visible on radar) helps the super-cell to produce extreme weather events, such as giant hail (more than 2 inches in diameter), strong downbursts of 80 miles an hour or more, and strong to violent tornadoes.

Lightning

Lightning is an electrical discharge between positive and negative regions of a thunderstorm. A lightning flash is composed of a series of strokes, with an average of about four. The average duration of each stroke is about 30 microseconds. Lightning occurs in all thunderstorms. There are two main types of lightning: intra-cloud lightning and cloud-to-ground lightning (National Oceanic and Atmospheric Administration n.d.).

Lightning is one of the more dangerous weather hazards in the United States. Each year, lightning is responsible for deaths, injuries, and millions of dollars in property damage, including damage to buildings, communications systems, power lines, and electrical systems. Lightning also causes forest and brush fires and deaths and injuries to livestock and other animals. According to the National Lightning Safety Institute, property damage, increased operating costs, production delays, and lost revenue from lightning and secondary effects exceed \$8-10 billion per year (National Lightning Safety Institute 2014). Impacts can be direct or indirect. People or objects can be directly struck, or damage can occur indirectly when the current passes through or near it.

Intra-cloud lightning is the most common type of discharge, but cloud-to-ground lightning is the most damaging and dangerous. Most flashes originate near the lower-negative charge center and deliver negative charge to earth. However, many flashes carry positive charge to earth, often during the dissipating stage of a thunderstorm's life. Positive flashes are more common as a percentage of total ground strikes during the winter. Positive lightning frequently strikes away from the rain core. It can strike as far as 5 or 10 miles from the storm in areas that people do not consider to be a threat. Positive lightning also has a longer duration, so fires are more easily ignited.

Using a network of lightning detection systems, the United States monitors an average of 25 million strokes of lightning from the cloud-to-ground every year. Statistics compiled by the National Oceanic and Atmospheric Administration between 1959 and 1994 indicate that most lightning incidents occur in June, July and August and during the afternoon between 2 and 6 p.m.

Hail

Hail occurs when updrafts in thunderstorms carry raindrops upward into extremely cold areas of the atmosphere where they freeze into ice. Super-cooled water may accumulate on frozen particles near the back-side of a storm as they are pushed forward across and above the updraft by the prevailing winds near the top of the storm. Eventually, the hailstones encounter downdraft air and fall to the ground.

Hailstones grow two ways: by wet growth or dry growth. In wet growth, a tiny piece of ice is in an area where the air temperature is below freezing, but not super cold. When the tiny piece of ice collides with a super-cooled drop, the water does not freeze on the ice immediately. Instead, liquid water spreads across tumbling hailstones and slowly freezes. Since the process is slow, air bubbles can escape, resulting in a layer of clear ice. Dry growth hailstones grow when the air temperature is well below freezing and the water droplet freezes immediately as it collides with the ice particle. The air bubbles are “frozen” in place, leaving cloudy ice.

Hailstones can have layers like an onion if they travel up and down in an updraft, or they can have few or no layers if they are “balanced” in an updraft. Hailstones can begin to melt and then re-freeze together, forming large and very irregularly shaped hail.

13.1.2 Damaging Winds

Damaging winds are classified as those exceeding 58 mph. Damage from such winds accounts for half of all extreme weather reports in the lower 48 states. Straight-line wind speeds can reach up to 100 mph and can produce a damage path extending for hundreds of miles. Isolated wind events in mountainous regions have more localized effects (State of Idaho Hazard Mitigation Plan 2018). There are seven types of damaging winds:

- **Straight-line winds**—Any thunderstorm wind that is not associated with rotation; this term is used mainly to differentiate from tornado winds. Most thunderstorms produce some straight-line winds as a result of outflow generated by the thunderstorm downdraft.
- **Downdrafts**—A small-scale column of air that rapidly sinks toward the ground.
- **Downbursts**—A strong downdraft with horizontal dimensions larger than 2.5 miles resulting in an outward burst or damaging winds on or near the ground. Downburst winds may begin as a microburst and spread out over a wider area, sometimes producing damage similar to a strong tornado. Although usually associated with thunderstorms, downbursts can occur with showers too weak to produce thunder.
- **Microbursts**—A small concentrated downburst that produces an outward burst of damaging winds at the surface. Microbursts are generally less than 2.5 miles across and short-lived, lasting only 5 to 10 minutes, with maximum wind speeds up to 168 mph. There are two kinds of microbursts: wet and dry. A wet microburst is accompanied by heavy precipitation at the surface. Dry microbursts, common in places like the high plains and the intermountain west, occur with little or no precipitation reaching the ground.
- **Gust front**—A gust front is the leading edge of rain-cooled air that clashes with warmer thunderstorm inflow. Gust fronts are characterized by a wind shift, temperature drop, and gusty winds out ahead of a thunderstorm. Sometimes the winds push up air above them, forming a shelf cloud or detached roll cloud.
- **Derecho**—A derecho is a widespread thunderstorm wind caused when new thunderstorms form along the leading edge of an outflow boundary (the boundary formed by horizontal spreading of thunderstorm-cooled air). The word “derecho” is of Spanish origin and means “straight ahead.” Thunderstorms feed on the boundary and continue to reproduce. Derechos typically occur in summer when complexes of thunderstorms form over plains, producing heavy rain and severe wind. The damaging winds can last a long time and cover a large area.

- **Bow Echo**—A bow echo is a linear wind front bent outward in a bow shape. Damaging straight-line winds often occur near the center of a bow echo. Bow echoes can be 200 miles long, last for several hours, and produce extensive wind damage at the ground.

Windstorms can result in collapsed or damaged buildings, damaged or blocked roads and bridges, damaged traffic signals, streetlights and parks, and other damage. They can also cause direct losses to buildings, people, and vital equipment. There are direct consequences to the local economy resulting from windstorms related to both physical damage and interrupted services.

Wind pressure can create a direct and frontal assault on a structure, pushing walls, doors, and windows inward. Conversely, passing currents can create lift and suction forces that act to pull building components and surfaces outward. As positive and negative forces impact a building's doors, windows and walls, the result can be roof or building component failures and considerable structural damage. The effects of winds are magnified in the upper levels of multi-story structures.

Debris carried along by extreme winds can contribute directly to loss of life and indirectly to the failure of protective building envelopes. Falling trees and branches can damage buildings, power lines, and other property and infrastructure. Tree limbs breaking in winds of only 45 mph can be thrown over 75 feet, so overhead power lines can be damaged even in relatively minor windstorm events. During wet winters, saturated soils cause trees to become less stable and more vulnerable to uprooting from high winds. Utility lines brought down by summer thunderstorms have also been known to cause fires, which start in dry roadside vegetation. Electric power lines falling down to the pavement create the possibility of lethal electric shock.

Downed trees and power lines, and damaged property also can be major hindrances to emergency response and disaster recovery. Emergency response operations can be complicated when roads are blocked or when power supplies are interrupted. Industry and commerce can suffer losses from interruptions in electric service and from extended road closures.

13.1.3 Extreme Temperatures

Excessive Heat Events

Extreme heat is defined as summertime temperatures that are much hotter and/or humid than average. Because some places are hotter than others, this depends on what is considered average for a particular location. Humid conditions can make it seem hotter than it really is (Centers for Disease Control and Prevention 2017). Excessive heat claims over 100 lives each year in the United State. In a 30-year record of weather fatalities across the nation (1990-2019), excessive heat claimed more lives each year than floods, lightning, tornadoes, and hurricanes (Erdman 2021).

Heat Index

Extreme heat events are often a result of more than ambient air temperature. Heat index tables (see Figure 13-1) are commonly used to provide information about how hot it feels based on several meteorological conditions. Heat index values are for shady, light wind conditions; exposure to full sunshine can increase heat index values by up to 15°F. Strong winds with very hot, dry air also can be extremely hazardous (National Weather Service n.d.).

Source: (National Weather Service n.d.)

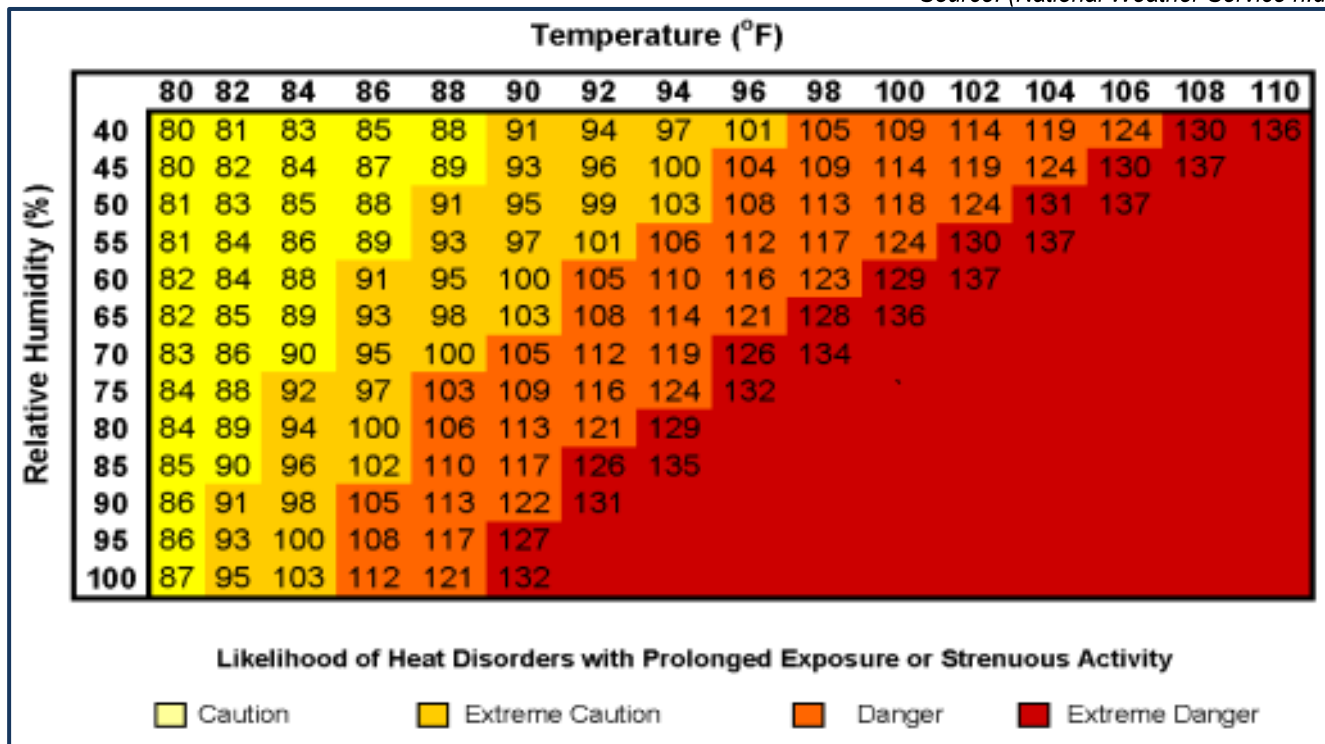


Figure 13-1. Heat Index Chart

Heat Islands

Extreme heat events may be exacerbated in urban areas, where reduced air flow, reduced vegetation and increased generation of waste heat can contribute to temperatures that are several degrees higher than in surrounding rural or less urbanized areas. When urban buildings, roads and other infrastructure replace open land and vegetation, surfaces that were once permeable and moist become impermeable and dry. These changes cause urban areas to become warmer than the surrounding areas, serving as contiguous regions of higher temperatures. This phenomenon is known as urban heat island effect. Heat islands can affect communities by increasing peak summer energy demand, air pollution, greenhouse gas emissions, and heat-related illness and death (Environmental Protection Agency 2022).

Extreme Cold and Wind Chill

Weather that constitutes extreme cold varies across different parts of the U.S. In regions relatively unaccustomed to winter weather, near freezing temperatures are considered extreme cold (Centers for Disease Control and Prevention n.d.). Extreme cold can often accompany severe winter storms. Wind can exacerbate the effects of cold temperatures by carrying heat away from the body more quickly, thus making it feel colder than is indicated by the temperature. This phenomenon is known as wind chill. Wind chill is the temperature that your body feels when the air temperature is combined with wind speed. Figure 13-2 shows the value of wind chill based on ambient temperature and wind speed.

Source: (National Weather Service n.d.)

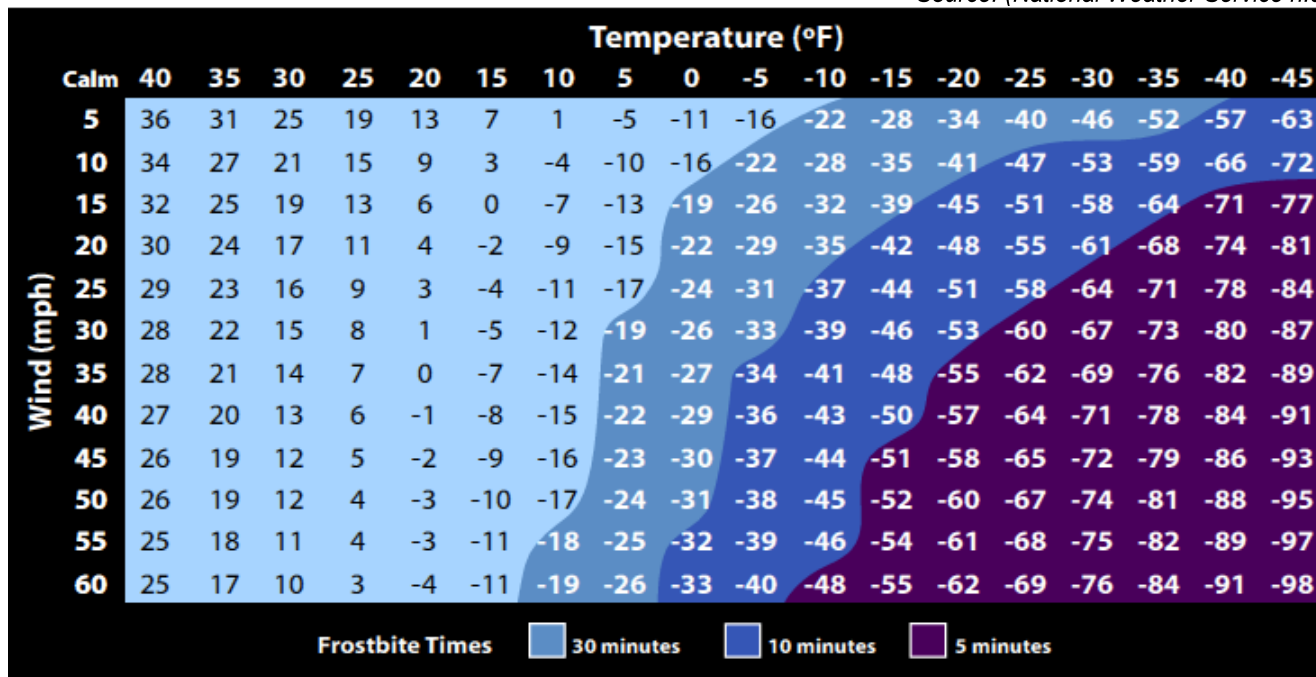


Figure 13-2. Wind Chill Chart

13.1.4 Severe Winter Weather

Blizzards and Snowstorms

The National Weather Service defines a winter storm as having significant snowfall, ice and/or freezing rain; the quantity of precipitation varies by elevation. Heavy snowfall is 4 inches or more in a 12-hour period, or 6 inches or more in a 24-hour period in non-mountainous areas; and 12 inches or more in a 12-hour period or 18 inches or more in a 24-hour period in mountainous areas. There are three key ingredients to a severe winter storm:

- Cold Air—Below-freezing temperatures in the clouds and near the ground are necessary to make snow and/or ice.
- Moisture—Moisture is required in order to form clouds and precipitation. Air blowing across a body of water, such as a large lake or the ocean, is a typical source of moisture.
- Lift—Lift is required in order to raise the moist air to form the clouds and cause precipitation. An example of lift is warm air colliding with cold air and being forced to rise over the cold dome. The boundary between the warm and cold air masses is called a front. Another example of lift is air flowing up a mountain side.

Areas most vulnerable to winter storms are those affected by convergence of dry, cold air from the interior of the North American continent and warm, moist air off the Pacific Ocean. When strong storms crossing the Pacific arrive at the coast, if the air is cold enough, snow falls. As the moisture rises into the mountains, heavy snow closes mountain passes and can cause avalanches. Cold air from the north has to filter through mountain canyons into basins and valleys to the south. If the cold air is deep enough, it can spill over a mountain ridge. As the air funnels through canyons and over ridges, wind speeds can reach 100 mph. High winds with snow results in a blizzard.

Ice Storms

The National Weather Service defines an ice storm as a storm that results in the accumulation of at least 0.25 inches of ice on exposed surfaces. Ice storms occur when rain falls from a warm, moist, layer of atmosphere into a below freezing, drier layer near the ground. The rain freezes on contact with the cold ground and exposed surfaces, causing damage to trees, utility wires, and structures (see Figure 13-3).

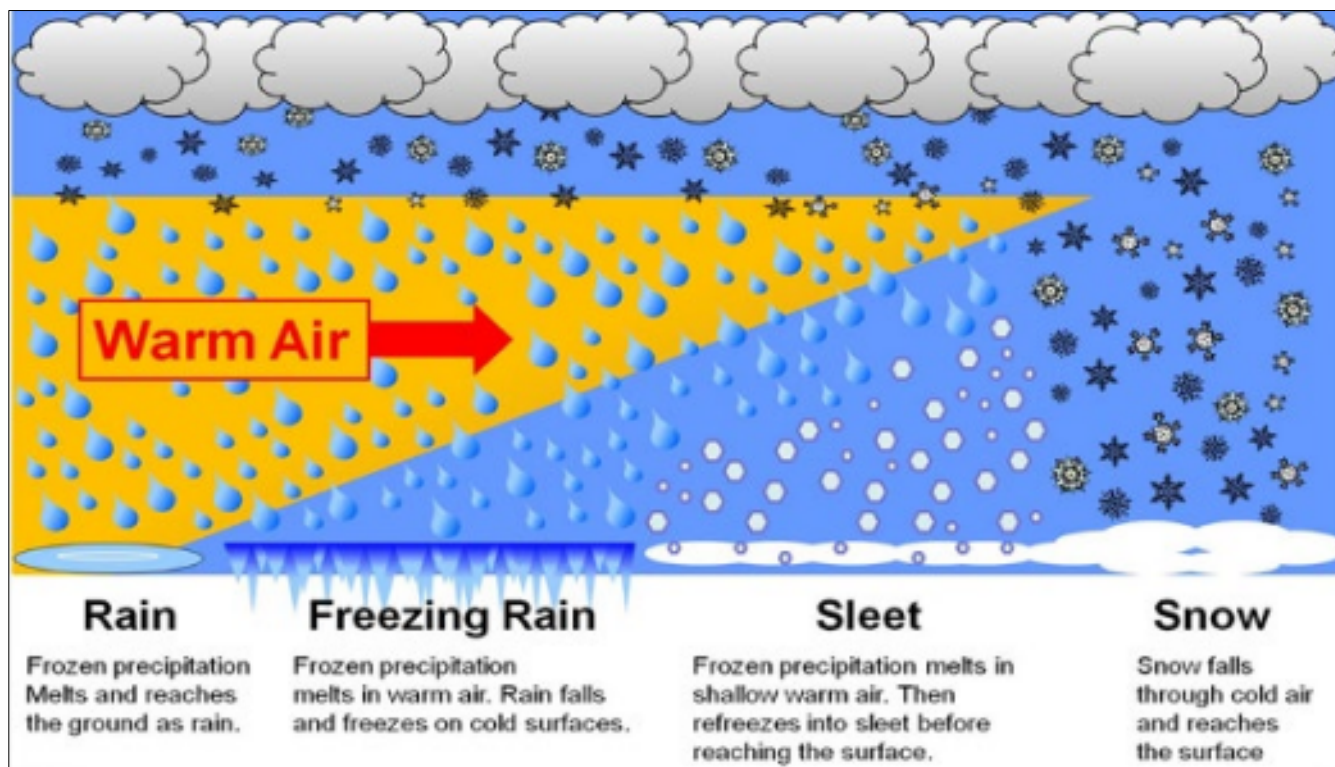


Figure 13-3. The Formation of Different Kinds of Precipitation

Ice accretion generally ranges from a trace to 1 inch. Accumulations between 1/4-inch and 1/2-inch can cause small branch and faulty limb breakage. Accumulations of 1/2-inch to 1 inch can cause significant breakage. Strong winds increase the potential for damage from ice accumulation.

13.1.5 Tornado

A tornado is a violently rotating column of air extending between, and in contact with, a cloud and the surface of the earth. Tornadoes are often (but not always) visible as a funnel cloud. On a local-scale, tornadoes are the most intense of all atmospheric circulations, with wind that can reach speeds of more than 300 mph. A tornado’s vortex is typically a few hundred meters in diameter, and damage paths can be up to 1 mile wide and 50 miles long. Tornadoes can occur throughout the year at any time of day but are most frequent in the spring during the late afternoon. As shown in Figure 13-4, Idaho has a relatively low risk of tornadoes compared to states in the Midwestern and Southern U.S. Washington has experienced tornadoes on occasion. Some have produced significant damage, injury or death. Washington’s tornadoes can be formed in association with large Pacific storms arriving from the west. Most of them, however, are caused by intense local thunderstorms. These storms also produce lightning, hail and heavy rain, and are more common during the warm season from April to October.

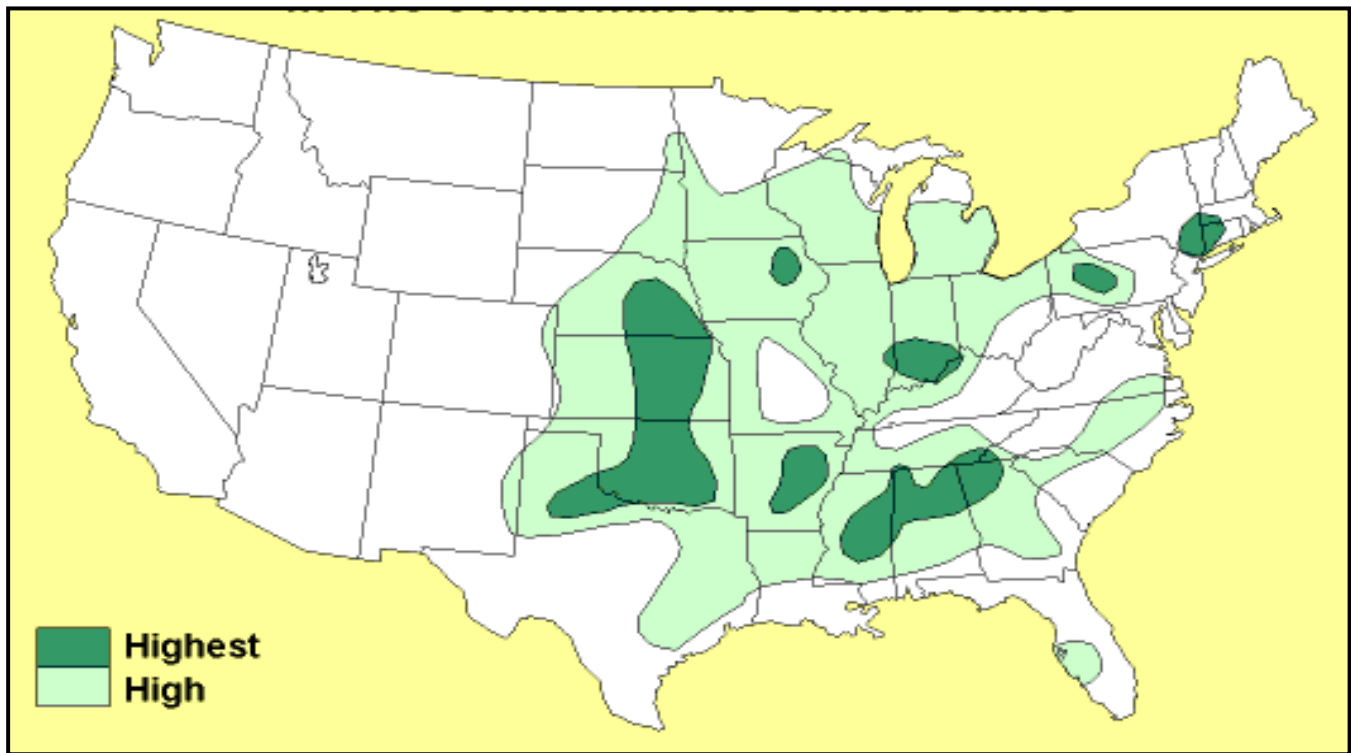


Figure 13-4. Tornado Risk Areas in the United States

13.1.6 Secondary Hazards

The most significant secondary hazards associated with severe local storms are floods, falling and downed trees, landslides and downed power lines. Rapidly melting snow combined with heavy rain can overwhelm both natural and man-made drainage systems, causing overflow and property destruction. Landslides occur when the soil on slopes becomes oversaturated and fails.

13.2 HAZARD PROFILE

13.2.1 Past Events

Table 13-1 summarizes extreme weather events in Ada County since 1970 that caused property damage or injury, as recorded by the National Oceanic and Atmospheric Administration (NOAA).

13.2.2 Location

Extreme weather events have the potential to happen anywhere in the planning area. Communities in low-lying areas next to streams or lakes are more susceptible to flooding. Wind events are most damaging to areas that are heavily wooded.

Table 13-1. Extreme Weather Events Impacting Planning Area Since 1970

Date	Type	Deaths or Injuries	Property Damage
6/22/2021	Thunderstorm Wind	0	Reports of damage, but not quantified. <i>Hot and dry conditions were ideal for thunderstorm microburst outflow propagation across Southeast Oregon and Southwest Idaho. Severe gusts were reported with reports of damage throughout the area.</i>
5/01/2021	Thunderstorm Wind	0	Numerous reports of damage, but not quantified. <i>A low pressure system moved through the Intermountain West, producing thunderstorms with severe winds, dust storms and small hail. The automated surface observing system at Boise measured a 62 mph wind gust and numerous incidents of damage were reported.</i>
5/30/2020	Thunderstorm Wind	0	Downed trees and fences <i>Severe thunderstorms developed across parts of South Central Idaho and the West Central Mountains ahead of a strong cold front.</i>
4/30/2020	Thunderstorm Wind	0	Wind damage across the Treasure Valley <i>A strong low pressure system swept across the Pacific Northwest initiating severe convection across parts of Southwest Idaho.</i>
10/19/2019	Thunderstorm Wind	2	House fire, downed power lines and fences, car damage <i>A strong low pressure system and a fast moving cold front caused severe thunderstorms across the Treasure and Magic valleys. The Boise Fire Department reported a lightning strike on a house 2 miles east of Boise. Two injuries were reported.</i>
9/05/2019	Thunderstorm Wind	0	Trees downed, school campus and home damage <i>Numerous trees were knocked down during a microburst from Broadway Avenue to Apple Street, especially near Timberline High School, in Southeast Boise. Extensive damage to the high school campus was surveyed by National Weather Service (NWS) employees, including trees knocked down onto houses in the vicinity. The peak thunderstorm wind was estimated at 80 mph.</i>
8/30/2017	Thunderstorm Wind	0	Downed branches and power outages <i>Monsoon moisture combined with unstable conditions associated with an approaching trough and afternoon heating produced strong to severe thunderstorms across parts of Southwest Idaho. Multiple damage reports were received in Southeast Boise, with large trees and branches down including power outages.</i>
6/04/2017	Thunderstorm Wind	0	Downed trees <i>An upper level trough and a strong cold front moved through the Intermountain west producing severe thunderstorms including damaging winds. Trees down from Eagle to Boise and throughout the Treasure Valley.</i>
8/10/2015	Thunderstorm Wind	0	Unknown damage <i>Monsoon moisture moved northward out of Arizona creating conditions for severe convection over Southwest Idaho. A 61 mph wind gust was recorded at the Boise Automated Surface Observing System and numerous reports of damage were received by the NWS.</i>
3/17/2014	Thunderstorm Wind	0	Unknown damage and power outages <i>A powerful cold front raced through Southwest and South Central Idaho on the 17th with numerous reports of damage and power outages. Numerous reports of power outages reported by Idaho Power.</i>
9/5/2013	Hail	0	None reported <i>A strong upper level jet moving through the area brought severe thunderstorms to parts of Southeast Oregon and Southwest Idaho. Spotters in Meridian and Eagle reported large hail up to an inch and a half across the area.</i>
3/6/2013	Thunderstorm Wind	0	Bleacher and fence damage <i>A trough rotating around a large, cold, upper level low swept across Southwest Idaho. Strong to severe thunderstorms developed along the associated front bringing damaging winds and hail up to three quarters of an inch to the area. A NWS storm survey estimated a 60 to 65 mph wind gust destroyed an announcer's booth at the Meridian Lions Club rodeo grounds. Four sets of unsecured grandstand bleachers were flipped upside down and rolled over a fence into the middle of the rodeo grounds.</i>
2/06/2013	Fog/Freezing Rain	1 injury	None reported <i>Dense fog and a brief period of freezing rain in the Treasure Valley of Southwest Idaho caused numerous accidents throughout the area. Numerous reports of slide offs, roll overs and crashes due to dense fog and freezing rain in the area.</i>
8/06/2012	Thunderstorm Wind	0	Tree and fence damage <i>Thunderstorms developed across the Intermountain West on the 6th leading to wind damage in parts of Ada County in Southwest Idaho. Thunderstorms that moved across Ada County caused damage around the Boise area, including tree tops torn off, a large tree snapped at its base, and residential fences blown down.</i>

Date	Type	Deaths or Injuries	Property Damage
4/24/2012	Hail	0	Wind damage
<i>A line of severe thunderstorms moved through parts of Southwest Idaho on the 24th producing large hail and damaging winds. A trained spotter reported half dollar size hail and wind gusts to 75 mph.</i>			
1/18/2012	Heavy Snow	0	None reported
<i>A major winter storm slammed into the Pacific Northwest and spread heavy snow across parts of Eastern Oregon and Southwest Idaho. Impacts were felt in the Boise metro area and along the Interstate 84 corridor. In the mountains, 2 to 3 feet of snow fell over a four day period. 4 to 8 inches of new snow were reported by various sources in the Treasure Valley and 9 inches at Mountain Home.</i>			
4/25/2011	Thunderstorm Wind	0	Wind damage
<i>A strong cold front produced high winds and isolated severe convection leading to significant wind damage to locations in the Treasure Valley of Southwest Idaho on the 25th. KTVB reported wind damage near Rocky Mountain High School in Meridian and around the Kuna area. Hail was covering the ground in the affected areas.</i>			
8/21/2010	Thunderstorm Wind	70 injuries	\$10,000
<i>A dry cold front moving across Eastern Oregon and Idaho set off a series of mainly dry thunderstorms generating severe outflow winds in the Treasure Valley, including Boise, and the Snake River plain throughout the evening of the 21st. Minor injuries were reported from the Western Idaho Fair as a result of temporary structures collapsing.</i>			
6/4/2010	Thunderstorm Wind	0	\$10,000
<i>The Boise Automated Surface Observing Systems measured a wind gust of 59 mph and NWS employees reported downed trees and fences in Southeast Boise along Surprise Valley Way. Ada County Emergency Manager reported power lines down in Southwest Boise and trees and traffic lights down in Garden City.</i>			
3/29/2009	High Wind	0	\$100,000
<i>The automated surface observing system at Boise recorded a peak gust of 53 mph and over \$100,000 in damage was sustained in the north end of Boise. Mountain Home had winds of 40 to 50 mph for most of the day.</i>			
6/29/2006	Thunderstorm Wind	0	\$5,000
<i>Very moist air mass combined with a well-defined vortices center and maximum day time heating to produce widespread pulse thunderstorms yielding numerous reports of nickel size hail and wind damage including downed trees and power lines</i>			
1/30/2004	Thunderstorm Wind	0	\$15,000
<i>During the morning of January 30, a fast moving cold front produced several severe thunderstorms, very strong (in excess of 60 mph) winds and snow showers as it moved eastward across Eastern Oregon and Southwestern Idaho. Fairly large trees were blown down in Payette in Payette County and in Nampa in Canyon County. There were also reports of trees down in Baker and Malheur counties in Oregon. Power was briefly knocked out in northern Owyhee County as the line of thunderstorms moved across the county..</i>			
5/8-9/2002	Extreme Cold/Wind Chill	0	Crop damage
<i>Most observation sites recorded low temperatures in the mid to upper 20s. The hard freeze damaged fruit and field crops.</i>			
8/3/2000	Tornado	0	Uprooted trees, minor home damage
<i>A series of thunderstorms moved though the Treasure Valley with four confirmed tornadoes in Ada county. One tornado touched down near Hidden Springs, with damage limited to two large trees being uprooted. The path of the tornado was 10 yards wide and less than one-tenth of a mile in length. Another touched down near the intersection of Lake Hazel Road and 5 Mile Road. Damage was confined to one home where a flag pole was bent in half and a 2x4 was imbedded in the outer wall of the home.</i>			
2/2/1999	Winter Storm	0	100+ auto accidents, major traffic disruptions
<i>During the day on February 2, a winter storm snarled traffic in the Treasure Valley and brought local heavy snow to the Lower Treasure Valley and the Boise Mountains. In the Upper Treasure Valley, 3 to 4 inches of snow fell and caused major traffic disruptions. Over 100 auto accidents were reported around Boise.</i>			
1/16/1999	Thunderstorm Wind	0	\$5,000
<i>During the morning of January 16 a line of strong rain showers and ice pellet showers produced severe wind gusts near Boise. A spotter reported the roof of a small barn was blown off and a tree was uprooted. A second spotter reported a small outbuilding was blown 50 yards and power lines were downed.</i>			
9/7/1998	Thunderstorm Wind	0	\$20,000
<i>Scattered thunderstorms produced heavy rains and isolated wet microbursts in the Boise area. Numerous reports of street flooding were received from around the city. Lightning caused a structure fire in Boise while about 3000 people were without power due to trees falling on power lines. At Shadow Valley on the outskirts of Boise, winds ripped two sections of roof off of an elementary school.</i>			

Date	Type	Deaths or Injuries	Property Damage
9/7/1998	Lightning	0	\$10,000
<i>Scattered thunderstorms produced heavy rains and isolated wet microbursts in the Boise area. Numerous reports of street flooding were received from around the city. Lightning caused a structure fire in Boise while about 3000 people were without power due to trees falling on power lines. At Shadow Valley on the outskirts of Boise, winds ripped two sections of roof off of an elementary school.</i>			
9/6/1998	Thunderstorm Wind	0	\$8,000
<i>During the evening of September 6th scattered thunderstorms moved through the Treasure Valley and Boise Mountains with heavy rain and isolated wet microbursts. In and around Boise numerous reports of street flooding were received while in Boise County a number of small mud slides covered the road between Garden Valley and Lowman. Winds gusted to an estimated 60 to 70 mph at the NWS office in Boise, while numerous reports of trees down were received from around the city. Winds toppled a tree onto a car and caused scattered power outages</i>			
4/23/1998	Thunderstorm/ Wind/Hail	0	\$20,000
<i>A severe thunderstorm caused damage from Owyhee Count through the Boise area and into the Boise Mountains. As the storm crossed into Ada County numerous reports of large hail up to golf ball size were received along with damaging winds up to 59 mph. Many trees were blown down and a greenhouse sustained heavy damage from large hail. Windblown debris smashed a car window. A wind gust of 74 mph was reported south of Idaho City.</i>			
3/4/1998	Winter Storm	0	20 to 30 minor traffic accidents
<i>A local snow shower produced 3 inches of accumulation over southeast Boise. Twenty to thirty minor traffic accidents disrupted traffic on area roadways.</i>			
9/17/1997	High Wind	0	\$2,000
<i>A strong wind gust toppled a 30-foot tall masonry wall at a Boise construction site.</i>			
7/31/1997	Lightning	0	One house burned down, fire damage to a restaurant
<i>During the afternoon of July 31, a thunderstorm formed over the Owyhee Mountains of southwest Idaho and moved into the Boise area. Lightning from this storm triggered a 530-acre range fire in Owyhee County and sparked a fire that burned a house down east of Boise. Winds from this storm peeled off shingles and damaged siding on a house in southeast Boise and short circuited an electric sign, causing a fire that damaged a restaurant in Boise.</i>			
4/20/1997	Tornado	0	Six homes and surroundings suffered damage
<i>A strong cold front across Southern Idaho spawned a short lived weak tornado. The tornado moved through a subdivision on the outskirts of Boise. Six houses suffered roof damage, fences were torn up and a trampoline was hurled 5 city blocks.</i>			
9/3/1995	Lightning	0	\$50,000
<i>In Gooding, high winds uprooted trees, downed power lines, and damaged several structures in the area. A thunderstorm that moved through the Boise area produced lightning igniting a house on fire. This storm also produced high winds downing power lines causing several power outages throughout the Treasure Valley.</i>			
7/28/1995	Lightning	2	\$50,000
<i>Thunderstorm in the Kuna area of Ada County caused 2 fatalities and approximately \$5,000 in property damage</i>			
8/15/1993	Lightning	0	\$50,000
<i>A lightning bolt did extensive damage to a home in Eagle, 10 miles northwest of Boise. The bolt punctured a hole in the roof, then traveled around the inside of the house damaging walls and knocking electrical outlets and telephones out of the walls. The bolt finally grounded on a telephone utility box and completely destroyed it.</i>			
5/20/1993	Lightning	0	\$5,000
<i>Lightning from a morning thunderstorm struck two trees sending bark into two windows of a house. The two windows were shattered, and one tree was split.</i>			
3/21/1984	Tornado	0	\$25,000
<i>A small tornado, associated with a fast moving cold front, passed through a farm east of Kuna. A grain bin, as well as a two-story wood framed shed, and the roof of an adjacent storage area were damaged.</i>			
10/26/1984	Tornado	0	\$25,000
<i>An F1 tornado was reported in Ada County causing approximately \$25,000 in Property damage.</i>			

13.2.3 Frequency

Table 13-2 summarizes search results from the National Center for Environmental Information Storm Events Database for Ada County over the 20-year period from 2001 through 2021. Based on these results, damaging wind, severe winter weather, and thunderstorm, lightning and hail events are likely to happen every year, tornado events once every 10 years, and extreme temperature events once every 20 years.

Table 13-2. Ada County Extreme Weather Events, January 2001 - December 2021

Event Types Included ^a	Total Number of Events	Number of Days with:			Average Years Between Days with Event
		Event	Event and Death or Injury	Event and Property Damage	
Thunderstorms, Lightning and Hail					
Hail, Heavy Rain, Lightning, Thunderstorm Wind	51	51	3	1	<1
Damaging Winds					
High Wind, Strong Wind, Thunderstorm Wind	57	57	3	2	<1
Extreme Temperatures					
Extreme Cold/Wind Chill	1	2	0	0	20
Severe Winter Weather					
Dense Fog, Heavy Snow	24	38	0	0	<1
Tornado					
Funnel Cloud	2	2	0	0	10

a. Event types are the categories available for search in the National Center for Environmental Information Storm Events Database
 Source: National Center for Environmental Information Storm Events Database

13.2.4 Severity

The most common problems associated with severe storms are immobility and loss of utilities. Fatalities are uncommon, but can occur. Roads may become impassable due to flooding, downed trees or a landslide. Power lines may be downed due to high winds or ice accumulation, and services such as water or phone may not be able to operate without power. Physical damage to homes and facilities can be caused by wind or accumulation of snow or ice. Even a small accumulation of snow can cause havoc on transportation systems due to a lack of snow clearing equipment and experienced drivers and the hilly terrain.

Lightning severity is typically assessed based on property damage and life safety (injuries and fatalities). Lightning can cause severe damage and injury. The number of reported injuries from lightning is likely to be low. County infrastructure losses can be up to thousands of dollars each year.

Windstorms can be a frequent problem in the planning area and have been known to cause damage to utilities. The predicted wind speed given in wind warnings issued by the National Weather Service is for a one-minute average; gusts may be 25 to 30 percent higher. Lower wind speeds typical in the lower valleys are still high enough to knock down trees and power lines and cause other property damage. Mountainous sections of the county experience much higher winds under more varied conditions.

Ice storms accompanied by high winds can have especially destructive impacts, especially on trees, power lines, and utility services. While sleet and hail can create hazards for motorists when they accumulate, freezing rain can cause the most dangerous conditions in the planning area. Ice buildup can bring down trees, communication

towers and wires, creating hazards for property owners, motorists and pedestrians. Rain can fall on frozen streets, cars, and other sub-freezing surfaces, creating dangerous conditions.

The severity of an extreme heat event depends on the number of consecutive days it lasts. Urban heat island effect can exacerbate the severity of an extreme heat event. Impacts of an extreme heat event may include increased energy consumption, elevated emissions of air pollutants and greenhouse gases, compromised human health and comfort, and impaired water quality. Extreme heat can also impact infrastructure by warping bridges, causing roads to buckle, and melting runways (National Weather Service n.d.).

Tornadoes are potentially the most dangerous of local storms, but they are not common in the planning area. If a major tornado were to strike within the populated areas of the county, damage could be widespread. Businesses could be forced to close for an extended period or permanently, fatalities could be high, many people could be homeless for an extended period, and routine services such as telephone or power could be disrupted. Buildings could be damaged or destroyed.

13.2.5 Warning Time

Meteorologists can often predict the likelihood of a severe storm. This can give several days of warning time. However, meteorologists cannot predict the exact time of onset or severity of the storm. Some storms may come on more quickly and have only a few hours of warning time.

13.3 EXPOSURE

All people and property and the entire environment of the planning area is exposed to some degree to the extreme weather hazard.

13.4 VULNERABILITY

13.4.1 Population

Vulnerability by Type of Weather

Population vulnerabilities to specific types of extreme weather event are as follows:

- **Damaging Winds**—Debris carried by extreme winds and trees felled by gusty conditions can contribute directly to loss of life. Electric power lines falling down to the pavement create the possibility of lethal electric shock.
- **Extreme Temperatures**—Certain medical conditions, such as heat stroke, can be directly attributable to excessive heat, while others may be exacerbated by excessive heat, resulting in medical emergencies. Individuals who lack shelter and heating are particularly vulnerable to extreme cold and wind chill.
- **Severe Winter Weather**—Many of the deaths that result from severe winter weather are indirectly related to the actual weather event, including deaths resulting from traffic accidents on icy roads and heart attacks while shoveling snow. Icy road conditions that lead to major traffic accidents can make it difficult for emergency personnel to travel. This may pose a secondary threat to life if police, fire, and medical personnel cannot respond to calls. Homeless populations that lack adequate shelter are also vulnerable to severe winter weather events.

- **Thunderstorms**—Most injuries and deaths associated with lightning strikes occur when people are outdoors; however, almost one-third of lightning-related injuries occur indoors. Males are five times more likely than females to be struck by lightning and people between the ages of 15 and 34 account for 41 percent of all lightning strike victims (Centers for Disease Control and Prevention 2013).
- **Tornado**—All residents in the path of a tornado are vulnerable, especially if there is not adequate warning that tornado-causing conditions are likely.

13.4.2 Property

Loss estimations for the extreme weather hazard are not based on damage functions, because no such damage functions have been generated. Instead, loss estimates were developed representing 10 percent, 30 percent and 50 percent of the assessed value of exposed structures. This allows emergency managers to select a range of potential economic impact based on an estimate of the percent of damage to the general building stock. Damage in excess of 50 percent is considered to be substantial by most building codes and typically requires total reconstruction of the structure. Table 13-3 lists the loss estimates to the general building stock.

Table 13-3. Potential Damage to Buildings from Extreme Weather Hazard

City	Assessed Value	10% Damage	30% Damage	50% Damage
Boise	\$61,280,836,767	\$6,128,083,677	\$18,384,251,030	\$30,640,418,383
Eagle	\$9,838,649,929	\$983,864,993	\$2,951,594,979	\$4,919,324,964
Garden City	\$3,705,101,875	\$370,510,187	\$1,111,530,562	\$1,852,550,937
Kuna	\$3,886,826,099	\$388,682,610	\$1,166,047,830	\$1,943,413,050
Meridian	\$28,959,315,273	\$2,895,931,527	\$8,687,794,582	\$14,479,657,637
Star	\$2,845,160,473	\$284,516,047	\$853,548,142	\$1,422,580,237
Unincorporated	\$12,472,792,807	\$1,247,279,281	\$3,741,837,842	\$6,236,396,403
Total	\$122,988,683,223	\$12,298,868,322	\$36,896,604,967	\$61,494,341,611

It is estimated that 20 percent of residential structures in the planning area were built without the influence of a structure building code with provisions for wind loads. All of these buildings are considered to be exposed to the extreme weather hazard, but structures in poor condition or in particularly vulnerable locations may risk the most damage. Those in higher elevations and on ridges may be more prone to wind damage. Those that are located under or near overhead lines or near large trees may be vulnerable to falling ice or may be damaged in the event of a collapse. The frequency and degree of damage will depend on specific locations.

13.4.3 Critical Facilities

Critical facilities exposed to floods are at risk from extreme weather with heavy rain or snowmelt. Critical facilities on higher ground may be exposed to wind damage, damage from falling trees, heavy snow and ice accumulation, tornadoes, lightning strikes and extreme temperatures. The sections below describe systems most commonly at risk.

Transportation Systems

High winds can cause significant damage to trees and power lines, disrupting ingress and egress on roads with obstructing debris. Landslides caused by heavy prolonged rains can block roads. Snowstorms significantly impact the transportation system and the availability of public safety services. Of particular concern are roads providing

access to isolated areas and bridges, which tend to become icy before and after other areas are clear. Prolonged obstruction of major routes due to weather can disrupt the shipment of goods and other commerce. Large, prolonged storms can have negative economic impacts for an entire region.

Power and Communication Lines

Ice and severe windstorms can create serious impacts on power and above-ground communication lines. Freezing of power and communication lines can cause them to break, disrupting both electricity and communication for households. They can also break as a result of falling trees. This can result in isolation.

Water and Sewer Lines

Severe local storms can cause water and sewer lines to freeze, which may crack pipes. This could result in a loss of potable water to households or exposed sewage causing public health hazards. However, extreme and prolonged freezing weather is required to cause underground pipes to crack, which is not likely to occur in Ada County. Above-ground pipes leading to and from individual homes are more likely vulnerabilities than large mainlines.

13.4.4 Environment

The environment is highly vulnerable to extreme weather. Natural habitats such as streams and trees exposed to the elements during a severe storm risk major damage and destruction. Prolonged rains can saturate soils and lead to slope failure. Flooding caused by extreme weather or snowmelt can produce river channel migration or damage riparian habitat. Storm surges can erode beachfront bluffs and redistribute sediment loads.

13.5 DEVELOPMENT TRENDS

Because all of the planning area is exposed to the extreme weather hazard, the increase in exposed population and property since the last hazard mitigation plan update is equal to the countywide trend over that time period: a 13.6-percent increase in population, a 19.4-percent increase in number of general building stock structures, and a 46.7-percent increase in assessed property value. However, since the majority of this growth was new development, the increase in vulnerability to extreme weather is considered to be minimal due to the influence of strong codes and code enforcement within the planning area.

All future development will be affected by severe storms. The ability to withstand impacts lies in sound land use practices and consistent enforcement of codes and regulations for new construction. All planning partners that have permit authority have adopted the International Building Code. This code is equipped to deal with the impacts of extreme weather events. Land use policies identified in comprehensive plans within the planning area also address many of the secondary impacts (flood and landslide) of the extreme weather hazard. With these tools, the planning partnership is well equipped to deal with future growth and the associated impacts of extreme weather.

13.6 SCENARIO

Severe local storms can occur frequently and impacts can be significant, particularly when secondary hazards of flood and landslide occur. A worst-case event would involve prolonged high winds during a winter storm accompanied by thunderstorms. Such an event would have both short-term and longer-term effects. Initially,

schools and roads would be closed due to power outages caused by high winds and downed tree obstructions. In more rural areas, some subdivisions could experience limited ingress and egress. Prolonged rain could produce flooding, overtopped culverts with ponded water on roads, and landslides on steep slopes. Flooding and landslides could further obstruct roads and bridges, further isolating residents.

13.7 ISSUES

Important issues associated with extreme weather in the Ada County planning area include the following:

- Older building stock in the planning area is built to low code standards or none at all. These structures could be highly vulnerable to extreme weather events such as windstorms.
- Redundancy of power supply throughout the planning area must be evaluated to better understand what areas may be vulnerable.
- The capacity for backup power generation is limited.
- The County has numerous isolated population centers.
- Public education on dealing with the impacts of extreme weather needs to continue so that residents can be better informed and prepared for extreme weather events.
- Debris management (downed trees, etc.) must be addressed, because debris can impact the severity of extreme weather events, requires coordination efforts, and may require additional funding.
- Older building stock in the planning area is built to low code standards or none at all. These structures could be highly vulnerable to severe winter weather effects such as snow loads or high winds.
- Street tree management programs should be evaluated to help reduce impacts from tree-related damages.
- Priority snow removal routes should continue to be cleared first to ensure navigable routes through and between jurisdictions.

14. FLOOD

14.1 GENERAL BACKGROUND

14.1.1 Types of Flooding in the Planning Area

Three types of flooding primarily affect Ada County: riverine, stormwater runoff, and flash floods. The following subsections describe each type.

Riverine Floods

Riverine flooding is overbank flooding of rivers and streams. Natural processes of riverine flooding add sediment and nutrients to fertile floodplain areas. Flooding in large river systems typically results from large-scale weather systems that generate prolonged rainfall over a wide geographic area, causing flooding in hundreds of smaller streams, which then drain into the major rivers. Two types of flood hazards are generally associated with riverine flooding:

- **Inundation**—Inundation occurs when floodwater is present and debris flows through an area not normally covered by water. These events cause minor to severe damage, depending on velocity and depth of flows, duration of the flood event, quantity of logs and other debris carried by the flows, and amount and type of development and personal property along the floodwater’s path.
- **Channel Migration**—Erosion of banks and soils worn away by flowing water, combined with sediment deposition, causes migration or lateral movement of a river channel across a floodplain. A channel can also abruptly change location (termed “avulsion”); a shift in channel location over a large distance can occur within as short a time as one flood event.

The frequency and severity of flooding for river systems are based on discharge probability. The discharge probability is the probability that a certain river discharge (flow) level will be equaled or exceeded in a given year. Flood studies use historical records to determine the probability of occurrence for different discharge levels and storm surge levels. These measurements reflect statistical averages only; it is possible for multiple floods with a low probability of occurrence (such as a 1-percent-annual-chance flood) to occur in a short time period. For riverine flooding, the same flood event can have flows at different points on a river that correspond to different probabilities of occurrence.

Shallow area flooding is a special type of riverine flooding. FEMA defines shallow flood hazards as areas inundated by the 1-percent-annual-chance flood with flood depths of only 1 to 3 feet. These areas are generally flooded by low-velocity sheet flows of water.

Stormwater Runoff Floods

Stormwater flooding is a result of local drainage issues and high groundwater levels. Locally, heavy rain, especially during high lunar tide events, may induce flooding within areas other than delineated floodplains or along recognizable channels due to presence of storm system outfalls inadequate to provide gravity drainage into the adjacent body of water. If local conditions cannot accommodate intense precipitation through a combination of infiltration and surface runoff, water may accumulate and cause flooding problems. Flooding issues of this nature generally occur within areas with flat gradients, and generally increase with urbanization, which speeds accumulation of floodwaters because of impervious areas. Shallow street flooding can occur unless channels have been improved to account for increased flows.

Urban drainage flooding is caused by increased water runoff due to urban development and drainage systems. Drainage systems are designed to remove surface water from developed areas as quickly as possible to prevent localized flooding on streets and within other urban areas. These systems utilize a closed conveyance system that channels water away from an urban area to surrounding streams, and bypasses natural processes of water filtration through the ground, containment, and evaporation of excess water. Because drainage systems reduce the amount of time surface water takes to reach surrounding streams, flooding in those streams can occur more quickly and reach greater depths than prior to development within that area.

Flash Floods

The National Weather Service defined a flash flood as follows (National Weather Service 2009):

“a rapid and extreme flow of high water into a normally dry area, or a rapid water level rise in a stream or creek above a predetermined flood level, beginning within 6 hours of the causative event (e.g., intense rainfall, dam failure). However, the actual time threshold may vary in different parts of the country. Ongoing flooding can intensify to flash flooding in cases where intense rainfall results in a rapid surge of rising flood waters”

Flash floods can tear out trees, undermine buildings and bridges, and scour new channels. In urban areas, flash flooding is an increasingly serious problem due to removal of vegetation and replacement of ground cover with impermeable surfaces such as roads, driveways, and parking lots. The greatest risk from flash floods is occurrence with little to no warning. Major factors in predicting potential damage are intensity and duration of rainfall, and steepness of watershed and streams.

14.1.2 FEMA Regulatory Flood Zones

FEMA defines flood hazard areas through statistical analyses of records of river flow, storm tides, and rainfall; information obtained through consultation with the community; floodplain topographic surveys; and hydrologic and hydraulic analyses. Flood hazard areas are delineated on Digital Flood Insurance Rate Maps (DFIRMs), which are official maps of a community on which the Federal Insurance and Mitigation Administration has delineated both special flood hazard areas (SFHAs) and risk premium zones. DFIRMS identify the following:

- Locations of specific properties in relation to SFHAs
- Base flood (1-percent annual chance flood) elevations at specific sites
- Flood magnitudes in specific areas
- Regulatory floodways and floodplain boundaries (1-percent and 0.2-percent annual chance floodplain boundaries).

The SFHA is the land area covered by floodwaters of the base flood. In SFHAs, National Flood Insurance Program (NFIP) floodplain management regulations must be enforced and flood insurance is mandatory.

The NFIP defines the base flood elevation as the floodwater elevation during a base flood event (a flood that has a 1-percent chance of occurring in any given year). A structure within a 1-percent annual chance floodplain has a 26-percent chance of undergoing flood damage during the term of a 30-year mortgage. The 1-percent annual chance flood is a regulatory standard adopted by federal agencies and most states to administer floodplain management programs. The 1-percent annual chance flood is used by the NFIP as the basis for insurance requirements nationwide. DFIRMs also depict 0.2-percent annual chance flood designations (500-year events).

DFIRM, FIRMs, and other flood hazard information identify the expected spatial extent of flooding from a 1-percent or 0.2-percent annual chance event, defining specific areas as follows:

- **Zones A1-30 and AE**—SFHAs that are subject to inundation by the base flood, determined using detailed hydraulic analysis. Base flood elevations are shown within these zones.
- **Zone A (Also known as Unnumbered A-zones)**—SFHAs where no base flood elevations or depths are shown because detailed hydraulic analyses have not been performed.
- **Zone AO**—SFHAs subject to inundation by types of shallow flooding where average depths are between 1 and 3 feet. These are normally areas prone to shallow sheet flow flooding on sloping terrain.
- **Zone B and X (shaded)**—Zones where the land elevation has been determined to be above the base flood elevation, but below the 500-year flood elevation. These zones are not SFHAs.
- **Zones C and X (unshaded)**—Zones where the land elevation has been determined to be above both the base flood elevation and the 500-year flood elevation. These zones are not SFHAs.

14.1.3 Floodplains

A floodplain is the area adjacent to a river, creek, lake or the ocean that becomes inundated during a flood. Riverine floodplains may be broad, as when a river crosses an extensive flat landscape, or narrow, as when a river is confined in a canyon.

When floodwaters recede after a flood event, they leave behind layers of rock and mud. These gradually build up to create a new floor of the floodplain. Floodplains generally contain unconsolidated sediments (accumulations of sand, gravel, loam, silt, and/or clay), often extending below the bed of the stream. These sediments provide a natural filtering system, with water percolating back into the ground and replenishing groundwater. These are often important aquifers, the water drawn from them being filtered compared to the water in the stream. Fertile, flat reclaimed floodplain lands are commonly used for agriculture, commerce and residential development.

Connections between a river and its floodplain are most apparent during and after major flood events. These areas form a complex physical and biological system that not only supports a variety of natural resources but also provides natural flood and erosion control. When a river is separated from its floodplain with levees and other flood control facilities, natural, built-in benefits can be lost, altered, or significantly reduced.

Floodplain Ecosystems and Beneficial Functions

Floodplains can support ecosystems that are rich in plant and animal species. A floodplain can contain 100 or even 1,000 times as many species as a river. Wetting of the floodplain soil releases an immediate surge of

nutrients: those left over from the last flood, and those that result from the rapid decomposition of organic matter that has accumulated since then. Microscopic organisms thrive, and larger species enter a rapid breeding cycle. Opportunistic feeders (particularly birds) move in to take advantage. The production of nutrients peaks and falls away quickly, but the surge of new growth endures for some time. This makes floodplains valuable for agriculture. Species growing in floodplains are markedly different from those that grow outside floodplains. For instance, riparian trees (trees that grow in floodplains) tend to be very tolerant of root disturbance and very quick-growing compared to non-riparian trees.

Floodplains have many natural beneficial functions, and disruption of them can have long-term consequences for entire regions. Some well-known, water-related functions of floodplains (noted by FEMA) include:

- Natural flood and erosion control
- Provide flood storage and conveyance
- Reduce flood velocities
- Reduce flood peaks
- Reduce sedimentation
- Surface water quality maintenance
- Filter nutrients and impurities from runoff
- Process organic wastes
- Moderate temperatures of water
- Provide groundwater recharge
- Promote infiltration and aquifer recharge
- Reduce frequency and duration of low surface flows

Areas in the floodplain that typically provide these natural functions are wetlands, riparian areas, sensitive areas, and habitats for rare and endangered species.

Effects of Human Activities

Because they border water bodies, floodplains have historically been popular sites to establish settlements. Human activities tend to concentrate in floodplains for a number of reasons: water is readily available; riverine floodplain land is fertile and suitable for farming; transportation by water is easily accessible; land is flatter and easier to develop; and there is value placed in ocean views. But human activity in floodplains frequently interferes with the natural function of floodplains. It can affect the distribution and timing of drainage, thereby increasing flood problems. Human development can create local flooding problems by altering or confining drainage channels or causing erosion of natural flood protection systems such as dunes. Flood potential can be increased in several ways: reducing a stream's capacity to contain flows; increasing flow rates or velocities downstream; and allowing waves to extend further inland. Human activities can interface effectively with a floodplain as long as steps are taken to mitigate the activities' adverse impacts on floodplain functions.

14.1.4 Secondary Hazards

The most problematic secondary hazard for riverine flooding is bank erosion, in some cases more harmful than actual flooding. This is especially true in the upper courses of rivers with steep gradients, where floodwaters may pass quickly and without much damage, but scour banks, edging properties closer to the floodplain or causing them to fall in. Flooding is also responsible for hazards such as landslides when high flows over-saturate soils on steep slopes, causing them to fail. Hazardous materials spills are also a secondary hazard of flooding if storage tanks rupture and spill into streams, rivers, or storm sewers.

14.2 HAZARD PROFILE

Flooding in Ada County is typically caused by high-intensity, short-duration (1 to 3 hours) storms concentrated on a stream reach with already saturated soil. Flooding is predominantly confined within traditional riverine valleys. Locally, some natural or manmade levees separate channels from floodplains and cause independent overland flow paths. Occasionally, railroad, highway or canal embankments form barriers, resulting in ponding or diversion of flows. Some localized flooding not associated with stream overflow can occur where there are no drainage facilities to control flows or when runoff volumes exceed the design capacity of drainage facilities.

14.2.1 Principal Flooding Sources

The Boise River

The Boise River is about 200 miles long and flows generally east to west. The headwaters are in the Sawtooth Mountains and the mouth is near Parma, Idaho, where it empties into the Snake River. Principal tributaries of the Boise River are the North, Middle, and South Forks, and Mores Creek. Total drainage area of the Boise River is 4,134 square miles. Deep V-shaped valleys, steep slopes and narrow ridges characterize the watershed above Lucky Peak Dam. In the upper basin, elevation ranges from 3,000 to 10,600 feet. The watershed below Lucky Peak Dam is roughly 1,485 square miles and is composed of river bottoms, terraces, and low rolling to steep hills. The bottomland adjoining the main stream constitutes the floodplain and varies from 1 to 3 miles in width.

Water gradients on the Boise River vary from 150 feet per mile in the upper reaches of the watershed to 6 feet per mile in the lower Reaches from Barber Dam to the Ada-Canyon County border, the river has an average slope of 11.5 feet per mile. The natural runoff of the Boise River usually consists of low flows from late July through February, increasing flows during March, and high flows in April, May and June. Occasionally this pattern is interrupted by high flows of short duration in winter caused by rainstorms. The vast majority of the runoff is generated above Lucky Peak Dam. Average discharge near Boise is about 2,750 cubic feet per second (cfs) or 2 million acre-feet per year. The maximum recorded mean daily discharge was 35,500 cfs, on June 14, 1896.

The principal dams on the Boise River are Anderson Ranch, Arrowrock and Lucky Peak. These dams provide flood-control storage for 64 percent of the drainage area of the river. The dams have greatly reduced the magnitude and frequency of Boise River floods. In spite of the flood protection provided by the existing system, major floods still cannot be fully controlled. Boise River water levels reach bank-full stage (6,500 cfs at the Glenwood Bridge gage) virtually every year. However, the reservoirs provide enough regulation to generally allow for 24 to 72 hours' warning before cities along the Boise River in Ada County experience major flooding.

The river's ability to carry a flood has been significantly reduced over time by siltation. Before the upstream dams regulated flows, spring runoff flushed and scoured the river channel. Since 1954, when Lucky Peak, the last of the three big dams, went into operation, the capacity of the river channel has gradually been reduced. A 1972 USGS study noted a considerable decrease in stream capacity at the gauging stations at Notus and Boise. At the same river stage, flows at Notus were 11,800 cfs in 1938 and 8,000 cfs in 1972. Flows at the same stage at Boise were 9,600 cfs in 1943 and 7,700 cfs in 1972. This is a reduction in carrying capacity of 32 percent at Notus and 20 percent in Boise. In the decades since that study, silt has continued to be deposited. With present channel capacity, there is not enough reservoir space in the system to fully regulate the standard flood. There is a 1 percent chance in any year of flows at Boise exceeding 16,600 cfs, and a 2 percent chance of flows exceeding 11,000 cfs.

Other factors that affect flooding on the Boise River are the construction and condition of levees, the proliferation of plant growth along the river, and the construction of structures in the floodway. With these changes, water levels that in the past were merely an inconvenience now can cause significant damage. When flood elevations for the 10 percent or 2 percent annual chance flood are only slightly less than for a 1 percent annual chance flood, debris blockages can cause 1 percent annual chance elevations during a 10 percent annual chance flood.

The Snake River

The Snake River forms part of the southern boundary of Ada County, running from Castle Butte in the east to Gaffey Butte in the west. The river flows through a deep canyon bordered by high, steep walls. The main threat of flooding on the Snake River is from ice jams. The potential for other types of flooding is limited since large dams control the river. There is very little development along this part of the Snake River. The main residential area is near Swan Falls Dam. Depending on the time of year, varying numbers of recreationists may be on the river.

Tributaries

The most hazardous streams in Ada County are the Boise River tributaries that have their headwaters in the Boise Foothills: Seaman Gulch, Pierce Gulch, Polecat Gulch, Stewart Gulch, Crane Creek, Hull's Gulch, and Cottonwood Creek. These streams flow southwest and are dry most of the year. Only after periods of heavy rainfall or snowmelt do they have significant flows. The soil of these streams is almost entirely deep sandy loam, loam with areas of clay, or clay loam, and all are highly erodible. Vegetation in these gulches is sparse and consists mainly of sagebrush, bitterbrush and perennial grasses. Elevations range from about 2,800 feet at the Boise city limits to about 5,800 feet at the summit of Boise Ridge.

The danger on these streams is flash flooding. Cottonwood Creek is the largest of these drainages and carries the greatest threat for extensive flash flooding. The largest flood in recent history from these Foothills streams occurred August 20, 1959, when Cottonwood Creek flooded, inundating about 50 blocks in Boise and several hundred acres of farmland with water, rocks and mud.

Precipitation normally varies from 12 inches in Boise to about 22 inches at higher elevations. Both frontal storms and thunderstorms can be sufficiently heavy to cause flooding. The maximum recorded 24-hour rainfall in Boise is 2.7 inches. The maximum observed short-duration rainfall at the Boise weather station is 4.1 inches/hour. However, intensities as high as 7.5 inches/hour have been logged in southwestern Idaho and eastern Oregon. Peaks for both of these types of floods occur in a rather short time: from 15 minutes to several hours.

Two conditions may cause floods in the drainages on the Boise Front: the combination of a rainstorm with snowmelt on frozen ground in winter or early spring; high-intensity thunderstorms, in summer. Winter storm floods generally occur during January through March. Thunderstorms may occur at any time of the year, although they usually happen from March through September. Sandy soil and sparse vegetation combine to foster flash floods during intense thunderstorms. Floods from thunderstorms do not occur as frequently as those from general rain and snowmelt conditions, but are far more severe. The possibility for injury and death from flash floods is heightened because they are so uncommon that people do not recognize or accept the potential danger.

The onset of flooding in these gulches can range from extremely slow to very fast. This variability depends on the cause of flooding and other factors such as rainfall intensity, the areas receiving the rain, temperature, and the condition of the soil. Floods that occur quickly are usually caused by thunderstorms, while floods that occur more

slowly are often the result of moderate but prolonged rainfall, snowmelt or a combination of both. In the case of intense rainfall immediately above developed areas, the onset of flooding may occur in a matter of minutes.

The lower portions of most of the gulches contain residential developments, including single-family homes, mobile home parks and apartment complexes. A large portion of the older residential district in the City of Boise is located within the floodplains of these gulches. Residential streets form the flood channel in several locations. A number of gulches and areas immediately below the gulches contain commercial and public facilities.

Between August 26 and September 2, 1996, 15,300 acres of the Boise City foothills were burned by the Eight Street wildfire. About 50 percent of the area in the Stewart Gulch and Cottonwood Creek watersheds was burned. Crane Gulch and Hulls Gulch watersheds were burned almost totally. The fire removed vegetation and hardened the soil. As a result, for several years the threat of flash flooding was significantly increased. Treatments applied in an effort to reduce the flood risk included contour felling of trees, tillage and aerial seeding, placing straw wattles, hand trenching, contour trenching, and straw bale check dams. Flood control structures were as follows:

- Enlarging the Cottonwood Creek Mountain Cove ponds to 150 acre-feet combined and re-channeling the flow through the Mountain Cove Road turn at the head of the flume, and constructing a wall along Reserve Street to direct the flow of water
- Constructing a 35-acre-foot upper catch basin and a 15-acre-foot lower catch basin on Hulls Gulch
- Constructing a 19-acre-foot dam on the Main Fork of Crane Gulch, and a 28-acre-foot dam on the East Fork of Crane Gulch
- Elevating sections of the Bogus Basin Road to act as a 61-acre-foot dam across Stewart Gulch.

Recent studies addressing flash floods have focused on these Boise gulches. However, long-term consideration of all drainages is necessary to avoid similar problems. Other streams in Ada County that may be subject to flooding are Big Gulch Creek, Black's Creek, Bryans Run Creek, Corder Creek, Council Spring Creek, Current Creek, Dry Creek, Eightmile Creek, Fivemile Creek, Highland Valley Gulch, Indian Creek, Little Gulch Creek, Maynard Gulch, Ninemile Creek, Rabbit Creek, Sand Creek, Sheep Creek, Spring Valley Creek, Tenmile Creek, Threemile Creek, Warm Spring Creek, and Willow Creek. The majority of these streams are dry most of the year.

Canals

There are more than two dozen canals in Ada County, extending over 400 miles. The canals draw water from the Boise River, generally from April through October. This is the time of year when canals present the greatest flood danger. There are several types of flood threats posed by canals. The first type is from a break or breach in the canal. This has the potential for significant flooding, especially if the canal is elevated or located on a hillside. Another possibility is be from an obstruction in a canal that causes water to overtop the canal bank. Other potential risks are vandalism, piping of water, gopher holes, etc. A break would pose the most serious problem.

Urban Flooding

Like many areas in the western U.S., Ada County has experienced rapid change due to urban development in once rural areas. Drainage facilities in these recently urbanized areas are a series of pipes, roadside ditches and channels. Urban flooding occurs when these conveyance systems lack the capacity to convey rainfall runoff to nearby creeks, streams and rivers. As drainage facilities are overwhelmed, roads and transportation corridors become conveyance facilities. The two key factors that contribute to urban flooding are rainfall intensity and duration. Topography, soil conditions, urbanization and groundcover also play an important role.

Urban floods can be a great disturbance of daily life in urban areas. Roads can be blocked and people may be unable to go to work or school. Economic damage can be high but the number of casualties is usually limited, because of the nature of the flood. On flat terrain, the flow speed is low and people can still drive through it. The water rises relatively slowly and usually does not reach life endangering depths.

14.2.2 Participation in Federal Flood Programs

National Flood Insurance Program

Ada County entered the NFIP on December 18, 1984. Structures permitted or built in the County after then are called “post-FIRM” structures and are eligible for reduced flood insurance rates, since they were constructed after regulations and codes were adopted to decrease vulnerability. Structures built before then are called “pre-FIRM” and are subject to higher rates because they may not meet code or may be located in hazardous areas. The effective date for the current countywide FIRM is June 2020. This map is a DFIRM (digital flood insurance rate map).

All incorporated cities in Ada County also participate in the NFIP. The county and cities are currently in good standing with the provisions of the NFIP. Compliance is monitored by FEMA regional staff and by the Idaho Department of Water Resources under a contract with FEMA. Maintaining compliance under the NFIP is an important component of flood risk reduction. All planning partners that participate in the NFIP have identified actions to maintain their good standing.

Table 14-1 lists flood insurance statistics that help identify vulnerability in Ada County. Seven communities in the planning area participate in the NFIP, with 2,152 flood insurance policies providing \$656.8 million in insurance coverage. According to FEMA statistics, 121 flood insurance claims were paid between January 1, 1978, and March 31, 2022, for a total of \$480,275 and an average of \$3,969 per claim.

Table 14-1. Flood Insurance Statistics for Ada County

Jurisdiction	Date of Entry Initial FIRM Effective Date	# of Flood Insurance Policies as of 3/31/2022	Insurance In Force	Total Annual Premium	Claims, 11/1978 to 3/31/2022	Value of Claims paid, 11/1978 to 3/31/2022
Boise	4/17/1984	952	\$276,871,100	\$625,595	55	\$102,909
Eagle	3/04/1980	316	\$114,310,600	\$212,357	15	\$198,703
Garden City	5/15/1980	486	\$149,003,700	\$352,585	18	\$44,557
Kuna	10/02/2003	2	\$537,300	\$1,633	0	\$0
Meridian	9/27/1991	122	\$33,269,900	\$88,623	1	\$0
Star	12/18/1984	89	\$28,015,100	\$57,541	0	\$0
Unincorporated	12/18/1984	185	\$54,770,300	\$133,551	32	\$134,106
Total		2,152	\$656,778,000	\$1,471,885	121	\$480,275

The Community Rating System

Ada County and the cities of Boise, Eagle, Garden City and Meridian are currently participating in the CRS, as summarized in Table 14-2. Many of the mitigation actions identified this plan are creditable activities under the CRS program. Therefore successful implementation of this plan offers the potential for these communities to enhance their CRS classifications and for currently non-participating communities to join the program.

Table 14-2. CRS Community Status in Ada County

Community	NFIP Community #	CRS Entry Date	Current CRS Classification	Premium Discount, SFHA	Premium Discount, non-SFHA
Ada County	160001	10/1/1994	7	15%	5%
Boise	160002	10/1/1991	6	20%	10%
Eagle	160003	4/1/2000	6	20%	10%
Garden City	160004	10/1/1998	8	10%	5%
Meridian	160180	5/1/2016	8	10%	5%

14.2.3 Past Events

Ada County has a long and extensive history of flooding. The most common problem areas for flooding are the Boise River and the Boise Foothills streams. The greatest flood of known magnitude on the Boise River occurred on June 14, 1896. Peak flow was estimated at 35,500 cfs. The largest recent flood occurred in April 1943. Peak flow for this event was estimated at 21,000 cfs. Both of these events occurred prior to the river being regulated by Lucky Peak Dam. Table 14-3 shows flood events that have impacted the planning area since 1955.

Table 14-3. Ada County Flood Events

Date	Declaration #	Type of event
8/01/2021	N/A	Flash Flood
<i>Multiple small rock slides and flooding in Southeast Boise.</i>		
4/30/2020	N/A	Flash Flood
<i>Streets were flooded due to heavy rain from thunderstorms and stranded cars, which led to road closures in Southeast Boise.</i>		
4/01/2017 - 5/01/2017	DR 4342	Flood
<i>Planned releases from Lucky Peak Reservoir for flood control in April ranged from 7,800 cfs to 8,900 cfs. The Boise River remained in flood all of May due to planned release from Lucky Peak dam. Regulated flows were above flood stage for 101 days, resulting in extensive damage to the Greenbelt and Nature Trail paths. Extensive flood fight efforts were undertaken in the Eagle Island area. On Eagle Island in the Riviera Estates area, several homes were surrounded by water and low lying roads were inundated. Flood fight efforts to mitigate a pit capture were undertaken along the Eagle Island south channel of the river. Large portions of Ann Morrison Park, Barber Park, and Marianne Williams Park were flooded. Residential streets were flooded in the Garden City Warehouse District and on Eagle Island. A major shift in the river channel occurred downstream of Eagle Island. Streets in the Stonebriar development downstream of the Highway 16 bridge were inundated. Severe bank erosion and large trees washed into the river caused problems at some bridges.</i>		
3/06/2017	N/A	Planned Dam Release
<i>The Army Corps of Engineers and Bureau of Reclamation increased regulated flows from Lucky Peak Reservoir, putting the Boise River in flood for the remainder of March. Flooding was expected to continue through late spring. Flood flows caused significant damage to the Greenbelt and Nature Trail paths along the river. Flood fight efforts focused on the Eagle Island area where severe bank erosion occurred and a pit capture threat existed. A HESCO barrier wall and extensive sandbagging occurred in the area to mitigate a pit capture.</i>		
2/08/2017	N/A	Flood
<i>Strong Southwesterly flow behind a warm front spread heavy rain across most of the intermountain west. Flooding occurred in most of South Central Idaho.</i>		
7/08/2015	N/A	Flash Flood
<i>Strong thunderstorms and heavy rain crossed parts of southwest Idaho. Heavy rain from slow moving thunderstorms caused flash flooding in downtown Boise and in the north and northwest parts of the city. Over an inch of rain fell in less than an hour in parts of Boise.</i>		
5/01/2012	N/A	Planned Dam Release
<i>Unusually high rainfall triggered a rapid snow melt. Peak inflow into the three-dam reservoir system was over 26,000 cfs. Flows peaked at 8100 cfs through town. The high flows also caused an overtopping of a canal head-gate and two riverbank breeches along the Little Pioneer Ditch. Uncontrolled flows into the irrigation canal caused flooding on agricultural lands and threatened numerous public rights of way in Star. Ada County Highway District took the lead and completed the bank repairs that resolved this issue.</i>		

Date	Declaration #	Type of event
5/30/2011	N/A	Planned Dam Release
<i>Due to capacity issues at Lucky Peak Dam, officials were forced to increase flow on the Boise River, causing the channel to go above flood stage during the day. The river crested at 10.03 feet around 3:00 p.m..</i>		
5/20/2008	N/A	Flooding-Boise River
<i>High flows on the Boise River forced Boise Parks & Recreation to close three sections of the Greenbelt. The walking-only pedestrian area was underwater from the Cottonwoods Apartments past River Run in southeast Boise. Two other areas were also closed: Broadway Avenue tunnel on the north side of the river and Loggers Creek footbridge from Leadville Avenue east to the Park Center Bridge.</i>		
5/6/2006	N/A	Flooding-Kuna-Mora canal
<i>A breach in the Kuna-Mora Canal flooded parts of a south Kuna subdivision and came close to compromising a sewage pump about 2.5 miles away. Thirty to forty homeowners reported flooding. The canal broke about one quarter south of King Road. It started as a six foot breach and quickly became a 40 foot breach.</i>		
5/25/2006	N/A	Flooding-Boise River
<i>High water levels along the Boise River created a breach in the riverbank near Eagle Island. About 8- 10 homes along Artesian and Trout Roads were affected. The State of Idaho repaired the breach. For the affected residents Ada County provided sandbags, portable toilets, sump pumps and diesel for tractors.</i>		
5/11/2006	N/A	Flooding –Boise River
<i>High flows on the Boise River eroded a bridge near Garden City and nearly caused it to collapse into the river.</i>		
4/5/2006	N/A	Flooding-Tributaries
<i>Flooding along Five mile Creek and Lake Patricia flooded two homes and threatened several others as well as a small, private dam, southeast of Boise. Ada County inmate crews assisted in sandbagging.</i>		
7/7/2004	N/A	Urban Flooding
<i>The Idaho State Capital building was inundated by a flash flood. The flood occurred in the basement, displacing about 20 workers. Repairs are estimated to be between \$70,000 and \$100,000.</i>		
3/7/1999	N/A	Flooding-Boise River
<i>High water levels released from Lucky Peak Reservoir caused flooding in low lying areas. Segments of the Greenbelt were closed and areas in southeast Boise near Logger's Creek and Cottonwood Apartments were flooded. Also a 200' section of riverbank near Eagle's Starwood subdivision collapsed.</i>		
May/June 1998	N/A	Flooding-Boise/Snake
<i>Two weeks of rain fell on a melting snowpack caused flooding along the Snake, Weiser, Payette and Boise Rivers for the second year in a row. A levee break near Eagle Island caused flooding of nearby homes.</i>		
9/11/1997	N/A	Flash Flooding
<i>Flash flooding from thunderstorms caused damage in the Boise Foothills. Cloudburst dropped 0.40" of rain in 9 minutes on the Foothills area burned by the 1996 Eighth Street Fire, flooding homes, Highlands Elementary School, and streets in the Crane Creek and Hulls Gulch areas. Floodwaters were contained in several holding ponds. 15 people were evacuated and sheltered at Les Bois Junior High.</i>		
March/July 1997	DR 1177	Riverine Flooding
<i>Rapid melt of a record snowmelt led to flooded rivers throughout southern Idaho. The Snake River Basin received significant snowfall during the winter of 1996-97, and in higher elevations the snow pack exceeded 250 percent of normal, causing above normal runoff during the spring melt.</i>		
1/1/1997	DR 1154	Riverine Flooding
<i>Warm temperatures combined with a rainfall 4-6 times normal caused snowmelt triggering floods, mudslides and avalanches in the Weiser, Payette and Salmon River drainages, damaging communities and infrastructure throughout Idaho. Increased flows in the Boise River to make room in reservoirs flooded homes and businesses along Eagle Island. A dike near South Eagle Road broke, flooding a road and surrounding fields. Parts of the Greenbelt along the Boise River were closed.</i>		
May 1993	N/A	Flooding-Boise River
<i>Boise River floodwaters soaked 10 Eagle homes, 1 woman drowned.</i>		
February 1986	N/A	Flooding-Tributaries
<i>Melting snow flooded North Boise from creeks in the Foothills. Streets in downtown Boise were closed to form a temporary diversion canal to channel water from Cottonwood Creek to the Boise River. The canal carried an est. 800,000 gallons of water an hour</i>		

Date	Declaration #	Type of event
June 1983	N/A	Flooding-Boise River
<i>Snowmelt caused by high temperatures led to the raising of the Boise River to a peak runoff of 24,294 cfs. Flooding damaged the Greenbelt and river banks along Barber Park, Parkcenter, Garden City and Eagle Island. Homes along the river were flooded, and residents of Eagle Island used boats to travel. Cottonwood trees fell into the river, causing damming and further flooding. Municipal Park lost a chunk of land 300' long and 55' deep.</i>		
February 1982	N/A	Flooding-Tributaries
<i>Mudslides closed Hwy 55 three times in one month; erosion from floodwaters caused damage to numerous streets in the Foothills.</i>		
1/5/1979	N/A	Flooding-Tributaries
<i>In Boise, rain and melting snow caused flooding in North and West Boise from Foothills creeks. Over a dozen homes in the Highlands near Crane Creek were hardest hit, flooding basements, yards and streets despite sandbagging efforts. Flooding was also seen along Polecat Gulch, Stewart Gulch and Cottonwood Creek north of Boise, and Three mile, Five mile, Eight mile and Ten mile Creeks south of the airport, flooding homes, businesses and farmlands. Eckert Road bridge was closed.</i>		
5/26/1973	N/A	Flooding-Canal
<i>A 30' wide break in the Ridenbaugh Canal flooded the Triangle Dairy and 15 houses in southeast Boise with muddy, waist-deep water. The affected area was between Broadway/Linden/Leadville</i>		
1/17/1971	N/A	Urban Flooding
<i>Heavy rain and snow over four days caused flooding in southwest Idaho. Basements, yards and low-lying roads were flooded. In Orchard, 3 of 30 homes were evacuated by rowboat. Floodwaters covered approximately 160 acres in the town.</i>		
1/22/1969	N/A	Flooding-tributaries
<i>Crane Creek, Cottonwood Creek, and other drainages in the Foothills flooded, with the Cottonwood Creek flow being measured at 30 percent above normal. The Boise River reached 3,643 cfs, three times normal. Flooding was mostly confined to roads and yards in North Boise.</i>		
5/22/1965	N/A	Flooding-Boise River
<i>300 acres of farmland and several houses near Eagle Island were flooded by the Boise River when a levee broke.</i>		
1/29/1965	N/A	Flooding-Tributaries
<i>Flooding from Cottonwood and Dry Creeks, Crane, Stewart and Hulls Gulch. Damage mostly was for repair to bridges and cleanup.</i>		
12/21/1964	N/A	Riverine Flooding
<i>Warm weather combined with heavy rains and melting snow caused flooding along the Payette, Big Wood, Little Wood, Portneuf, Clearwater and Boise River drainages. Hwy 21 and 15, U.S. 95N and 30E were closed. Over 100 homes were damaged, numerous bridges were washed out, and thousands of acres of farmlands were flooded. Two deaths were attributed to the flood. A state of emergency was declared. Boise was isolated as surrounding roads and highways were closed, train and bus service cut off.</i>		
2/1/1963	N/A	Flooding
<i>In Ada County, Meridian streets and homes were flooded, farmland along Hwy 20-26 flooded. Canals in the area were running 3' above normal. Several highways were closed, bridges were washed away, and homes had basements and yards.</i>		
9/22/1959	N/A	Flash Flooding
<i>Heavy storms caused flooding along Cottonwood Creek and other Foothill drainages. The force of the water broke dikes across from the Armory on Reserve Street. Hwy 21 was closed because of debris flows. The area affected was mainly in the North End, from Fourth to Eighth Streets and Thatcher to Resseguie; also from Reserve Street to MK Plaza to Eighth Street. After these floods, several local and federal agencies cooperated in the "Boise Front Watershed Restoration Project" involving contour trenching, furrowing, seeding with trees and grasses and building protective fences, at a cost of approx. \$165,000.</i>		
8/20/1959	N/A	Cloudburst Floods
<i>Severe thunderstorms in the northeast Boise Foothills were estimated to be a 50- to 100-year rainfall event; 0.30" of rain fell in 5 minutes at Deer Point. Earlier Lucky Peak fires had denuded the foothills of vegetation. Debris flows filled basements and yards in north and east Boise. Floodwaters were diverted along Broadway Avenue to the Boise River. Some 500 houses were damaged by mud; over 160 acres were covered by silt and debris. The agriculture area between Lucky Peak Dam and East Boise suffered extensive property, crop and livestock losses. The Boise police clubhouse on Mountain Cove Road was destroyed. The Idaho National Guard headquarters on Reserve Street was inundated.</i>		

Date	Declaration #	Type of event
1/12/1958	N/A	Flash Flooding
<i>A rainstorm that dumped over 2" of rain in Boise in a 12 hour period caused extensive flooding and heavy crop damage. Homes, roads and storm basins were flooded, several families were evacuated. The Boise Bench was hit hardest, with one family on Atlantic Street evacuated when their house was flooded with over a foot of water.</i>		
2/25/1957	N/A	Flooding-tributaries
<i>Parts of Eagle flooded by Dry Creek.</i>		
8/1/1955	n/a	Flooding-Canals
<i>200' section of the New York Canal broke 7 miles southeast of Boise and flooded 200-300 acres of farmland with water, mud and rock. A dozen homes near the break were flooded with 3' of water and families were evacuated.</i>		

14.2.4 Location

Figure 14-1 shows the flood hazard areas from FEMA’s 2020 DFIRM for Ada County, which was used to assess flood risk for this plan update. The mapped 1 percent annual chance and 0.2 percent annual chance flood hazard area within each municipality is listed in Table 14-4.

Table 14-4. Area Within the Mapped Flood Hazard Areas

	Area in Flood Zone (acres)	
	1% Annual Chance	0.2% Annual Chance
Boise	2,386	6,398
Eagle	2,640	4,046
Garden City	845	2,092
Kuna	420	420
Meridian	590	976
Star	728	1,205
Unincorporated	14,673	16,542
Total	22,282	31,679

14.2.5 Frequency

Ada County experiences episodes of river flooding almost every winter. Large floods that can cause property damage typically occur every three to seven years. Urban portions of the county annually experience nuisance flooding related to drainage issues.

14.2.6 Severity

Peak Flows

The principal factors affecting flood damage are flood depth and velocity. The deeper and faster flood flows become, the more damage they can cause. Shallow flooding with high velocities can cause as much damage as deep flooding with slow velocity. This is especially true when a channel migrates over a broad floodplain, redirecting high velocity flows and transporting debris and sediment. Flood severity is often evaluated by examining peak discharges; Table 14-5 lists peak flows used by FEMA to map the floodplains of Ada County.

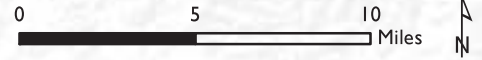
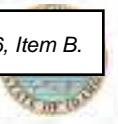


Figure 14-1.
FEMA Flood Hazard Areas

Flood Boundary

- 1% Annual Chance (100 Year)
- 0.2% Annual Chance (500 Year)

Flood Hazard Areas as depicted on FEMA DFIRM.
This map is a combination of effective and preliminary DFIRM boundaries.

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Road
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, FEMA

Table 14-5. Summary of Peak Discharges Within Ada County

Source/Location	Drainage Area (Square Miles)	Discharge (cubic feet/second)			
		10-Year	50-Year	100-Year	500-Year
Boise River					
At Lucky Peak Dam	2,650 ^a	7,500 ^b	11,000 ^b	16,600 ^b	34,800 ^b
Boise River Side Channel					
At Park Center	N/A	N/A	N/A	675 ^c	N/A
Cottonwood Gulch					
A mouth	16.5	242	1,450	3,650	25,500
Above Freestone Creek	11.7	192	1,016	2,688	19,282
Crane Gulch					
At mouth	7.8	154	376	1,030	8,428
Dry Creek					
At City of Eagle	67	610	2,700	4,000	13,200
Below Confluence with Spring Valley Creek	57.1	1,090	1,700	2,030	2,750
Above Confluence with Spring Valley Creek	37.8	791	1,200	1,410	1,950
Above Wooden Farm Bridge	34.5	695	1,090	1,280	1,770
Dry Creek below Current Creek Lane	33.5	674	1,060	1,240	1,710
Above split flow to Dry Creek Side Channel	--d	--d	--d	1,641	--d
5700 feet downstream of Cartwright Rd	--d	--d	--d	2,230	--d
Eightmile Creek					
At confluence with Fivemile Creek	16.7	330	525	590	850
At Cloverdale Road	--d	325	510	575	820
At Victory Road	13.4	275	390	425	580
Above New York Canal	9.9	300	700	950	1,800
Fivemile Creek					
Below Ninemile Creek	63	650	1,000	1,200	1,875
At Linder Road	--c	565	850	1,000	1,570
Below Eightmile Creek	52.5	530	780	900	1,375
Below Ridenbaugh Canal	--c	200	250	525	815
Above Ridenbaugh Canal	--c	345	440	525	815
Below Five Mile Road	--c	325	400	470	725
Below Threemile Creek	33	300	390	440	650
At Victory Road	--c	265	320	350	580
Below New York Canal	30.2	250	280	300	500
Above New York Canal	30.2	725	1,450	1,850	3,000
Highland Valley Gulch					
	2.5	150	940	1,250	2,100
Hulls Gulch					
At mouth	4.3	108	263	360	2,200
Maynard Gulch					
	2.3	150	830	1,100	1,850
Ninemile Creek					
At Tenmile Road	5.6	70	135	175	290
Above Linder Road	--d	50	95	120	200
At Meridian Road	--d	55	120	145	235

Source/Location	Drainage Area (Square Miles)	Discharge (cubic feet/second)			
		10-Year	50-Year	100-Year	500-Year
At Locust Grove Rd.	2.9	40	80	95	150
Pierce Gulch					
	2.0	140	760	1,100	1,700
Polecat Gulch					
	1.2	110	580	780	1,300
Seaman Gulch					
	1.8	140	760	1,100	1,700
South Channel Boise River Eagle Island					
	--c	--d	--d	4,900	14,000
South Channel Boise River Right Overbank					
	--c	--d	--d	3,250	4,000
Spring Valley Creek					
Below Brookside Lane	19.2	425	679	798	1,120
Stewart Gulch					
At mouth	9.1	169	538	1,494	11,794
Tenmile Creek					
At Roosevelt Road	10.0	215	415	510	820
At Tenmile Community Church	1.8	83	160	200	320
At Interstate 84	6.5	185	350	440	680
At Locust Grove Road	--d	170	320	400	620
At Amity Road	5.0	--c	--c	350	--c
At Eagle Road	3.4	--c	--c	275	--c
Warms Springs Creek					
	5.0	230	1,860	2,500	4,300

- a. Drainage area above Lucky Peak Dam
- b. Regulated Discharges
- c. Data not available
- d. Data not applicable

Repetitive Loss Areas

A repetitive loss property is defined by FEMA as an NFIP-insured property that has experienced any of the following since 1978, regardless of any changes in ownership:

- Four or more paid losses more than \$1,000
- Two paid losses more than \$1,000 within any rolling 10-year period
- Three or more paid losses that equal or exceed the current value of the insured property.

The government has instituted programs encouraging communities to identify and mitigate the causes of repetitive losses. Studies have found that many of these properties are outside any mapped 1 percent annual chance floodplain. The key identifiers for repetitive loss properties are the existence of NFIP insurance policies and claims paid by the policies.

Based on data provided by FEMA, there are two identified repetitive loss properties within the planning area as of March 14, 2022: one in the City of Garden City and one in the City of Eagle.

FEMA further designates as severe repetitive loss any NFIP-insured single-family or multi-family residential building for which either of the following is true:

- The building has incurred flood-related damage for which four or more separate claims payments have been made, with the amount of each claim (including building and contents payments) exceeding \$5,000, and with the cumulative amount of such claims payments exceeding \$20,000
- At least two separate claims payments (building payments only) have been made under NFIP coverage, with the cumulative amount of claims exceeding the market value of the building.

To qualify as a severe repetitive loss property, at least two of the claims must be within 10 years of each other, and claims made within 10 days of each other are counted as one claim. In determining severe repetitive loss status, FEMA considers the loss history since 1978, or from the building's construction if it was built after 1978, regardless of any changes in the ownership of the building.

FEMA-sponsored programs, such as the CRS, require participating communities to identify repetitive loss areas. A repetitive loss area is the portion of a floodplain holding structures that FEMA has identified as meeting the definition of repetitive loss. Identifying repetitive loss areas helps to identify structures that are at risk but are not on FEMA's list of repetitive loss structures because no flood insurance policy was in force at the time of loss.

14.2.7 Warning Time

Due to the extended pattern of weather conditions needed to cause serious flooding, warning times for floods can be between 24 and 48 hours. Flash flooding can be less predictable, but potential hazard areas can be warned in advanced of potential flash flooding danger.

EMCR has developed a Flood Response Plan outlining the response to flooding in the planning area. Since flows on the Boise River system are regulated by the Corps of Engineers, warning on this system is tied to water release rates set by the Corps. Each significant increase in release rates from Lucky Peak Dam requires notification to emergency managers by the Corps. These announcements usually occur well in advance (24 to 48 hours) of increased release rates.

The National Weather Service (NWS) uses a two-tiered warning system for flash flooding:

- A Flash Flood Watch covers a large area (a thousand square miles or greater, usually several counties) for up to 12 hours. A Flash Flood Watch is issued when conditions are favorable to produce flash flooding on the Boise Foothills within the next 12 hours.
- A Flash Flood Warning generally covers a very small area (a few square miles to several hundred square miles) for up to 6 hours. A flash flood warning for the Boise Foothills is issued under the following conditions:
 - Rainfall in the Boise Foothills is occurring or is imminent and is falling at a rate that could cause flash flooding.
 - Heavy rainfall is falling on snowpack and flash flooding is occurring or imminent.
 - Flash flooding is occurring and has been confirmed by stream flow gauges, NWS spotters, emergency responders or citizens.

There is no warning system for flooding from canal breaches or failures. Warning for failures of these systems will occur likely well after the event has begun.

14.2.8 Natural and Beneficial Floodplain Functions

What Are Beneficial Floodplain Functions?

Flooding is a natural event, and floodplains provide many natural and beneficial functions. Riparian areas—the zones along the edge of a river or stream that are influenced by or are an influence upon the water body—generally have a greater diversity and structure of vegetation than upland areas. Shelter, space, food and water available in these areas determine the health of wildlife populations. Riparian communities are of special importance for many animals since water supply is a major limiting factor to the animals' population. Animals depend upon a supply of water for their existence.

The Boise River Enhancement Plan

The Boise River Enhancement Plan is a community-generated plan to improve Boise River water quality, aquatic and riparian habitat, and stream channel function from Lucky Peak Dam to the Snake River. It provides an overview of the current health of the river and identifies how, what and where enhancement can be achieved to bring the most effective benefits to the river (Boise River Enhancement Network 2015).

14.3 EXPOSURE

A Level 2 Hazus analysis was used to assess exposure to flooding in the planning area. Where possible, the Hazus default data was enhanced using local GIS data from county, state and federal sources.

14.3.1 Population

All populations living in mapped flood zones would be exposed to the risk of a flood. Figure 14-2 and Figure 14-3 summarizes the population living in the 1 percent and 0.2 percent annual chance flood zones, respectively, by municipality.

14.3.2 Property

The value of exposed buildings and contents in each jurisdiction is summarized in Figure 14-4 and Figure 14-5 for the 1 percent annual chance and 0.2 percent annual chance flood zones, respectively. Figure 14-6 and Figure 14-7 summarize the number of structures in the 1 percent annual chance and 0.2 percent annual chance flood zones, respectively by municipality and occupancy class.

14.3.3 Critical Facilities

GIS analysis determined that 197 of the planning area's critical facilities (9 percent of the planning area total) are in the 1 percent annual chance floodplain and 542 (26 percent) are in the 0.2 percent annual chance floodplain. Figure 14-8 summarizes critical facilities in the mapped floodplains for the countywide planning area. Detailed results by jurisdiction are provided in Appendix D.

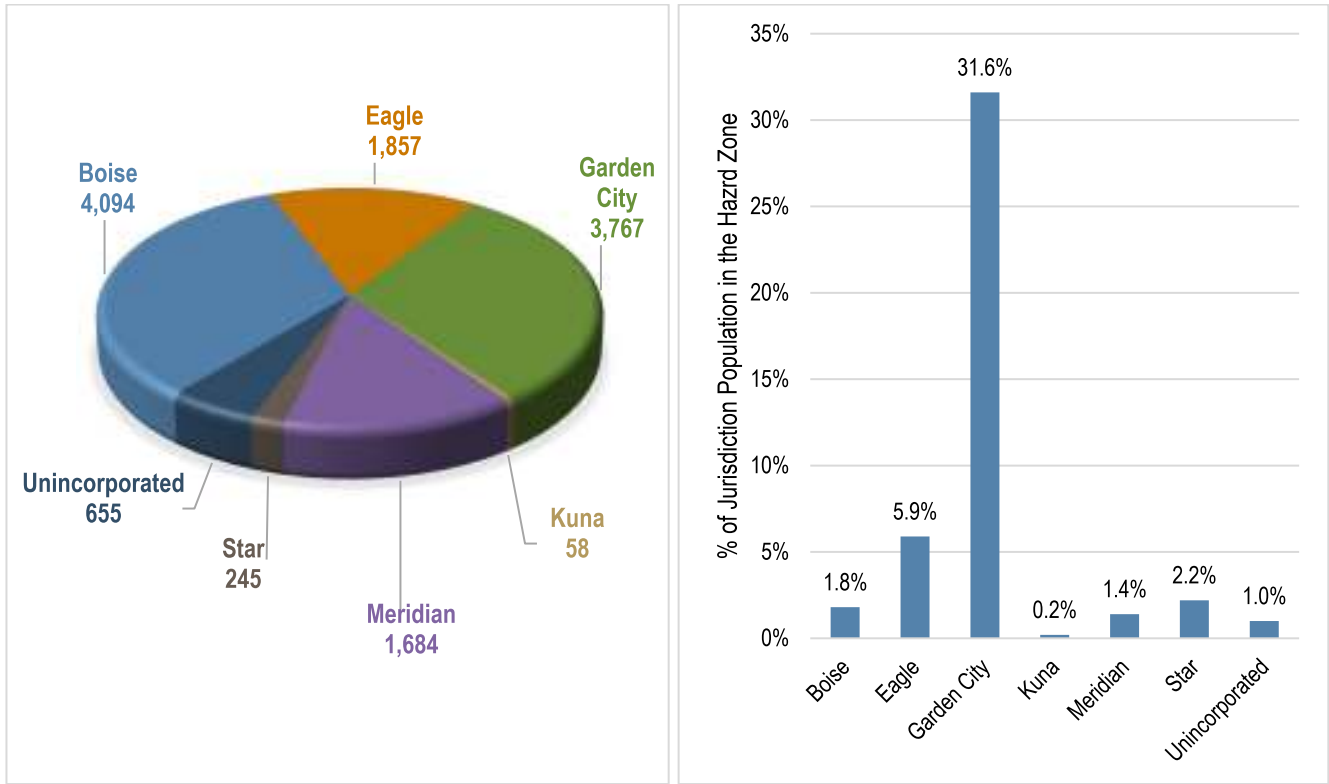


Figure 14-2. Population in the 1 Percent Annual Chance Flood Zone

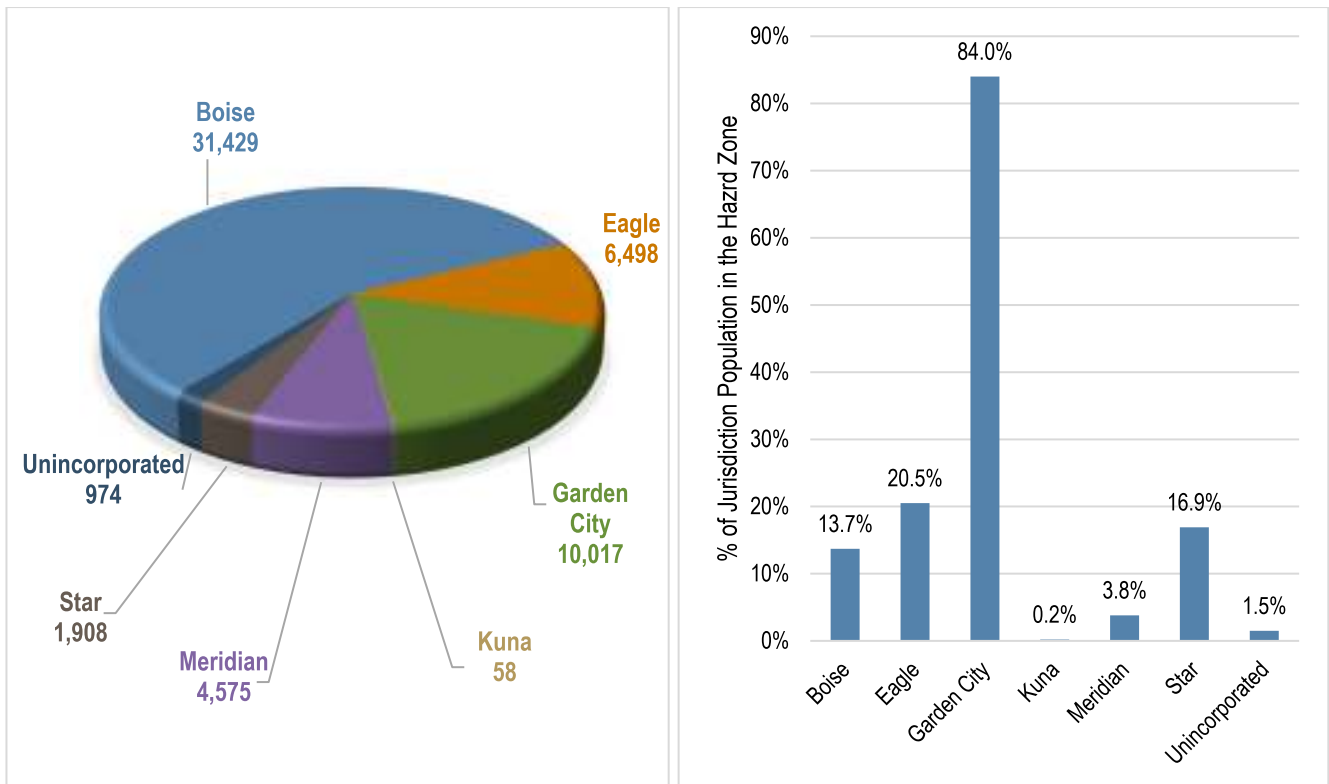


Figure 14-3. Population in the 0.2 Percent Annual Chance Flood Zone

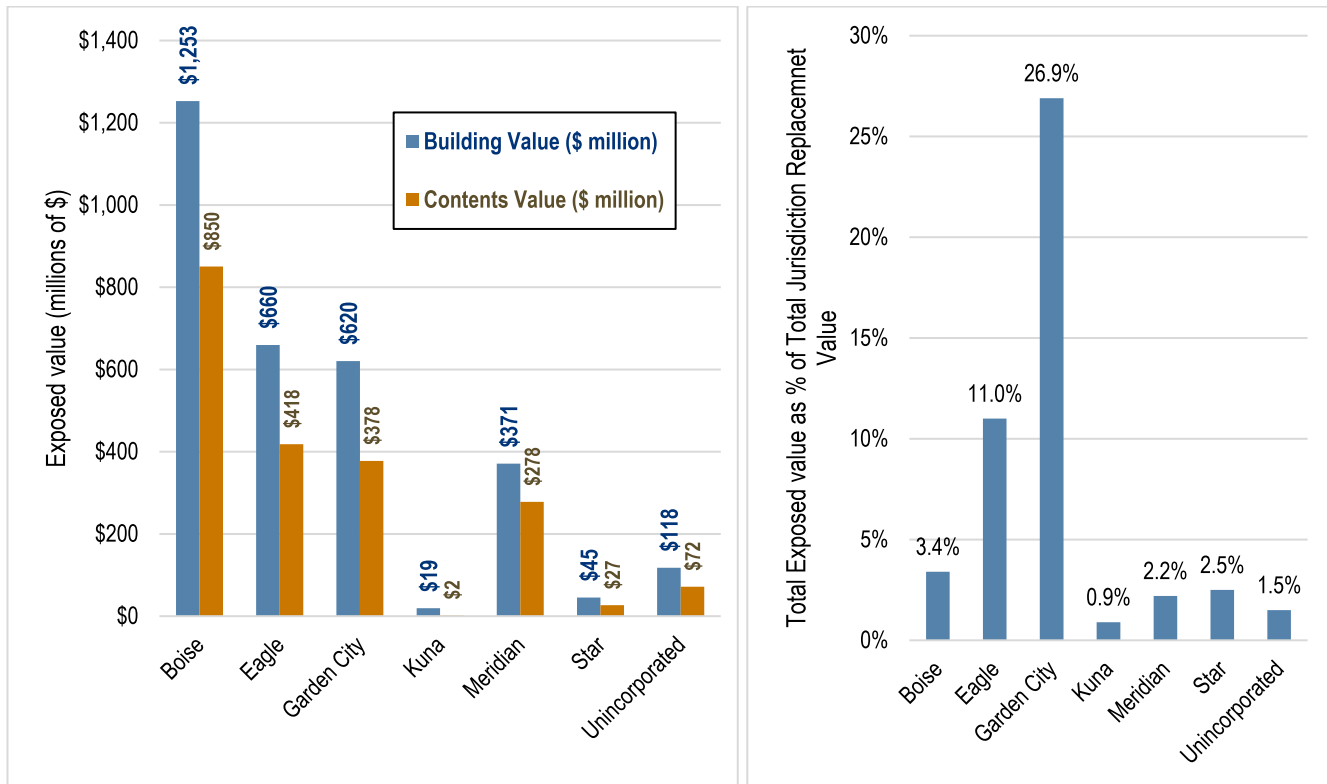


Figure 14-4. Value of Property in the 1% Annual Chance Flood Hazard Area

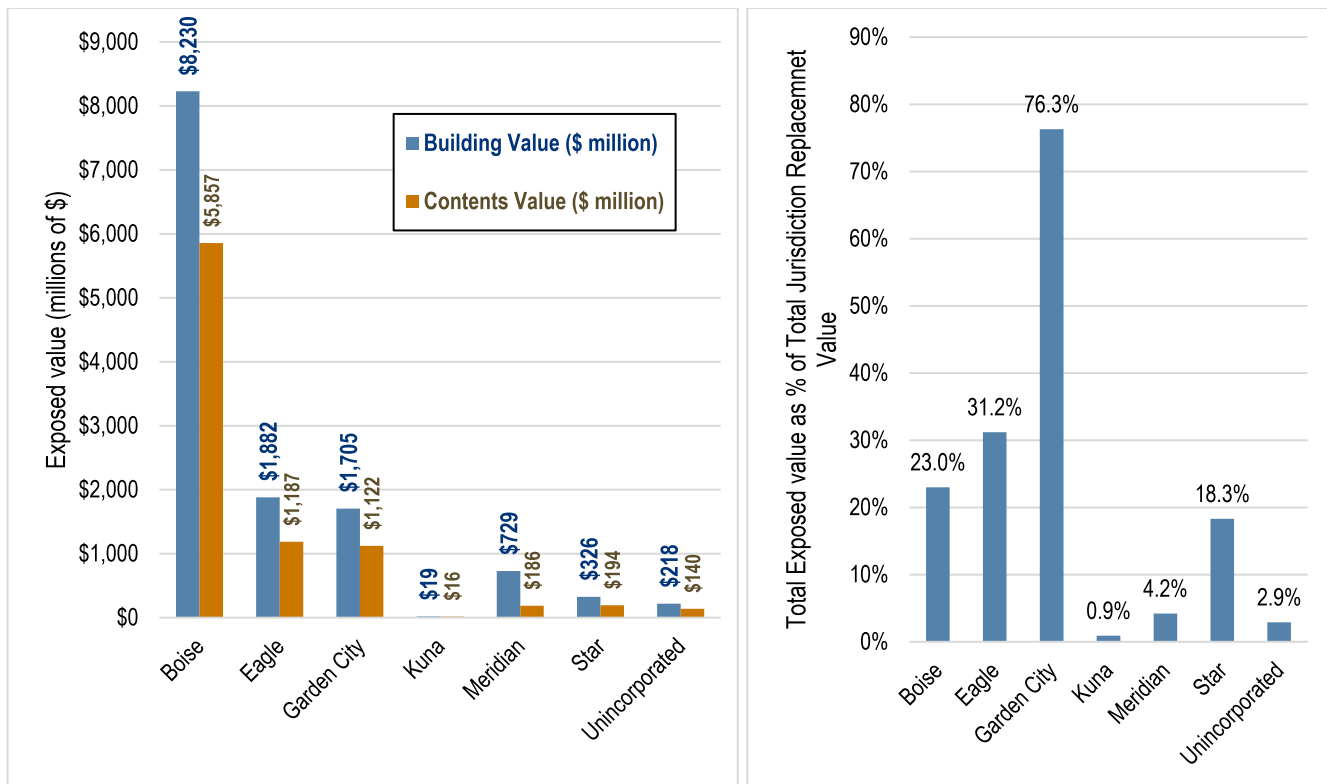


Figure 14-5. Value of Property in the 0.2% Annual Chance Flood Hazard Area

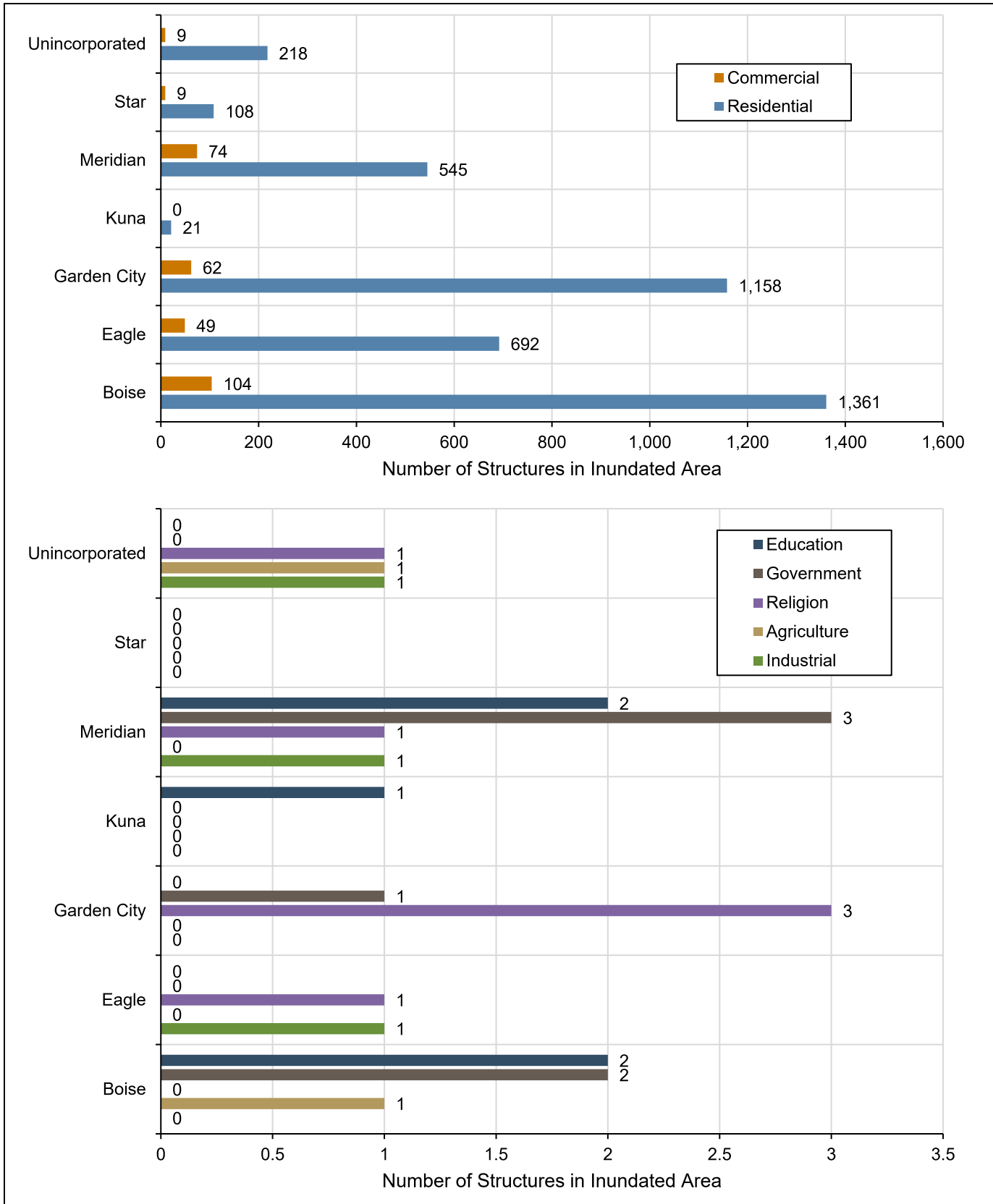


Figure 14-6. Number of Structures Within the 1% Annual Chance Flood Hazard Area

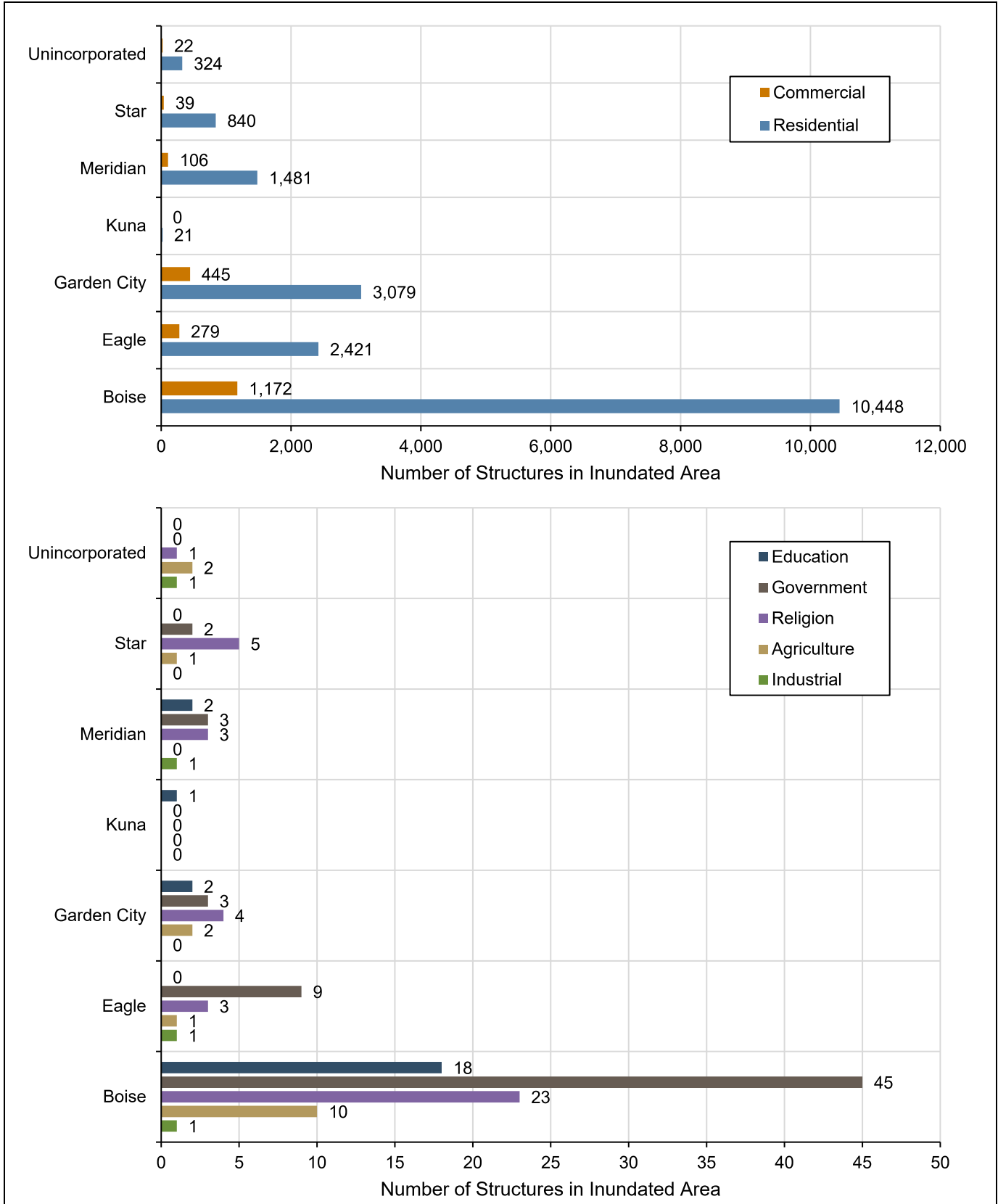


Figure 14-7. Number of Structures Within the 0.2% Annual Chance Flood Hazard Area

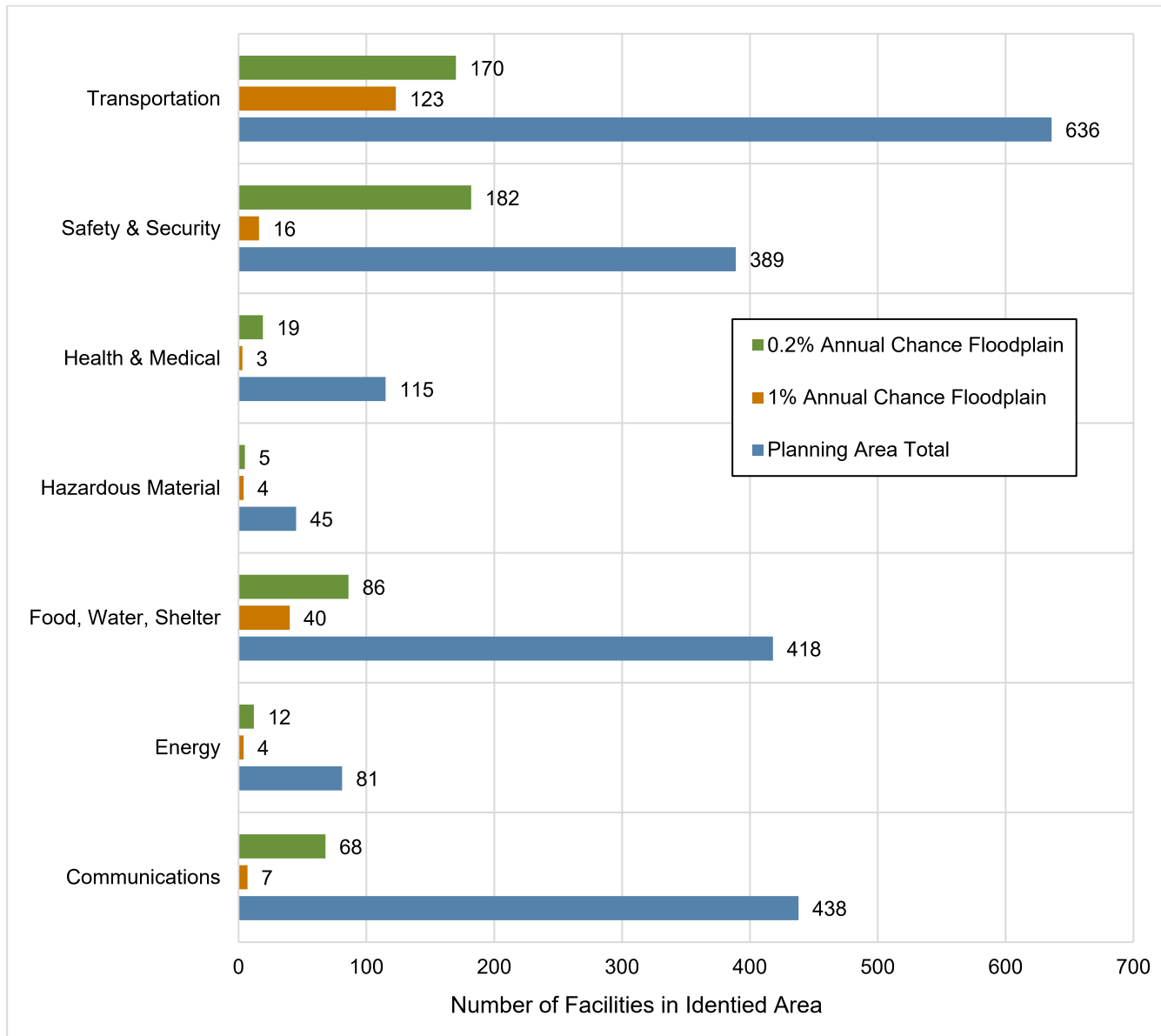


Figure 14-8. Critical Facilities in the Mapped Floodplains and Countywide

14.3.4 Environment

Flooding is a natural event, and floodplains provide many natural and beneficial functions. Nonetheless, with human development factored in, flooding can impact the environment in negative ways. Migrating fish can wash into roads or over dikes into flooded fields, with no possibility of escape. Pollution from roads, such as oil, and hazardous materials can wash into rivers and streams. During floods, these can settle onto normally dry soils, polluting them for agricultural uses. Human development such as bridge abutments and levees, and logjams from timber harvesting can increase stream bank erosion, causing rivers and streams to migrate into non-natural courses.

Many species of mammals, birds, reptiles, amphibians and fish live in Ada County in plant communities that are dependent upon streams, wetlands and floodplains. Changes in hydrologic conditions can result in a change in the plant community. Wildlife and fish are impacted when plant communities are eliminated or fundamentally altered to reduce habitat. Wildlife populations are limited by shelter, space, food and water. Since water supply is a major limiting factor for many animals, riparian communities are of special importance. Riparian areas are the zones along the edge of a river or stream that are influenced by or are an influence upon the water body. Human disturbance to riparian areas can limit wildlife's access to water, remove breeding or nesting sites, and eliminate suitable areas for rearing young. Wildlife relies on riparian areas in the following ways:

- Mammals depend upon a supply of water for their existence. Riparian communities have a greater diversity and structure of vegetation than other upland areas. Beavers and muskrats are now recolonizing streams, wetlands and fallow farm fields, which are converted wetlands. As residences are built in rural areas, there is an increasing concern with beaver dams causing flooding of low-lying areas and abandoned farm ditches being filled in, which can lead to localized flooding.
- A great number of birds are associated with riparian areas. They swim, dive, feed along the shoreline, or snatch food from above. Rivers, lakes and wetlands are important feeding and resting areas for migratory and resident waterfowl. Threatened or endangered species such as the bald eagle or the peregrine falcon eat prey from these riparian areas.
- Amphibians and reptiles are some of the least common forms of wildlife in riparian areas, but species such as the western pond turtle and the spotted frog are known to inhabit the waterways and wetlands.
- Fish habitat throughout the county varies widely based on natural conditions and human influence.

14.4 VULNERABILITY

14.4.1 Population

Vulnerable populations are all populations living within the mapped floodplain who are incapable of escaping the area before floodwaters arrive. Impacts on persons and households for the mapped floodplains were estimated through the Level 2 Hazus analysis. Detailed results by jurisdiction are included in Appendix D; summaries are provided in Table 14-6.

14.4.2 Property

Figure 14-9 and Figure 14-10 summarize the Level 2 Hazus analysis of the flood hazard for the 1 percent annual chance and 0.2 percent annual chance floodplains, respectively.

14.4.3 Critical Facilities

Estimated Damage by Category

Hazus was used to estimate the percent of damage to the building and contents of critical facilities, using depth/damage function curves. The results are summarized in Figure 14-11 and Figure 14-12.

Table 14-6. Estimated Flood Impacts on Persons and Households

	Number of Displaced Residents	Number of Residents Requiring Short-Term Shelter
1% Annual Chance Flood Zone		
Boise	1,042	133
Eagle	466	61
Garden City	2,225	153
Kuna	4	1
Meridian	231	45
Star	92	7
Unincorporated	84	16
Total	4,144	416
0.2% Annual Chance Flood Zone		
Boise	20,532	1,070
Eagle	3,562	226
Garden City	8,679	405
Kuna	4	1
Meridian	1,246	125
Star	1,074	54
Unincorporated	151	23
Total	35,247	1,904

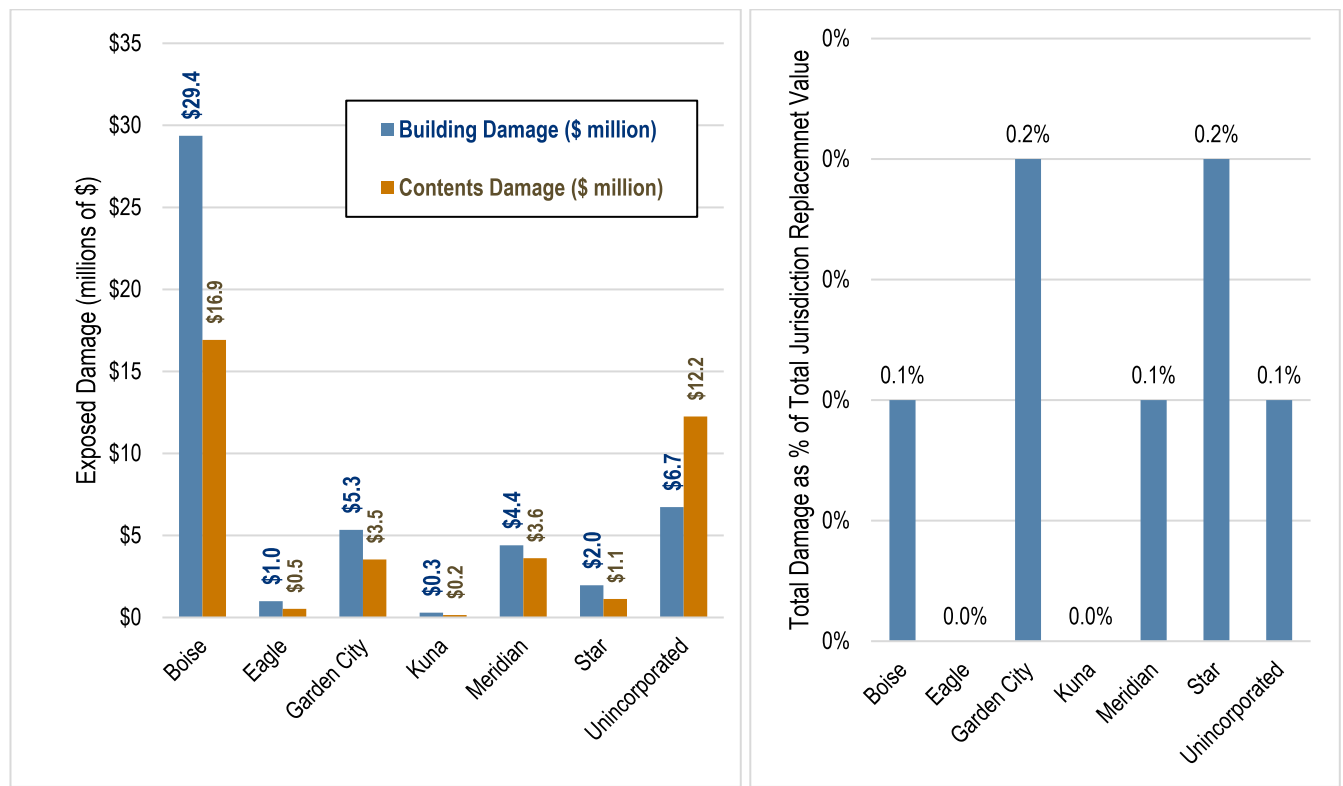


Figure 14-9. Estimated Property Damage in 1% Annual Chance Floodplain

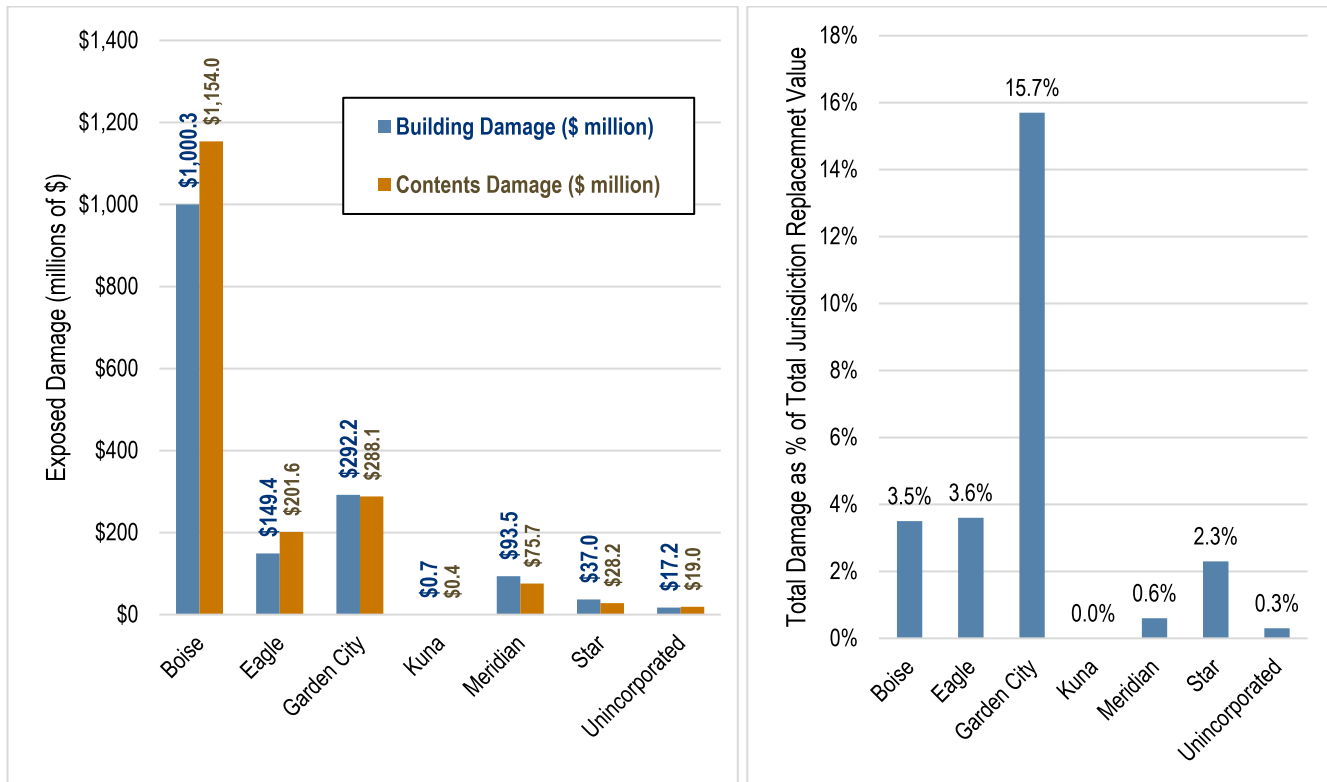


Figure 14-10. Estimated Property Damage in 0.2% Annual Chance Floodplain

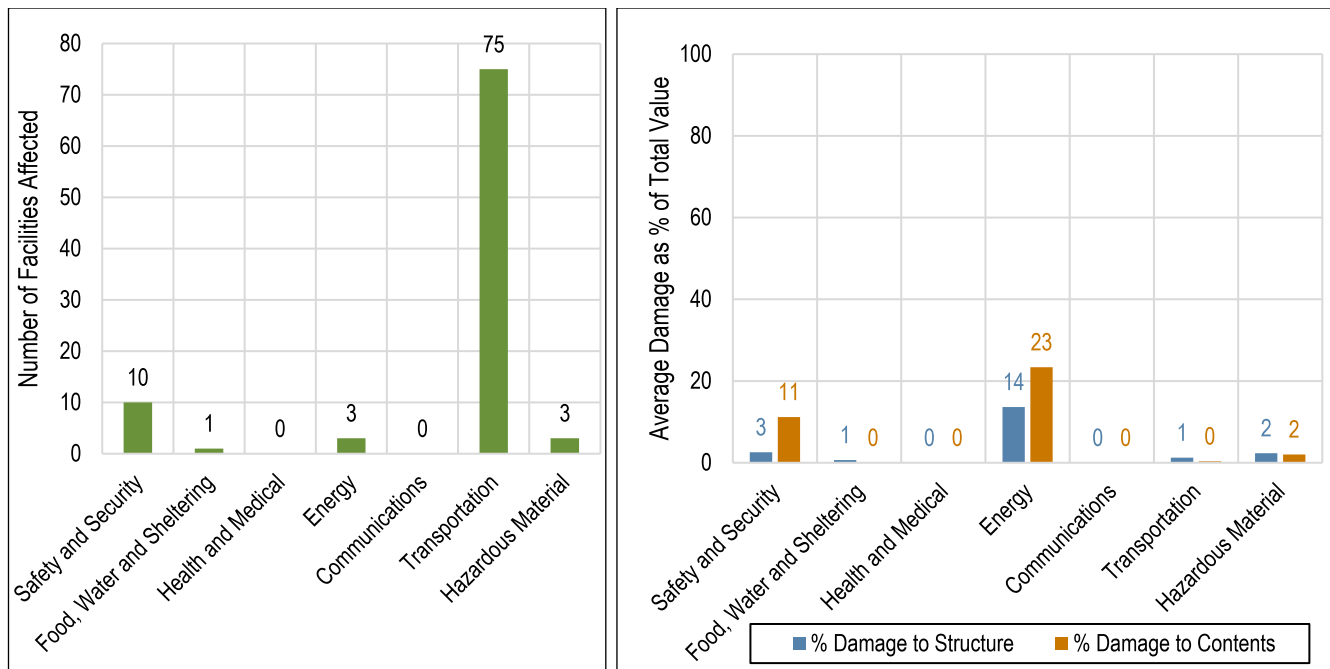


Figure 14-11. Estimated Damage to Critical Facilities from 1% Annual Chance Flood

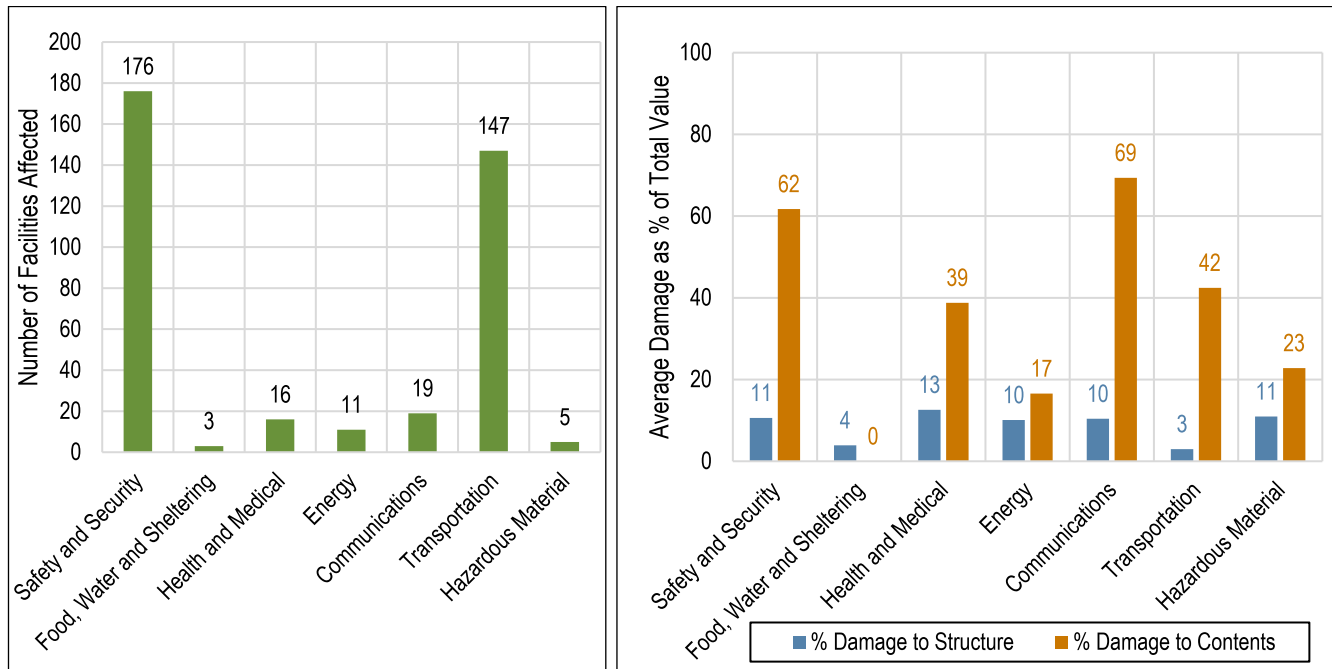


Figure 14-12. Estimated Damage to Critical Facilities from 0.2% Annual Chance Flood

Tier II Facilities

Tier II facilities are those that use or store materials that can harm the environment if damaged by a flood. During a flood event, containers holding hazardous materials can rupture and leak into the surrounding area. These facilities could release chemicals that cause cancer or other human health effects, significant adverse acute human health effects, or significant adverse environmental effects. The risk assessment identified three such facilities that would be affected by the 1 percent annual chance flood and five that would be affected by the 0.2 percent annual chance flood.

Utilities and Infrastructure

Roads that are blocked or damaged can isolate community members and can prevent access throughout the planning area, including for emergency service providers needing to get to vulnerable populations or to make repairs. Bridges washed out or blocked by floods or debris also can cause isolation. Underground utilities can be damaged. Levees can fail or be overtopped, inundating the land that they protect. Floodwaters can back up drainage systems, causing localized flooding. Culverts can be blocked by debris from flood events, also causing localized urban flooding. Floodwaters can get into drinking water supplies, causing contamination. Sewer systems can be backed up, causing wastewater to spill into homes, neighborhoods, rivers, and streams. The following sections describe the risk assessment for specific types of critical infrastructure.

Roads

The following major roads in Ada County pass through the 1 percent annual chance floodplain and thus are exposed to flooding:

- 8th Street
- Highway 21

- Broadway Avenue
- Capitol Blvd.
- Eagle Road
- Eckert Road
- Glenwood Street
- Highway 44
- Highway 55
- Interstate 84 (Connector)
- Linder Road
- Veterans Memorial Parkway

Some of these roads are built above the flood level, and others function as levees to prevent flooding. Still, in severe flood events these roads can be blocked or damaged, preventing access to some areas.

Bridges

Flooding events can significantly impact road bridges. These are important because often they provide the only ingress and egress to some neighborhoods. An analysis showed that there are 74 bridges that would be affected by the 1 percent annual chance floodplain and 144 bridges that would be affected by the 0.2 percent annual chance floodplain.

Water and Sewer Infrastructure

Water and sewer systems can be affected by flooding. Floodwaters can back up drainage systems, causing localized flooding. Culverts can be blocked by debris from flood events, also causing localized urban flooding. Floodwaters can get into drinking water supplies, causing contamination. Sewer systems can be backed up, causing wastewater to spill into homes, neighborhoods, rivers and streams. The risk assessment identified one water/wastewater facility that would be affected by the 1 percent annual chance floodplain and three that would be affected by the 0.2 percent annual chance floodplain.

14.5 DEVELOPMENT TRENDS

The value of planning area properties exposed to the 1 percent annual chance flood hazard has increased by 59 percent (\$1.9 billion) since the last hazard mitigation plan update in 2017. The value exposed to the 500-year flood hazard has increased by 4.51 percent. This increase in risk exposure can be attributed to the population growth of 13.6 percent in the same period.

Current comprehensive planning in the planning area appears to be adequately equipped to dictate sound land use practices within the designated floodplain. The key to this will be to identify flood hazard areas that accurately reflect the true flood risk within the planning area. Ada County finalized new flood maps through FEMA's Risk MAP program during the maintenance period of the previous plan. The new maps are based on the abundance of available information on flood risk from creditable agencies such as IDWR and the Corps of Engineers.

All municipal planning partners for this plan are participants in the NFIP and have adopted flood damage prevention ordinances in response to its requirements. With 71 percent of communities in the county participating in the CRS program, there is incentive to adopt consistent, appropriate, higher regulatory standards in communities with the highest degree of flood risk. All municipal planning partners have committed to maintaining their good standing under the NFIP through actions identified in this plan. Communities participating or considering participation in the CRS program will be able to refine this commitment using CRS programs and templates as a guide.

14.6 SCENARIO

The primary water courses in Ada County have the potential to flood at irregular intervals, generally in response to a succession of intense thunderstorms in summer or rain-on-snowpack events in winter. Storm patterns of warm, moist air usually occur between early November and late March. A series of such weather events can cause severe flooding in the planning area. The worst-case scenario is a series of storms that flood numerous drainage basins in a short time. This could overwhelm the response and floodplain management capability within the planning area. Major roads could be blocked, preventing critical access for many residents and critical functions. High in-channel flows could cause water courses to scour, possibly washing out roads and creating more isolation problems.

Additionally, the potential impacts of future climate conditions on the operations of Lucky Peak Dam are real. The Boise River could see increased flows in response to a changing hydrograph that dictates dam operations.

14.7 ISSUES

The planning team has identified the following flood-related issues relevant to the planning area:

- The extent of the flood-protection currently provided by flood control facilities (dams, dikes and levees) is not known due to the lack of an established national policy on flood protection standards.
- The risk associated with the flood hazard overlaps the risk associated with other hazards such as earthquake, landslide and fishing losses. This provides an opportunity to seek mitigation alternatives with multiple objectives that can reduce risk for multiple hazards.
- Additional efforts to coordinate land-use practices across all affected jurisdictions within the planning area are needed to expand floodplain management practices beyond the minimum requirements of the NFIP.
- Potential future climate conditions could alter flood conditions in Ada County.
- More information is needed on flood risk to support the concept of risk-based analysis of capital projects.
- There needs to be a sustained effort to gather historical damage data, such as high water marks on structures and damage reports, to measure the cost-effectiveness of future mitigation projects.
- Ongoing flood hazard mitigation will require funding from multiple sources.
- There needs to be a coordinated hazard mitigation effort between jurisdictions affected by flood hazards in the county.
- Floodplain residents need to continue to be educated about flood preparedness and the resources available during and after floods.
- The concept of residual risk should be considered in the design of future capital flood control projects and should be communicated with residents living in the floodplain.
- The promotion of flood insurance as a means of protecting private property owners from the economic impacts of frequent flood events should continue.
- Existing floodplain-compatible uses such as agricultural and open space need to be maintained. There is constant pressure to convert these existing uses to more intense uses within the planning area during times of moderate to high growth.

- The economy affects a jurisdiction's ability to manage its floodplains. Budget cuts and personnel losses can strain resources needed to support floodplain management.
- A buildable-lands analysis that looks at vacant lands and their designated land use would be a valuable tool in helping decision-makers make wise decisions about future development.
- The risk associated with flooding due to canal failure is unknown at this time. Data on this risk need to be gathered to better support communities' preparedness and response efforts.

15. HAZARDOUS MATERIALS RELEASE

15.1 GENERAL BACKGROUND

Hazardous materials are substances that are considered severely harmful to human health and the environment, as defined by the U.S. Environmental Protection Agency's (EPA's) Comprehensive Environmental Response, Compensation, and Liability Act (commonly known as Superfund). Many hazardous materials are commonly used substances that are harmless in their normal uses but dangerous if released. The EPA designates about 800 substances as hazardous and identifies many more as potentially hazardous due to their characteristics and the circumstances of their release (EPA 2022). If released or misused, hazardous substances can cause death, serious injury, long-lasting health effects, and damage to structures, other properties, and the environment. Hazardous materials are present in nearly every city and county in the United States in facilities that produce, store, or use them:

- Fuel storage vessels (both in and above ground)
- Water treatment plants use chlorine to eliminate bacterial contaminants.
- Hazardous materials are transported along interstate highways and railways daily.
- The natural gas used in homes and businesses is a dangerous substance when a leak occurs.
- Many businesses, through intentional action, lack of awareness or accidental occurrences, have contamination in and around their property.

Hazardous material releases can pose a risk to life, public health, air quality, water quality and the environment. They may result in the evacuation of a facility or an entire neighborhood. In addition to the immediate risk, long-term public health and environmental impacts may result from sustained exposure to certain substances.

15.1.1 Types of Incidents

The following are the most common types of hazardous material incidents:

- **Fixed-Facility Hazardous Materials Incident**—This is the uncontrolled release of materials from a fixed site capable of posing a risk to health, safety, and property as determined by the Resource and Conservation and Recovery Act. It is possible to identify and prepare for a fixed-facility incident because federal and state laws require those facilities to notify state and local authorities about what is being used or produced at the site.
- **Hazardous Materials Transportation Incident**—A hazardous materials transportation incident is any event resulting in uncontrolled release of materials during transport that can pose a risk to health, safety, and property as defined by Department of Transportation Materials Transport regulations. Transportation incidents are difficult to prepare for because there is little if any notice about what materials could be

involved should an accident happen. Hazardous materials transportation incidents can occur at any place within the country, although most occur on the interstate highways or major federal or state highways, or on major rail lines.

15.1.2 Hazardous Materials Resulting from Hazard Events

Debris generated from natural disasters often includes hazardous materials. Large quantities of debris from natural disasters can hinder emergency personnel, damage or block access to necessary infrastructure, and pose threats to human health and the environment (State of Idaho Hazard Mitigation Plan 2018). Natural disaster debris that may contain hazardous materials includes:

- Aluminum composite material—asbestos pipe wrap, siding, ceiling and floor tiles
- Ammunition and explosives
- Asphalt
- Building contents—furniture, personal property
- Cylinders and tanks
- Electronics waste—televisions, computers, cell phones
- Household waste—household cleaners, freezer and refrigerator coolant
- Medical waste
- Municipal solid waste—trash, garbage
- PCB-containing waste—transformers, capacitors, other electrical equipment
- Pharmaceuticals
- Radiological-contaminated waste—hospital equipment
- Tires
- Toxic materials—batteries, pesticides, solvents, paint thinners, mercury-containing devices
- Treated wood—utility poles, fencing, decks
- Used oil and oil-contaminated waste
- Vehicles and vessels
- White goods—household appliances, such as stoves, refrigerators, washers/dryers, air conditioner units

15.1.3 Secondary Hazards

Secondary hazards associated with fixed-facility hazardous substance releases include those impacting the health of the community and environment. The secondary impacts have the potential to occur regardless of the mode or the source of release. In addition to the secondary impacts noted for the fixed-facility hazard, other impacts may include damage to infrastructure such as road beds or bridges in a hazardous materials transportation incident.

15.2 HAZARD PROFILE

15.2.1 Past Events

The Pipeline and Hazardous Materials Safety Administration tracks hazardous material releases through its nationwide database. Incidents are listed by state. Regulations in 49 CFR govern situations where hazardous materials are released and establish notification and reporting requirements. Unless they are properly reported, it is difficult to identify and track past hazardous materials releases. Between January 1, 2000, and December 31, 2021, 495 hazardous material incidents in Ada County were reported (Pipeline and Hazardous Materials Safety Administration 2022). None of these resulted in injury or fatality. One caused a serious evacuation and three incidents resulted in closure of a main transportation artery. Total damages were estimated at more than \$514,000. See Table 15-1 for events by city.

Table 15-1. Hazardous Materials Incidents by City, 2000-2021

City	Mode of Transportation	Number of Events	Damage
Boise	Air	31	\$0
	Highway	342	\$190,780
Eagle	Highway	1	\$0
Garden City	Highway	4	\$0
Kuna	Highway	2	\$0
Meridian	Highway	115	\$323,784

15.2.2 Location

Because hazardous materials are so widely used, stored and transported, a hazardous material event could take place almost anywhere. Many hazardous materials are used, stored and transported in very large quantities, so the impacts of an event may be widespread and powerful. Hazardous material incidents usually occur on major highways and railways. According to the 2018 Idaho State Hazard Mitigation Plan, there are 213 Tier II facilities and 10 Toxic Release Inventory sites in Ada County (State of Idaho Hazard Mitigation Plan 2018). Ada County does not contain any hazardous waste Superfund sites (EPA 2021).

15.2.3 Frequency

Hazardous materials releases are difficult to predict; however, based on past events (Table 15-1), the County can expect to experience an event nearly 24 times a year.

15.2.4 Severity

Hazardous material releases can contaminate the air, water and soil. Releases may result in injury or loss of life. Hazardous materials can be carried quickly by water and wind, affecting the population and environment in surrounding areas.

For both accidental and intentional hazardous material releases, the severity of impact varies with mitigating or exacerbating conditions. Measures taken in advance of an event can reduce its severity. For example, shielding by sheltering in place and primary and secondary containment measures can protect people and the environment. However, adverse weather conditions, building code violations, and maintenance failures can substantially increase the hazard severity.

Severity is also dependent on the type of substance released and the response time of hazardous materials teams. The area with closest to the release is generally at greatest risk, but hazardous materials can be dispersed over large areas and affect the environment for a long period of time.

15.2.5 Warning Time

Warning times vary for incidents fixed facilities. Incidents may be sudden without any warning, such as an explosion, or may develop slowly, such as a leaking container. Facilities that store extremely hazardous substances are required to notify local officials when an incident occurs. Local emergency responders and emergency management officials determine the need to evacuate the public or to advise to shelter in place.

The amount of warning time for incidents associated with hazardous substances in transit varies based on the nature and scope of the incident. If an explosion does not occur immediately following an accident, there may be time for warning adjacent neighborhoods and facilitating appropriate protective actions.

15.3 EXPOSURE AND VULNERABILITY

Due to the nature of a hazardous materials release, all people, property and the environment of the planning area are exposed to some degree to the hazard. Populations who live or work near major transportation routes or sites that use and store large quantities of hazardous materials are likely to be more vulnerable.

15.4 DEVELOPMENT TRENDS

Not all land-use regulations restrict building around industrial facilities or along transportation routes. As the population increases, development will continue to increase in these areas, thereby exposing a greater number of individuals to the risk of a hazardous material release. Increased development will lead to increased vulnerability and potential losses.

15.5 SCENARIO

A worst-case event would involve a release on a major transportation route, in a developed area along a waterway. High winds could quickly spread the release. Such an event would have both short-term and longer-term effects. Initially, the affected transportation route would be closed, the surrounding area evacuated, and emergency response teams deployed. Longer-term effects would include environmental damage.

15.6 ISSUES

Important issues associated with hazardous materials release events in Ada County include the following:

- Facilities using or transporting hazardous materials need to continue to be monitored and regulated.
- Education needs to be provided to workers and emergency response personnel in appropriate techniques and safety measure for dealing with spills and incidents. This includes Hazardous Waste Operations & Emergency Response training and certification.
- The general public should be made aware of the hazards of household chemical products and methods for properly disposing of these products.

16. LANDSLIDE

16.1 GENERAL BACKGROUND

16.1.1 Landslide Causes

A landslide is a mass of rock, earth or debris moving down a slope. Slides are caused by a combination of geological and climate conditions and the influence of urbanization. They can be initiated by storms, earthquakes, fires, volcanic eruptions or human modification of the land. Vulnerable natural conditions are affected by human development and the infrastructure that supports it. In some cases, irrigation increases the landslide potential. The following factors can contribute to slide formation:

- Change in slope of the terrain
- Increased load on the land
- Shocks and vibrations
- Change in water content
- Groundwater movement
- Frost action
- Weathering of rocks
- Removing or changing the vegetation covering slopes

Ground saturation by water, steepening of slopes by erosion or construction, alternate freezing and thawing, and earthquake shaking are all factors that contribute to landslides. Landslides are typically associated with periods of heavy rainfall or rapid snow melt. Rain-saturated hill slopes and increased groundwater pressure on porous hillsides are triggering agents of slope failure. In areas burned by forest and brushfires, a lower threshold of precipitation may initiate landslides.

16.1.2 Landslide Risk Areas

Landslides are typically a function of soil type and steepness of slope. Soil type is a key indicator for landslide potential and is used by geologist and geotechnical engineers to determine soil stability for construction standards. In general, landslide hazard areas are where the land has characteristics that contribute to the risk of the downhill movement of material, such as the following:

- A slope greater than 33 percent
- A history of landslide activity or movement during the last 10,000 years
- Stream activity that has caused erosion, undercut a bank or cut into a bank to cause the surrounding land to be unstable
- The presence or potential for snow avalanches
- The presence of an alluvial fan, indicating vulnerability to the flow of debris or sediments
- The presence of impermeable soils such as silt or clay, mixed with granular soils such as sand and gravel.

Certain combinations of earth materials and steep topography increase the likelihood of slope failure. In Idaho, examples include basalt with sedimentary interbeds, altered volcanic rocks, fractured metamorphic rocks, glacial and lake deposits, and weathered granite. Basalt lava flows exposed in canyons hundreds of feet deep occur throughout the Snake River Plain and Columbia Plateau. Large landslides tend to form where the basalts are underlain by unconsolidated sediments. In some cases, irrigation increases the landslide potential. At Salmon Falls Creek south of Buel, translational and rotational slides and multiple lateral spreads have occurred where basalt overlies lake and fluvial sediments. On steep slopes in Idaho's river canyons, metamorphic rocks fractured by faulting and folding are prone to fail as falls, topples, and translational slides. Such landslides are common along the Salmon River and in Hells Canyon.

16.1.3 Landslide Types

The following are common types of mass landslides (see Figure 16-1):

- **Rotational Slides**—Blocks of fine-grained sediment that rotate and move down slope
- **Translational Slides**—Sediments that move along a flat surface without a rotational component
- **Block Slides**—Blocks of rock that slide along a slip plane as a unit down a slope.
- **Rock Falls**—Blocks of rock that fall away from a bedrock unit without a rotational component
- **Rock Topples**—Blocks of rock that fall away from a bedrock unit with a rotational component
- **Debris Flows (Mudslides)**—Rivers of rock, earth, organic matter, and other soil materials saturated with water. They develop in the soil overlying bedrock on sloping surfaces when water rapidly accumulates in the ground, such as during heavy rainfall or rapid snowmelt.
- **Debris avalanche**—A debris flow that travels faster than about 10 miles per hour (mph). Speeds in excess of 20 mph are not uncommon, and speeds in excess of 100 mph, although rare, can occur. The slurry can travel miles from its source, growing as it descends, picking up trees, boulders, cars, and anything else in its path.
- **Earth Flows**—Fine-grained sediments that flow downhill and typically form a fan structure
- **Creep**—A slow-moving landslide often only noticed through crooked trees and disturbed structures
- **Lateral spread**—Landslides that commonly form on gentle slopes and that have rapid fluid-like flow movement, like water

16.1.4 Secondary Hazards

Landslides can cause secondary effects such as blocking access to roads, which can isolate residents and businesses and delay transportation. This could result in economic losses for businesses. Other potential problems are power and communication failures. Vegetation or poles on slopes can be knocked over, resulting in possible losses to power and communication lines. Landslides also have the potential of destabilizing the foundation of structures, which may result in monetary loss for residents. They also can damage rivers or streams, potentially harming water quality, fisheries and spawning habitat.

Source: (U.S. Geological Survey 2006)

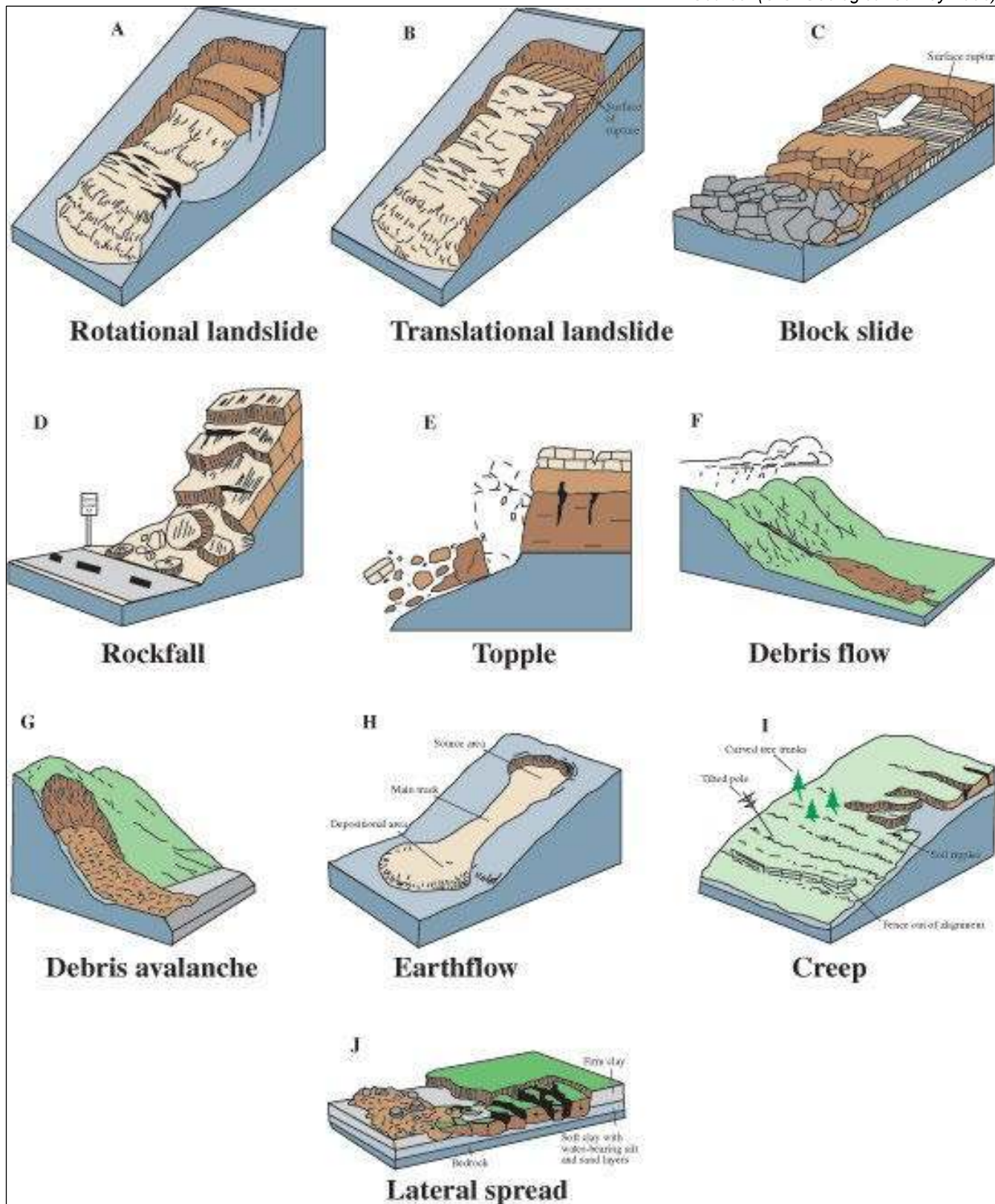


Figure 16-1. Common Landslide Types

16.2 HAZARD PROFILE

16.2.1 Past Events

Ada County has seen landslides primarily in the Boise Foothills. This area is most prone to landslides following large wildfires or heavy rain events. There are no records in the County of fatalities attributed to landslides. However, deaths have occurred across the western U.S. as a result of slides and slope collapses. Events that have caused property damage within the planning area are summarized below.

Early- to Mid-2016

The ground under the Terra Nativa subdivision in the Boise foothills experienced slow sliding for months. Roads and sidewalks buckled. The landslide caused homes to slide off their foundations (see Figure 16-2). Alto Via Court was closed; five of the six homes on the street were deemed unsafe to occupy and were demolished by the city. The sixth home is considered safe to live in, but is vacant. Another property on Strata Via Place was impacted by the landslide and is vacant.

Source: KTBV7



Figure 16-2. Residential and Infrastructure Damage, Alto Via Court

April 2003

Mud slid down a 400-yard embankment, crushed a 4-foot wooden fence and ripped a back door from its hinges on the 3800 block of McGonigull Street in Boise (see Figure 16-3).

December 1996

During the last days of 1996, warm unsettled air from the Pacific Ocean crossed into North Central Idaho dropping rain, snow, frozen rain, sleet and hail. Warming temperatures melted snow and saturated the soil of the area. The result was unstable soil conditions that led to mudslides along miles of the state's primary roadways between Boise and Lewiston. Although the catastrophic mudslides north of Ada County received much of the press, smaller scale mudslides impacted the homes, driveways, and surface streets where cut banks had been created to site area roads.



Figure 16-3. McGonigull Street Slide

March – May 1973

Landslides along Warm Springs Mesa, some over 100 yards long, closed Starcrest Drive several times over a three-month period. The area was stabilized by installing 17 horizontal drains to release water.

August 20, 1959

During severe thunderstorms in the northeast Boise Foothills, estimated to be a 50- to 100-year rainfall event, 0.30 inches of rain fell in 5 minutes at Deer Point. The peak flow on Cottonwood Creek was 3,000 cfs. Floodwaters were carried by other Foothills creeks draining Shaw Mountain and Aldape Summit. Earlier Lucky Peak fires had denuded the Foothills of vegetation.

Debris flows over 10 inches deep filled basements and yards in north and east Boise. Floodwaters were diverted along Broadway Avenue to the Boise River. Approximately 500 houses were damaged by mud up to 10 inches

deep; over 160 acres were covered by silt and debris flows. Hardest hit areas were Reserve Street, East Jefferson, East State, Krall and East Bannock, and Avenues D and E and Warm Springs Avenue.

The agriculture area between Lucky Peak Dam and East Boise suffered extensive property, crop and livestock losses. The Boise police clubhouse on Mountain Cove Road was destroyed, and the Idaho National Guard headquarters on Reserve Street was inundated, breaking out the windows, filling the basement with several feet of water, and destroying equipment and records.

16.2.2 Location

Landslides are typically a function of soil type and steepness of slope. Soil type is a key indicator for landslide potential and is used by geologist and geotechnical engineers to determine soil stability for construction standards. Soils mapping is lacking for the Ada County planning area.

The best available predictor of where movement of slides and earth flows might occur is the location of past movements. Past landslides can be recognized by their distinctive topographic shapes, which can remain in place for thousands of years. Most landslides recognizable in this fashion range from a few acres to several square miles. Most show no evidence of recent movement and are not currently active. A small proportion of them may become active in any given year, with movements concentrated within all or part of the landslide masses or around their edges.

The recognition of ancient dormant landslide sites is important in the identification of areas susceptible to flows and slides because they can be reactivated by earthquakes or by exceptionally wet weather. Also, because they consist of broken materials and frequently involve disruption of groundwater flow, these dormant sites are vulnerable to construction-triggered sliding.

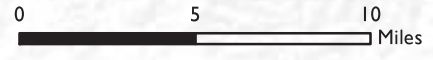
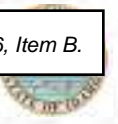
To assess the location of potential landslide hazard areas, a dataset of steep slopes was generated using available digital elevation models. Two slope classifications were created: 15 to 30 percent; and greater than 30 percent. Figure 16-4 shows the estimated landslide hazard areas in the Ada County planning area, based on slopes.

16.2.3 Frequency

In Ada County, landslides typically occur during and after major storms, so the landslide potential largely coincides with the potential for sequential severe storms that saturate steep, vulnerable soils. Until better data is generated specifically for landslide hazards, this severe storm frequency is appropriate for the purpose of ranking risk associated with the landslide hazard. The ground must be saturated prior to the onset of a major storm for significant landslides to occur. Most local landslides occur in January after the water table has risen during November and December. Water is involved in nearly all cases; and human influence has been identified in more than 80 percent of reported slides.

16.2.4 Severity

Landslides destroy property and infrastructure and can take the lives of people. Slope failures in the United States result in an average of 25 lives lost per year and an annual cost to society of about \$1.5 billion. There are no records in Ada County of fatalities attributed to landslides. The biggest assets at risk to landslides are roads and infrastructure in landslide-prone area. Landslides can isolate populations due to road closures.



Boise County

Canyon County

STAR

EAGLE

GARDEN CITY

MERIDIAN

BOISE

KUNA

Elmore County

Owyhee County

Figure 16-4.
Landslide Hazard Mapping
Legend

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Road
- Rail
- Waterbody

- Slope**
- 15 – 30%
 - Greater than 30%

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

16.2.5 Warning Time

Landslide velocity can range from inches per year to many feet per second, depending on slope angle, material and water content. Generally accepted warning signs for landslide activity include the following:

- Springs, seeps, or saturated ground in areas that have not typically been wet before
- New cracks or unusual bulges in the ground, street pavements or sidewalks
- Soil moving away from foundations
- Ancillary structures such as decks and patios tilting and/or moving relative to the main house
- Tilting or cracking of concrete floors and foundations
- Broken water lines and other underground utilities
- Leaning telephone poles, trees, retaining walls or fences
- Offset fence lines
- Sunken or down-dropped roadbeds
- Rapid increase in creek water levels, possibly accompanied by increased soil content
- Sudden decrease in creek water levels though rain is still falling or recently stopped
- Sticking doors and windows or visible open spaces indicating jambs and frames out of plumb
- A faint rumbling sound that increases in volume as the landslide nears
- Unusual sounds, such as trees cracking or boulders knocking together.

It is possible to determine areas at risk during general time periods based on geology, vegetation, and amount of predicted precipitation for an area. However, there is no practical warning system for individual landslides. The current procedure is to monitor situations on a case-by-case basis and respond after the event has occurred.

16.3 EXPOSURE

A Level 2 Hazus analysis was used to assess exposure to landslides in the planning area. Where possible, the Hazus default data was enhanced using local GIS data from county, state and federal sources.

16.3.1 Population

Population could not be examined by landslide hazard area because census block group areas do not coincide with the hazard areas. A population estimate was made using the structure count of buildings within the landslide hazard areas. Figure 16-5 and Figure 16-6 summarize the population by municipality living in the two landslide hazard zones (15 to 30 percent slopes, and slopes greater than 30 percent, respectively).

16.3.2 Property

The value of exposed buildings and contents in each jurisdiction is summarized in Figure 16-7 and Figure 16-8 for the 15 to 30 percent slope and greater than 30 percent slope landslide hazard zones, respectively.

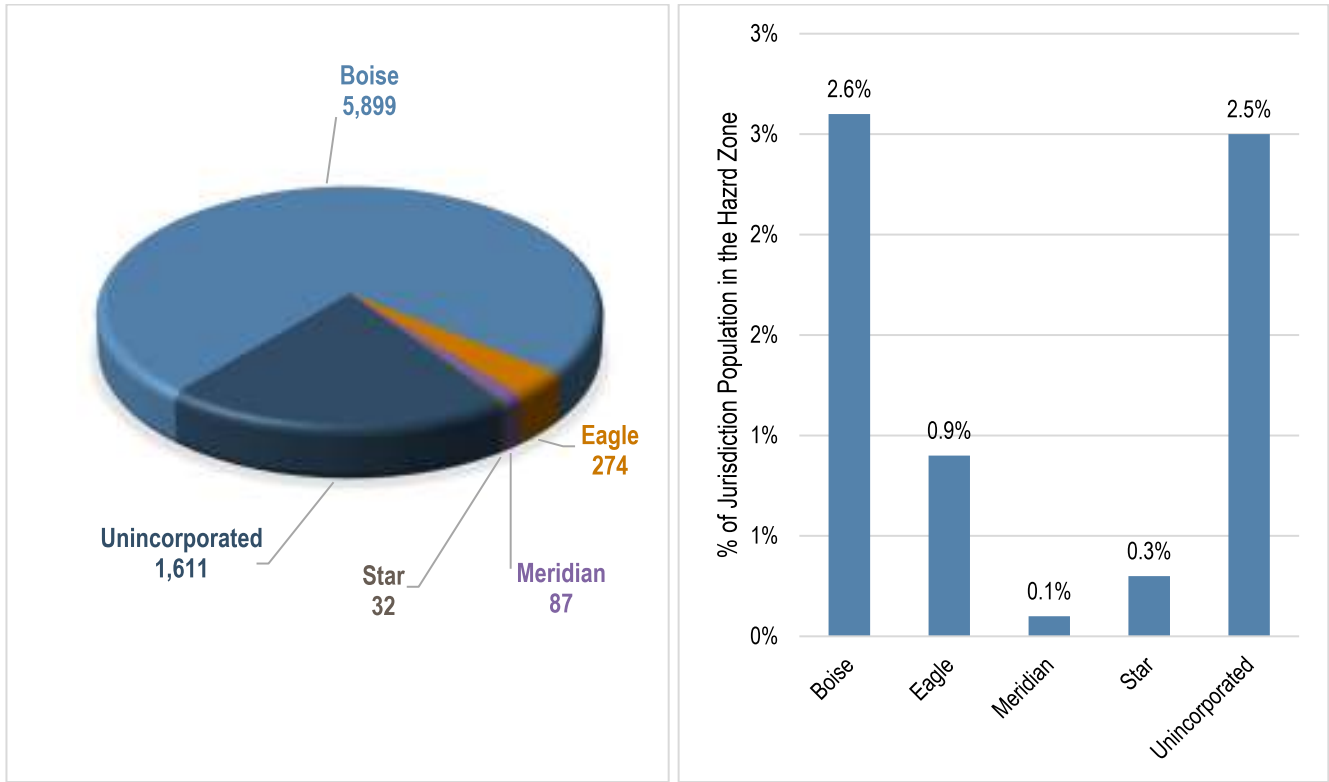


Figure 16-5. Population in the 15% to 30% Slope Landslide Hazard Area

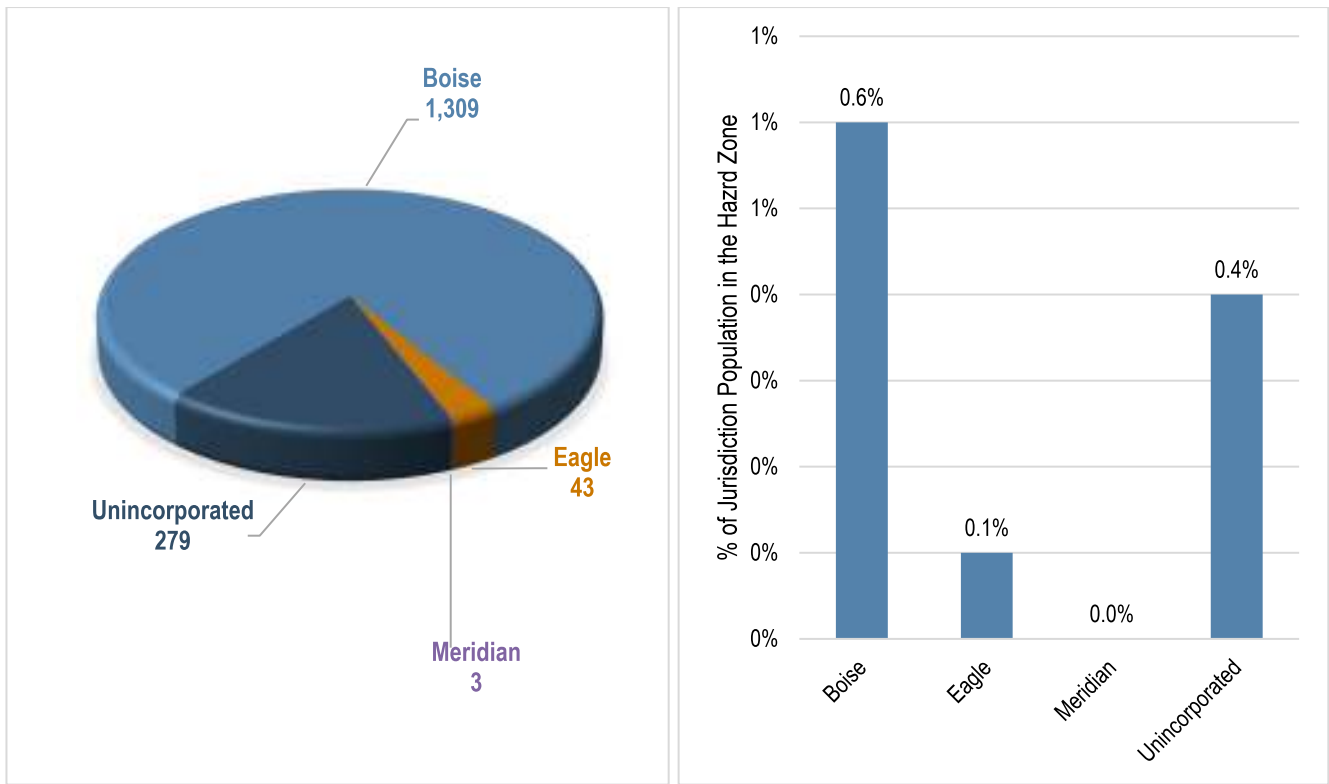


Figure 16-6. Population in the > 30% Slope Landslide Hazard Area

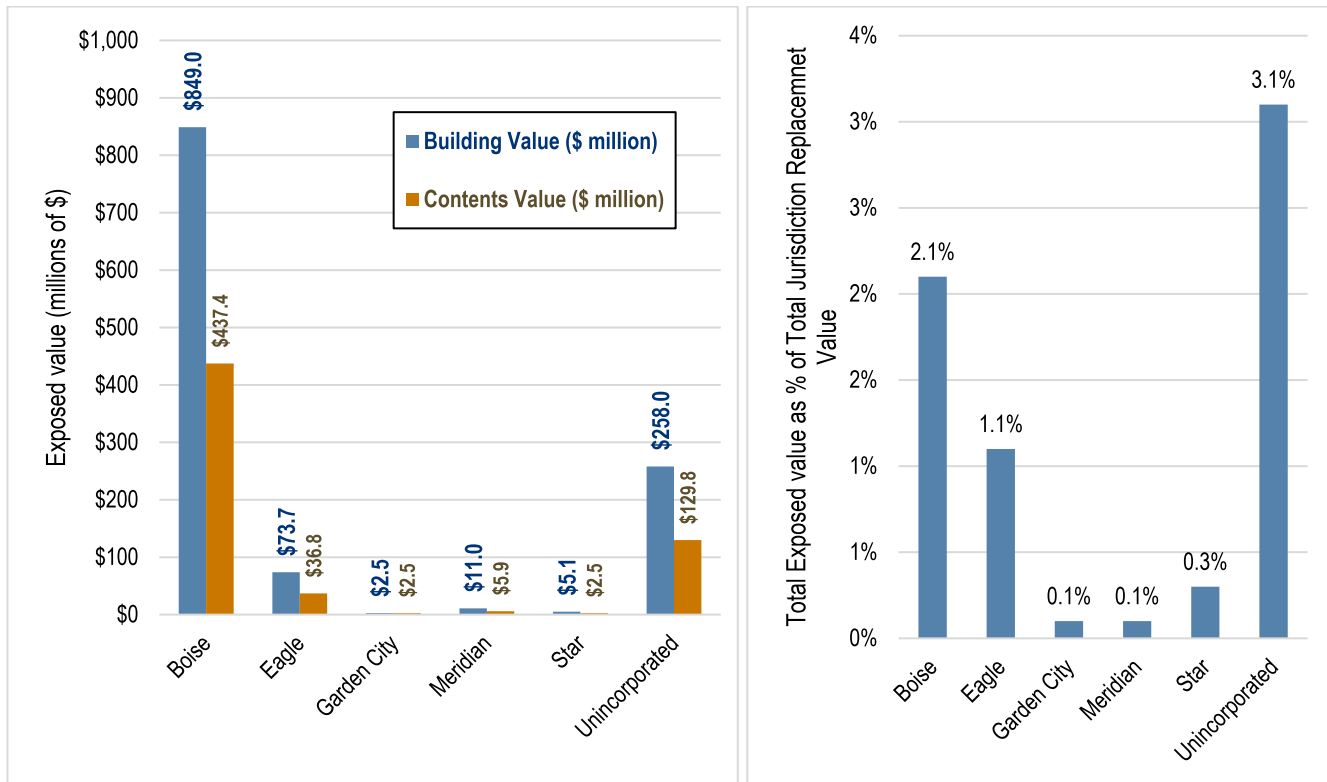


Figure 16-7. Value of Property in the 15% to 30% Slope Landslide Hazard Area

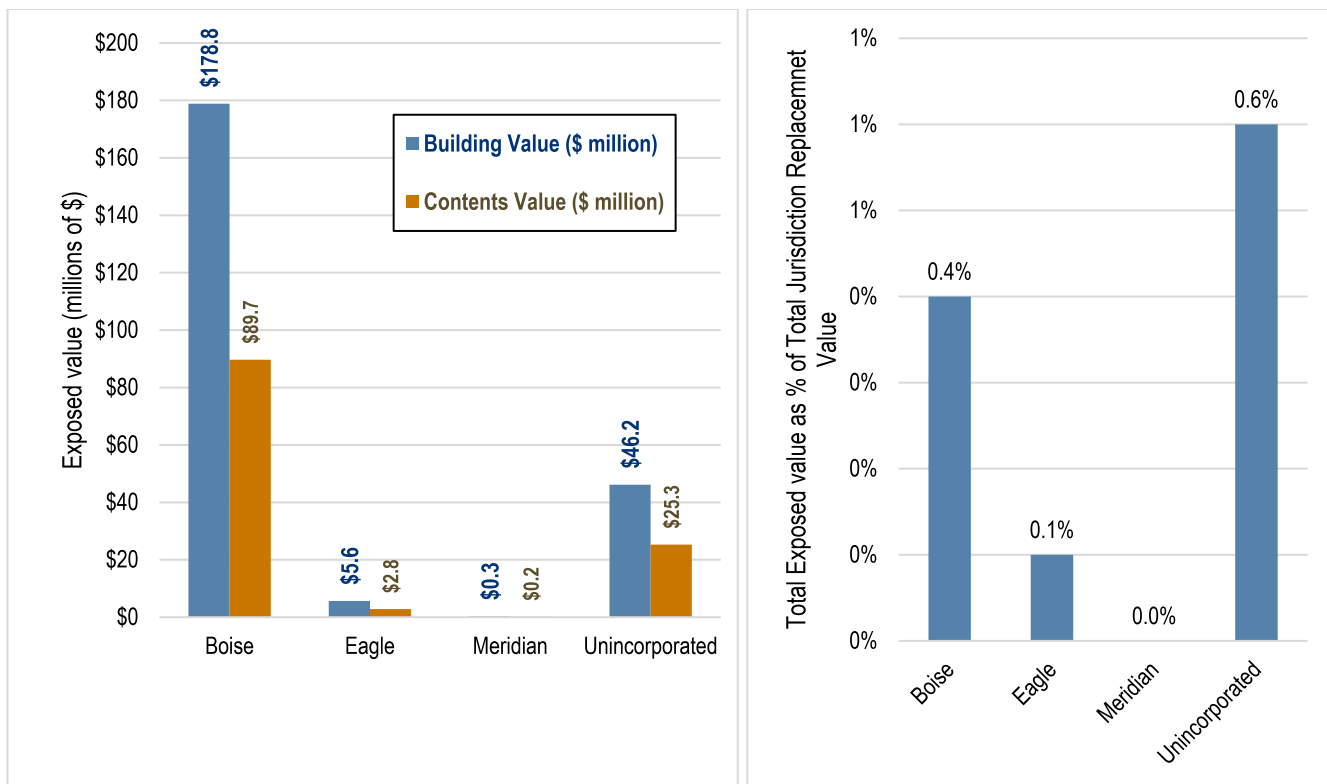


Figure 16-8. Value of Property in the > 30% Slope Landslide Hazard Area

Figure 16-9 summarizes the number of structures in the 15 to 30 percent slope landslide hazard zones by jurisdiction and occupancy class. In the greater than 30 percent slope landslide hazard zones, almost all of the exposed structures are residential, as shown in Figure 16-10. The only other exposed structures in this zone are one commercial structure in Boise and four in unincorporated Ada County.

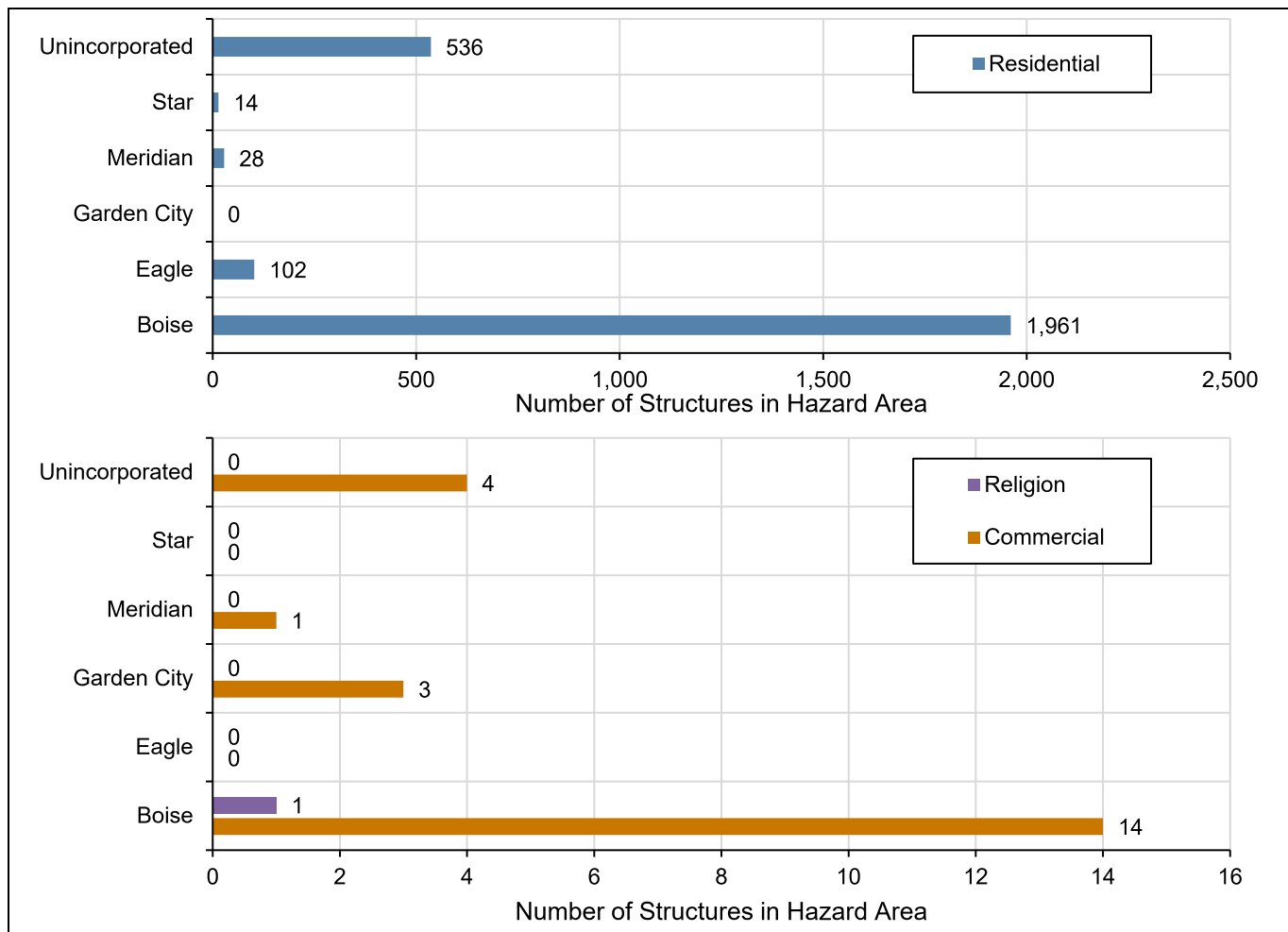


Figure 16-9. Number of Structures Within the 15% to 30% Slope Landslide Hazard Area

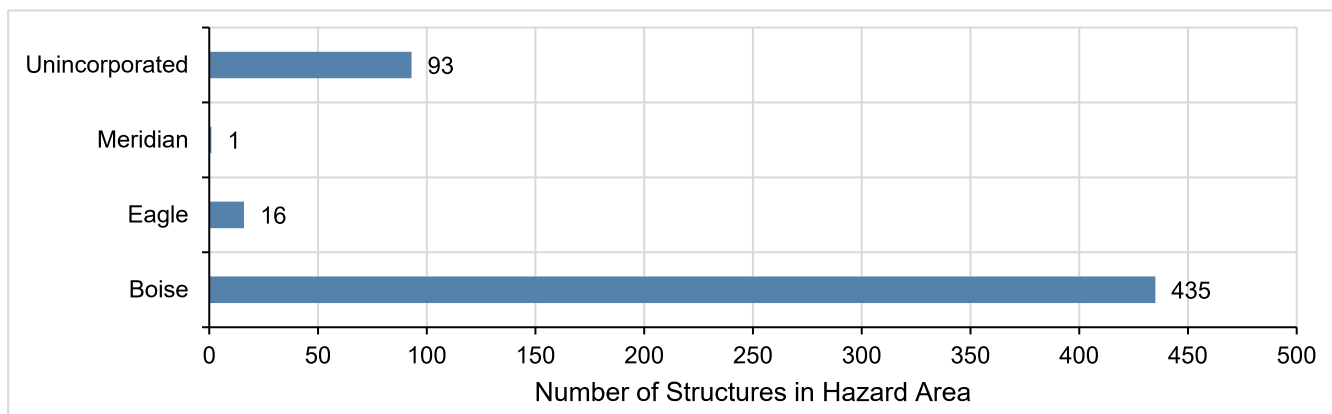


Figure 16-10. Number of Residential Structures Within the > 30% Slope Landslide Hazard Area

16.3.3 Critical Facilities

Figure 16-11 summarizes the critical facilities exposed to the landslide hazard for the countywide planning area. Detailed results by jurisdiction are included in Appendix D.

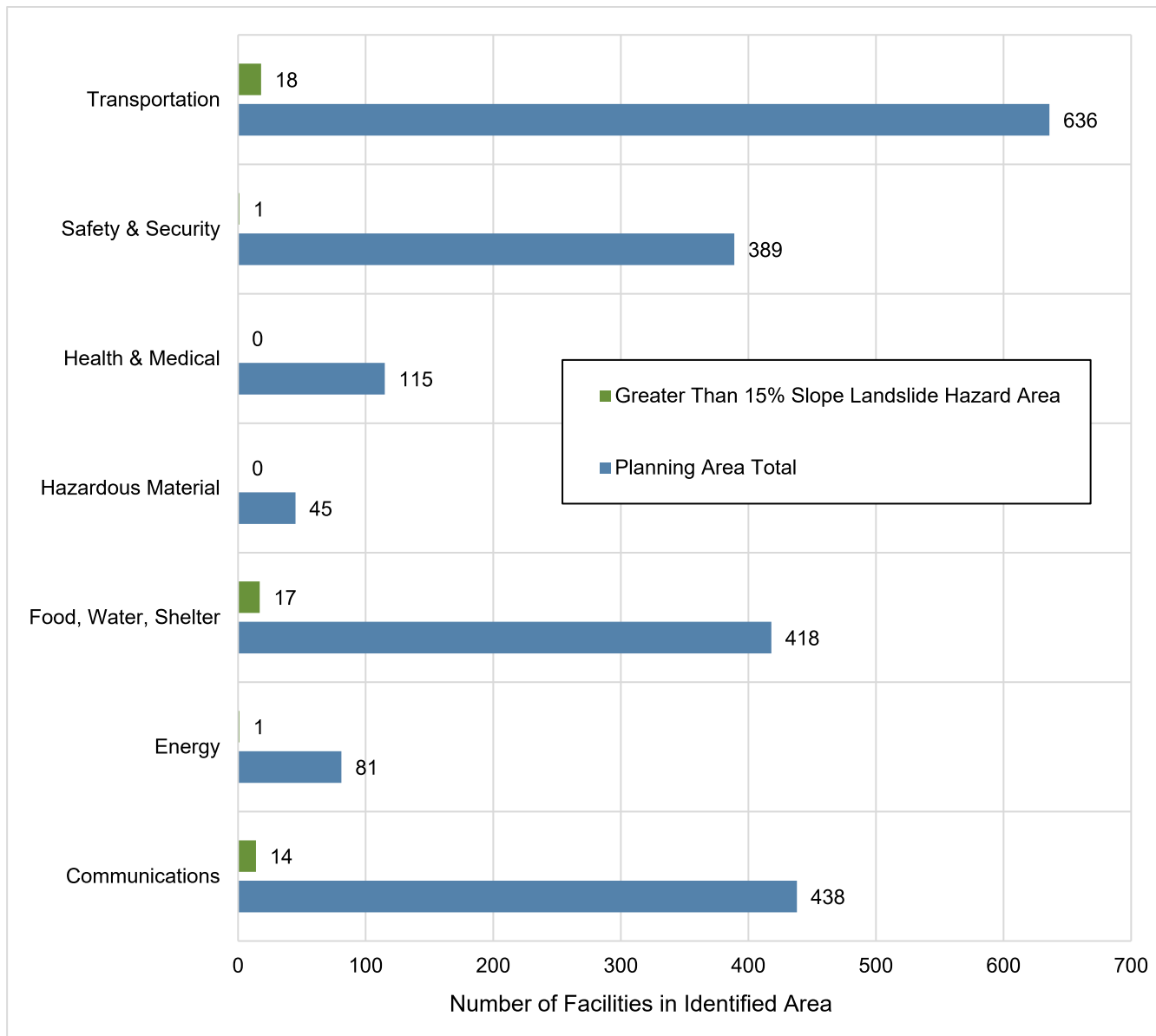


Figure 16-11. Critical Facilities in the Mapped Landslide Hazard Areas and Countywide

A significant amount of infrastructure can be exposed to landslides:

- Roads**—Access to major roads is crucial to life-safety after a disaster event and to response and recovery operations. Landslides can block egress and ingress on roads, causing isolation for neighborhoods, traffic problems and delays for public and private transportation. This can result in economic losses for businesses.

- **Bridges**—Landslides can knock out bridge abutments or significantly weaken the soil supporting them, making them hazardous for use.
- **Power Lines**—Power line towers can be subject to landslides. A landslide could trigger failure of the soil underneath a tower, causing it to collapse and ripping down the lines. Power and communication failures due to landslides can create problems for vulnerable populations and businesses.

16.3.4 Environment

All natural areas within the mapped landslide hazard zones are considered to be exposed to the hazard.

16.4 VULNERABILITY

16.4.1 Population

All people exposed to the landslide hazard are potentially vulnerable to landslide impacts. Populations with access and functional needs as well as elderly populations and the very young are more vulnerable to the landslide hazards as they may not be able to evacuate quickly enough to avoid the impacts of a landslide.

16.4.2 Property

Loss estimations for the landslide hazard are not based on modeling using damage functions, because no such damage functions have been generated. Instead, loss estimates were developed representing 10 percent, 30 percent and 50 percent of the assessed value of exposed structures. This allows emergency managers to select a range of economic impact based on an estimate of the percent of damage to the general building stock. Damage in excess of 50 percent is considered to be substantial by most building codes and typically requires total reconstruction of the structure. Table 16-1 shows the general building stock loss estimates in landslide risk areas.

Table 16-1. Estimated Building Losses in the Steep Slope Areas

	Building Count	Assessed Value	10% Damage	30% Damage	50% Damage
Boise	81,552	\$61,280,836,767	\$6,128,083,677	\$18,384,251,030	\$30,640,418,383
Eagle	12,437	\$9,838,649,929	\$983,864,993	\$2,951,594,979	\$4,919,324,964
Garden City	4,385	\$3,705,101,875	\$370,510,187	\$1,111,530,562	\$1,852,550,937
Kuna	8,831	\$3,886,826,099	\$388,682,610	\$1,166,047,830	\$1,943,413,050
Meridian	40,812	\$28,959,315,273	\$2,895,931,527	\$8,687,794,582	\$14,479,657,637
Star	5,065	\$2,845,160,473	\$284,516,047	\$853,548,142	\$1,422,580,237
Unincorporated	21,720	\$12,472,792,807	\$1,247,279,281	\$3,741,837,842	\$6,236,396,403
Total	174,802	\$122,988,683,223	\$12,298,868,322	\$36,896,604,967	\$61,494,341,611

16.4.3 Critical Facilities

There are 51 critical facilities with potential exposure to landslides due to their location on steep slopes. A more in-depth analysis of the mitigation measures taken by these facilities to prevent damage from landslides should be done to determine if they could withstand impacts of a landslide.

Several types of infrastructure are exposed to landslides, including transportation, water and sewer and power infrastructure. Highly susceptible areas of the county include mountain roads and transportation infrastructure. At this time, all infrastructure and transportation corridors identified as exposed to the landslide hazard are considered vulnerable until more information becomes available.

16.4.4 Environment

Natural Resources

Landslides can destroy natural assets that are highly valued by the community:

- Landslides that fall into streams may significantly impact fish and wildlife habitat, as well as affecting water quality.
- Hillsides that provide wildlife habitat can be lost due to landslides.
- Endangered species and their critical habitat in the planning area may be located in landslide hazard areas.

Agricultural and Timber Resources

Agricultural resources include rangelands, timberlands, cultivated farmlands and dairy lands. Landslides can have major consequences to such resources, primarily timberland, due to the large percentage of such land in remote locations on steep slopes. Roads accessing timberlands are often susceptible to slides and frequently are contributing factors to landslides. Landslide activity on these roads can remove them from production.

Cultural Resources

Landslides can destroy cultural resources such as artifacts and structures.

16.5 DEVELOPMENT TRENDS

The value of planning area properties exposed to the landslide hazard has increased by 48 percent (\$701.5 million) since the last hazard mitigation plan update in 2017. This increase in risk exposure can be attributed to a population growth of 13.6 percent in the same period.

While landslides are not generally hazards addressed in comprehensive plans, the risk assessment in this plan creates an opportunity for Ada County and its planning partners to consider the inclusion of landslide hazards in their comprehensive plans. A key component to support this action would be the availability of good sub-surface soil mapping using the best available data, science and technology. It is anticipated that this data will be available in the near future. In the meantime, Ada County and its planning partners are equipped to deal with new development on a case-by-case basis through enforcement of the International Building Code. The IBC includes provisions for geotechnical analyses in steep slope areas that have soil types susceptible to landslides. These provisions ensure that new construction is built to standards that reduce the vulnerability to landslides.

16.6 SCENARIO

Major landslides in Ada County occur as a result of soil conditions that have been affected by severe storms, groundwater or human development. The worst-case scenario for landslide hazards in the planning area would generally correspond to a severe storm that had heavy rain and caused flooding. Landslides are most likely during

late winter when the water table is high. After heavy rains from November to December, soils become saturated with water. As water seeps downward through upper soils that may consist of permeable sands and gravels and accumulates on impermeable silt, it will cause weakness and destabilization in the slope. A short intense storm could cause saturated soil to move, resulting in landslides. As rains continue, the groundwater table rises, adding to the weakening of the slope. Gravity, poor drainage, a rising groundwater table and poor soil exacerbate hazardous conditions.

Landslides are becoming more of a concern as development moves outside of city centers and into areas less developed in terms of infrastructure. Most landslides would be isolated events affecting specific areas. It is probable that private and public property, including infrastructure, will be affected. Landslides could affect bridges that pass over landslide prone ravines and knock out rail service through the county. Road obstructions caused by landslides would create isolation problems for residents and businesses in sparsely developed areas. Property owners exposed to steep slopes may suffer damage to property or structures. Landslides carrying vegetation such as shrubs and trees may cause a break in utility lines, cutting off power and communication access to residents.

Continued heavy rains and flooding will complicate the problem further. As emergency response resources are applied to problems with flooding, it is possible they will be unavailable to assist with landslides occurring all over Ada County.

16.7 ISSUES

Important issues associated with landslides in Ada County include the following:

- Sub-surface soils mapping is needed to better understand the landslide risk potential within the planning area.
- There are existing homes in landslide risk areas throughout the county. The degree of vulnerability of these structures depends on the codes and standards the structures were constructed to. Information to this level of detail is not currently available.
- Future development could lead to more homes in landslide risk areas, especially as development moves into the Boise Foothills.
- Mapping and assessment of landslide hazards are constantly evolving. As new data and science become available, assessments of landslide risk should be reevaluated.
- The impact of future climate conditions on landslides is uncertain. If future climate conditions impact atmospheric conditions, then exposure to landslide risks is likely to increase.
- Landslides may cause negative environmental consequences, including water quality degradation.
- The risk associated with the landslide hazard overlaps the risk associated with other hazards such as earthquake, flood and wildfire. This provides an opportunity to seek mitigation alternatives with multiple objectives that can reduce risk for multiple hazards.
- A buildable-lands analysis that looks at vacant lands and their designated land use would be a valuable tool in helping decision-makers make wise decisions about future development.

17. PUBLIC HEALTH EMERGENCY/PANDEMIC

17.1 GENERAL BACKGROUND

17.1.1 Description

An outbreak is defined by the U.S. Centers for Disease Control and Prevention (CDC) as the occurrence of more cases of disease than normally expected within a specific place or group of people over a given period of time. State and local regulations require immediate reporting of any known or suspected outbreaks by health care providers, health care facilities, laboratories, veterinarians, schools, child day care facilities, and food service establishments. An epidemic is a localized outbreak that spreads rapidly and affects a large number of people or animals in a community. A pandemic is an epidemic that occurs worldwide or over a very large area and affects a large number of people or animals.

A new virus strain or subtype that easily transmits between humans can cause a pandemic. Bacteria that become resistant to antibiotic treatment may also be behind a rapid spread. Sometimes, pandemics occur when new diseases develop the ability to spread rapidly, such as COVID-19. Humans may have little or no immunity against a new virus. Often, a new virus cannot spread between animals and people. However, if the disease changes or mutates, it may start to spread easily, and a pandemic may result. Seasonal flu epidemics generally occur because of a viral subtype that is already circulating among people. Novel subtypes, such as COVID-19, generally cause pandemics. These subtypes will not previously have circulated among humans. A pandemic can lead to social disruption, economic loss, and general hardship on a wide scale (Felman 2020).

According to the 2018 Idaho State’s Hazard Mitigation Plan, factors in Idaho that heighten the probability of occurrences of such events include large numbers of travelers arriving via the region’s airports, the transportation of infected animals into the area, or disease transmission through individuals transporting or coming into contact with infectious patients. (State of Idaho Hazard Mitigation Plan 2018).

17.1.2 Diseases with Pandemic Potential

The Idaho Office of Emergency Management has identified the following diseases that have become, or have the potential to become widespread in the area:

- **COVID-19** is a respiratory virus. People at high risk (those with certain underlying conditions, the elderly, the very young, and pregnant women) can develop severe illness that results in hospitalization or death.
- **Ebola virus disease** is a rare and deadly disease caused by infection with one of the Ebola virus species. Ebola viruses are transmitted through direct contact with contaminated blood or body fluids of a person who is sick or has died from Ebola. There have been no reported cases of Ebola virus disease contracted

in the United States, but two U.S. residents were infected with Ebola virus in 2014 while traveling to areas where it is found, and were diagnosed in the United States. Two healthcare workers who provided care for the first of these patients also became infected with Ebola virus.

- **HIV** (human immunodeficiency virus) is a viral infection transmitted by sexual intercourse, sharing needles or syringes, contaminated blood transfusions, or from infected mother to child during pregnancy or breastfeeding. This disease, first recognized by the CDC in 1981, compromises the immune system. There is no effective cure for HIV, but HIV can be controlled with proper medical care and antiretroviral therapy.
- **Influenza** is an infectious viral disease of birds and mammals commonly transmitted through aerosols produced by coughing or sneezing. People who have influenza can have some or all of these symptoms: fever, cough, sore throat, runny nose, muscle aches, headaches, fatigue, and sometimes vomiting and diarrhea. Complications from influenza can be moderate (e.g., sinus or ear infections) to severe (e.g., pneumonia, inflammation of the heart, inflammation of the brain, failure of multiple organs, or death). Influenza virus strains that were new or had not circulated in a while caused pandemics in the late 20th and 21st centuries (CDC 2018).
- **Measles** is a serious respiratory disease caused by the measles virus. It can lead to pneumonia, encephalitis (swelling of the brain), and death. The measles-mumps-rubella vaccine protects against measles.
- **Mosquito-borne diseases** are those spread by the bite of an infected mosquito. Diseases that are spread to people by mosquitoes include Chikungunya, dengue, malaria, Saint Louis encephalitis, West Nile virus disease, and Zika virus disease.
- **Mumps** is a contagious disease caused by the mumps virus. It is spread through saliva or mucus from the mouth, nose, or throat through coughing, sneezing or talking, sharing items such as cups or eating utensils, and touching contaminated objects. Mumps typically starts with a few days of fever, headache, muscle aches, tiredness, and loss of appetite, followed by swollen and tender salivary glands under the ears on one or both sides. Some people who get mumps have very mild or no symptoms; most people with mumps recover completely in a few weeks. The best way to protect against mumps is to be vaccinated with the measles-mumps-rubella vaccine.
- **Pertussis (whooping cough)** is a highly contagious respiratory disease caused by the pertussis bacterium. It causes violent persistent coughing. Whooping cough is most harmful for young babies and can be deadly. Vaccines that protect against pertussis include DtaP, for babies and children, and Tdap for preteens, teens, and adults.
- **Plague** is a disease that affects mammals, caused by the bacterium *Yersinia pestis*. Humans usually get plague after rodent fleabite carrying the bacterium or by handling an infected animal. Historically, plague pandemics have killed millions of people in Asia and Europe (CDC 2021). Today, modern antibiotics are effective in treating plague. Without prompt treatment, the disease can cause serious illness or death. Human plague infections continue to occur in the western United States, but significantly more cases occur in parts of Africa and Asia. An outbreak of plague among ground squirrels occurred in southwestern Idaho during 2016 and 2017. In 2018, a boy in Elmore County, Idaho contracted the first case of bubonic plague in the state in 26 years.
- **Rabies** is a viral disease of mammals most often transmitted through the bite of a rabid animal. It infects the central nervous system, ultimately causing disease in the brain and death. Over the last 100 years, rabies in the United States has changed dramatically. More than 90 percent of all animal cases reported annually to CDC now occur in wildlife; before 1960 the majority were in domestic animals. Two bats with rabies were found in Ada County in 2020, but none were reported in 2021.

- **Severe acute respiratory syndrome (SARS)** is a viral respiratory illness caused by a coronavirus, called SARS-CoV. SARS was first reported in Asia in 2003. The illness spread to more than two dozen countries in North America, South America, Europe, and Asia before the global outbreak was contained.
- **Tuberculosis** is a disease caused by a bacterium called *Mycobacterium tuberculosis*. The bacteria usually attack the lungs, but can attack any part of the body such as the kidney, spine, and brain. If not treated properly, tuberculosis can be fatal. It is spread through the air from one person to another. The bacteria are put into the air when a person with tuberculosis coughs, sneezes, speaks, or sings.

17.1.3 Secondary Hazards

While pandemic events do not influence natural hazards, secondary impacts are far-reaching as has been seen during the COVID-19 pandemic. In addition to health impacts, disease outbreaks reaching pandemic proportions can cause social and economic impacts on a global scale (Shang, Li and Zhang 2021). Civil disorder, protests, depression, and anxiety are a few of the social impacts of the COVID-19 pandemic. Economic impacts include unemployment, price increases, and supply chain interruptions (Center on Budget and Policy Priorities 2022).

17.2 HAZARD PROFILE

17.2.1 Past Events

Between 1953 and 2022, FEMA issued only one disaster declaration for the State of Idaho for a pandemic-related event. Ada County was included in this declaration for COVID-19. Known disease outbreaks that have impacted Ada County between 1918 and 2022 are identified in Table 17-1.

Table 17-1. Public Health Emergencies and Pandemics in Ada County

Type of Event	Dates	Description
Influenza	1918	Caused an estimated 50 million deaths worldwide and about 675,000 in the United States. Communities throughout Idaho reported 1918 influenza outbreaks and deaths and prohibited public events. The state Board of Health cancelled public and private schools statewide in hopes of preventing the spread to children and families. The pandemic of 1918 first affected Idaho in Canyon County. In less than two weeks, the number of cases grew to the extent the state was unable to track the disease accurately. Case records are not available on a county level.
Influenza	1957-1958	Killed an estimated 1.1 million people worldwide and 116,000 in the United States. In Idaho, 49 deaths were attributed to the pandemic. Case records are not available on a county level.
Influenza	1968-1969	Caused an estimated 1 million deaths worldwide and about 100,000 in the United States. In Idaho, 61 deaths were attributed to the pandemic. Case records are not available on a county level.
West Nile Virus	2004-present	Between 2003 and 2021, 327 human cases of West Nile Virus were reported in Ada County. 2006 had the majority of the cases at 252 reported.
Influenza	2009-2010	Killed nearly 12,000 Americans from 2009 through 2010; widespread in Idaho and led to several deaths. Case records are not available on a county level.
COVID-19 Pandemic	January 2020-present	As of March 31, 2022, 112,335 confirmed COVID-19 cases and 1,009 deaths have been reported in Ada County.

Sources: (State of Idaho Hazard Mitigation Plan 2018), (CDC 2022), (Idaho Division of Public Health 2022)

17.2.2 Location

Public health emergencies and pandemics can occur without regard for location. However, factors such as density, visitation, and the length of time in which the public spends in a location all contribute to the spread of infectious diseases. For example, influenza and COVID-19 are more likely spread by persons in close contact. Indoor areas in which people are in close contact with each other appear to be significant vectors for diseases that are spread through respiratory droplets. Infectious diseases spread by insects may be subject to other types of location hazards. For example, the prevalence of standing water can provide breeding grounds for mosquito-borne diseases such as West Nile Virus. Diseases that can infect humans are variable in nature and methods of transmission. Ultimately, residents need to be vigilant about diseases altogether in order to better understand and respond to public health emergencies and pandemic hazards.

17.2.3 Frequency

Public health emergencies and pandemics have occurred at a rate of 1 every 15 to 20 years in Ada County. The COVID-19 pandemic is by far the longest in duration. It has been ongoing for more than two years at the writing of this plan.

17.2.4 Severity

Widespread sickness and loss of life can result from public health emergencies and pandemics. The COVID-19 pandemic infected nearly 500 million people and caused more than 6 million deaths worldwide in just 27 months and is still ongoing (Worldometer 2022).

17.2.5 Warning Time

Pandemics can occur with very little warning. Air travel can hasten the spread of a new organism and decrease the time available for early implementation of interventions. Influenza outbreaks are expected to occur simultaneously throughout much of the United States, preventing shifts in human and material resources that usually occur in response to other disasters. Warning time for influenza will depend on the origin of the virus and the amount of time needed to identify the virus.

17.3 EXPOSURE AND VULNERABILITY

Health hazards that affect the residents of Ada County may arise in a variety of situations, such as during a communicable disease outbreak, after a natural disaster, or as the result of a bioterrorism incident. All populations in Ada County are susceptible to pandemic events. Populations who are young or elderly or have compromised immune systems are likely to be more vulnerable. The relative ease of world-wide travel in addition to the world's expanding global food industry ensures that all countries are vulnerable to pandemic events at any time.

17.4 DEVELOPMENT TRENDS

Future population growth will directly impact the County's vulnerability to public health emergencies and pandemics. The population of Ada County is projected to increase by 186,756, or 37 percent between 2020 and 2040 (COMPASS 2021). As the population grows, so will population density, which will increase the chance of transmission of communicable diseases from person to person. New structures close to water bodies or areas with high population density are at an increased risk.

17.5 SCENARIO

A worst-case scenario would be a global pandemic similar to COVID-19. This could lead to sickness and deaths; strain on healthcare systems; income stress and financial loss; and negative mental health impacts.

17.6 ISSUES

Many lessons have been learned and issues have been overcome during the COVID-19 pandemic. However, adequate health care staffing and response capabilities should continue to be considered in emergency management.

18. RADIOLOGICAL EVENT

18.1 GENERAL BACKGROUND

18.1.1 Description

Radiological incidents produce radiation without detonation of a nuclear device. They may occur for a wide variety of reasons and can range significantly in scope and severity. Even very small amounts of certain radiological sources can cause significant contamination of the environment. Radiological incidents can occur anywhere within the United States and throughout the world.

Radiation can come in two forms (State of Idaho Hazard Mitigation Plan 2018):

- Ionizing radiation is energetic waves or particles that have sufficient energy to ionize other atoms. This results in the biological breakdown of DNA and cellular molecules in all living organisms exposed to it. This can lead to skin rash, radiation sickness (nausea, vomiting, diarrhea), or death, depending on the radiation dose absorbed by the body.
- Non-ionizing radiation is electromagnetic radiation that lacks sufficient energy to ionize atoms or molecules. The danger posed by non-ionizing radiation sources (lasers, microwave- or ultraviolet-producing machines and linear accelerators) is injury to the eyes or skin.

The most common radiological incidents occur because of loss, theft, or mismanagement of relatively minor or low-level radioactive sources material. Natural hazards, such as fires and extreme weather, may impact radiological facilities, resulting in an incident. The 2011 Fukushima Daiichi nuclear disaster is an example of how a natural hazard (in that case, a tsunami) could result in a major international nuclear or radiological incident. Radiological incidents can also result from terrorist attempts to acquire or use nuclear threat devices.

18.1.2 Types of Radiological Events

Naturally Occurring Radioactive Material

Natural sources of radioactive elements are found in air, water, soil, and human bodies. Ionizing particulate and electromagnetic radiation are generated in the environment by naturally occurring radioactive material in the earth's crust (terrestrial radioactivity, radon) or through the effects of cosmic radiation originating outside the earth's atmosphere. Thorium and uranium are naturally occurring radioactive elements that are used as nuclear fuels. The Treasure Valley, where Ada County is located, contains elevated levels of uranium in the groundwater (Neace 2020).

Technologically Enhanced Naturally Occurring Radioactive Material

Technologically enhanced naturally occurring radioactive material (TENORM) is defined as naturally occurring radioactive materials that have been concentrated or exposed to the accessible environment through human activities such as manufacturing, mineral extraction, or water processing (EPA 2021). Industrial sectors that generate TENORM are mining, energy production, community drinking water treatment, and some consumer products (fertilizer, cigarettes, building materials). TENORM is generated by nuclear reactors or high energy particle accelerators. Relatively high levels of ionizing electromagnetic radiation are produced using X-ray machines.

Radioactive materials are often encapsulated so that the ionizing electromagnetic radiation they produce may be used without the hazard posed by uncontained radioactive contamination. Technologically produced radioactivity and radiation are used extensively in medical and industrial applications. Everyone receives varying amounts of radiation exposure from natural and technological sources (Ada County Multi-Hazard Mitigation Plan 2017).

Radiological Dispersal

Radioactive material can be dispersed by conventional explosive or other mechanical means, such as a spray. Dirty bombs are one type of radiological dispersal device. A dirty bomb spreads radioactive material by detonation of conventional explosive (see Figure 18-1). It kills or injures people through the initial blast and spreads radioactive contamination over possibly a large area. Such bombs could be miniature devices or large truck bombs (U.S. Department of Health & Human Services 2022). Passive or active dispersion can be achieved with unsealed radioactive material through means such as depositing the material in soil or water or a dropping it from an airborne device. Radioactive sources can be solid, aerosol, gas, or liquid, and contamination of people may occur via air, water, soil, or food (U.S. Department of Health & Human Services 2022).

Source: U.S. Department of Health and Human Services

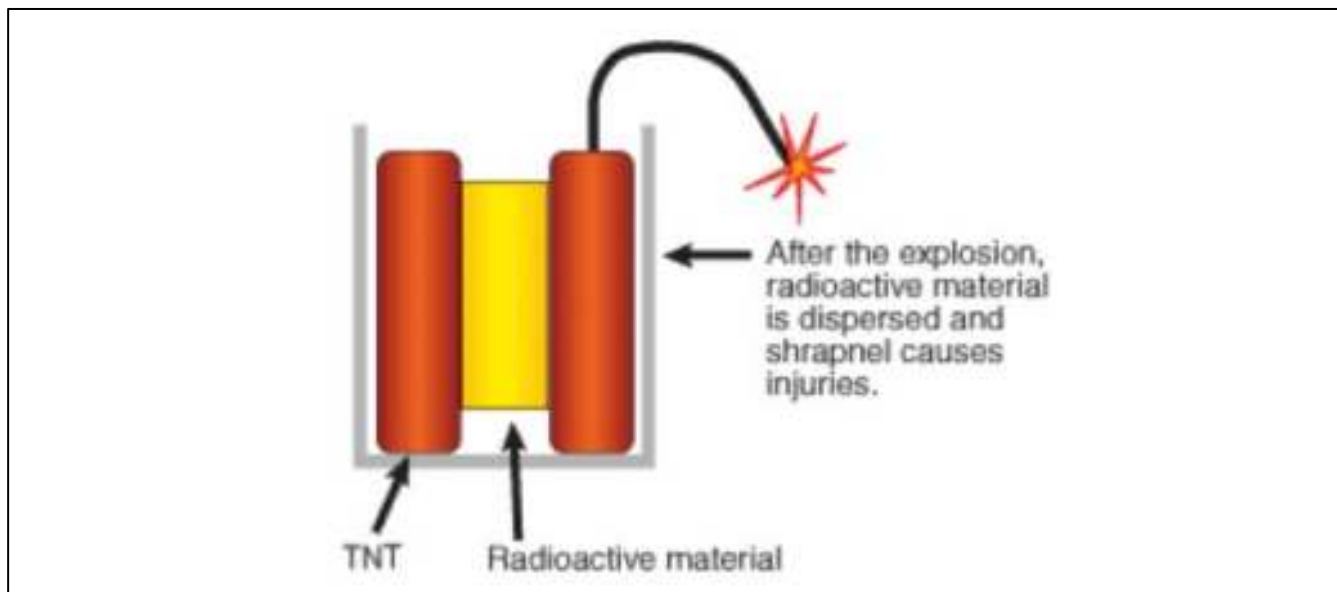


Figure 18-1. Dirty Bomb: Radiological Dispersal Device Using an Explosive

Radiological Exposure Device

A radiological exposure device, sometimes called a “hidden sealed source,” is a terrorist device intended to expose people to significant doses of ionizing radiation without their knowledge. Constructed from partially or fully unshielded radioactive material, a radiological exposure device could be hidden from sight in a public place (e.g., under a subway seat, in a food court, or in a busy hallway), exposing those who sit or pass close by. If the seal around the source were broken and the radioactive contents released from the container, the device could become a radiological dispersal device, capable of causing radiological contamination.

18.1.3 Secondary Hazards

The secondary impacts associated with radiological incidents include those impacting the health of the community and environment. Depending on the severity of exposure, impacts may include temporary illness or injury, permanent medical conditions, or death. Secondary impacts have the potential to occur regardless of whether the incident is naturally occurring or man-made. From a human-caused perspective, it is possible that small or large-scale radiological incidents could initiate civil disturbances.

18.2 HAZARD PROFILE

18.2.1 Past Events

An example of radiological contamination using TENORM occurred in Ada County in 2014. An individual was collecting uranium and thorium ore, grinding it up, and trying to chemically activate and produce uranium yellow cake to sell online. This resulted in a multi-million dollar EPA cleanup of the individual’s apartment and storage units. Given that these materials were naturally occurring, or below Nuclear Regulatory Commission (NRC) license limits, these activities went unnoticed for a long period of time until the NRC was notified about the individual attempting to ship a box into another country. This is an example of how small quantities of material can lead to large cleanup operations and a potential public hazard. While no members of the general public were exposed to these materials, an apartment fire could have drastically changed this scenario and its impact on surrounding neighborhoods (State of Idaho Hazard Mitigation Plan 2018).

Between 1954 and 2022, FEMA has not included Ada County or the State of Idaho in any radiological-related disasters or emergency declarations.

18.2.2 Location

Radiological materials are found in many locations. The NRC does not identify any licenses in Ada County, but it requires licenses only for sources with activities greater than 10 microcuries (a unit of radioactivity). Anyone can purchase industrial button sources of multiple isotopes online, and have them shipped to their home. While the quantity and activity of radioactive material in these sources is small, they could still be used for nefarious activities. Individuals also may be able to acquire naturally occurring materials like ore directly or from online sources.

Technologically produced sources are used extensively in medical and industrial applications. These sources have the highest probability of being involved in a radiological incident, due to the large quantities in medical facilities and the high frequency with which they are shipped or transported on local roads. They pose a high risk of overall impact on an area, depending on the isotope and its half-life.

Radiological incidents that happen in surrounding counties can also be carried into Ada County through multiple environmental and economic pathways. For these reasons, the risk for radiological emergencies exists throughout the entire county.

18.2.3 Frequency

Radiological events are difficult to predict. Currently, there are no identified TENORM issues in Ada County, although there is a relatively high potential for TENORM generation given the extractive industries operating in the county and the occurrence of uranium ore deposits in the county. Radioactive sources are used in a wide variety of industrial and consumer applications, including soil density/moisture gauges, smoke detection, well logging, weld inspection, and radioluminescent devices. Incidents involving manmade radioactivity in these applications have occurred sporadically, so the future rate of occurrence of incidents involving industrial radioactive sources cannot be projected on the basis of past experience. However, future incidents should be anticipated.

The most prevalent use of radioactive material in Idaho is for nuclear medicine. Hospitals and clinics in every region use radioactive isotopes for diagnostics and treatment. Medical isotopes are typically transported by common carrier either by air or road. Typically, nuclear medical applications involve use of relatively large amounts of short-lived radioactivity. Incidents involving radiopharmaceuticals could result in unintended exposures, but are not likely to pose a long-lasting hazard.

Safe transport will remain a small concern as nuclear spent fuel shipments continue in Idaho. Fuel shipments are transported in massive containment vessels via rail that undergo strict accident-proof testing criteria; therefore, these shipments pose little to no actual risk to the general public. Radioactive waste from the Idaho National Laboratory Cleanup Project facilities in eastern Idaho is transported by railway to the Waste Isolation Pilot Plant in New Mexico. These shipments pose a low risk for emergency due to the strict requirements for the vessels they are shipped in. No accidents have been reported in transporting spent fuel in Idaho.

18.2.4 Severity

All sources of energy pose some risk to human health or environmental quality. Radiation protection standards for humans, embodied in regulations that U.S. nuclear facilities must adhere to, exceed ample protection for other species and for ecosystems. Each year, U.S. residents receive an average dose from natural background radiation of about 3.1 millisievert (mSv). Medical procedures add another 3.1 mSv on average, for a total of 6.2 mSv per year. The NRC is the primary agency for regulating radioactive materials and ensuring public safety. The NRC set a radiation dose limit from regulated radiation sources of 1 mSv in a year and 0.02 mSv in an hour for a member of the public; this excludes natural and medical uses of ionizing radiation (U.S. Nuclear Regulatory Commission 2021).

Exposure to high levels of radiation is known to cause cancer and, at very high levels, radiation poisoning and even death. But the effects on human health from very low doses of radiation—such as exposure to varying levels of background radiation—does not significantly affect cancer incidence (UNSCEAR 2000).

18.2.5 Warning Time

The warning time for an incident occurring will vary and depends on the nature and scope of the incident. At facilities that handle radioactive material or any place where radiation-producing equipment is used, the radiation tri-foil sign (shown at right) must be displayed. This sign is used as a warning to protect people from being exposed to radioactivity (U.S. Department of Health & Human Services 2021).



18.3 EXPOSURE AND VULNERABILITY

Radiological events that affect the residents of Ada County may arise in a variety of situations, such as a transportation accident involving radioactive materials, an accidental or intentional release at a fixed facility, or if used during a terrorist attack. All populations in Ada County are susceptible to radiological events. Populations who live or work near major transportation routes and fixed-facility locations are likely to be more vulnerable.

18.4 DEVELOPMENT TRENDS

Future population growth will directly impact the County's vulnerability to radiological events. The population of Ada County is projected to increase by 186,756, or 37 percent between 2020 and 2040 (COMPASS 2021). New structures close to fixed facilities and major transportation routes are at an increased risk.

18.5 SCENARIO

A worst-case scenario would be a terrorist attack using a radiological dispersal device. This could lead to immediate injury or death of those nearby from the explosion and sickness and death over a much larger area from radiation. The affected area could be considered contaminated and uninhabitable for decades.

18.6 ISSUES

Important issues associated with radiological events in Ada County include the following:

- Facilities using or transporting radiological materials need to continue to be monitored and regulated closely.
- Education needs to be available about naturally occurring radiological materials.

19. UTILITY FAILURE

19.1 GENERAL BACKGROUND

19.1.1 Description

A power failure (also referred to as a power outage) is any interruption or loss of electrical service caused by disruption of power transmission due to accident, sabotage, natural hazards, or equipment failure. A significant power failure is defined as any incident of a long duration, which would require the involvement of the local and/or state emergency management organizations to coordinate provision of food, water, heating, cooling, and shelter.

Widespread power outages can occur without warning or as a result of a natural disaster. Generally, warning times are short in the case of technological failure, such as a fire at a sub-station, traffic accident, human error or terrorist attack. When a power failure is caused by natural hazards, greater warning time is possible. For example, high wind events such as tornados and hurricanes often cause widespread power failure, and are often forecasted before they affect a community. Additionally, severe winter weather conditions such as ice storms, blizzards, and snowstorms often cause power failure. Incidents such as these often have plenty of warning time, so power response crews can stage resources to prepare for power failure.

19.1.2 Secondary Hazards

Power failures can lead to secondary hazards, with negative impacts on the health and safety of residents:

- During periods of extreme heat or extreme cold, vulnerable populations such as the elderly and medically frail can be susceptible to hypothermia or heat stroke.
- Power failure can lead to food spoilage, which has negative impacts on public health.
- Residents who rely on electric medical devices such as home oxygen machines, medication nebulizers, home dialysis, infusion pumps, and electric wheelchairs may face life-threatening situations if power failure extends beyond the battery backup timeframe of their device (Huff 2021).
- Power failure can result in a loss of communications capability by first responders, with negative impacts on public safety.
- Power outages can also lead to instances of civil disturbance, including looting.
- Power interruptions at chemical handling plants can allow for a chemical spill during restart (EPA 2001). Chemical spills can have significant health and environmental impacts.
- Wastewater and potable water utility interruption may occur as a result of a power failure. Interruption of these critical utilities may have cascading economic and environmental impacts.

- Lack of power can prevent fuel pumps from operating and lead to fuel shortages.
- Traffic accidents may increase because of the lack of traffic control devices such as stoplights and railroad crossing advisory signals. Power outages lasting a long time will force law enforcement officials to man traffic control points to prevent accidents.
- Downed power lines can spark an urban or wildland fire.

19.2 HAZARD PROFILE

19.2.1 Past Events

Power outages and downed utility line events in Ada County between 2000-2021 are listed in Table 19-1. Between 1954 and 2022, FEMA has not included Ada County or the State of Idaho in any utility failure disasters or emergency declarations.

Table 19-1. Ada County Utility Failure Events

Date	Event Type	Utility Failure Event Description
October 19, 2019	Thunderstorm Wind	Several large trees, power lines and fences down in Kuna.
August 30, 2017	Thunderstorm Wind	Power outages in Southeast Boise
August 11, 2015	Thunderstorm Wind	Idaho Power reported outages from thunderstorm winds throughout the Treasure Valley. A downed power pole started a brush fire.
March 17, 2014	High Wind	Numerous reports of power outages reported by Idaho Power.
August 22, 2013	Thunderstorm Wind	Downed trees and power poles were reported across Ada County.
November 16, 2012	High Wind	Trees and power lines down in Start and North Boise.
August 21, 2010	Thunderstorm Wind	68 mph wind gusts, downed trees and power lines. A wildfire started due to the downed power lines and burned a home and six out buildings.
June 4, 2010	Thunderstorm Wind	Power lines downed in Southwest Boise and trees and traffic lights down in Garden City.
October 26, 2009	High Wind	Numerous incidents of power outages and wind damage in the Boise metro area.
November 20, 2008	High Wind	Downed trees and power outages in Boise, Mountain Home, Garden City and Kuna.
July 22, 2008	Thunderstorm Wind	Thunderstorm winds caused power outages to 6,000 customers in Meridian, Boise and Eagle.
June 21, 2008	Thunderstorm Wind	Downed trees and power outages in the Boise metro area.
September 4, 2007	Thunderstorm Wind	Gusty winds and rain ripped through the Treasure Valley, causing power outages and knocking down huge trees.
June 29, 2006	Thunderstorm Wind	Widespread thunderstorms yielding numerous reports of nickel-size hail and wind damage, including downed trees and power lines.
August 21, 2004	Thunderstorm Wind	Trees and power lines were blown down.
July 25, 2002	Thunderstorm Wind	Thunderstorm winds brought down trees and power lines which left over 5,000 homes and businesses without power.
July 22, 2002	Thunderstorm Wind	Trees and power lines were blown down across west Boise and Horseshoe Bend.
July 13, 2002	Thunderstorm Wind	Numerous trees and power lines were blown down across Ada, Canyon, Payette and Gem Counties.
February 7, 2002	Thunderstorm Wind	Numerous trees and power lines were brought down by the storm.
August 4, 2000	Thunderstorm Wind	Trees and power lines were downed in Ada County and Idaho Power reported that about 10,000 residents were without power for several hours.
July 18, 2000	Tornado	An old growth tree was snapped and several power lines were felled.
May 16, 2000	Hail Storm	Idaho power company reported power outages in Nampa, Caldwell and Meridian due to numerous trees and limbs down on power lines.

Source: (National Climatic Data Center 2022)

19.2.2 Location

Power failures in Ada County are usually localized and are usually the result of a natural hazard event involving high winds or heavy snowfall.

19.2.3 Frequency

The utility failure events for Ada County shown in Table 19-1 are often related to high winds associated with thunderstorms. Based on the frequency of these high wind events, the planning area can expect to experience a utility failure event at least annually.

Power failures also often result from damage to or electrical hazards within an electric power system. System components include power generation plants, substations, circuits, switches, transformers, power lines, and power poles. Due to the varied nature of power outage causes ranging from vehicle accidents to severe weather, utility interruptions can happen at any time.

19.2.4 Severity

The extent and severity of a power outage depends on the cause, location, duration, and time of year. It can range from a small, localized event to a countywide power outage. Impacts from an outage can be significant to the county and its residents.

Power failures lead to the inability to use diverse electric-powered equipment: lighting; heating, ventilation, and air conditioning; communication equipment (telephones, computers, etc.); fire and security systems; small appliances such as refrigerators, sterilizers, etc.; and medical equipment. This all can lead to food spoilage, loss of heating and cooling, basement flooding due to sump pump failure, and loss of water due to well pump failure.

Power failure is particularly problematic for homes that are cooled or heated with electricity. Widespread power outages during the summer and winter can directly impact vulnerable populations such as the elderly and medically frail. According to the 2020 American Community Survey 5-Year Estimates, 24.9 percent of homes across Ada County are heated with electricity.

19.2.5 Warning Time

Utility failures can occur without warning. Since they are often the result of severe weather events, the potential for a utility failure can be anticipated with the same warning time as the impending severe weather event. This includes extreme heat events that overload power systems due to heavy use of cooling systems. However, not every weather event triggers a utility failure. Many other events, such as transportation and construction accidents that may impact utility infrastructure, occur without warning.

19.3 EXPOSURE AND VULNERABILITY

The entire Ada County is exposed to the utility failure hazard. The most vulnerable residents are those over 65 or under 5 years of age, below the poverty threshold, or who rely on power for home medical devices.

19.4 DEVELOPMENT TRENDS

Future population growth will directly impact the County's vulnerability to utility failure events. The population of Ada County is projected to increase by 186,756, or 37 percent, between 2020 and 2040 (COMPASS 2021).

19.5 SCENARIO

A worst-case scenario would be a strong wind event that damages power lines and downs trees. Streets blocked by fallen trees would impact the ability of emergency utility crews to access and repair damaged lines.

19.6 ISSUES

Emergency management will need to continue to consider emergency backup power needs for critical facilities throughout the planning area.

20. VOLCANO (ASH FALL)

20.1 GENERAL BACKGROUND

A volcano is a vent in the earth's crust through which magma, rock fragments, gases and ash are ejected from the earth's interior. Over time, accumulation of these erupted products on the earth's surface creates a volcanic mountain. Figure 20-1 illustrates how Cascade volcanoes were formed.

Source: (U.S. Geological Survey 2016)

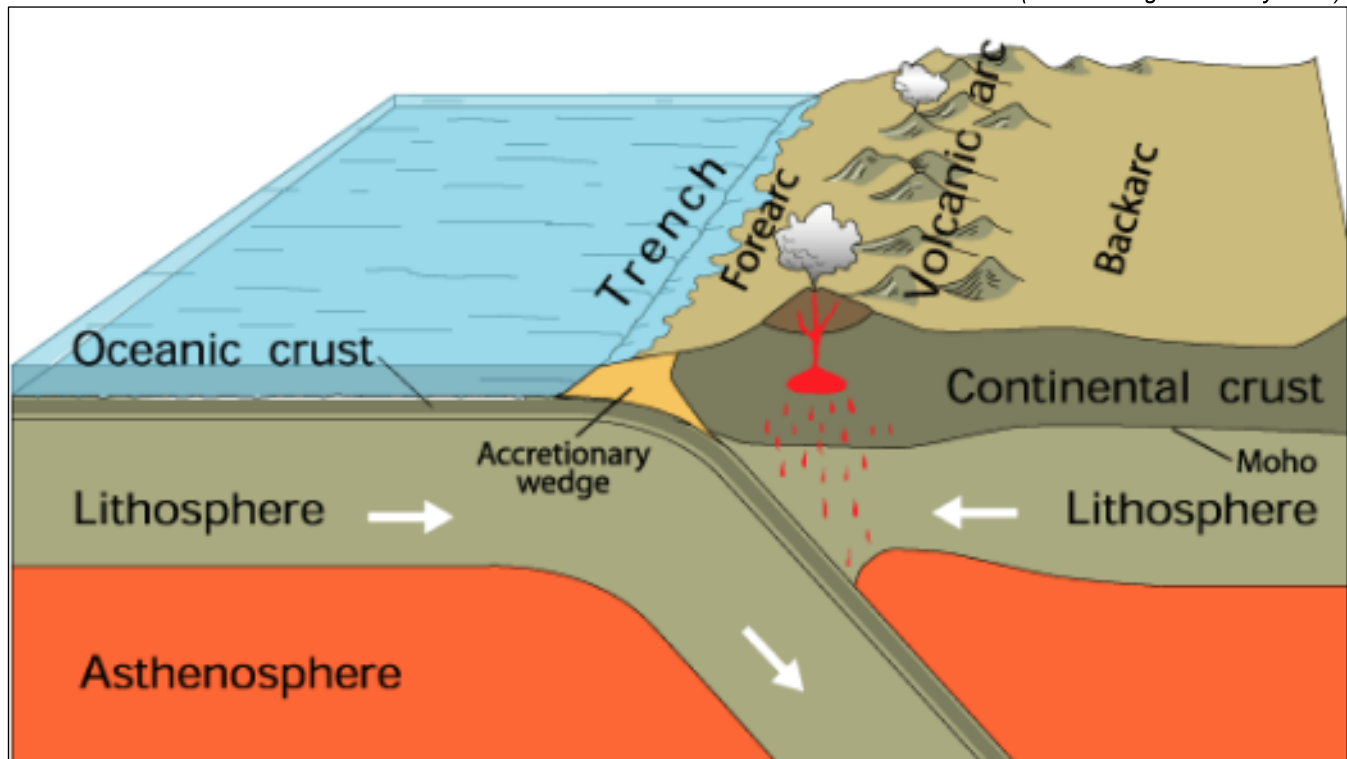


Figure 20-1. How Cascade Volcanoes Are Formed

There are a wide variety of hazards related to volcanoes and volcanic eruptions. The hazards are distinguished by the different ways in which volcanic materials and other debris flow from the volcano. The molten rock that erupts from the volcano (lava) forms a hill or mountain around the vent. The lava may flow out as a viscous liquid, or it may explode from the vent as solid or liquid particles. Ash and fragmented rock material can become airborne and travel far from the erupting volcano to affect distant areas.

Volcanoes can lie dormant for centuries between eruptions. When they erupt, high-speed avalanches of hot ash and rock called pyroclastic flows, lava flows, and landslides can devastate areas 10 or more miles away, while huge mudflows of volcanic ash and debris called *lahars* can inundate valleys more than 50 miles downstream. Falling ash from explosive eruptions, called *tephra*, can disrupt human activities hundreds of miles downwind, and drifting clouds of fine ash can cause severe damage to the engines of jet aircraft hundreds or thousands of miles away.

20.1.1 Idaho Volcanic Activity

Currently there are no active volcanoes in Idaho, but there is evidence of several types of volcanoes.

Craters of the Moon

Craters of the Moon is a volcanic field of basalt composition, 17,000 to 19,000 feet in elevation, that experienced eight eruptive episodes from 15,000 to 2,000 years ago. Its lava field lies along the northern border of the Snake River Plain, midway between Arco and Carey, Idaho. The Snake River Plain is a volcanic province that was created by a series of cataclysmic caldera-forming super-eruptions that started about 15 million years ago. The Yellowstone hotspot (see Section 12.1.1) was under the Craters of the Moon area some 10 to 11 million years ago but moved as the North American Plate migrated southwestward. Pressure from the hotspot heaves the land surface up, creating fault-block mountains. After the hotspot passes, the pressure is released and the land subsides. Leftover heat from this hotspot was later liberated by Basin and Range-associated rifting and created the overlapping lava flows that make up the Lava Beds of Idaho. The largest rift zone is the Great Rift; it is from the Great Rift fissure system that Craters of the Moon, Kings Bowl, and Wapi lava fields were created.

A typical eruption along the Great Rift and similar basaltic rift systems starts with a curtain of very fluid lava shooting up to 1,000 feet high along a segment of the rift up to 1 mile long. As the eruption continues, pressure and heat decrease and the lava becomes slightly more silica rich. The curtain of lava responds by breaking apart into separate vents. Various types of volcanoes may form at these vents: gas-rich pulverized lava creates cinder cones, and pasty lava blobs form spatter cones. Later stages of an eruption push lava streams out through the side or base of cinder cones, which usually ends the life of the cinder cone. This will sometimes breach part of the cone and carry it away as large and craggy blocks of cinder. Solid crust forms over lava streams, and lava tubes (a type of cave) are created when lava vacates its course.

Geologists feared that a large earthquake that shook Borah Peak, Idaho's tallest mountain, in 1983 would restart volcanic activity at Craters of the Moon, though this proved not to be the case. Geologists predict that the area will experience its next eruption sometime in the next 900 years, with the most likely period in the next 100 years.

Bruneau-Jarbidge Caldera

The Bruneau-Jarbidge caldera (sometimes called a super volcano) is located in present-day southwest Idaho. The volcano erupted during the Miocene, between 10 and 12 million years ago, spreading a thick blanket of ash and forming a caldera. At the time, the caldera was above the Yellowstone hotspot. Prevailing westerly winds deposited distal ash fall over a vast area of the Great Plains. The evolving composition of the erupted material indicates that while it is derived in large part from melted material from the middle or upper crust, it also incorporated a young basaltic component.

Henry's Fork Caldera

The Henry's Fork Caldera in Idaho is located in an area known as Island Park west of Yellowstone National Park. The caldera was formed by a super-volcano in an eruption of more than 67 cubic miles 1.3 million years ago, and is the source of the Mesa Falls Tuff (tuff is a consolidated volcanic ash). The Henry's Fork Caldera is nested inside the Island Park Caldera; the two calderas share a rim on the western side. The older Island Park Caldera is much larger and more oval and extends well into Yellowstone Park. Although much smaller than the Island Park Caldera, the Henry's Fork Caldera is still sizeable at 18 miles long and 23 miles wide and its curved rim is plainly visible from many locations in the Island Park area. Of the many calderas formed by the Yellowstone hotspot, the Henry's Fork Caldera is the only one that is currently clearly visible.

Henry's Fork of the Snake River flows through the Caldera and drops out at Upper and Lower Mesa Falls. The caldera is bounded by Ashton Hill on the south, Big Bend Ridge and Bishop Mountain on the west, Thurburn Ridge on the north and Black Mountain and the Madison Plateau on the east.

Mahogany Mountain

Mahogany Mountain is an ancient caldera volcano on the border of Malheur County Oregon and Owyhee County Idaho. Its last eruption was probably 15.5 million years ago. This eruption ejected layers of volcanic rock tuff, creating formations of rock in the Leslie Gulch. A part of the Basin and Range Province, the volcano's most recent eruptive activity dates to 15 million years ago (the Miocene), forming during a period of active volcanism. It formed around the same time as Three Fingers, Castle Peak, and three other volcanoes. Today the volcano appears gnarled due to erosion and is topped by pine forests. The caldera is narrow and shaped like a ridge, with precipitous slopes and an escarpment on the northwest flank.

Leslie Gulch lies within the depression of the volcano. Layers of ash and tuff are evident in the formation, and leftover volcanic rocks sit in it as well. The gulch features an array of rock formations and ash erupted from the volcano 15.5 million years ago.

Menan Buttes

The North and South Menan Buttes in southeastern Idaho are two of the world's largest volcanic tuff cones. They are located in Madison County, with lower slopes extending westward into Jefferson County. The two cones, with four smaller associated cones, align along a north-northwest line and make up the Menan Complex. The buttes rise about 800 feet above the surrounding Snake River plain and are late Pleistocene in age, dating to 10,000 years ago. The buttes are the remains of the only volcanic eruptions that have occurred in freshwater within the boundaries of the modern United States. The South Menan Butte is currently in private hands, but North Menan Butte is publicly owned and has been designated as a National Natural Landmark and a Research Natural Area by the U.S. Congress. The BLM designated the North Butte as an Area of Critical Environmental Concern.

The volcanoes forming the two major Menan Buttes were created when basaltic magma came into contact with a shallow aquifer or with the precursor of the modern Snake River. Particles of volcanic glass were created as the water turned to steam and explosively fragmented the hot magma. The cone-shaped deposits are fairly uniform and consist primarily of tuff in small stone-sized particles. Some deposit layers preserve indentations made as larger pyroclastic particles landed on soft layers of tuff.

The Menan Buttes stand at an elevation of 5,619 feet and are very similar in size and shape. North Menan Butte is slightly larger and elliptical, with axes 2 and 2.5 miles in length. South Menan Butte measures 2 miles by 1 mile.

The crater of the North Menan Butte is about 3,000 feet in diameter and the cone is about 6,000 feet in diameter. The North Butte's volume is 0.16 cubic miles and the South Butte measures at 0.07 cubic miles. In comparison, the better-known tuff cone Diamond Head on Oahu has a volume of 0.15 cubic miles. The larger buttes in the Menan Complex are asymmetrical. Each has a greater accumulation of material on the northeast, presumably due to strong southwest winds during the initial eruption.

Yellowstone Caldera

The Yellowstone Caldera, sometimes referred to as the Yellowstone super-volcano, is located in Yellowstone National Park in the northwest corner of Wyoming. The major features of the caldera measure about 34 miles by 45 miles. The last full-scale eruption of the Yellowstone super-volcano, the Lava Creek eruption nearly 640,000 years ago, ejected 240 cubic miles of rock and dust into the sky.

The upward movement of the Yellowstone caldera floor between 2004 and 2008—almost 3 inches each year, and as much as 8 inches at the White Lake GPS station—was more than three times greater than ever observed since measurements began in 1923. By the end of 2009, the uplift had slowed significantly and appeared to have stopped. In January 2010, the USGS stated “that uplift of the Yellowstone Caldera has slowed significantly” and uplift continues but at a slower pace. Scientists with the Yellowstone Volcano Observatory say there is no evidence that a cataclysmic eruption will occur at Yellowstone in the foreseeable future.

20.1.2 Secondary Hazards

The secondary hazards associated with volcanic eruptions are mudflows and landslides and possibly seismic activity in the region of the eruption.

20.2 HAZARD PROFILE

The greatest volcano risk to the planning area is tephra accumulation from Cascade Range eruptions. The Cascade Range extends more than 1,000 miles from southern British Columbia into northern California and includes 13 potentially active volcanic peaks in the U.S. The heart of the Cascade Range lies 320 miles west of the Ada County planning area. Many of these volcanoes are far from the county or not directly upwind of the county.

20.2.1 Past Events

Figure 20-2 summarizes past eruptions in the Cascades. The last major volcanic eruption in the continental United States was the explosion of Mount St. Helens on May 18, 1980. Due to its great distance, and location across the continental divide of the Cascades, the lava and lahar flow from this eruption did not affect the Ada County planning area. West-central and southwestern Idaho did see small amounts (less than 1 inch) of tephra (ash) fall.

20.2.2 Location

The most hazardous volcanoes are those directly west and southwest of the county (along the direction of prevailing winds). The closest volcanoes due west of the planning area are Sisters, (330 miles) and Newberry Crater (285 miles). Mount Shasta in California is within 500 miles and is southwest of the Ada County planning area. With prevailing wind directions, volcanic eruption of Mount Shasta would put the Ada County planning area in the direct path for significant tephra accumulation. Figure 20-3 shows active volcanoes within the western United States.

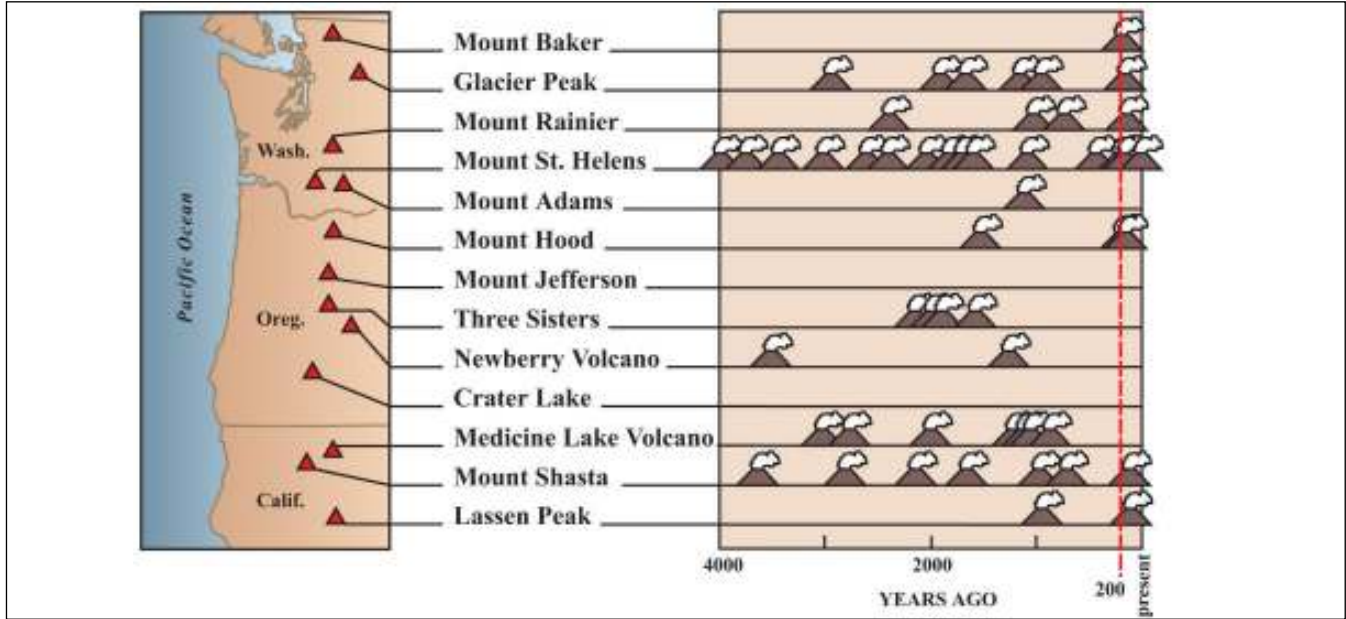


Figure 20-2. Past Eruptions in the Cascade Range



Figure 20-3. Potentially Active Volcanoes in the Western U.S.

20.2.3 Frequency

Eruptions in the Cascades have occurred at an average rate of 1 or 2 per century during the last 4,000 years. Mount St. Helens is by far the most active volcano in the Cascades, with four major explosive eruptions in the last 515 years. Still, the probability of an eruption in any given year is extremely low.

20.2.4 Severity

A 1-inch deep layer of ash weighs an average of 10 pounds per square foot, causing danger of structural collapse. Ash is harsh, acidic and gritty, and it has a sulfuric odor. Ash may also carry a high static charge for up to two days after being ejected from a volcano. When an ash cloud combines with rain, sulfur dioxide in the cloud combines with the rainwater to form diluted sulfuric acid that may cause minor, but painful burns to the skin, eyes, nose and throat.

20.2.5 Warning Time

The best warning of a volcanic eruption is one that specifies when and where an eruption is likely and what type and size eruption should be expected. Such accurate predictions are sometimes possible but still rare. The most accurate warnings are those in which scientists indicate an eruption is probably only hours to days away, based on significant changes in a volcano's earthquake activity, ground deformation, and gas emissions. Experience from around the world has shown that most eruptions are preceded by such changes over a period of days to weeks. A volcano may begin to show signs of activity several months to a few years before an eruption. However, a warning that specifies months or years in advance when it might erupt are extremely rare.

20.3 EXPOSURE

The Ada County planning area has no direct volcanic exposure. The planning area is generally downwind of three Cascade Range volcanoes, and could experience the impacts of a tephra fall from any of these. Additionally, there are several dormant volcanic sources in Idaho that could create significant exposure to the planning area should they become active. Using the latest eruption of Mount St. Helens as an indicator, a tephra fall in Ada County could be anywhere from a half-inch to an inch. Nonetheless, some people, property and the environment are vulnerable to the effects of a tephra fall, as discussed below

20.3.1 Population

The whole population of the planning area would be exposed to some degree to the effects of a tephra fall from volcanic eruptions in the Cascade Range or volcanic sites in Idaho. The degree of exposure is highly dependent upon the magnitude of the eruption and the prevailing wind speed and direction.

20.3.2 Property

All property within the planning area could be exposed to the effects of a tephra fall to some degree. The degree of exposure would be highly dependent upon proximity to the event, magnitude of the event and the prevailing wind speed and direction at the time of the event.

20.3.3 Critical Facilities

All critical facilities could have some degree of exposure to tephra accumulation. All transportation routes are exposed to ash fall and tephra accumulation, which could create hazardous driving conditions on roads and highways and hinder evacuations and response

20.3.4 Environment

The environment is highly exposed to the effects of a volcanic eruption.

20.4 VULNERABILITY

20.4.1 Population

While accumulations of tephra would not be considered to be significant, the populations most vulnerable to the effects of a tephra fall are the elderly, the very young and those already experiencing ear, nose and throat problems. Homeless people, who may lack adequate shelter, are also vulnerable to the effects of a tephra fall, although Ada County has few homeless people who would not be able to find adequate shelter or assistance during an event.

20.4.2 Property

The planning team was not able to generate damage estimates for this hazard because there are no generally accepted damage functions for volcanic hazards in risk assessment platforms such as Hazus. Vulnerable property includes equipment and machinery left out in the open, such as farm equipment, whose parts can become clogged by the fine dust. Since Ada County receives snow every year, and roofs are built to withstand snow loads, most roofs are not vulnerable and would be able to withstand the potential load of ash. Infrastructure, such as drainage systems, is also potentially vulnerable to the effects of a tephra fall, since the fine ash can clog pipes and culverts. This may be more of a problem if an eruption occurs during winter or early spring when precipitation is highest and floods are most likely.

20.4.3 Critical Facilities

Critical facilities in the direction of wind would be vulnerable to tephra accumulations. Water treatment plants, power generation stations and wastewater treatment plants are vulnerable to contamination from ash fall.

20.4.4 Environment

The environment is very vulnerable to the effects of a volcanic eruption, even if the eruption does not directly impact the planning area. This is highly dependent upon the amount of tephra accumulation. Rivers and streams in the Boise River watershed are vulnerable to damage due to ash fall, especially since ash fall can be carried throughout the county by these water courses. The sulfuric acid contained in volcanic ash could be damaging to area vegetation, waters, wildlife and air quality.

Even if ash from a volcanic eruption were to fall elsewhere, it could be spread throughout the county by the rivers and streams. A volcanic blast would expose the local environment to many effects such as lower air quality, and many other elements that could harm local vegetation and water quality.

20.5 DEVELOPMENT TRENDS

Because all of the planning area is exposed to the volcanic ash fall hazard, the increase in exposed population and property since the last hazard mitigation plan update is equal to the countywide trend over that time period: a 17.8 percent increase in population, a 19.4 percent increase in number of general building stock structures, and an 46.7 percent increase in total assessed property value (see Section 4.4.4). However, since the majority of this growth was new development, the increase in vulnerability to volcanic ash fall is considered to be minimal due to the influence of strong codes and code enforcement within the planning area.

All future development has the potential of being impacted by ash fall generated from a volcanic event. While this potential impact on the built environment is not considered to be significant, the economic impact on industries that rely on machinery and equipment such as agriculture or civil engineering projects could be significant. The extent of this hazard is difficult to gauge because it is dependent upon many variables, so the ability to institute land use recommendations based on potential impacts of this hazard is limited. While the impacts of volcanic hazards are sufficient to warrant risk assessment for emergency management purposes, the impacts are not considered to be sufficient to dictate land use decisions.

20.6 SCENARIO

The worst-case scenario for the Ada County planning area would be any volcanic activity associated with the Yellowstone hotspot. Geologic history has shown that volcanic activity associated with the hotspot could be catastrophic if it were to occur in today's environment. The probability of such an event occurring in the near term is up for geologic debate. A more likely scenario is volcanic activity in the Cascade Range producing a significant amount of ash fall within the planning area. No one would be injured or killed, but businesses and non-essential government would be closed until the cloud passes. People and animals without shelter would be affected. Structures would be safe, but private property left out in the open, such as farm equipment, might be damaged by the fine ash dust.

20.7 ISSUES

Since volcanic episodes have been fairly predictable in the recent past, there is not much concern about loss of life, or impact on property. However, economic and environmental impacts are something to consider in emergency management.

21. WILDFIRE

21.1 GENERAL BACKGROUND

A wildfire is an uncontrolled fire on undeveloped or developed land, in most cases requiring fire suppression. They can be ignited by lightning or by human activity such as smoking, campfires, equipment use and arson. Wildfires occur when all of the necessary elements of a fire come together in a wooded or grassy area: an ignition source is brought into contact with a combustible material such as vegetation that is subjected to sufficient heat and has an adequate supply of oxygen from the ambient air.

A wildfire front is the portion of a wildfire sustaining continuous flaming combustion, where unburned material meets active flames. As the front approaches, the fire heats the surrounding air and vegetative material. At a temperature of 212°F, vegetative material is dried as water in it is vaporized. At 450°F, the wood releases flammable gases. Wood smolders at 720°F and ignites at 1,000°F. Before the flames of a wildfire arrive, heat from the wildfire front can warm the air to 1,470°F, which pre-heats and dries flammable materials, causing them to ignite faster and allowing the fire to spread faster. High temperature and long-duration surface wildfires may encourage flashover or *torching*: the drying of tree canopies and their subsequent ignition from below.

Large wildfires may affect air currents by the stack effect: air rises as it is heated, so large wildfires create powerful updrafts that draw in new, cooler air from surrounding areas in thermal columns. Great vertical differences in temperature and humidity encourage fire-created clouds, strong winds, and fire whirls with the force of tornadoes at speeds of more than 50 mph. Rapid rates of spread, prolific crowning or spotting, the presence of fire whirls, and strong convection columns signify extreme conditions.

21.1.1 Wildfire Types

Fire types can be generally characterized by their fuels as follows:

- Ground fires are fed by subterranean roots, duff and other buried organic matter. This fuel type is especially susceptible to ignition due to spotting. Ground fires typically burn by smoldering, and can burn slowly for days to months.
- Crawling or surface fires are fueled by low-lying vegetation such as leaf and timber litter, debris, grass, and low-lying shrubbery.
- Ladder fires consume material between low-level vegetation and tree canopies, such as small trees, downed logs and vines. Invasive plants that scale trees may encourage ladder fires.
- Crown, canopy or aerial fires burn suspended material at the canopy level, such as tall trees, vines and mosses. The ignition of a crown fire, called *crowning*, depends on the density of the suspended material, canopy height, canopy continuity, and the presence of surface and ladder fires to reach the tree crowns.

21.1.2 Factors Affecting Wildfire Risk

Three principal factors have a direct impact on the behavior of wildfires: topography, fuel, and weather.

Topography

Topography can have a powerful influence on wildfire behavior. The movement of air over the terrain tends to direct a fire's course. Gulches and canyons can funnel air and act as a chimney, intensifying fire behavior and inducing faster rates of spread. Saddles on ridge tops offer lower resistance to the passage of air and will draw fires. Solar heating of drier, south-facing slopes produces upslope thermal winds that can complicate behavior.

Slope is an important factor. If the percentage of uphill slope doubles, the rate of spread of wildfire will likely double. On steep slopes, fuels on the uphill side of the fire are closer physically to the source of heat. Radiation preheats and dries the fuel, thus intensifying fire behavior. Fire travels downslope much more slowly than it does upslope, and ridge tops often mark the end of wildfire's rapid spread.

Fuels

Fuels are classified by weight or volume (fuel loading) and by type. Fuel loading, often expressed in tons per acre, can be used to describe the amount of vegetative material available. If fuel loading doubles, the energy released also can be expected to double. Each fuel type is given a burn index, which is an estimate of the amount of potential energy that may be released, the effort required to contain a fire in a given fuel, and the expected flame length. Different fuels have different burn qualities. Some fuels burn more easily or release more energy than others. Grass, for instance, releases relatively little energy, but can sustain very high rates of spread.

Continuity of fuels is expressed in terms of horizontal and vertical dimensions. Horizontal continuity is what can be seen from an aerial photograph and represents the distribution of fuels over the landscape. Vertical continuity links fuels at the ground surface with tree crowns via ladder fuels.

Another essential factor is fuel moisture. Fuel moisture is expressed as a percentage of total saturation and varies with antecedent weather. Low fuel moistures indicate the probability of severe fires. Given the same weather conditions, moisture in fuels of different diameters changes at different rates. A 1,000-hour fuel, which has a 3- to 8-inch diameter, changes more slowly than a 1- or 10-hour fuel.

Weather

Of all the factors influencing wildfire behavior, weather is the most variable. Extreme weather leads to extreme events, and it is often a moderation of the weather that marks the end of a wildfire's growth and the beginning of successful containment. High temperatures and low humidity can produce vigorous fire activity. The cooling and higher humidity brought by sunset can dramatically quiet fire behavior.

Fronts and thunderstorms can produce winds that are capable of radical and sudden changes in speed and direction, causing similar changes in fire activity. The rate of spread of a fire varies directly with wind velocity. Winds may play a dominant role in directing the course of a fire. The radical and devastating effect that wind can have on fire behavior is a primary safety concern for firefighters. In July 1994, a sudden change in wind speed and direction on Storm King Mountain led to a blowup that claimed the lives of 14 firefighters. The most damaging firestorms are usually marked by high winds.

21.1.3 Historical Fire Regime and Current Condition Classification

Land managers need to understand historical fire regimes (that is, fire frequency and fire severity prior to significant human settlement) to be able to define ecologically appropriate goals and objectives for an area. This understanding must include knowledge of how historical fire regimes vary across the landscape. Five historical fire regimes are classified based on average number of years between fires (fire frequency) and the severity of the fire (amount of replacement) on the dominant overstory vegetation:

- I. 0- to 35-year frequency and low (surface fires most common) to mixed severity (less than 75 percent of the dominant overstory vegetation replaced)
- II. 0- to 35-year frequency and high (stand replacement) severity (greater than 75 percent of the dominant overstory vegetation replaced)
- III. 35- to 100-year frequency and mixed severity (less than 75 percent of the dominant overstory vegetation replaced)
- IV. 35- to 100-year frequency and high (stand replacement) severity (greater than 75 percent of the dominant overstory vegetation replaced)
- V. >200-year frequency and high (stand replacement) severity.

Understanding ecosystem departures—how ecosystem processes and functions have changed—provides a context for managing sustainable ecosystems. The fire regime condition class (FRCC) is a classification of the amount of departure from the historical fire regime. There are three condition classes for each historical fire regime. All wildland vegetation and fuel conditions fit within one of the three classes. The classification is based on a relative measure describing the degree of departure from the historical fire regime. This departure results in changes to one or more of the following ecological components:

- Vegetation characteristics (species composition, structural stages, stand age, canopy closure and mosaic pattern)
- Fuel composition
- Fire frequency, severity, and pattern
- Associated disturbances (e.g., insect and disease mortality, grazing, and drought).

The three classes indicate low (FRCC 1), moderate (FRCC 2) and high (FRCC 3) departure from the historical fire regime. Low departure is considered to be within the historical range of variability, while moderate and high departures are outside.

Characteristic vegetation and fuel conditions are those that occurred within the historical fire regime.

Uncharacteristic conditions are those that did not occur within the historical fire regime, such as invasive species (e.g. weeds, insects, and diseases), “high graded” forest composition and structure (e.g. large trees removed in a frequent surface fire regime), or repeated annual grazing that reduces grassy fuels across relatively large areas to levels that will not carry a surface fire.

Determination of the amount of departure is based on comparison of a composite measure of fire regime attributes to the central tendency of the historical fire regime. The amount of departure is then classified to determine the fire regime condition class. Table 21-1 presents a simplified description of the fire regime condition classes and associated potential risks.

Table 21-1. Fire Regime Condition Class Definitions

Description	Potential Risks
Fire Regime Condition Class 1	
Within the historical range of variability.	<ul style="list-style-type: none"> • Fire behavior, effects, and other associated disturbances are similar to those that occurred prior to fire exclusion (suppression) and other types of management that do not mimic the natural fire regime and associated vegetation and fuel characteristics. • Composition and structure of vegetation and fuels are similar to the natural (historical) regime. • Risk of loss of key ecosystem components (e.g. native species, large trees and soil) is low.
Fire Regime Condition Class 2	
Moderate departure from the historical regime of variability.	<ul style="list-style-type: none"> • Fire behavior, effects, and other associated disturbances are moderately departed (more or less severe). • Composition and structure of vegetation and fuel are moderately altered. • Uncharacteristic conditions range from low to moderate. • Risk of loss of key ecosystem components is moderate.
Fire Regime Condition Class 3	
High departure from the historical regime of variability.	<ul style="list-style-type: none"> • Fire behavior, effects, and other associated disturbances are highly departed (more or less severe). • Composition and structure of vegetation and fuel are highly altered. • Uncharacteristic conditions range from moderate to high. • Risk of loss of key ecosystem components is high.

21.1.4 Secondary Hazards

Wildfires can generate a range of secondary effects, which in some cases may cause more widespread and prolonged damage than the fire itself. Fires can cause direct economic losses in the reduction of harvestable timber and indirect economic losses in reduced tourism. Wildfires cause the contamination of reservoirs, destroy transmission lines and contribute to flooding. They strip slopes of vegetation, exposing them to greater amounts of runoff. This in turn can weaken soils and cause failures on slopes. Major landslides can occur several years after a wildfire. Most wildfires burn hot and for long durations that can bake soils, especially those high in clay content, thus increasing the imperviousness of the ground. This increases the runoff generated by storm events, thus increasing the chance of flooding.

21.2 HAZARD PROFILE

Wildfire presents a risk to vegetation and wildlife habitats. Short-term loss caused by a wildfire can include the destruction of timber, wildlife habitat, scenic vistas, and watersheds. Long-term effects include smaller timber harvests, reduced access to affected recreational areas, destruction of cultural and economic resources, and potential impacts on water supply and community infrastructure. Vulnerability to flooding increases due to the destruction of watersheds. The potential for significant damage to life and property exists in areas designated as wildland urban interface (WUI) areas, where development is adjacent to densely vegetated areas. For the Ada County Planning area, a WUI has been identified and mapped based on the following definition:

The geographical area where structures and other human development meet or intermingle with wildland or vegetative fuels.

This definition comes from the 2012 *International Wildland Urban Interface Code* and it is defined geographically in the planning layers. Ada County and its planning partners use this definition to implement land use regulations in the identified WUI. All references to the WUI in this hazard mitigation plan are for areas identified and mapped under this definition.

21.2.1 Past Events

In the fire-adapted ecosystems of Idaho, fire is the dominant process constraining terrestrial vegetation patterns, habitat, and species composition. Fire was once an integral function of the majority of ecosystems in Idaho, including the Ada County planning area. The seasonal cycling of fire across the landscape was as regular as the July, August and September lightning storms plying across the canyons and mountains. Depending on the plant community composition, structural configuration, and buildup of plant biomass, fire resulted from ignitions with varying intensities and extent across the landscape. Shorter return intervals between fire events often resulted in less dramatic changes in plant composition. The fires burned with a varied return interval, but much of the county burned through a stand-replacing fire that occurred on a moderate return interval of 20 to 80 years.

Native plant communities in this region developed under the influence of fire, and adaptations to fire are evident at the species, community and ecosystem levels. Fire history data (from fire scars and charcoal deposits) suggest fire has played a role in shaping the vegetation in the region for thousands of years.

Detailed records of fire perimeter and ignition and extent have been obtained from the BLM for the Ada County planning area. Since 2000, there were 239 fire events on or near BLM lands within the Ada County planning area, burning over 95,350 acres. These ignitions and perimeter points are shown in Figure 21-1. Table 21-2 is a summary of the number of fires per year from 2000 to 2021 on or near BLM lands in the Ada County planning area. There are over 589,000 acres of BLM-managed land in the Ada County planning area, representing 86 percent of the planning area. Much of this land is in or adjacent to privately held lands within the WUI as well as the overall planning area.

Table 21-2. BLM Fire Statistics—Fires per Year in Ada County Planning Area, 2000-2021

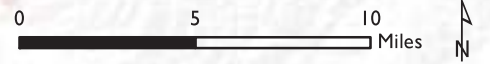
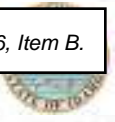
Fire Year	# Fires	Total Acres	Causes	Fire Year	# Fires	Total Acres	Causes
2021	8	556.05	2 Natural, 6 Human	2009	6	629.17	N/A
2020	6	240.65	1 Natural, 5 Human	2008	3	584.73	N/A
2019	6	102.95	2 Natural, 4 Human	2007	32	6,685.70	N/A
2018	9	69.2	2 Natural, 7 Human	2006	8	2,531.13	N/A
2017	9	215.45	4 natural, 5 human	2005	13	10,286.88	N/A
2016	19	7,144.1	3 natural, 16 Human	2004	2	126.12	N/A
2015	6	178.10	6 Human	2003	3	1,295.72	N/A
2014	6	1,540.88	2 natural, 6 human	2002	7	5,189.88	N/A
2013	16	5,208.07	4 natural, 12 human	2001	26	1,1740.08	N/A
2012	24	10,804.70	2 natural, 22 human	2000	9	5,789.50	N/A
2011	14	18,050.43	7 natural, 7 Human	Total	109	44,858.91	
2010	7	6,381.03	N/A	Average	10.86	4,334.11	

21.2.2 Location

The wildfire risk assessment for this hazard mitigation plan update used different data from what was used for previous plans. After the completion of the 2017 Ada County Multi-Hazard Mitigation Plan, EMCRC completed the Ada County Enhanced Wildfire Risk Map project. This project produced wildfire maps and GIS data at the block level within the wildland urban interface (WUI) and at a study region level outside the WUI (study regions were delineated by defined characteristics such as interior urban environment or irrigated agriculture). This data and modeling were identified by the Steering Committee as the best data available to assess the wildfire risk for the current update. Figure 21-2 shows the extent and location of the wildfire hazard based on the new data.

Ada County General Planning Area

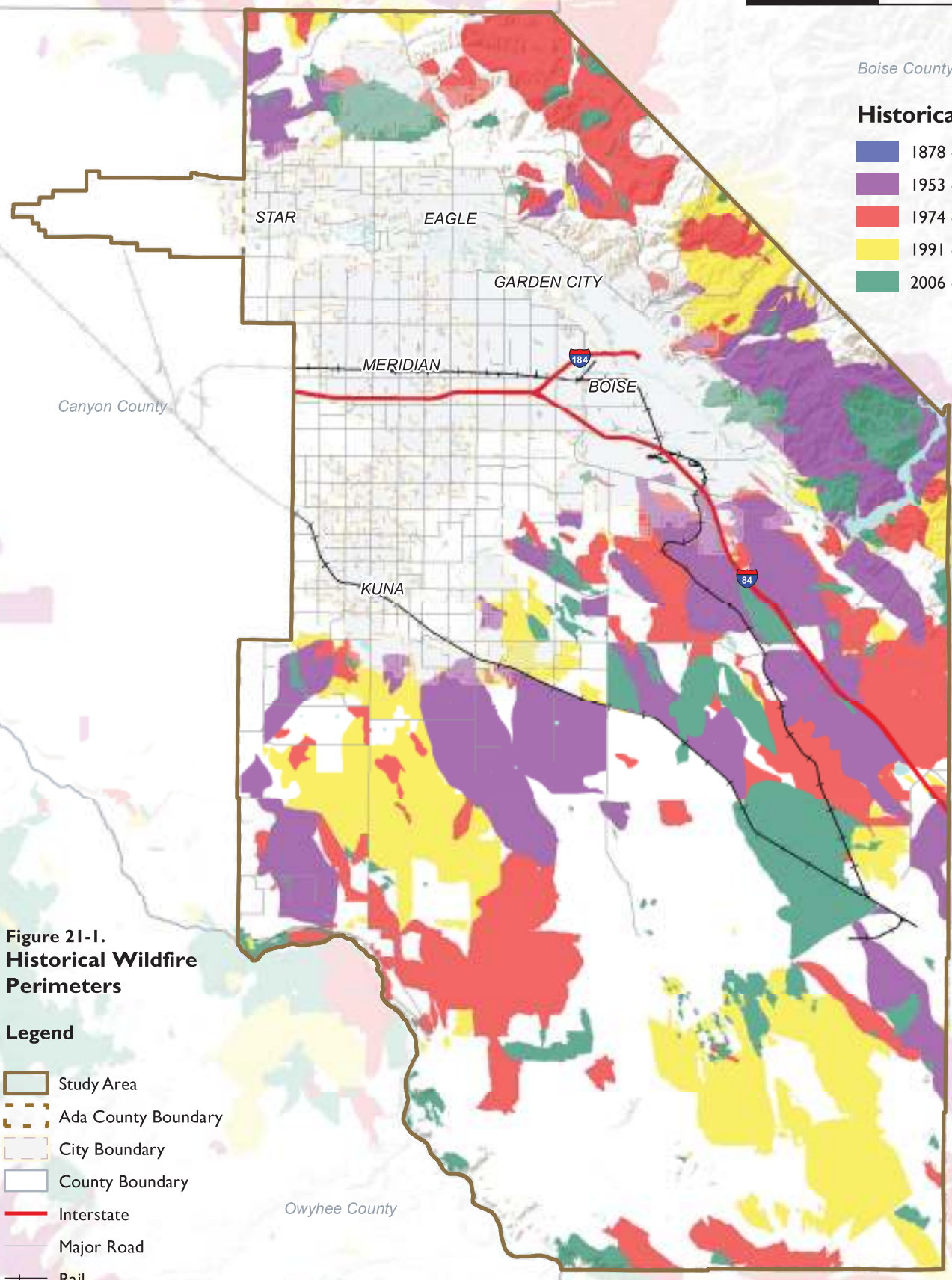
Section 6, Item B.



Boise County

Historical Fire Perimeters

- 1878 - 1952
- 1953 - 1973
- 1974 - 1990
- 1991 - 2005
- 2006 - 2019

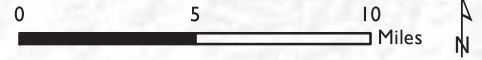
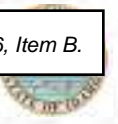


**Figure 21-1.
Historical Wildfire
Perimeters**

Legend

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Road
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA



Boise County

Canyon County

STAR

EAGLE

GARDEN CITY

MERIDIAN

BOISE

KUNA

Elmore County

Owyhee County

Figure 21-2.
Wildfire Base Hazard Rating Legend

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Road
- Rail
- Waterbody

Wildfire Base Hazard Rating

- Low
- Moderate
- High

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

21.2.3 Frequency

Fire ecologists use natural fire rotation to establish recurrence intervals for a planning area. Fire rotation is a measure of relative expected intervals between fires at regional scales, where site-specific fire frequency estimates are not available. Natural fire rotation is defined as the number of years necessary for fires to burn over an area equal to that of the study area (Heinselman, 1981). It is calculated for large areas using past fire size records by dividing the length of the record period in years by the percentage of total area burned during that period. Modern-era fire rotation analysis summarizes areas into the following classes of expected fire frequency:

- High (fire rotation less than 100 years)
- Medium (fire rotation more than 100 years and less than 300 years)
- Low (fire rotation more than 300 years).

As shown in Table 21-2, Ada County experienced an average of 10.86 fires per year on or near BLM-managed lands from 2000 to 2021, burning 4,334 acres per fire. This yields a natural fire rotation of 109.2 years, a medium rating, almost a high rating.

21.2.4 Severity

Fire severity has been defined as “the magnitude of significant negative fire impacts on wildland systems” (Simard, 1991). This definition has nothing to do directly with the fire itself—not the fire’s behavior, flame length, rate of spread, or any of the other measures of the fire. Rather, it is defined by the effects of a fire on wildland systems. This definition was born out of the need to provide a description of how fire intensity affects ecosystems, particularly wildfires for which direct information on fire intensity was absent and effects vary among different ecosystems (Keely, 2009).

Within the WUI, risks are associated with the probability that an area will burn, its severity, and the likely behavior of fire in the area. It was assumed that burn probability and fire behavior contribute equally to the risks to communities. Agriculture areas, rock, urban areas, and water are not assigned a burn probability or relative fire behavior. Communities with these cover classes are assumed to not be at risk from wildfire.

Wildfire impacts beyond those on ecosystems include impacts on human life, built improvements, and natural resources such as watersheds, grazing lands and recreational areas. Although fire suppression capabilities in the WUI areas are substantial, the volatile nature of wildfires makes fighting them a challenge. First responders are exposed to the dangers from the initial incident and after-effects from smoke inhalation and heat stroke.

Smoke and air pollution from wildfires can be a health hazard, especially for sensitive populations including children, the elderly and those with respiratory and cardiovascular diseases. In addition, wildfire can lead to ancillary impacts such as landslides in steep ravine areas and flooding due to the impacts of silt in local watersheds. There are two reported incidents of loss of life from wildfires in the planning area. One involved first responders and the other involved a resident who lived within a WUI.

21.2.5 Warning Time

Wildfires are often caused by humans, intentionally or accidentally. There is no way to predict when one might break out. The weather can provide an element of warning for local governments in that nicer weather heightens public activity in interface areas. Within Ada County the planning area, there is always a heightened state of

readiness by fire response personnel during the spring, summer and fall as weather and the increased recreational uses within the WUI can trigger events.

Dry seasons and droughts are factors that greatly increase fire likelihood. Dry lightning may trigger wildfires. Extreme weather can be predicted, so special attention can be paid during weather events that may include lightning. Reliable National Weather Service lightning warnings are available on average 24 to 48 hours prior to a significant electrical storm.

If a fire does break out and spread rapidly, residents may need to evacuate within days or hours. A fire's peak burning period generally is between 1 p.m. and 6 p.m. Once a fire has started, fire alerting is reasonably rapid in most cases. The spread of cellular and two-way radio communications in recent years has contributed to a significant improvement in warning time.

21.2.6 Performance Period Wildfire Mitigation Activities

Several organizations in Ada County have implemented wildfire mitigation projects since completion of the 2017 plan. These projects have been well-supported by the community and are helping to lessen the impact of wildfires on Ada County residents, structures, ecosystems, and economy. A summary of all project activities by implementing agencies is provided in Appendix E of this volume.

21.2.7 Firefighting Resources and Capabilities

Fire district personnel are often the first responders during emergencies. In addition to structure fire protection, they are called on during wildfires, floods, landslides, and other events. There are many in Ada County serving fire protection departments in various capacities. A complete inventory of resources and capabilities of fire-fighting agencies in the Ada County planning area is provided in Appendix F of this volume.

21.3 EXPOSURE

A Level 2 Hazus analysis was used to assess exposure to wildfire in the planning area. Where possible, the Hazus default data was enhanced using local GIS data from county, state and federal sources. Population could not be examined by wildfire hazard area because census block group areas do not coincide with the hazard areas. A population estimate was made using the structure count of buildings within the wildfire hazard areas.

21.3.1 Population

Figure 21-3 and Figure 21-4 summarize the population living in the moderate and high wildfire hazard zones.

21.3.2 Property

The value of exposed buildings and contents in each jurisdiction is summarized in Figure 21-5 through Figure 21-6 for the moderate, moderate/high, and high wildfire hazard zones, respectively. Figure 21-7 through Figure 21-8 summarize the number of structures in the moderate, moderate/high, and high wildfire hazard zones, respectively, by municipality and occupancy class.

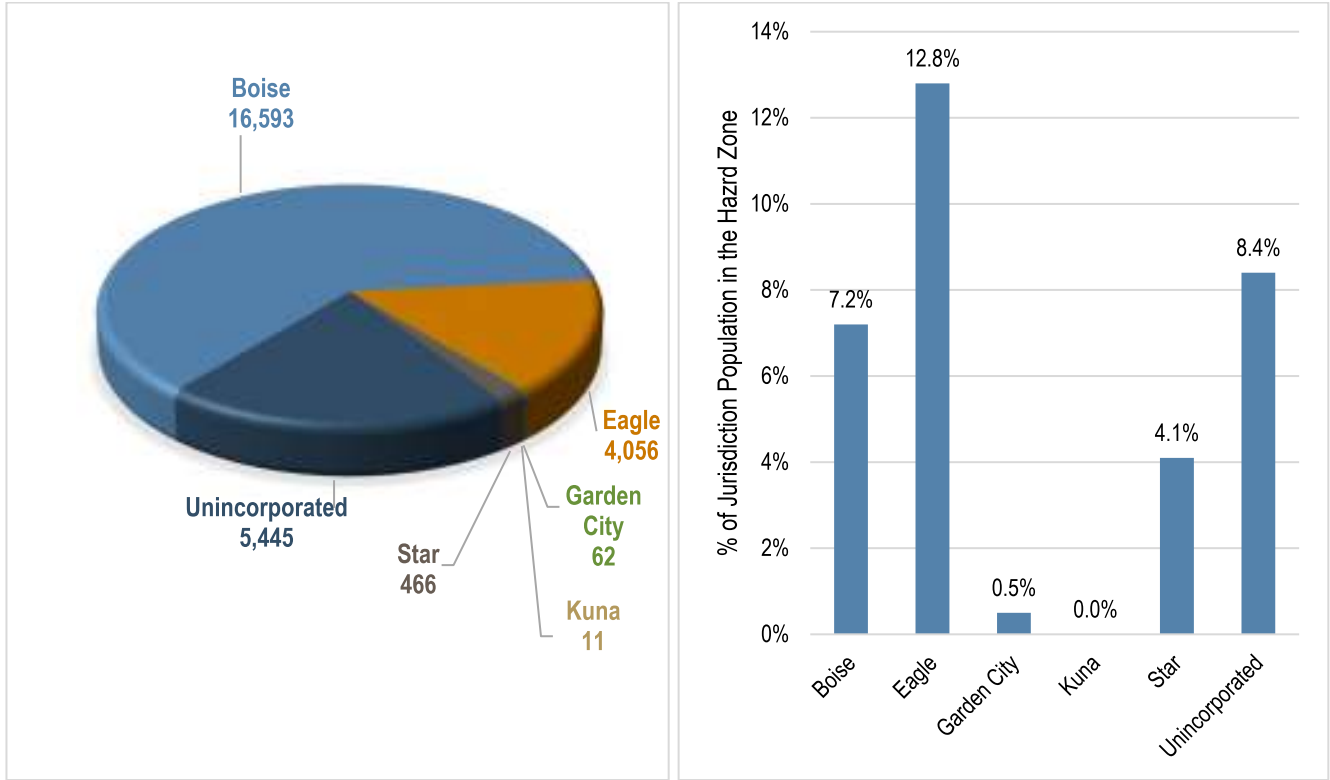


Figure 21-3. Population in the Moderate Wildfire Hazard Area

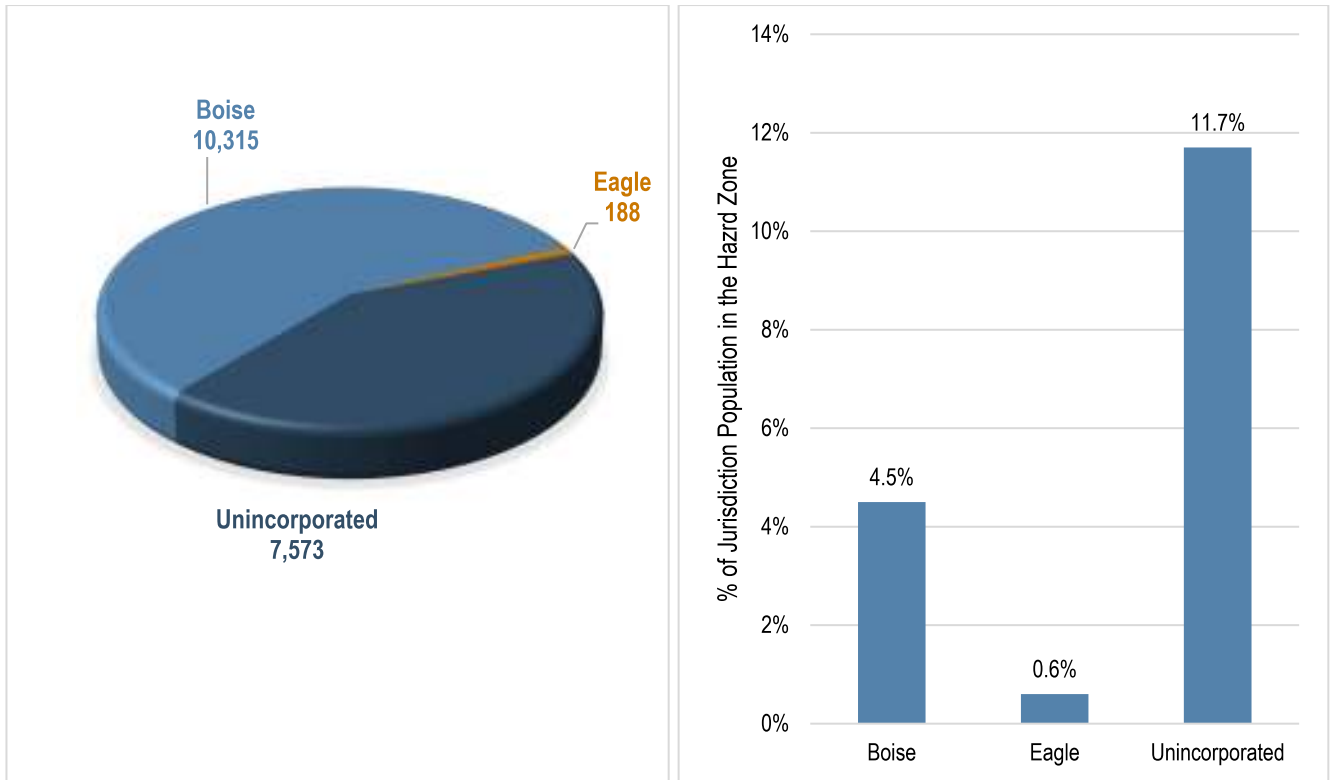


Figure 21-4. Population in the High Wildfire Hazard Area

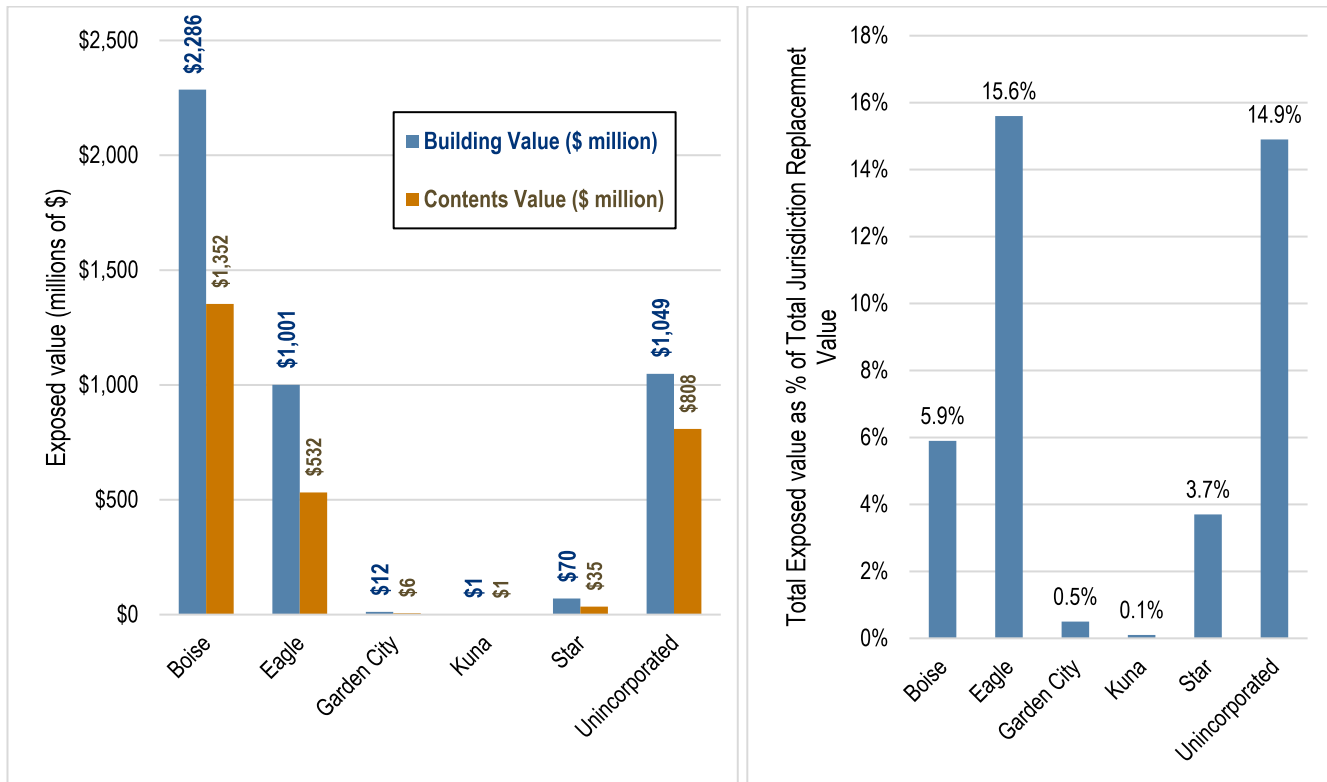


Figure 21-5. Value of Property in the Moderate Wildfire Hazard Area

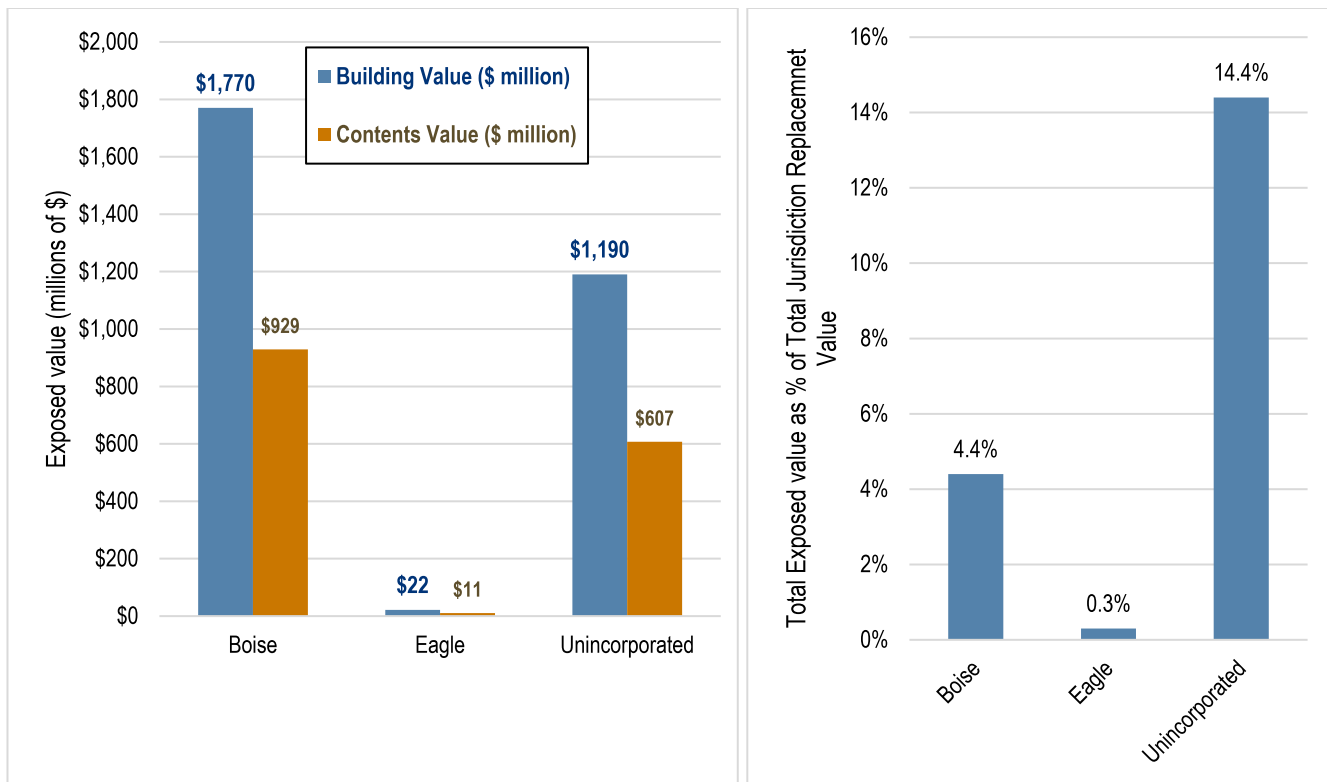


Figure 21-6. Value of Property in the High Wildfire Hazard Area

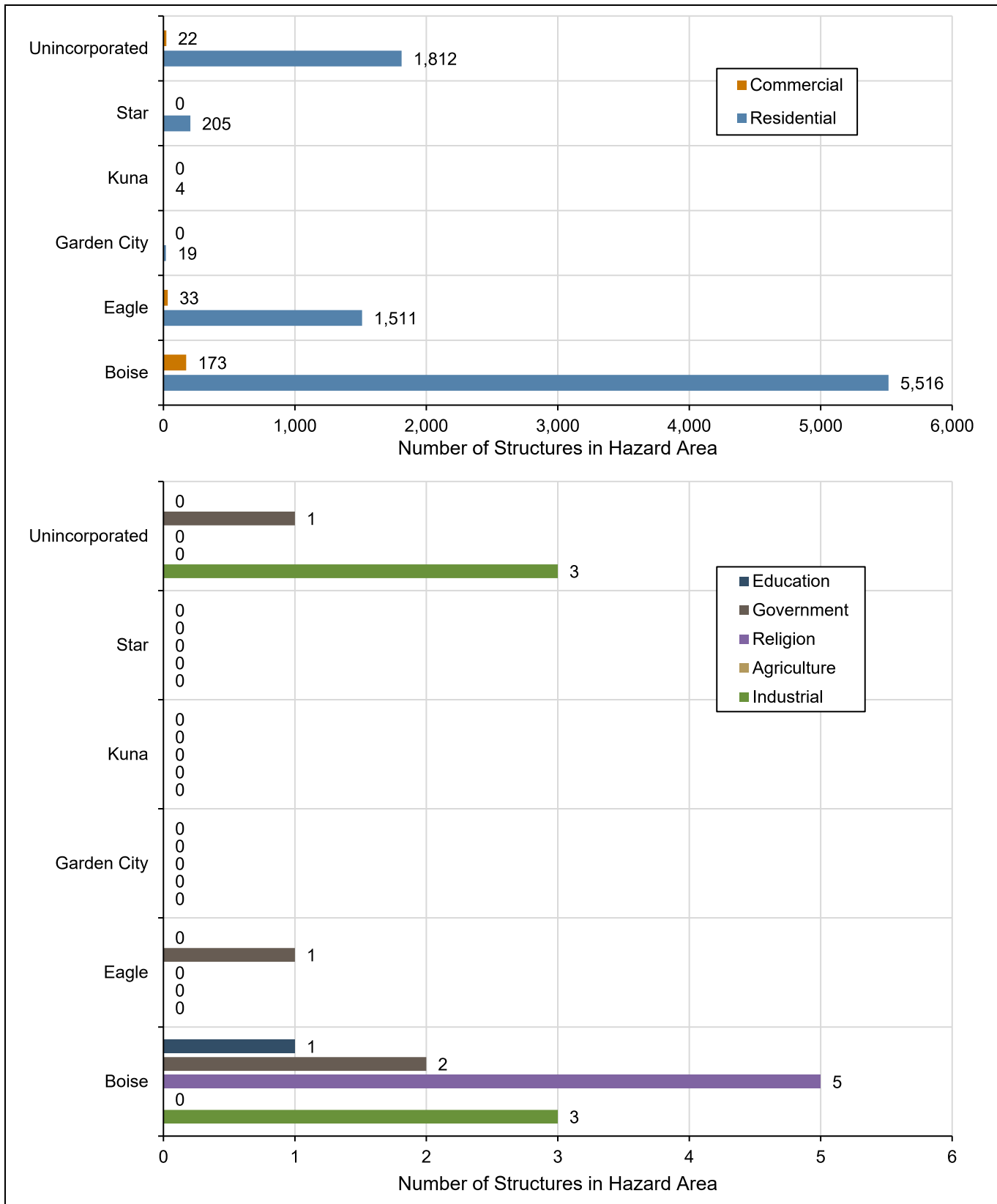


Figure 21-7. Number of Structures Within the Moderate Wildfire Hazard Area

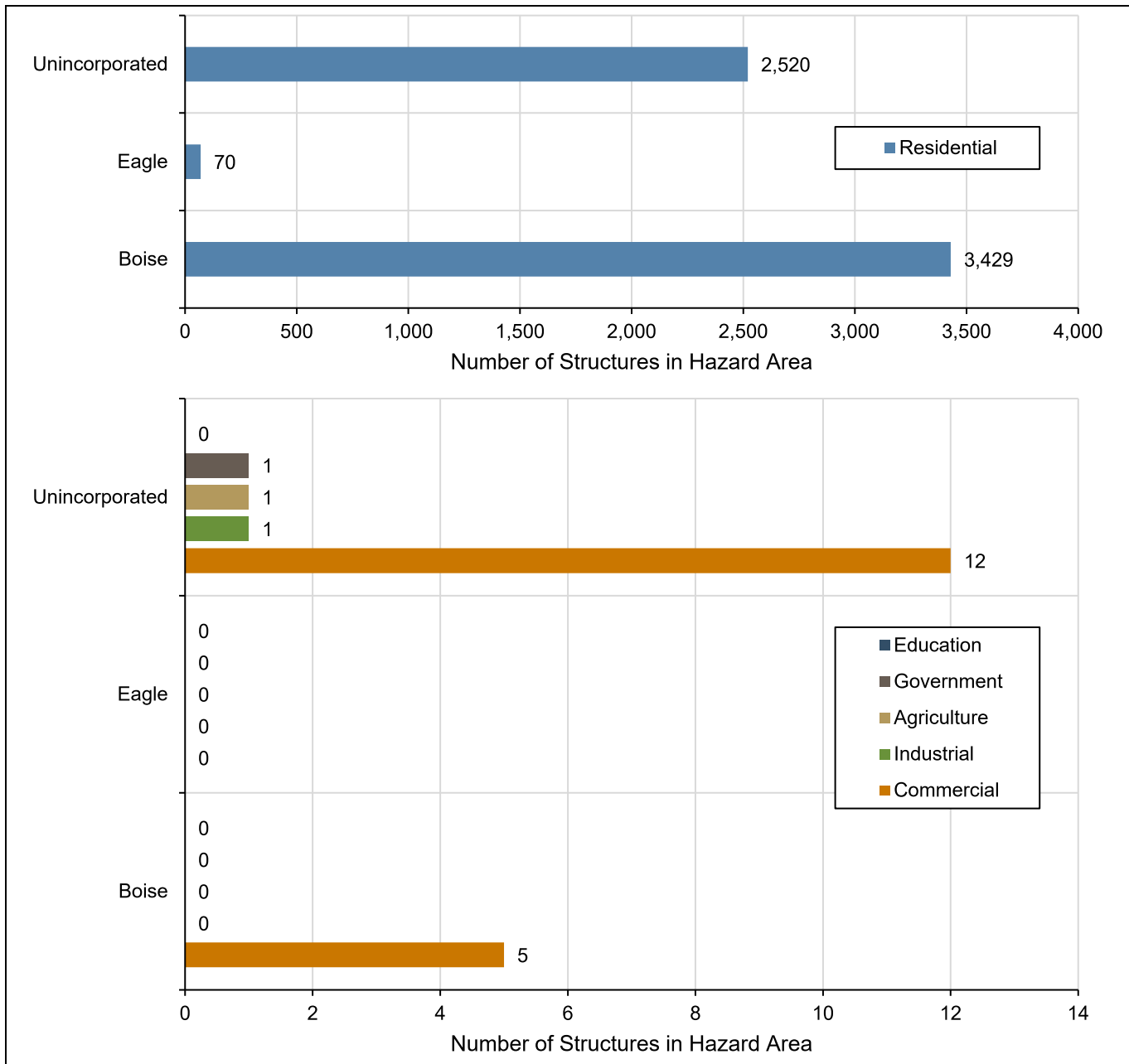


Figure 21-8. Number of Structures Within the High Wildfire Hazard Area

21.3.3 Critical Facilities

Figure 21-9 summarizes the critical facilities exposed to the wildfire hazard for the countywide planning area. Results for individual jurisdictions are provided in Appendix D.

In the event of wildfire, there would likely be little damage to the majority of infrastructure. Most road and railroads would be without damage except in the worst scenarios. Power lines are the most at risk to wildfire because most are supported on poles made of wood and susceptible to burning. In the event of a wildfire, pipelines could provide a source of fuel and lead to a catastrophic explosion.

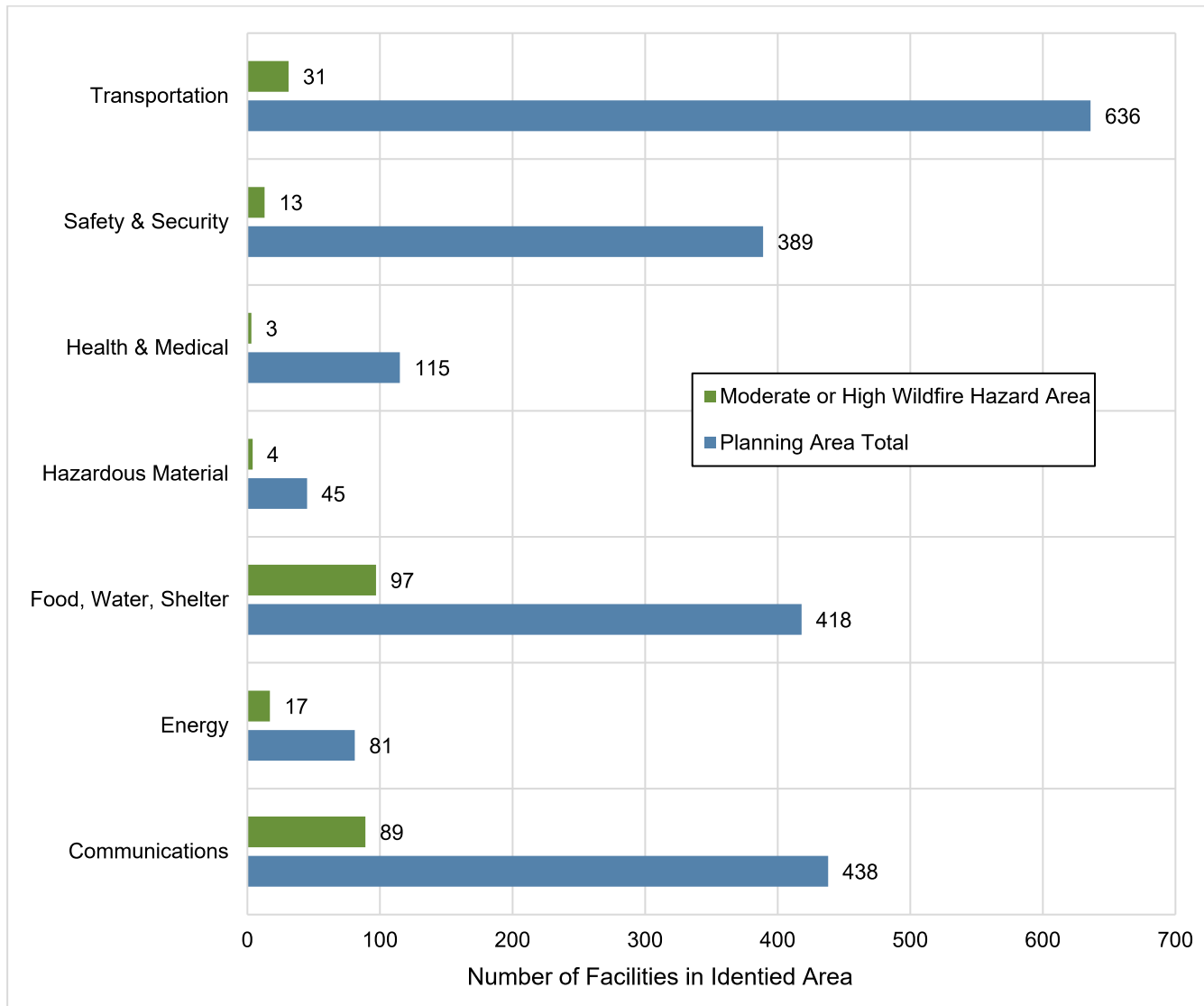


Figure 21-9. Critical Facilities in the Mapped Wildfire Hazard Areas and Countywide

During a wildfire event, hazardous material containers at Tier II material containment sites could rupture due to excessive heat and act as fuel for the fire, causing rapid spreading and escalating the fire to unmanageable levels. In addition, they could leak into surrounding areas, saturating soils and seeping into surface waters, and have a disastrous effect on the environment.

21.3.4 Environment

All natural areas within the mapped wildfire hazard zones are considered to be exposed to the hazard.

21.4 VULNERABILITY

There are currently no recognized models that estimate the vulnerability of people, property or infrastructure in for wildfire. There are too many variables with wildfire behavior to establish damage curves for the various

wildfire severity zones. The vulnerabilities to wildfires are many. This section quantifies vulnerabilities in a fashion consistent with FEMA-suggested best management practices for risk assessment for hazard mitigation planning. For vulnerabilities that are not quantifiable, a qualitative assessment is provided. Except as discussed in this section, vulnerable populations, property, infrastructure and environment are assumed to be the same as described in the section on exposure.

21.4.1 Population

Smoke and air pollution from wildfires can be a severe health hazard, especially for sensitive populations, including children, the elderly and those with respiratory and cardiovascular diseases. Smoke generated by wildfire consists of emissions that contain particulate matter (soot, tar, water vapor, and minerals), gases (carbon monoxide, carbon dioxide, nitrogen oxides), and toxics (formaldehyde, benzene). Public health impacts associated with wildfire include difficulty in breathing, odor, and reduction in visibility. Wildfire may also threaten the health and safety of those fighting the fires.

21.4.2 Property

Loss estimations for this assessment were developed representing 10 percent, 30 percent and 50 percent of the assessed value of exposed structures. This allows emergency managers to select a range of economic impact based on an estimate of the percent of damage to the general building stock. Damage in excess of 50 percent is considered to be substantial by most building codes and typically requires total reconstruction of the structure. Loss estimates for the general building stock for jurisdictions that have an exposure to the top three hazard risk areas are listed in Table 21-3 and Table 21-4.

Table 21-3. Potential Damage to Buildings in High Wildfire Risk Areas

	Assessed Value	10% Damage	30% Damage	50% Damage
Boise	\$2,699,393,432	\$269,939,343	\$809,818,029	\$1,349,696,716
Eagle	\$32,296,279	\$3,229,627	\$9,688,883	\$16,148,139
Garden City	\$0	\$0	\$0	\$0
Kuna	\$0	\$0	\$0	\$0
Meridian	\$0	\$0	\$0	\$0
Star	\$0	\$0	\$0	\$0
Unincorporated	\$1,797,462,158	\$179,746,215	\$539,238,647.40	\$898,731,079
Total	\$4,529,151,869	\$452,915,187	\$1,358,745,561	\$2,264,575,935

Table 21-4. Potential Damage to Buildings in Moderate Wildfire Risk Areas

	Assessed Value	10% Damage	30% Damage	50% Damage
Boise	\$3,638,292,936	\$363,829,293	\$1,091,487,880	\$1,819,146,468
Eagle	\$1,532,844,195	\$153,284,419	\$459,853,258	\$766,422,097
Garden City	\$17,512,716	\$1,751,271	\$5,253,814	\$8,756,358
Kuna	\$2,067,968	\$206,796	\$620,390	\$1,033,984
Meridian	\$0	\$0	\$0	\$0
Star	\$104,906,482	\$10,490,648	\$31,471,944	\$52,453,241
Unincorporated	\$1,856,895,561	\$185,689,556	\$557,068,668	\$928,447,780
Total	\$7,152,519,858	\$715,251,985	\$2,145,755,957	\$3,576,259,929

21.4.3 Critical Facilities

Critical facilities of wood frame construction are especially vulnerable during wildfire events. In the event of wildfire, there would likely be little damage to most infrastructure. Most roads and railroads would be without damage except in the worst scenarios. Power lines are the most at risk from wildfire because most poles are made of wood and susceptible to burning. Fires can create conditions that block or prevent access and can isolate residents and emergency service providers. Wildfire typically does not have a major direct impact on bridges, but it can create conditions in which bridges are obstructed. Many bridges in areas of high to moderate fire risk are important because they provide the only ingress and egress to large areas and in some cases to isolated neighborhoods.

Transportation infrastructure increases the wildfire vulnerability of adjacent lands because it provides access to the WUI. For example, a car towing a trailer through the WUI with a safety chain dragging on the ground that cause sparks can start a wildfire. Any access to a wildfire hazard area increases the vulnerability of that area.

21.4.4 Ecosystem Impacts

Wildfire is a part of nature. It plays a key role in shaping ecosystems by serving as an agent of renewal and change. But fire can be deadly, destroying homes, wildlife habitat and timber, and polluting the air with emissions harmful to human health. Fire also releases carbon dioxide—a key greenhouse gas—into the atmosphere. Fire’s effect on the landscape may be long-lasting. Fire effects are influenced by forest conditions before the fire and management action taken or not taken after the fire. Fire can shape ecosystem composition, structure and functions in multiple ways:

- By selecting fire-adapted species and removing other, susceptible species
- By releasing nutrients from the biomass and improving nutrient cycling
- By affecting soil properties through changing soil microbial activities and water relations
- By creating heterogeneous mosaics, which in turn, can further influence fire behavior and ecological processes
- By damaging watersheds that serve as water supplies for urban areas
- By eliminating natural grazing areas.

Fire as a destructive force can rapidly consume large amount of biomass and cause negative impacts such as post-fire soil erosion and water runoff, and air pollution; however, as a constructive force, fire is also responsible for maintaining the health and perpetuity of fire-dependent ecosystems. Considering the unique ecological roles of fire in mediating and regulating ecosystems, fire should be incorporated as an integral component of ecosystems and management.

Ecosystem stability is threatened when any of the attributes for a given fire regime diverge from its range of natural variability. In such cases, wildfires can cause severe environmental impacts:

- Damaged Fisheries—Critical fisheries can suffer from increased water temperatures, sedimentation, and changes in water quality.
- Soil Erosion—The protective covering provided by foliage and dead organic matter is removed, leaving the soil fully exposed to wind and water erosion. Accelerated soil erosion occurs, causing landslides and threatening aquatic habitats.

- Spread of Invasive Plant Species—Non-native woody plant species frequently invade burned areas. When weeds become established, they can dominate the plant cover over broad landscapes, and become difficult and costly to control.
- Disease and Insect Infestations—Unless diseased or insect-infested trees are swiftly removed, infestations and disease can spread to healthy forests and private lands. Timely active management actions are needed to remove diseased or infested trees.
- Destroyed Endangered Species Habitat—Catastrophic fires can devastate endangered species.
- Soil Sterilization—Topsoil exposed to extreme heat can become water repellent, and soil nutrients may be lost. It can take decades or even centuries for ecosystems to recover from a fire. Some fires burn so hot that they can sterilize the soil.

21.5 DEVELOPMENT TRENDS

The planning area appears to be well equipped to deal with the wildfire hazard to future development. The key will be the availability of good hazard identification mapping that accurately reflects risks. As new science, data and technology become available, wildfire mapping should be updated.

Another key element to dealing with future development trends will be the ability of fire districts to maintain their levels of service. In a weak economy with decreasing tax revenues, fire districts struggle to maintain their resources at existing levels. Maintaining and or improving service will be a key element to dealing with future growth in the WUI.

County-wide adoption of stricter building codes for structures in the WUI is the first step to reducing risk in new construction. Increased public outreach will be the tool used to educate and assist property owners already in the WUI on how to comply with new codes and reduce the risk to their property. This combination of public education and code enforcement will be critical to reducing the risk of wildfire countywide.

21.5.1 Boise City Foothills Policy Plan

The purpose of the *Boise City Foothills Plan* of 1997 is to preserve multiple qualities and values of the Foothills while allowing for controlled development. The plan recognizes the constraints to Foothills development, including the wildfire hazard and the need for appropriate subdivision design, street layout, building materials and design, and landscaping. As an amendment of the Boise City Comprehensive Plan, the Foothills Plan has adopted zoning and building codes with specific wildfire prevention provisions.

21.5.2 Wildland Urban Fire Interface Overlay District

Ada County has delineated its high hazard area as a Wildland Urban Fire Interface overlay district, with specific requirements for building construction and defensible space. The building requirements are listed in Section 419.3 – 419.12.3 of the County’s Uniform Building Code of 1997. The zoning code regulations apply to the area within the overlay district. Any new construction, alteration, moving, or change of use of a habitable structure is required to establish and maintain a minimum 50-foot defensible space around its perimeter. Within this defensible space buffer zone, there can be only single specimens of trees or ornamental vegetation, and cultivated ground cover or grasses up to a maximum height of 4 inches. All dead wood must be removed from trees, and clusters of trees must be thinned so that the crowns do not overlap. Trees must be pruned up to 6 feet. Areas adjacent to private roads and driveways must be cleared of vegetation. Areas within 5 feet on either side of driveways must be

cleared, and the entire width of the easement of private roads must be cleared. Other regulations in the code address the location of liquefied petroleum gas, firewood, and other combustible materials near structures, road access to subdivisions, length of cul-de-sacs and water supply needs for fire flow.

21.6 SCENARIO

A major conflagration in Ada County might begin with a wet spring, adding to fuels already present on the forest floor. Flashy fuels would build throughout the spring. The summer could see the onset of insect infestation. A dry summer could follow the wet spring, exacerbated by dry hot winds. Carelessness with combustible materials or a tossed lit cigarette, or a sudden lightning storm could trigger a multitude of small isolated fires.

The embers from these smaller fires could be carried miles by hot, dry winds. The deposition zone for these embers would be deep in the forests and interface zones. Fires that start in flat areas move slower, but wind still pushes them. It is not unusual for a wildfire pushed by wind to burn the ground fuel and later climb into the crown and reverse its track. This is one of many ways that fires can escape containment, typically during periods when response capabilities are overwhelmed. These new small fires would most likely merge. Suppression resources would be redirected from protecting the natural resources to saving more remote subdivisions.

The worst-case scenario would include an active fire season throughout the American west, spreading resources thin. Firefighting teams would be exhausted or unavailable. Many federal assets would be responding to other fires that started earlier in the season. While local fire districts would be useful in the WUI areas, they have limited wildfire response capabilities and would have a difficult time responding to the ignition zones due to topography and other access limitations. Even though the existence and spread of the fire is known, it may not be possible to respond to it adequately. An initially manageable fire can become out of control before resources can reach the area.

Heavy rains could follow, causing flooding and landslides and releasing sediment into rivers, permanently changing floodplains and damaging sensitive habitat. With the forests removed from the watershed, stream flows could easily double. High-magnitude floods could increase in frequency.

21.7 ISSUES

The major issues for wildfire are the following:

- Public education and outreach to people living in or near the fire hazard zones should include information about and assistance with mitigation activities such as defensible space and advance identification of evacuation routes and safe zones.
- Wildfires could cause landslides as a secondary natural hazard.
- Future climate conditions could affect the wildfire hazard.
- Future growth into interface areas should continue to be managed.
- Area fire districts need to continue to train on wildland urban interface events.
- Vegetation management activities would include enhancement through expansion of the target areas as well as additional resources.
- Regional consistency is needed for higher building code standards such as residential sprinkler requirements and prohibitive combustible roof standards.

- Additional fire department water supply is needed in high risk wildfire areas.
- A buildable-lands analysis that looks at vacant lands and their designated land use would be a valuable tool in helping decision-makers make wise decisions about future development.

22. PLANNING AREA RISK RANKING

A risk ranking for the entire planning was performed for the hazards of concern described in this plan. This risk ranking assesses the probability of each hazard’s occurrence as well as its likely impact on the people, property, and economy of the planning area. The risk ranking was conducted via facilitated brainstorming sessions with the Steering Committee. Estimates of risk were generated with data from Hazus using methodologies promoted by FEMA. Separate risk rankings for each planning partner city and the unincorporated county are provided in Volume 2. The ranking assessed only the natural hazards of concern and the dam/canal failure hazard. Other human-caused hazards of concern were not included.

22.1 PROBABILITY OF OCCURRENCE

The probability of occurrence of a hazard is indicated by a factor determined by the likelihood of annual occurrence, based on past hazard events in the area:

- High—Hazard event is likely to occur within 25 years (Probability Factor = 3)
- Medium—Hazard event is likely to occur within 100 years (Probability Factor =2)
- Low—Hazard event is not likely to occur within 100 years (Probability Factor =1)
- No exposure—There is no probability of occurrence (Probability Factor = 0)

Figure 22-1 summarizes the probability assessment for each hazard of concern for this plan. The probability factor is the same for the baseline ranking and the equity lens ranking.

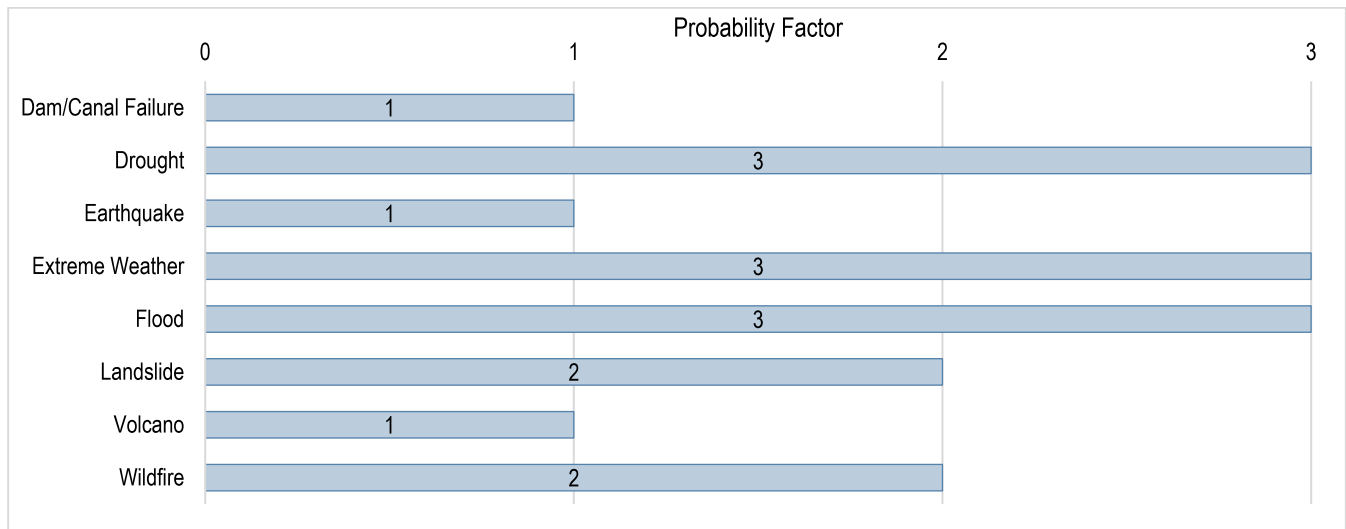


Figure 22-1. Probability Factors for Hazards of Concern

22.2 IMPACT

Hazard impacts were assessed in three categories: impacts on people, impacts on property and impacts on the local economy. Numerical impact factors were assigned as follows:

- **People**—Values were assigned based on the percentage of the total *population exposed* to the hazard event. The rating of this impact assumes, for simplicity and consistency, that all people exposed to a hazard because they live in a hazard zone will be equally impacted when a hazard event occurs. Planners can use an element of subjectivity when assigning values for impacts on people. Impact factors for people were assigned as follows:
 - High—50 percent or more of the population is exposed to a hazard (Impact Factor = 3)
 - Medium—25 percent to 49 percent of the population is exposed to a hazard (Impact Factor = 2)
 - Low—25 percent or less of the population is exposed to the hazard (Impact Factor = 1)
 - No impact—None of the population is exposed to a hazard (Impact Factor = 0)
- **Property**—Values were assigned based on the percentage of the total *property value exposed* to the hazard event:
 - High—30 percent or more of the total assessed property value is exposed to a hazard (Impact Factor = 3)
 - Medium—15 percent to 29 percent of the total assessed property value is exposed to a hazard (Impact Factor = 2)
 - Low—14 percent or less of the total assessed property value is exposed to the hazard (Impact Factor = 1)
 - No impact—None of the total assessed property value is exposed to a hazard (Impact Factor = 0)
- **Economy**—Values were assigned based on the percentage of the total *property value vulnerable* to the hazard event. Values represent estimates of the loss from a major event of each hazard in comparison to the total assessed value of the property exposed to the hazard. For some hazards, such as wildfire, landslide and extreme weather, vulnerability was considered to be the same as exposure due to the lack of loss estimation tools specific to those hazards. Loss estimates separate from the exposure estimates were generated for the earthquake and flood hazards using Hazus.
 - High—Estimated loss from the hazard is 20 percent or more of the total assessed property value (Impact Factor = 3)
 - Medium—Estimated loss from the hazard is 10 percent to 19 percent of the total assessed property value (Impact Factor = 2)
 - Low—Estimated loss from the hazard is 9 percent or less of the total assessed property value (Impact Factor = 1)
 - No impact—No loss is estimated from the hazard (Impact Factor = 0)

The impacts of each hazard category were assigned a weighting factor to reflect the significance of the impact. These weighting factors are consistent with those typically used for measuring the benefits of hazard mitigation actions: impact on people was given a weighting factor of 3; impact on property was given a weighting factor of 2; and impact on the operations was given a weighting factor of 1. Figure 22-2 and Figure 22-3 summarize the unweighted and weighted impact factors, respectively, for each hazard.

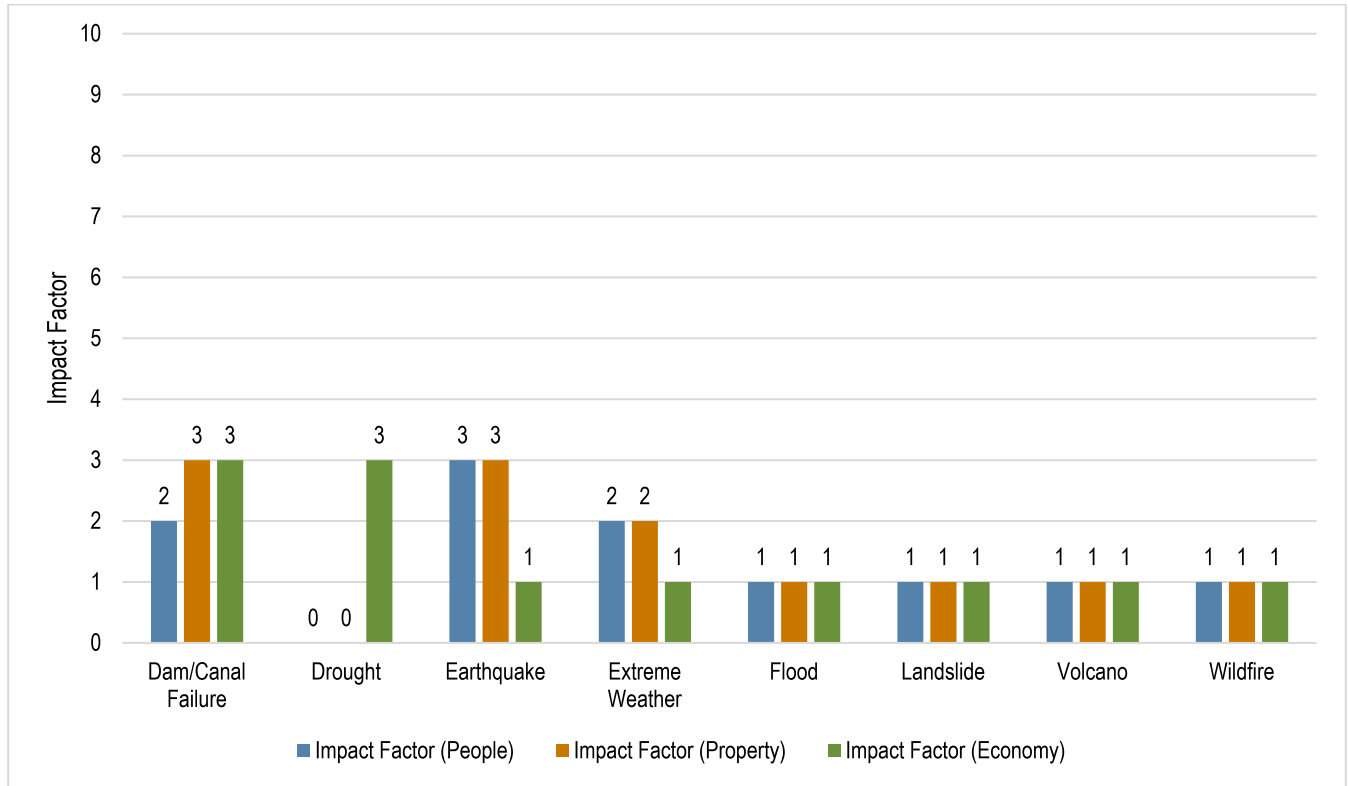


Figure 22-2. Impact Factors for Hazards of Concern

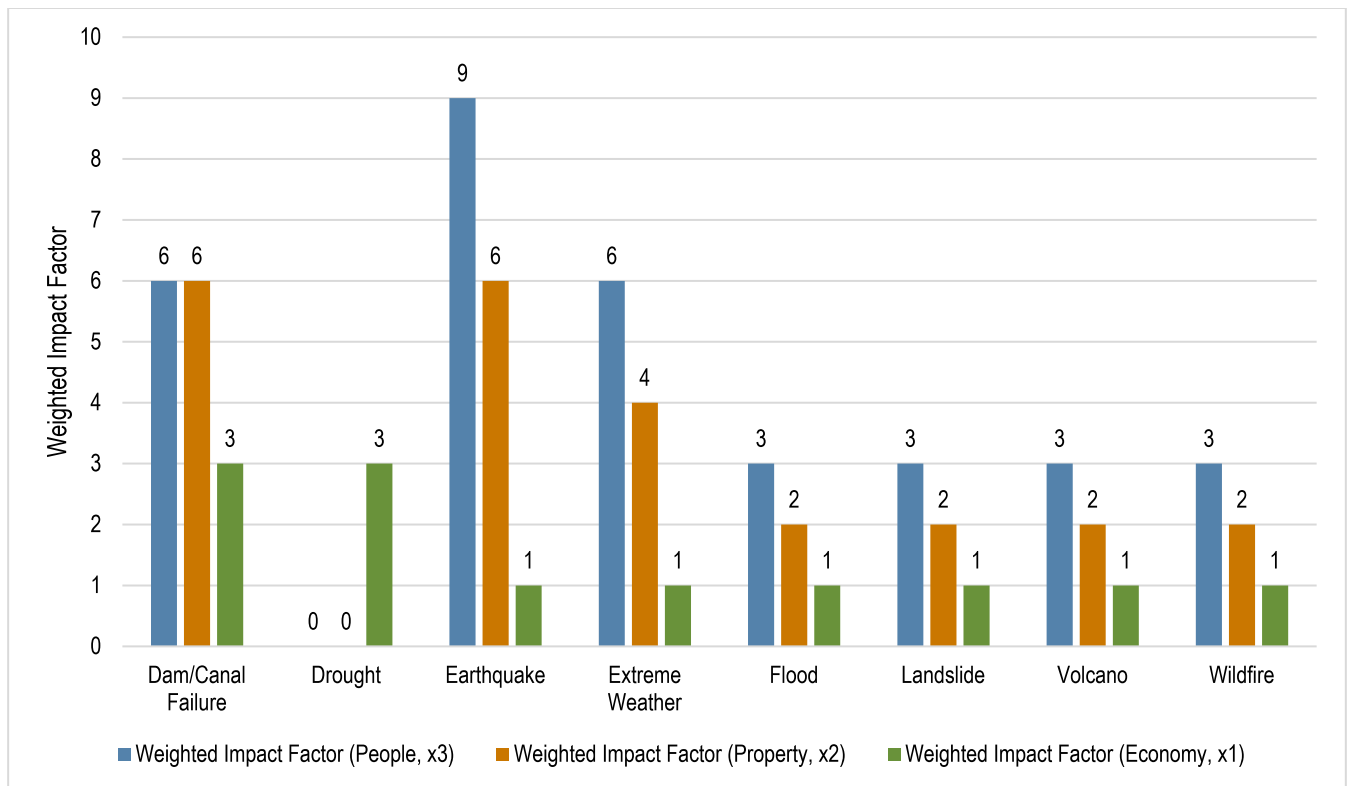


Figure 22-3. Weighted Impact Factors for Hazards of Concern

22.3 RISK RATING AND RANKING

The risk rating for each hazard was determined by multiplying the probability factor by the sum of the weighted impact factors for people, property, and operations, as summarized in Figure 22-4. Based on these ratings, a priority of high, medium, or low was assigned to each hazard. Figure 22-5 shows the hazard risk ranking.

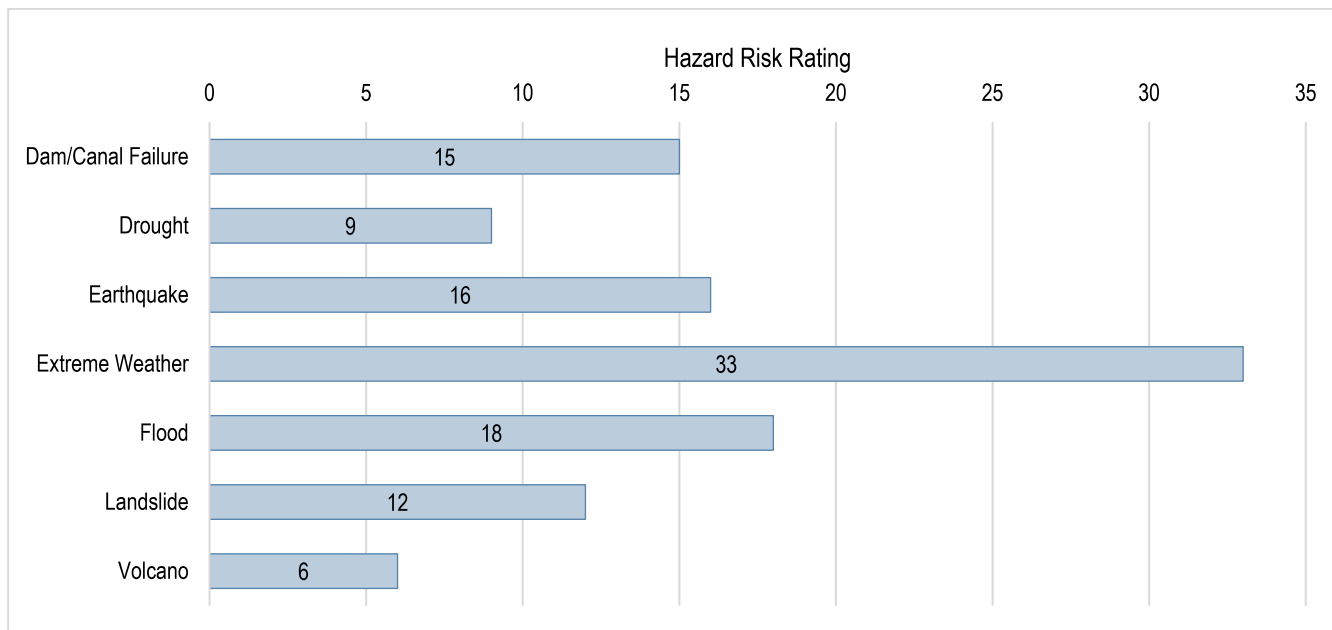


Figure 22-4. Total Risk Rating for Hazards of Concern

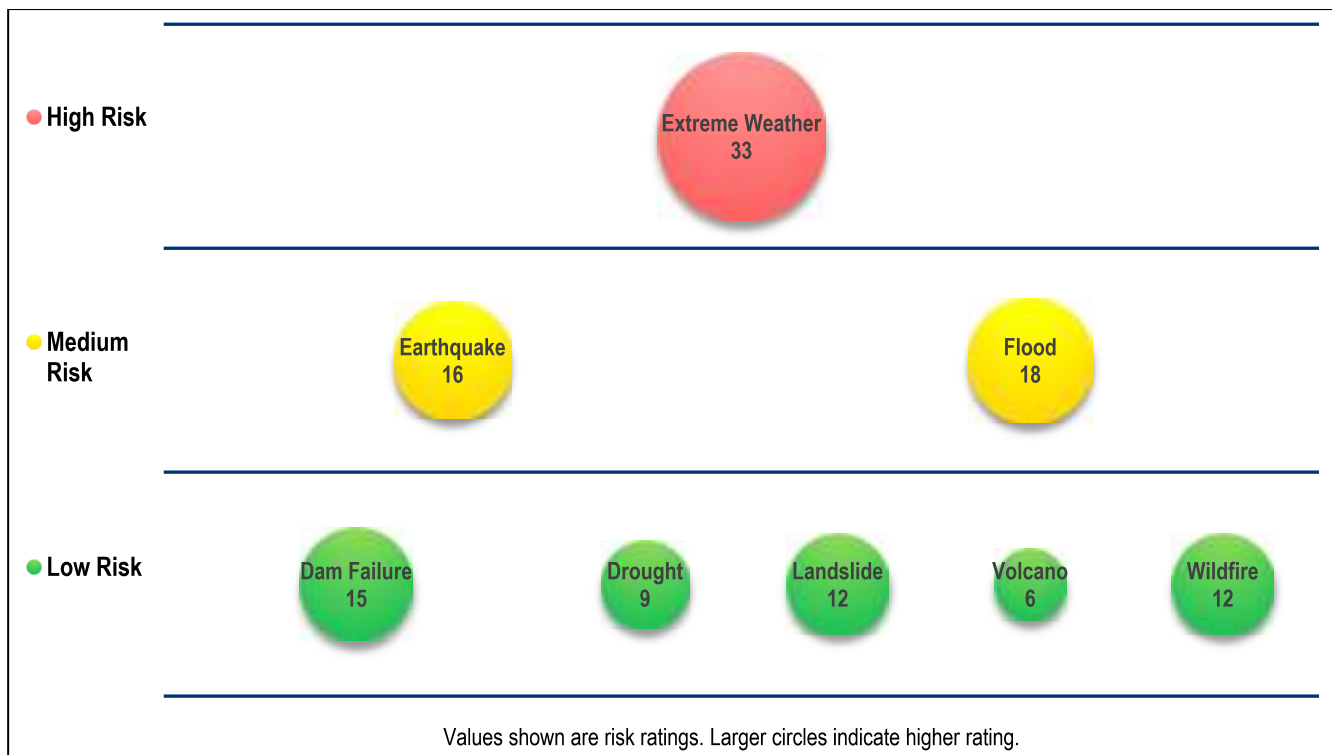


Figure 22-5. Hazard Risk Ranking

23. CONSIDERATION OF FUTURE CLIMATE CONDITIONS

23.1 WHAT ARE FUTURE CLIMATE CONDITIONS?

Climate, consisting of patterns of temperature, precipitation, humidity, wind and seasons, plays a fundamental role in shaping natural ecosystems and the human economies and cultures that depend on them. “Future climate conditions” refers to variations in climate conditions over a long period of time.

The well-established worldwide warming trend of recent decades and its related impacts are caused by increasing concentrations of carbon dioxide and other greenhouse gases in the earth’s atmosphere. Greenhouse gases are gases that trap heat in the atmosphere, resulting in a warming effect. Carbon dioxide is the most commonly known greenhouse gas; however, methane, nitrous oxide and fluorinated gases also contribute to warming. Emissions of these gases come from a variety of sources, such as the combustion of fossil fuels, agricultural production, and changes in land use. According to the National Aeronautics and Space Administration (NASA), carbon dioxide concentrations measured about 280 parts per million (ppm) before the industrial era began in the late 1700s and have risen dramatically since then, surpassing 400 ppm in 2013 for the first time in recorded history (see Figure 23-1).

Source: (National Aeronautics and Space Administration 2022)

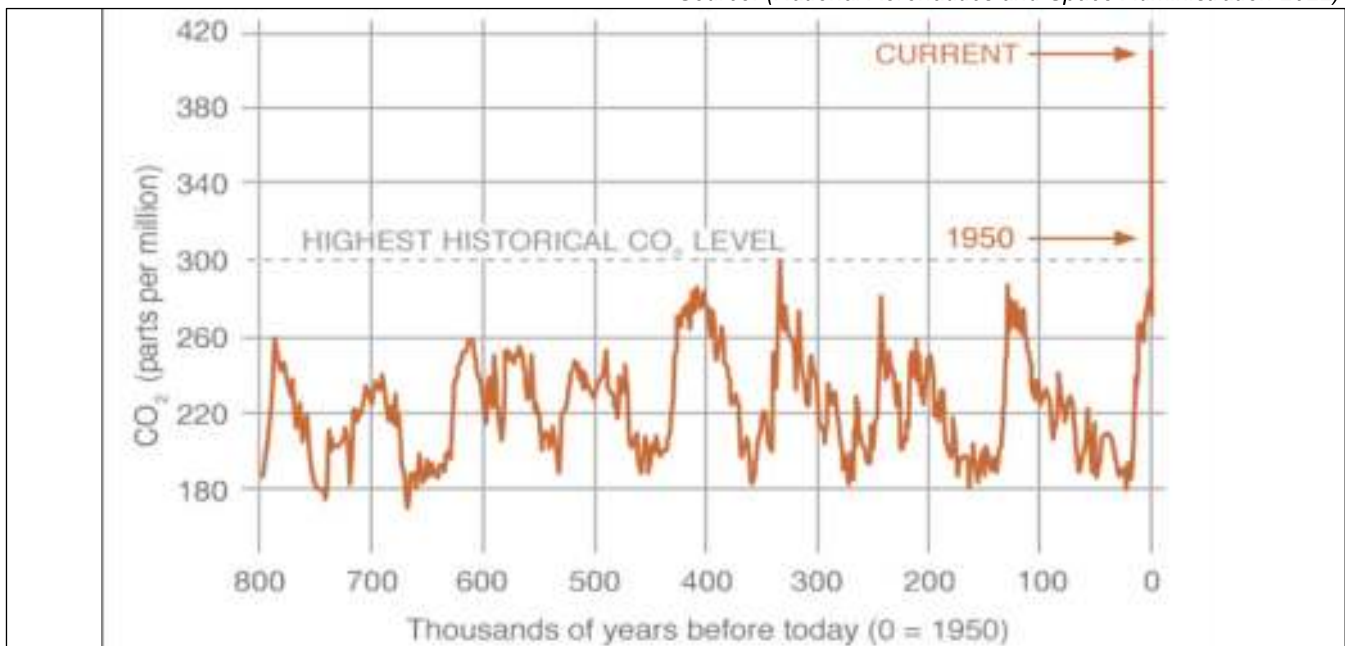


Figure 23-1. Global Carbon Dioxide Concentrations Over Time

23.2 HOW CLIMATE CONDITIONS AFFECT HAZARD MITIGATION

Future climate conditions will have a measurable impact on the occurrence and severity of natural hazards, affecting the people, property, economy and ecosystems of Ada County in a variety of ways. Impacts are likely to be associated with changes such as increased flooding, heat-related illnesses, or public health concerns.

An essential aspect of hazard mitigation is predicting the likelihood of hazard events. Typically, predictions are based on statistical projections from records of past events. This approach assumes that the likelihood of hazard events remains essentially unchanged over time. Thus, averages based on the past frequencies of, for example, floods are used to estimate future frequencies: if a river has flooded an average of once every 5 years for the past 100 years, then it can be expected to continue to flood an average of once every 5 years.

For hazards that are affected by climate conditions, the assumption that future behavior will be equivalent to past behavior is not valid if climate conditions are changing. As flooding is generally associated with precipitation frequency and quantity, for example, the frequency of flooding will not remain constant if broad precipitation patterns change over time. Specifically, as hydrology changes, storms currently considered to be a 1 percent-annual-chance event might strike more often, leaving many communities at greater risk. The risks of landslide, severe storms, extreme heat and wildfire are all affected by climate patterns as well. For this reason, an understanding of climate conditions is pertinent to efforts to mitigate natural hazards. Information about how climate patterns are changing provides insight on the reliability of future hazard projections used in mitigation analysis. This chapter summarizes current understandings about future climate conditions in order to provide a context for the recommendation and implementation of hazard mitigation measures.

23.3 CURRENT INDICATORS OF FUTURE CLIMATE CONDITIONS

23.3.1 Global Indicators

The major scientific agencies of the United States—including NASA and the National Oceanic and Atmospheric Administration (NOAA)—have presented evidence of trends for future climate conditions. NASA summarizes key evidence as follows (National Aeronautics and Space Administration 2022):

- **Global Temperature Rise**—The planet’s average surface temperature has risen about 2 °F since the late 19th century, a change driven largely by increased carbon dioxide emissions into the atmosphere and other human activities. Most of the warming occurred in the past 40 years, with the seven most recent years being the warmest. The years 2016 and 2020 are tied for the warmest year on record.
- **Warming Ocean**—The ocean has absorbed much of this increased heat, with the top 300 feet of ocean showing warming of more than 0.6 °F since 1969. Earth stores 90 percent of its extra energy in the ocean.
- **Shrinking Ice Sheets**—The Greenland and Antarctic ice sheets have decreased in mass. Data from NASA’s Gravity Recovery and Climate Experiment show Greenland lost an average of 279 billion tons of ice per year between 1993 and 2019, and Antarctica lost about 148 billion tons of ice per year.
- **Glacial Retreat**—Glaciers are retreating almost everywhere around the world—including in the Alps, Himalayas, Andes, Rockies, Alaska and Africa.
- **Decreased Snow Cover**—Satellite observations reveal that the amount of spring snow cover in the Northern Hemisphere has decreased over the past five decades and the snow is melting earlier

- **Sea Level Rise**—Global sea level rose about 8 inches in the last century. The rate in the last two decades is nearly double that of the last century and is accelerating slightly every year.
- **Declining Arctic Sea Ice**—Both the extent and thickness of Arctic sea ice has declined rapidly over the last several decades
- **Extreme Events**—The number of record high temperature events in the United States has been increasing, while the number of record low temperature events has been decreasing, since 1950. The U.S. has also witnessed increasing numbers of intense rainfall events.
- **Ocean Acidification**—Since the beginning of the Industrial Revolution, the acidity of surface ocean waters has increased by about 30 percent. This increase is the result of humans emitting more carbon dioxide into the atmosphere and hence more being absorbed into the ocean. The amount of carbon dioxide absorbed by the upper layer of the oceans has increased to about 7 to 10 billion metric tons per year.

23.3.2 Idaho Indicators

Monitoring and research efforts across Idaho have generated data that describe observed changes already underway in the state. Notable examples across the state include the following (Abatzoglou, Marshall and Harley 2021) (University of Idaho n.d.).

- **Statewide Warming Trends**—While the warmest year in Idaho was 1934 during the Dust Bowl, seven of the ten warmest years from 1895 through 2020 have occurred since 1990; only one of the 10 coldest years has occurred since 1990. Warming trends are evident in all seasons over the past five decades. From 1918 through 2010, observations show approximately a two-week lengthening in the freeze-free season for lower elevation weather stations across Idaho.
- **Snowpack Decline**—The elevation of the freezing level in Idaho has increased over 500 feet from November through April since 1950. Widespread reductions in snowfall are evident across the state, with reduction of up to 15 percent in the Bitterroot Mountains from 1950 through 2020.
- **Streamflow Changes**—In unregulated basins in Idaho, there has been a reduction in total annual stream flow since 1950. In snowmelt-dominated regions, peak stream flow has occurred 1 to 2 weeks earlier in the year, tracking the reduction in spring snowpack. Stream gage measurements show decreases in minimum annual streamflow. Summer stream temperatures warmed by an average of 1.5°F from 1975 to 2015.
- **Heavier Spring Rainfall**—The intensity of the biggest rainfall event of the season has increased, with most of the large events having occurred since 1990.
- **Drought**—There has been a notable trend toward warmer and drier summers over the past five decades that have increased atmospheric water demand and dryness. Such changes have contributed to a substantial decrease in fuel moisture, contributing to escalating fire potential.
- **Increasing Forest Wildfire Activity**—Since 1986, longer, warmer summers in the western United States have resulted in four times as many major wildfires and six times as much area of forest burned, compared to 1970 through 1986. The length of the wildfire season (when fires are actively burning) has increased by 78 days. The average time-span of large fires has increased from 7.5 to 37.1 days. Earlier snowmelt, higher summer temperatures, and a longer fire season have contributed to these changes in fire activity.
- **Plants and Forests**—Through observations of plant life cycle events and temperature data, scientists have determined that indicator plant species are blooming earlier on average.

- **Salmon Migration**—Sockeye salmon migration has been occurring earlier in the spring. Thirty years' worth of data suggests that salmon are returning to freshwater streams about one day earlier per decade.
- **Wildlife**—Changes in temperature impact plant and animal life cycle events. Tracking by citizen scientists has provided data that indicates that mountain bluebirds in Idaho lay eggs earlier when spring temperatures are warmer.

23.4 PROJECTED FUTURE IMPACTS

Projections about future climate conditions contain inherent uncertainty, largely because they depend on future greenhouse gas emission scenarios. Generally, the uncertainty in greenhouse gas emissions is addressed by the presentation of differing scenarios: low-emissions or high-emissions scenarios. In low-emissions scenarios, greenhouse gas emissions are reduced substantially from current levels. In high-emissions scenarios, greenhouse gas emissions generally increase or continue at current levels. Uncertainty in outcomes is generally addressed by averaging a variety of model outcomes. Despite this uncertainty, future climate condition projections present valuable information to help guide decision-making for possible future conditions.

23.4.1 Global and National Projections

The Intergovernmental Panel on Climate Change, which includes more than 1,300 scientists from the United States and other countries, project that Earth's average temperatures will raise 2.5 to 10 °F over the next century (National Aeronautics and Space Administration 2022). The Third and Fourth *National Climate Assessment Reports* indicate the following:

- **Change Will Continue Through This Century and Beyond**—Global climate is projected to continue to change over this century and beyond. The magnitude of change beyond the next few decades depends primarily on the amount of heat-trapping gases emitted globally, and how sensitive the Earth's climate is to those emissions.
- **Temperatures Will Continue to Rise**—Because human-induced warming is superimposed on a naturally varying climate, the temperature rise has not been, and will not be, uniform or smooth across the country or over time.
- **Frost-Free Season and Growing Season will Lengthen**—The length of the frost-free season and the corresponding growing season has been increasing nationally since the 1980s, with the largest increases occurring in the western United States, affecting ecosystems and agriculture. Across the United States, the growing season is projected to continue to lengthen. In a future in which heat-trapping gas emissions continue to grow, increases of a month or more in the lengths of the frost-free and growing seasons are projected across most of the United States by the end of the century, with slightly smaller increases in the northern Great Plains. The largest increases in the frost-free season (more than eight weeks) are projected for the western United States, particularly in high elevation and coastal areas. The increases will be smaller if heat-trapping gas emissions are reduced.

23.4.2 Projections for Idaho

A research project at the University of Idaho sought to identify future climate projections from climate models in the State of Idaho. The following information is summarized from their findings (Abatzoglou, Marshall and Harley 2021):

Temperature and Precipitation

Projected changes in temperature in Idaho largely mirror projected changes for the northwestern United States. The annual mean temperature averaged for Idaho is projected to warm 11 °F on average above 1950 through 1999 values by 2100 under a high-warming scenario, compared with a warming of 6 °F on average under a moderate-warming scenario. All models show faster rates of warming over the 21st century than in the 20th century.

The length of the freeze-free season is projected to increase substantially across Idaho. For example, in Nampa, the length of the freeze-free season extends from around 160 days for the late 20th century to 210 days by the mid-21st century under a high-warming scenario.

Summer precipitation and cloud cover are projected to decrease slightly. Despite small decreases in relative humidity, increased temperatures and increased overall atmospheric moisture are projected to dramatically increase the occurrence of days with elevated heat index values across Idaho. The heat index—which incorporates a combination of air temperature and relative humidity—is used by the National Weather Service and health information services across the country to assess heat-related impacts. While Boise saw an average of less than one day per year with heat indices over 100 °F from 1971 through 2000, model projections suggest the region could see upwards of two weeks of such conditions by the mid-21st century under a high-warming scenario.

Projected changes include a slight increase (5 to 10 percent) in total annual precipitation by 2100. In addition to changes in cumulative precipitation, models suggest changes in the character of precipitation. The frequency of extremely heavy hourly precipitation from December through February is projected to increase 3- to 5-fold across Idaho by the end of the 21st century using a high-warming scenario. Compensatory changes in the frequency of precipitation are also projected for the region, with a few additional days per year without notable precipitation.

Snowpack

Despite uncertain projected changes in the total amount of precipitation, warming results in decreased snowpack as precipitation falls more as rain and less as snow. April 1 volumetric snowpack storage across Idaho is projected to decrease by one-third by the mid-21st century under a high-warming scenario. In addition, multiple consecutive years of snow drought—years with very low snow or snow that melts very early—are projected to become much more common. A larger fraction of the annual snowpack is projected to come from large storm events.

Drought

The likelihood, duration, magnitude, and character of drought are also likely to change across the state in the coming decades. Warming, associated increased evaporative demand, and reduced mountain snowpack all favor a future of increased summer drought.

23.5 RESPONSES TO FUTURE CLIMATE CONDITIONS

Communities and governments worldwide are working to address, evaluate and prepare for future climate conditions that are likely to impact communities in coming decades. Generally, future climate condition discussions encompass two separate but inter-related considerations: mitigation and adaptation.

The term “mitigation” has multiple meanings across disciplines. Mitigation in emergency management, as generally addressed in this hazard mitigation plan, is typically defined as the effort to reduce loss of life and

property by lessening the impact of disasters. Mitigation in climate condition discussions is defined as a human intervention to reduce impacts on the climate system. It includes strategies to reduce greenhouse gas sources and emissions and enhance greenhouse gas sinks. In this chapter, mitigation is used as defined by the climate condition community. In the other chapters of this plan, mitigation is primarily used in an emergency management context.

Adaptation refers to adjustments in natural or human systems in response to the actual or anticipated effects of future climate conditions and associated impacts. These adjustments may moderate harm or exploit beneficial opportunities. Mitigation and adaptation are related, as the world's ability to reduce greenhouse gas emissions will affect the degree of adaptation that will be necessary. Some initiatives and actions can both reduce greenhouse gas emissions and support adaptation to likely future conditions.

Societies across the world are facing the need to adapt to changing conditions associated with natural disasters and climate conditions. Farmers are altering crops and agricultural methods to deal with changing rainfall and rising temperature; architects and engineers are redesigning buildings; planners are looking at managing water supplies to deal with droughts or flooding.

Adaptive capacity goes beyond human systems, as some ecosystems are able to adapt to change and to buffer surrounding areas from the impacts of change. Forests can bind soils and hold large volumes of water during times of plenty, releasing it through the year; floodplains can absorb vast volumes of water during peak flows; coastal ecosystems can hold out against storms, attenuating waves and reducing erosion. Other ecosystem services—such as food provision, timber, materials, medicines, and recreation—can provide a buffer to societies in the face of changing conditions. Ecosystem-based adaptation is the use of biodiversity and ecosystem services as part of an overall strategy to help people adapt to the adverse effects of future climate conditions. This includes the sustainable management, conservation and restoration of specific ecosystems that provide key services.

23.6 FUTURE CLIMATE CONDITION IMPACTS ON HAZARDS

The following sections provide information on how each identified hazard of concern for this planning process may be impacted by future climate conditions and how these impacts may alter current exposure and vulnerability for the people, property, critical facilities and the environment in Ada County to these hazards.

23.6.1 Civil Disturbance and Terrorism

Impacts on the Hazard

Because civil disturbance and terrorism are short-term, human-caused hazards, no future climate condition impacts are associated with the hazard.

Population, Property, Critical Facilities and the Environment

Increases in exposure and vulnerability of the local resources are not able to be determined. However, adverse effects on the population due to future climate conditions could create a possibility for civil disturbance instances. An example would be critical resource shortages (such as water) during a drought, or prolonged power and service issues resulting from floods or severe storms causing people to become angry with government.

23.6.2 Cyber Disruption

Impacts on the Hazard

Although cyber disruption is categorized as a human-caused hazard, future climate condition impacts could have cascading effects potentially causing a cyber disruption. Such instances would be severe storms, as well as flooding associated with potential rain on snow events. If the damage were caused to computer systems or servers, this could cause a cyber disruption for that agency or building.

Population, Property, Critical Facilities and the Environment

Increases in exposure and vulnerability of the local resources are not able to be determined.

23.6.3 Dam Failure

Impacts on the Hazard

Small changes in rainfall, runoff, and snowpack conditions may have significant impacts for water resource systems, including dams. Dams are designed partly based on assumptions about a river's flow behavior, expressed as hydrographs. Changes in weather patterns can have significant effects on the hydrograph used for the design of a dam. If the hydrograph changes, it is conceivable that the dam can lose some or all of its designed margin of safety, also known as freeboard. If freeboard is reduced, dam operators may be forced to release increased volumes earlier in a storm cycle in order to maintain the required margins of safety. Such early releases of increased volumes can increase flood potential downstream.

Dams are constructed with safety features known as "spillways." Spillways are put in place on dams as a safety measure in the event of the reservoir filling too quickly. Spillway overflow events, often referred to as "design failures," result in increased discharges downstream and increased flooding potential. Although future climate conditions will not increase the probability of catastrophic dam failure, they may increase the probability of design failures.

Population

Population exposure and vulnerability to the dam failure hazard are unlikely to change as a result of future climate conditions.

Property

Property exposure and vulnerability to the dam failure hazard are unlikely to change as a result of future climate conditions.

Critical Facilities

The exposure and vulnerability of critical facilities are unlikely to change as result of future climate conditions. Dam owners and operators may need to alter maintenance and operations to account for changes in the hydrograph and increased sedimentation.

Environment

The exposure and vulnerability of the environment to dam failure are unlikely to change as a result of future climate conditions. Ecosystem services may be used to mitigate some of the factors that may increase the risk of design failures, such as increasing the natural water storage capacity in watersheds above dams.

23.6.4 Drought

Impacts on the Hazard

The long-term effects of future climate conditions on regional water resources are unknown, but global water resources are already experiencing the following stresses:

- Growing populations
- Increased competition for available water
- Poor water quality
- Environmental claims
- Uncertain reserved water rights
- Groundwater overdraft
- Aging urban water infrastructure.

With a warmer climate, droughts could become more frequent, more severe, and longer-lasting. According to the National Climate Assessment, “higher surface temperatures brought about by global warming increase the potential for drought. Evaporation and the higher rate at which plants lose moisture through their leaves both increase with temperature. Unless higher evapotranspiration rates are matched by increases in precipitation, environments will tend to dry, promoting drought conditions” (U.S. Climate Resilience Toolkit 2021).

Much of the water needed for agriculture, public supplies, and other uses comes from mountain snowpack, which melts in spring and summer and runs off into rivers and fills reservoirs. As the climate warms, less precipitation falls as snow, and more snow melts during the winter, which decreases the snowpack. Since the 1950s, Idaho’s snowpack has been decreasing in most locations. A warming climate makes water less available during summer. As snowpack melts earlier, flows of fresh water in rivers and streams increase during late winter and early spring, but decrease during summer (Environmental Protection Agency 2016).

By addressing current stresses on water supplies and by building a flexible, robust program, Ada County will be able to more adeptly respond to changing conditions and to survive dry years.

Population

Population exposure and vulnerability to drought are unlikely to increase as a result of future climate conditions. While greater numbers of people may need to engage in behavior change, such as water saving efforts, significant life or health impacts are unlikely.

Property

Property exposure and vulnerability may increase as a result of increased drought resulting from future climate conditions, although this would most likely occur in non-structural property such as crops and landscaping. It is unlikely that structure exposure and vulnerability would increase as a direct result of drought, although secondary impacts of drought, such as wildfire, may increase and threaten structures.

Critical Facilities

Critical facility exposure and vulnerability are unlikely to increase as a result of increased drought resulting from future climate conditions; however, critical facility operators may need to alter standard management practices and actively manage resources, particularly in water-related service sectors.

Environment

The vulnerability of the environment may increase as a result of increased drought resulting from future climate conditions. The ecosystems and biodiversity in Ada County are already under stress from development and water diversion activities. Prolonged or more frequent drought resulting from future climate conditions may further stress the ecosystems in the region.

23.6.5 Earthquake

Impacts on the Hazard

The impacts of global future climate conditions on earthquake probability are unknown, although scientists have identified tiny earthquakes triggered by the change of fault stress loads from rain and snow. Similarly, long-term drought can result in a significant change in the stress load on earth's crust.

Secondary impacts of earthquakes could be magnified by future climate conditions. Soils saturated by repetitive storms or heavy precipitation could experience liquefaction or an increased propensity for slides during seismic activity due to the increased saturation. Dams storing increased volumes of water due to changes in the hydrograph could fail during seismic events.

Population, Property, Critical Facilities and the Environment

Because impacts on the earthquake hazard are not well understood, increases in exposure and vulnerability of the local resources are not able to be determined.

23.6.6 Extreme Weather

Impacts on the Hazard

Future climate conditions present a challenge for risk management associated with extreme weather. The frequency of extreme weather events has increased steadily over the last century. The number of weather-related disasters during the 1990s was four times that of the 1950s, and cost 14 times as much in economic losses. Historical data shows that the probability for extreme weather events increases in a warmer climate.

This increase in average surface temperatures can also lead to more intense heat waves that can be exacerbated in urbanized areas by what is known as urban heat island effect. The evidence suggests that heat waves are already increasing, especially in western states.

Population and Property

Population and property exposure and vulnerability would be unlikely to increase as a direct result of future climate condition impacts on the extreme weather hazard. Extreme weather events may occur more frequently, but exposure and vulnerability will remain the same. Secondary impacts, such as the extent of localized flooding, may increase, thus impacting greater numbers of people and structures.

Critical Facilities

Critical facility exposure and vulnerability would be unlikely to increase as a result of future climate condition impacts on the extreme weather hazard; however, critical facility owners and operators may experience more frequent disruptions. For example, more frequent and intense storms may cause more frequent disruptions in power service.

Environment

Exposure and vulnerability of the environment would be unlikely to increase; however, more frequent storms and heat events and more intense rainfall may place additional stressors on already stressed systems.

23.6.7 Flood

Impacts on the Hazard

Use of historical hydrologic data has long been the standard of practice for designing and operating water supply and flood protection projects. For example, historical data are used for flood forecasting models and to forecast snowmelt runoff for water supply. This method of forecasting assumes that the climate of the future will be similar to that of the period of historical record. However, the hydrologic record cannot be used to predict changes in frequency and severity of extreme climate events such as floods. Going forward, model calibration or statistical relation development must happen more frequently, new forecast-based tools must be developed, and a standard of practice that explicitly considers future climate conditions must be adopted. Future climate conditions are already impacting water resources, and resource managers have observed the following:

- Historical hydrologic patterns can no longer be solely relied upon to forecast the water future.
- Precipitation and runoff patterns are changing, increasing the uncertainty for water supply and quality, flood management and ecosystem functions.
- Extreme climatic events will become more frequent, necessitating improvement in flood protection, drought preparedness and emergency response.

The amount of snow is critical for water supply and environmental needs, but so is the timing of snowmelt runoff into rivers and streams. Rising snowlines caused by future climate conditions will allow more mountain areas to contribute to peak storm runoff. High frequency flood events (e.g. 10-year floods) in particular will likely increase with future climate conditions. Along with reductions in the amount of the snowpack and accelerated snowmelt,

scientists project greater storm intensity, resulting in more direct runoff and flooding. Changes in watershed vegetation and soil moisture conditions will likewise change runoff and recharge patterns. As stream flows and velocities change, erosion patterns will also change, altering channel shapes and depths, possibly increasing sedimentation behind dams, and affecting habitat and water quality. With potential increases in the frequency and intensity of wildfires due to future climate conditions, there is potential for more floods following fire, which increase sediment loads and water quality impacts.

As hydrology changes, what is currently considered a 1-percent-annual-chance flood may strike more often, leaving many communities at greater risk. Planners will need to factor a new level of safety into the design, operation, and regulation of flood protection facilities such as dams, bypass channels and levees, as well as the design of local sewers and storm drains.

Population and Property

Population and property exposure and vulnerability may increase as a result of future climate condition impacts on the flood hazard. Runoff patterns may change resulting in flooding in areas where it has not previously occurred.

Critical Facilities

Critical facility exposure and vulnerability may increase as a result of future climate condition impacts on the flood hazard. Runoff patterns may change resulting in risk to facilities that have not historically been at risk from flooding. Additionally, changes in the management and design of flood protection critical facilities may be needed as additional stress is placed on these systems.

Environment

The exposure and vulnerability of the environment may increase as a result of future climate condition impacts on the flood hazard. Changes in the timing and frequency of flood events may have broader ecosystem impacts that alter the ability of already stressed species to survive.

23.6.8 Hazardous Materials Release

Impacts on the Hazard

Hazardous materials are an important factor and often a cascading effect in every natural and many man-made disasters. Therefore, there are serious implications for impacts from future climate conditions.

Population, Property, Critical Facilities and the Environment

Increases in exposure and vulnerability of local resources are not able to be determined with certainty, but hazardous materials are subject to the same future climate considerations as every other hazard.

23.6.9 Landslide

Impacts on the Hazard

Future climate conditions may impact storm patterns, increasing the probability of more frequent, intense storms with varying duration. Increase in global temperature is likely to affect the snowpack and its ability to hold and store water. Warming temperatures also could increase the occurrence and duration of droughts, which would increase the probability of wildfire, reducing the vegetation that helps to support steep slopes. All of these factors would increase the probability for landslide occurrences.

Population and Property

Population and property exposure and vulnerability would be unlikely to increase as a result of future climate condition impacts on the landslide hazard. Landslide events may occur more frequently, but the extent and location should be contained within mapped hazard areas and recently burned areas.

Critical Facilities

Critical facility exposure and vulnerability would be unlikely to increase as a result of future climate condition impacts on the landslide hazard; however, critical facility owners and operators may experience more frequent disruption to service provision as a result of landslide hazards. For example, transportation systems may experience more frequent delays if slides blocking these systems occur more frequently.

Environment

Exposure and vulnerability of the environment would be unlikely to increase as a result of future climate conditions, but more frequent slides in riverine systems may impact water quality and have negative impacts on already stressed species.

23.6.10 Public Health Emergency/Pandemic

Impacts on the Hazard

Worldwide, there has been an apparent increase in reports of infectious diseases, many of which reflect the combined effects of rapid demographic, environmental, social, technological, and other changes in how we live. Future climate conditions will likely affect changes in transmission patterns of infectious diseases (Centers for Disease Control and Prevention 2020). Emergence of new pathogens and improved detection and reporting can also contribute to increases in numbers of reported cases.

Population, Property, Critical Facilities and the Environment

The relationship between climate conditions and infectious diseases is complex and not well understood. The ranges and impacts of important pathogens might change as a result of changing temperatures and precipitation. Future climate conditions might increase or change the range of disease vectors such as mosquitoes or rodents. Heavy rainfall and flooding can be associated with waterborne disease outbreaks. Increases in exposure to property, critical facilities, and the environment are unknown.

23.6.11 Radiological Event

Impacts on the Hazard

In addition to increase in temperature, the stratospheric ozone is depleting. Stratospheric ozone absorbs much of the incoming solar ultraviolet radiation. A depleting ozone increases the amount of ultraviolet-B in the atmosphere, raising concern about the levels of biologically damaging radiation reaching the ground.

Population, Property, Critical Facilities and the Environment

Loss of stratospheric ozone may lead to human health impacts, affecting the skin, eyes, immune system and general well-being. Many studies have indicated that solar radiation is a cause of skin cancer and there may be an increase in skin cancer incidence and sunburn severity due to ozone depletion (World Health Organization 2017). Increases in exposure to property, critical facilities, and the environment are unknown.

23.6.12 Utility Failure

Impacts on the Hazard

Declining snowpack and resulting lower streamflow would mean less hydroelectric power. (Environmental Protection Agency 2016).

Population, Property, Critical Facilities and the Environment

Increases in exposure and vulnerability of local resources are not able to be determined.

23.6.13 Volcano (Ash Fall)

Impacts on the Hazard

Future climate conditions are not likely to affect the risk associated with volcanoes; however, volcanic activity can affect future climate conditions. Volcanic clouds absorb terrestrial radiation and scatter a significant amount of incoming solar radiation. By reducing the amount of solar radiation reaching the Earth's surface, large-scale volcanic eruptions can lower temperatures in the lower atmosphere and change atmospheric circulation patterns. The massive outpouring of gases and ash can influence climate patterns for years following a volcanic eruption. Additionally, while future climate conditions are not likely to increase the frequency of eruptions, changes in precipitation amounts could increase the potential for lahars or debris avalanches in volcanic areas.

Population, Property, Critical Facilities and the Environment

Exposure and vulnerability to the volcano hazard are unlikely to change as a direct result of future climate conditions.

23.6.14 Wildfire

Impacts on the Hazard

Wildfire is determined by climate variability, local topography, and human intervention. Future climate conditions have the potential to affect multiple elements of the wildfire system: fire behavior, ignitions, fire management, and vegetation fuels. Hot dry spells create the highest fire risk. Increased temperatures may intensify wildfire danger by warming and drying out vegetation. Additionally, changes in climate patterns may impact the distribution and perseverance of insect outbreaks that create dead trees (increase fuel). When climate alters fuel loads and fuel and soil moisture, forest susceptibility to wildfires changes (Environmental Protection Agency 2016). Future climate conditions also may increase winds that spread fires. Faster fires are harder to contain, and thus are more likely to expand into residential neighborhoods.

Population, Property and Critical Facilities

Larger, more severe, and more frequent fires may impact the people, property and critical facilities by increasing the risk of ignition from nearby fire sources. Additionally, secondary impacts such as air quality issues may increase.

Environment

It is possible that the exposure and vulnerability of the environment will be impacted by impacts on wildfire risk from future climate conditions, as natural fire regimes may change, resulting in more frequent or higher intensity burns. These impacts may alter the composition of the ecosystems in the areas in and surrounding Ada County.

Part 3. MITIGATION PLAN

24. MISSION STATEMENT, GOALS AND OBJECTIVES

Hazard mitigation plans must identify goals for reducing long-term vulnerabilities to identified hazards (44 CFR Section 201.6.c(3i)). The Steering Committee established a mission statement, a set of goals and measurable objectives for this update, based on data from the preliminary risk assessment and the results of the public involvement strategy. The mission statement, goals, objectives and actions in this plan all support each other. Goals were selected to support the mission statement. Objectives were selected that met multiple goals. Actions were prioritized based on the action meeting multiple objectives.

24.1 MISSION STATEMENT

A mission statement provides a vision for a process. It is not a goal because it does not describe a hazard mitigation outcome, and it is broader than a hazard-specific objective. The mission statement for the 2022 Ada County Multi-Hazard Mitigation Plan is as follows:

To reduce the vulnerability to natural hazards in order to protect the health, safety, welfare and economy of the Ada County community.

24.2 GOALS

The following are the mitigation goals for this plan update:

1. Protect lives and reduce hazard related injuries
2. Minimize or reduce current and future damage from natural hazards to property, including critical facilities and environment
3. Encourage the development and implementation of long-term, cost-effective mitigation projects that foster resilience for the whole community
4. Maintain, enhance, and restore the natural environment’s capacity to deal with the impacts of natural hazard events.
5. Improve emergency management preparedness, collaboration, and outreach within the planning area.

Achievement of these goals defines the effectiveness of a mitigation strategy.

24.3 OBJECTIVES

Each selected objective meets multiple goals, serving as a stand-alone measurement of the effectiveness of a mitigation action, rather than as a subset of a goal. The objectives also are used to help establish priorities. The objectives are as follows:

1. Minimize disruption of local government and commerce operations caused by the identified hazards.
2. Using best available data, science, and knowledge, continually improve understanding of the location and potential impacts of the identified hazards.
3. Based on willing participation, encourage retrofit, purchase, or relocation of real property, based on one or more of the following criteria: level of exposure, repetitive loss history, and previous damage from natural hazards.
4. Based on understanding of risk, prevent or discourage new development in hazardous areas; if building occurs in high-risk areas, ensure that it is done in such a way as to minimize risk.
5. Strengthen codes and code enforcement to ensure that new construction and redevelopment of property and infrastructure can withstand the impacts of hazards.
6. Integrate hazard mitigation policies into local government land use plans that not only protect the built environment, but also maintain or enhance the natural environment's ability to withstand and recover from disasters, with an emphasis on the promotion of regional consistency in policy.
7. Develop new, and improve existing, early warning emergency notification protocols, systems, and evacuation procedures.
8. Perform whole community engagement to educate the public on the area's potential hazards and ways to personally prepare, respond, recover and mitigate the impacts of these events.
9. Establish partnerships among all levels of government, the business community, and other stakeholders to improve and implement methods to protect life, property and the natural environment.
10. Increase the resilience and continuity of operations of identified critical facilities and infrastructure within the planning area to maintain delivery of essential services to the whole community.

25. MITIGATION BEST PRACTICES

Catalogs of hazard mitigation best practices were developed that present a broad range of alternatives to be considered for use in the planning area, in compliance with 44 CFR (Section 201.6.c.3.ii). These catalogs were developed through a facilitated session with the Steering Committee looking at strengths, weaknesses, obstacles and opportunities within the planning area for each identified hazard of concern. The planning team augmented the catalogs with best practices from state and federal publications as well as experience from past planning efforts. One catalog was developed for each natural hazard of concern evaluated in this plan. The catalogs for each hazard are listed in Table 25-1 through Table 25-8. The catalogs present best practices categorized in two ways:

- By what it would do:
 - Manipulate a hazard
 - Reduce exposure to a hazard
 - Reduce vulnerability to a hazard
 - Increase the ability to respond to or be prepared for a hazard
- By who would have responsibility for implementation:
 - Individuals
 - Businesses
 - Government.

Hazard mitigation actions recommended in this plan were selected from among the best practices presented in the catalogs or inspired by a review of the catalogs. The catalogs provide a baseline of mitigation best practices that are backed by a planning process, are consistent with the planning partners' goals and objectives, and are within the capabilities of the partners to implement. Some of these best practices may not be feasible based on the selection criteria identified for this plan. The purpose of the catalog was to equip the planning partners with a list of what could be considered to reduce risk from natural hazards within the planning area. Best practices in the catalog that are not included for the final action plan were not selected for one or more of the following reasons:

- The action is not feasible.
- The action is already being implemented.
- There is an apparently more cost-effective alternative.
- The action does not have public or political support.

Table 25-1. Catalog of Mitigation Alternatives—Dam/Canal Failure

Personal-Scale	Corporate-Scale	Government-Scale
<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ None • Reduce exposure: <ul style="list-style-type: none"> ❖ Relocate out of dam failure inundation areas • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Elevate home to appropriate levels • Build local capacity: <ul style="list-style-type: none"> ❖ Learn about risk reduction for the dam failure hazard ❖ Learn the evacuation routes for a dam failure event ❖ Educate yourself on early warning systems and the dissemination of warnings 	<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ Remove dams ❖ Harden dams • Reduce exposure: <ul style="list-style-type: none"> ❖ Replace earthen dams with hardened structures • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Flood-proof facilities within dam failure inundation areas • Build local capacity: <ul style="list-style-type: none"> ❖ Educate employees on the probable impacts of a dam failure ❖ Develop a continuity of operations plan 	<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ Remove dams ❖ Harden dams • Reduce exposure: <ul style="list-style-type: none"> ❖ Replace earthen dams with hardened structures ❖ Relocate critical facilities out of dam failure inundation areas ❖ Consider open space land use in designated dam failure inundation areas • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Adopt higher floodplain standards in mapped dam failure inundation areas ❖ Retrofit critical facilities within dam failure inundation areas • Build local capacity: <ul style="list-style-type: none"> ❖ Map dam failure inundation areas ❖ Enhance emergency operations plan to include a dam failure component ❖ Institute monthly communications checks with dam operators ❖ Inform the public on risk reduction techniques ❖ Adopt real-estate disclosure requirements for the re-sale of property located within dam failure inundation areas ❖ Consider the probable impacts of future climate conditions in assessing the risk associated with the dam failure hazard ❖ Establish early warning capability downstream of listed high hazard dams ❖ Consider the residual risk associated with protection provided by dams in future land use decisions

Table 25-2. Catalog of Mitigation Alternatives—Drought

Personal-Scale	Corporate-Scale	Government-Scale
<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ None • Reduce exposure: <ul style="list-style-type: none"> ❖ None • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Drought-resistant landscapes ❖ Reduce water system losses ❖ Modify plumbing systems (through water saving kits) ❖ For homes with on-site water systems: increase storage, utilize rainwater catchment • Build local capacity: <ul style="list-style-type: none"> ❖ Practice active water conservation 	<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ None • Reduce exposure: <ul style="list-style-type: none"> ❖ None • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Drought-resistant landscapes ❖ Reduce private water system losses ❖ Support alternative irrigation techniques to reduce water use and encourage use of climate-sensitive water supplies ❖ For businesses with on-site water systems: increase storage, utilize rainwater catchment • Build local capacity: <ul style="list-style-type: none"> ❖ Practice active water conservation 	<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ Groundwater recharge through stormwater management ❖ Develop a water recycling program ❖ Increase “above-the-dam” regional natural water storage systems • Reduce exposure: <ul style="list-style-type: none"> ❖ Identify and create groundwater backup sources • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Water use conflict regulations ❖ Reduce water system losses ❖ Distribute water saving kits ❖ increase conventional storage that is filled during high-flow periods • Build local capacity: <ul style="list-style-type: none"> ❖ Public education on drought resistance ❖ Identify alternative water supplies for times of drought; mutual aid agreements with alternative suppliers ❖ Develop drought contingency plan ❖ Develop criteria “triggers” for drought-related actions ❖ Improve accuracy of water supply forecasts ❖ Modify rate structure to influence active water conservation techniques ❖ Consider the probable impacts of future climate conditions on the risk associated with the drought hazard

Table 25-3. Catalog of Mitigation Alternatives—Earthquake

Personal-Scale	Corporate-Scale	Government-Scale
<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ None • Reduce exposure: <ul style="list-style-type: none"> ❖ Locate outside of hazard area (off soft soils) • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Retrofit structure (anchor house structure to foundation) ❖ Secure household items that can cause injury or damage (such as water heaters, bookcases, and other appliances) ❖ Build to higher design • Build local capacity: <ul style="list-style-type: none"> ❖ Practice “drop, cover, and hold” ❖ Develop household mitigation plan, such as creating a retrofit savings account, communication capability with outside, 72-hour self-sufficiency during an event ❖ Keep cash reserves for reconstruction ❖ Become informed on the hazard and risk reduction alternatives available. ❖ Develop a post-disaster action plan for your household 	<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ None • Reduce exposure: <ul style="list-style-type: none"> ❖ Locate or relocate mission-critical functions outside hazard area where possible • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Build redundancy for critical functions and facilities ❖ Retrofit critical buildings and areas housing mission-critical functions • Build local capacity: <ul style="list-style-type: none"> ❖ Adopt higher standard for new construction; consider “performance-based design” when building new structures ❖ Keep cash reserves for reconstruction ❖ Inform your employees on the possible impacts of earthquake and how to deal with them at your work facility. ❖ Develop a continuity of operations plan 	<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ None • Reduce exposure: <ul style="list-style-type: none"> ❖ Locate critical facilities or functions outside hazard area where possible • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Harden infrastructure ❖ Provide redundancy for critical functions ❖ Adopt higher regulatory standards • Build local capacity: <ul style="list-style-type: none"> ❖ Provide better hazard maps ❖ Provide technical information and guidance ❖ Enact tools to help manage development in hazard areas (e.g., tax incentives, information) ❖ Include retrofitting and replacement of critical system elements in capital improvement plan ❖ Develop strategy to take advantage of post-disaster opportunities ❖ Warehouse critical infrastructure components such as pipe, power line, and road repair materials ❖ Develop and adopt a continuity of operations plan ❖ Initiate triggers guiding improvements (such as <50% substantial damage or improvements) ❖ Further enhance seismic risk assessment to target high hazard buildings for mitigation opportunities. ❖ Develop a post-disaster action plan that includes grant funding and debris removal components.

Table 25-4. Catalog of Mitigation Alternatives—Extreme Weather

Personal-Scale	Corporate-Scale	Government-Scale
<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ None • Reduce exposure: <ul style="list-style-type: none"> ❖ None • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Insulate house ❖ Provide redundant heat and power ❖ Insulate structure ❖ Plant appropriate trees near home and power lines (“Right tree, right place” National Arbor Day Foundation Program) • Build local capacity: <ul style="list-style-type: none"> ❖ Trim or remove trees that could affect power lines ❖ Promote 72-hour self-sufficiency ❖ Obtain a NOAA weather radio. ❖ Obtain an emergency generator. 	<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ None • Reduce exposure: <ul style="list-style-type: none"> ❖ None • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Relocate critical facilities (such as power lines) underground ❖ Reinforce critical facilities (such as power lines) to meet performance expectations ❖ Install tree wire • Build local capacity: <ul style="list-style-type: none"> ❖ Trim or remove trees that could affect power lines ❖ Create redundancy ❖ Equip facilities with a NOAA weather radio ❖ Equip vital facilities with emergency power sources. 	<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ None • Reduce exposure: <ul style="list-style-type: none"> ❖ Develop an urban heat island reduction program that includes an urban forest program or plan • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Harden infrastructure such as locating utilities underground ❖ Trim trees back from power lines ❖ Designate snow routes and strengthen critical road sections and bridges • Build local capacity: <ul style="list-style-type: none"> ❖ Support programs such as “Tree Watch” that proactively manage problem areas through use of selective removal of hazardous trees, tree replacement, etc. ❖ Establish and enforce building codes that require all roofs to withstand snow loads ❖ Increase communication alternatives ❖ Modify land use and environmental regulations to support vegetation management activities that improve reliability in utility corridors. ❖ Modify landscape and other ordinances to encourage appropriate planting near overhead power, cable, and phone lines ❖ Provide NOAA weather radios to the public ❖ Consider the probable impacts of future climate conditions on the risk associated with the extreme weather hazard ❖ Review and update heat response plan in light of future climate condition (heat events) projections

Table 25-5. Catalog of Mitigation Alternatives—Flood

Personal-Scale	Corporate-Scale	Government-Scale	
<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ Clear storm drains and culverts ❖ Use low-impact development techniques • Reduce exposure: <ul style="list-style-type: none"> ❖ Locate outside of hazard area ❖ Elevate utilities above base flood elevation ❖ Use low-impact development techniques • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Raise structures above base flood elevation ❖ Elevate items within house above base flood elevation ❖ Build new homes above base flood elevation ❖ Flood-proof structures • Build local capacity: <ul style="list-style-type: none"> ❖ Buy flood insurance ❖ Develop household plan, such as retrofit savings, communication with outside, 72-hour self-sufficiency during and after an event 	<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ Clear storm drains and culverts ❖ Use low-impact development techniques • Reduce exposure: <ul style="list-style-type: none"> ❖ Locate critical facilities or functions outside hazard area ❖ Use low-impact development techniques • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Build redundancy for critical functions or retrofit critical buildings ❖ Provide flood-proofing when new critical facilities must be located in floodplains • Build local capacity: <ul style="list-style-type: none"> ❖ Keep cash reserves for reconstruction ❖ Support and implement hazard disclosure for sale of property in risk zones. ❖ Solicit cost-sharing through partnerships with others on projects with multiple benefits. 	<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ Maintain drainage system ❖ Institute low-impact development techniques on property ❖ Dredging, levee construction, and providing regional retention areas ❖ Structural flood control, levees, channelization, or revetments. ❖ Stormwater management regulations and master planning ❖ Acquire vacant land or promote open space uses in developing watersheds to control increases in runoff • Reduce exposure: <ul style="list-style-type: none"> ❖ Locate or relocate critical facilities outside of hazard area ❖ Acquire or relocate identified repetitive loss properties ❖ Promote open space uses in identified high hazard areas via techniques such as: planned unit developments, easements, setbacks, greenways, sensitive area tracks. ❖ Adopt land development criteria such as planned unit developments, density transfers, clustering ❖ Institute low impact development techniques on property ❖ Acquire vacant land or promote open space uses in developing watersheds to control increases in runoff ❖ Preserve undeveloped and vulnerable shoreline ❖ Restore existing flood control and riparian corridors • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Harden infrastructure, bridge replacement program ❖ Provide redundancy for critical functions and infrastructure ❖ Adopt regulatory standards such as freeboard standards, cumulative substantial improvement or damage, lower substantial damage threshold; compensatory storage, non-conversion deed restrictions. ❖ Stormwater management regulations and master planning. ❖ Adopt “no-adverse impact” floodplain management policies that strive to not increase the flood risk on downstream communities 	<ul style="list-style-type: none"> ❖ Facilitate managed retreat from, or upgrade of, the most at-risk areas ❖ Require accounting of sea level rise in all applications for new development in shoreline areas ❖ Implement Assembly Bill 162 (2007) requiring flood hazard information in local general plans <ul style="list-style-type: none"> • Build local capacity: <ul style="list-style-type: none"> ❖ Produce better hazard maps ❖ Provide technical information and guidance ❖ Enact tools to help manage development in hazard areas (stronger controls, tax incentives, and information) ❖ Incorporate retrofitting or replacement of critical system elements in capital improvement plan ❖ Develop strategy to take advantage of post-disaster opportunities ❖ Warehouse critical infrastructure components ❖ Develop and adopt a continuity of operations plan ❖ Consider participation in the Community Rating System ❖ Maintain and collect data to define risks and vulnerability ❖ Train emergency responders ❖ Create an elevation inventory of structures in the floodplain ❖ Develop and implement a public information strategy ❖ Charge a hazard mitigation fee ❖ Integrate floodplain management policies into other planning mechanisms within the planning area. ❖ Consider the probable impacts of future climate conditions on the risk associated with the flood hazard ❖ Consider the residual risk associated with structural flood control in future land use decisions ❖ Enforce National Flood Insurance Program requirements ❖ Adopt a Stormwater Management Master Plan ❖ Develop an adaptive management plan to address the long-term impacts of sea level rise

Table 25-6. Catalog of Mitigation Alternatives—Landslide

Personal-Scale	Corporate-Scale	Government-Scale
<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ Stabilize slope (dewater, armor toe) ❖ Reduce weight on top of slope ❖ Minimize vegetation removal and the addition of impervious surfaces. • Reduce exposure: <ul style="list-style-type: none"> ❖ Locate structures outside of hazard area (off unstable land and away from slide-run out area) • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Retrofit home • Build local capacity: <ul style="list-style-type: none"> ❖ Institute warning system, and develop evacuation plan ❖ Keep cash reserves for reconstruction ❖ Educate yourself on risk reduction techniques for landslide hazards 	<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ Stabilize slope (dewater, armor toe) ❖ Reduce weight on top of slope • Reduce exposure: <ul style="list-style-type: none"> ❖ Locate structures outside of hazard area (off unstable land and away from slide-run out area) • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Retrofit at-risk facilities • Build local capacity: <ul style="list-style-type: none"> ❖ Institute warning system, and develop evacuation plan ❖ Keep cash reserves for reconstruction ❖ Develop a continuity of operations plan ❖ Educate employees on the potential exposure to landslide hazards and emergency response protocol. 	<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ Stabilize slope (dewater, armor toe) ❖ Reduce weight on top of slope • Reduce exposure: <ul style="list-style-type: none"> ❖ Acquire properties in high-risk landslide areas. ❖ Adopt land use policies that prohibit the placement of habitable structures in high-risk landslide areas. • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Adopt higher regulatory standards for new development within unstable slope areas. ❖ Armor/retrofit critical facilities against the impact of landslides. • Build local capacity: <ul style="list-style-type: none"> ❖ Produce better hazard maps ❖ Provide technical information and guidance ❖ Enact tools to help manage development in hazard areas: better land controls, tax incentives, information ❖ Develop strategy to take advantage of post-disaster opportunities ❖ Warehouse critical infrastructure components ❖ Develop and adopt a continuity of operations plan ❖ Educate the public on the landslide hazard and appropriate risk reduction alternatives. ❖ Consider the probable impacts of future climate conditions on the risk associated with the landslide hazard

Table 25-7. Catalog of Risk Reduction Measures—Volcano

Personal-Scale	Corporate-Scale	Government-Scale
<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ None • Reduce exposure: <ul style="list-style-type: none"> ❖ Locate outside of hazard area • Reduce vulnerability: <ul style="list-style-type: none"> ❖ None • Build local capacity: <ul style="list-style-type: none"> ❖ Develop and practice a household evacuation plan. 	<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ None • Reduce exposure: <ul style="list-style-type: none"> ❖ Locate outside of hazard area • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Protect corporate critical facilities from potential impacts of severe ash fall (air filtration capability). • Build local capacity: <ul style="list-style-type: none"> ❖ Develop and practice a corporate evacuation plan ❖ Inform employees through corporate sponsored outreach ❖ Develop a cooperative. 	<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ Limited success has been experienced with lava flow diversion structures • Reduce exposure: <ul style="list-style-type: none"> ❖ Locate outside of hazard area • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Protect critical facilities from potential problems associated with ash fall. ❖ Build redundancy for critical facilities and functions. • Build local capacity: <ul style="list-style-type: none"> ❖ Public outreach, awareness. ❖ Tap into state volcano warning system to provide early warning to residents of potential ash fall problems

Table 25-8. Catalog of Mitigation Alternatives—Wildfire

Personal-Scale	Corporate-Scale	Government-Scale
<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ Clear potential fuels on property such as dry overgrown underbrush and diseased trees • Reduce exposure: <ul style="list-style-type: none"> ❖ Create and maintain defensible space around structures ❖ Locate outside of hazard area ❖ Mow regularly • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Create and maintain defensible space around structures and provide water on site ❖ Use fire-resistant building materials ❖ Create defensible spaces around home • Build local capacity: <ul style="list-style-type: none"> ❖ Employ techniques from the National Fire Protection Association's Firewise USA program to safeguard home ❖ Identify alternative water supplies for fire fighting ❖ Install/replace roofing material with non-combustible roofing materials and implement other strategies to harden homes from embers and flame impingement 	<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ Clear potential fuels on property such as dry underbrush and diseased trees • Reduce exposure: <ul style="list-style-type: none"> ❖ Create and maintain defensible space around structures and infrastructure ❖ Locate outside of hazard area • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Create and maintain defensible space around structures and infrastructure and provide water on site ❖ Use fire-resistant building materials ❖ Use fire-resistant plantings in buffer areas of high wildfire threat. • Build local capacity: <ul style="list-style-type: none"> ❖ Support Firewise USA community initiatives. ❖ Create /establish stored water supplies to be utilized for firefighting. 	<ul style="list-style-type: none"> • Manipulate the hazard: <ul style="list-style-type: none"> ❖ Clear potential fuels on property such as dry underbrush and diseased trees ❖ Implement best management practices on public lands • Reduce exposure: <ul style="list-style-type: none"> ❖ Create and maintain defensible space around structures and infrastructure ❖ Locate outside of hazard area ❖ Enhance building code to include use of fire resistant materials in high hazard area. • Reduce vulnerability: <ul style="list-style-type: none"> ❖ Create and maintain defensible space around structures and infrastructure ❖ Use fire-resistant building materials ❖ Use fire-resistant plantings in buffer areas of high wildfire threat. ❖ Consider higher regulatory standards (such as Class A roofing) ❖ Establish biomass reclamation initiatives ❖ Reintroduce fire (controlled or prescribed burns) to fire-prone ecosystems ❖ Manage fuel load through thinning and brush removal ❖ Establish integrated performance standards for new development to harden homes. • Build local capacity: <ul style="list-style-type: none"> ❖ More public outreach and education efforts, including an active Firewise USA program ❖ Possible weapons of mass destruction funds available to enhance fire capability in high-risk areas ❖ Identify fire response and alternative evacuation routes and establish where needed ❖ Seek alternative water supplies ❖ Become a Firewise USA community ❖ Use academia to study impacts/solutions to wildfire risk ❖ Establish/maintain mutual aid agreements between fire service agencies ❖ Develop, adopt, and implement integrated plans for mitigating wildfire impacts in wildland areas bordering on development ❖ Consider the probable impacts of future climate conditions on the risk associated with the wildfire hazard in future land use decisions ❖ Establish a management program to track forest and rangeland health ❖ Provide incentives to for existing structures to be hardened against wildfire.

26. MITIGATION ACTIONS

26.1 SELECTED COUNTYWIDE MITIGATION ACTIONS

The planning partners and the Steering Committee determined that some actions from the mitigation catalogs could be implemented to provide hazard mitigation benefits countywide. Table 26-1 lists the recommended countywide actions, the lead agency for each, and the proposed timeline. The parameters for the timeline are as follows:

- Short Term = to be completed in 1 to 5 years
- Long Term = to be completed in greater than 5 years
- Ongoing = currently being funded and implemented under existing programs.

Table 26-1. Action Plan—Countywide Mitigation Actions

Benefits new or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
CW-1 —Sponsor and maintain a natural-hazard informational website to include the following types of information:						
<ul style="list-style-type: none"> • Hazard-specific information such as warning, private property mitigation alternatives, important facts on risk and vulnerability • Pre- and post-disaster information such as notices of grant funding availability • CRS creditable information • Links to planning partners’ pages, FEMA and Idaho Office of Emergency Management • Natural hazard mitigation plan information such as progress reports, mitigation success stories, update strategies, Steering Committee meetings. 						
<i>Hazards Mitigated:</i> New and Existing	Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire 2, 8, 9	EMCR	N/A	Low	EMCR Operational Budget	Ongoing
CW-2 —Maintain the Steering Committee as a functioning body, under the ground rules established at its inception, to monitor progress of the plan, provide technical assistance to planning partners, and oversee the update of the plan according to schedule.						
<i>Hazards Mitigated:</i> New and Existing	Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire 6, 8, 9	EMCR	N/A	Low	Can be funded under existing programs	Ongoing
CW-3 —All planning partners that committed to the update effort will formally adopt this plan when pre-adoption approval has been granted by the Idaho Office of Emergency Management and FEMA Region X. Each planning partner will adhere to the plan maintenance protocol identified in this plan. All actions under this action will be coordinated by EMCR.						
<i>Hazards Mitigated:</i> New and Existing	Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire All	EMCR	All Planning Partners	Low	Can be funded under existing programs	Short-term
CW-4 —Continue to implement ongoing public outreach programs administered by EMCR. Seek opportunities to promote the mitigation of natural hazards within the planning area, using information contained in this plan.						
<i>Hazards Mitigated:</i> New and Existing	Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire 2, 8, 9	EMCR	N/A	Low	Can be funded under existing programs	Ongoing

Benefits new or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
CW-5 —Seek out and use the best available data, science and technology to update the risk assessment to this plan as that data, science, technology and funding resources become available.						
<i>Hazards Mitigated:</i> Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire						
New and Existing	2, 9	EMCR	N/A	Medium	FEMA HMGP, RiskMAP, federal hazard analysis funding	Long-term
CW-6 —Continue to support and coordinate with the Idaho Silver Jackets program.						
<i>Hazards Mitigated:</i> Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire						
New and Existing	2, 6, 8, 9	EMCR	N/A	Low	Can be funded under existing programs	Ongoing
CW-7 —Provide technical support and coordination for available grant funding opportunities to the planning partnership.						
<i>Hazards Mitigated:</i> Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire						
New and Existing	2, 9	EMCR	N/A	Low	Can be funded under existing programs, FEMA HMGP	Short-term
CW-8 —Participate as a cooperating partner with FEMA and other stakeholders in FEMA’s RiskMAP initiative.						
<i>Hazards Mitigated:</i> Flood						
New and Existing	2, 9	EMCR	N/A	Low	Can be funded under existing programs, RiskMAP initiative	Short-term
CW-9 —Leverage public outreach partnering capabilities within the planning area to promote a uniform and consistent message on the importance of proactive hazard mitigation.						
<i>Hazards Mitigated:</i> Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire						
New and Existing	All	EMCR	N/A	Low	EMCR Operational Budget	Ongoing
CW-10 —Coordinate mitigation planning and project efforts within the planning area to leverage all resources available to the planning partnership.						
<i>Hazards Mitigated:</i> Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire						
New and Existing	1, 9, 10	EMCR	N/A	Low	EMCR Operational Budget	Ongoing
CW-11 —Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect them from future damage, with repetitive and severe repetitive loss properties as a priority. Seek opportunities to leverage partnerships within the planning area in these pursuits.						
<i>Hazards Mitigated:</i> Dam/Canal Failure, Earthquake, Flood, Landslide, Extreme Weather, Wildfire						
Existing	3, 9	Planning Partners	N/A	High	FEMA HMGP, BRIC, FMA	Long-term
CW-12 —Use information contained in the Ada County Multi-Hazard Mitigation Plan to support updates to other emergency management plans in effect within the planning area.						
<i>Hazards Mitigated:</i> Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire						
New and Existing	1, 2, 6, 10	EMCR	N/A	Low	Can be funded under existing programs	Short-term
CW-13 —Using the most current Hazus model and other data available, examine exposure and level of risk to the known hazards of concern for first responder facilities and identified potential sheltering sites.						
<i>Hazards Mitigated:</i> Dam/Canal Failure, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire						
New and Existing	2, 9	EMCR	N/A	Low	Can be funded under existing programs	Long-term
CW-14 —Based on identified risks, relocate or structurally harden first responder facilities as needed. Relocation may not be an option based on response requirements of the organization.						
<i>Hazards Mitigated:</i> Dam/Canal Failure, Drought, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire						
New and Existing	3, 9	EMCR	All Planning Partners	High	FEMA HMGP	Long-term

Benefits new or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline
<p>CW-15—Using the most current Hazus model and other data available, categorize potential sheltering sites from lowest to highest exposure to the known hazards of concern. Identify partners that own the sheltering sites and encourage building enhancements at those sites that would allow for operations during a major disaster event.</p> <p><i>Hazards Mitigated:</i> Dam/Canal Failure, Earthquake, Flood, Landslide, Extreme Weather, Volcano, Wildfire</p>						
New and Existing	2, 9	EMCR	All Planning Partners	Low	Can be funded under existing programs, FEMA HMGP	Long-term

26.2 AREA-WIDE ACTION PLAN PRIORITIZATION

The actions recommended in the action plan were prioritized based on the following factors:

- Cost and availability of funding
- Benefit, based on likely risk reduction to be achieved
- Number of plan objectives achieved
- Timeframe for project implementation
- Eligibility for grant funding programs

Two priorities were assigned for each action:

- A high, medium, or low priority for implementing the action
- A high, medium, or low priority for pursuing grant funding for the action.

The sections below describe the analysis of benefits and costs and the assignment of the two priority ratings.

26.2.1 Benefit and Cost

The action plan must be prioritized according to a benefit/cost analysis of the proposed actions (44 CFR, Section 201.6(c)(3)(iii)). For this hazard mitigation plan, a qualitative benefit-cost review was performed for each action by assigning ratings for benefit and cost as follows:

- Cost:
 - **High**—Existing funding will not cover the cost of the action; implementation would require new revenue through an alternative source (for example, bonds, grants, and fee increases).
 - **Medium**—The action could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the action would have to be spread over multiple years.
 - **Low**—The action could be funded under the existing budget. The action is part of or can be part of an ongoing existing program.
- Benefit:
 - **High**—Action will provide an immediate reduction of risk exposure for life and property.
 - **Medium**—Action will have a long-term impact on the reduction of risk exposure for life and property, or action will provide an immediate reduction in the risk exposure for property.
 - **Low**—Long-term benefits of the action are difficult to quantify in the short term.

To assign priorities, each action with a benefit rating equal to or higher than its cost rating (such as high benefit/medium cost, medium benefit/medium cost, medium benefit/low cost, etc.) was considered to be cost-beneficial. This is not the detailed level of benefit/cost analysis required for some FEMA hazard-related grant programs. Such analysis would be performed at the time a given action is being submitted for grant funding.

26.2.2 Implementation Priority

Implementation priority ratings were assigned as follows:

- **High Priority**—An action that meets multiple objectives, has benefits that exceed costs, and has a secured source of funding. Action can be completed in the short term (1 to 5 years).
- **Medium Priority**—An action that meets multiple objectives, has benefits that exceed costs, and is eligible for funding though no funding has yet been secured for it. Action can be completed in the short term (1 to 5 years), once funding is secured. Medium-priority actions become high-priority actions once funding is secured.
- **Low Priority**—An action that will mitigate the risk of a hazard, has benefits that do not exceed the costs or are difficult to quantify, has no secured source of funding, and is not eligible for any known grant funding. Action can be completed in the long term (1 to 10 years). Low-priority actions may be eligible for grant funding from programs that have not yet been identified.

26.2.3 Grant Pursuit Priority

Outside funding pursuit priority ratings were assigned as follows:

- **High Priority**—An action that meets identified funding eligibility requirements, has high benefits, and is listed as high or medium implementation priority; local funding options are unavailable or available local funds could be used instead for actions that are not eligible for funding from an outside local government source.
- **Medium Priority**—An action that meets identified outside funding source eligibility requirements, has medium or low benefits, and is listed as medium or low implementation priority; local funding options are unavailable.
- **Low Priority**—An action that has not been identified as meeting any outside funding source eligibility requirements.

26.2.4 Prioritization Summary for Countywide Actions

Table 26-2 lists the priority of each action.

26.3 CLASSIFICATION OF AREA-WIDE MITIGATION ACTIONS

Each recommended action was classified based on the hazard it addresses and the type of mitigation it involves. Table 26-3 shows these classifications.

Table 26-2. Mitigation Action Priority

Action #	# of Objectives Met	Benefit	Cost	Do Benefits Equal or Exceed Costs?	Is Action Eligible for Grant Funding?	Can Action be Funded Under Existing Programs/ Budgets?	Implementation Priority	Grant Pursuit Priority
CW-1	3	Low	Low	Yes	No	Yes	High	Low
CW-2	3	Low	Low	Yes	No	Yes	High	Low
CW-3	10	Low	Low	Yes	No	Yes	High	Low
CW-4	3	Low	Low	Yes	No	Yes	High	Low
CW-5	2	Medium	Medium	Yes	Yes	No	Medium	Medium
CW-6	4	Low	Low	Yes	No	Yes	High	Low
CW-7	2	Low	Low	Yes	Yes	Yes	High	Medium
CW-8	2	Low	Low	Yes	Yes	Yes	High	Medium
CW-9	10	Low	Low	Yes	No	Yes	High	Low
CW-10	3	Low	Low	Yes	No	Yes	High	Low
CW-11	2	High	High	Yes	Yes	No	Medium	High
CW-12	4	High	Low	Yes	Yes	Yes	High	High
CW-13	2	Low	Low	Yes	Yes	Yes	High	Medium
CW-14	2	High	High	Yes	Yes	No	Medium	High
CW-15	2	Low	Low	Yes	Yes	Yes	High	Medium

Table 26-3. Analysis of Mitigation Actions

Hazard	Actions That Address the Hazard, by Mitigation Type							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resiliency	Community Capacity Building
Medium Risk Hazards								
Earthquake		CW-11, 14	CW-1, 4, 9		CW-13, 15			CW-2, 3, 5, 6, 7, 10, 12
Extreme Weather		CW-11, 14	CW-1, 4, 9		CW-13, 15			CW-2, 3, 5, 6, 7, 10, 12
Flood		CW-11, 14	CW-1, 4, 9		CW-13, 15			CW-2, 3, 5, 6, 7, 8, 10, 12
Low Risk Hazards								
Dam/Canal Failure		CW-11, 14	CW-1, 4, 9		CW-13, 15			CW-2, 3, 5, 6, 7, 10, 12
Drought			CW-1, 4, 9					CW-2, 3, 5, 6, 7, 10, 12
Landslide		CW-11, 14	CW-1, 4, 9		CW-13, 15			CW-2, 3, 5, 6, 7, 10, 12
Wildfire		CW-11, 14	CW-1, 4, 9		CW-13, 15			CW-2, 3, 5, 6, 7, 10, 12

Mitigation types used for this categorization are as follows:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education and Awareness**—Actions to inform community members and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, wetland restoration and preservation, and green infrastructure.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.
- **Climate Resiliency**—Actions that incorporate methods to mitigate and/or adapt to the impacts of future climate conditions. Includes aquifer storage and recovery activities, incorporating future conditions projections in project design or planning, or actions that specifically address jurisdiction-specific climate risks, such as sea level rise or urban heat island effect.
- **Community Capacity Building**—Actions that increase or enhance local capabilities to adjust to potential damage, to take advantage of opportunities, or to respond to consequences. Includes staff training, memorandums of understanding, development of plans and studies, and monitoring programs.

27. PLAN ADOPTION AND IMPLEMENTATION

27.1 PLAN ADOPTION

A hazard mitigation plan must document formal adoption by the governing body of the jurisdiction requesting federal approval of the plan (44 CFR, Section 201.6.c.5). For multi-jurisdictional plans, each jurisdiction requesting approval must document that it has been formally adopted. This plan will be submitted for a pre-adoption review to the Idaho Office of Emergency Management and the Insurance Services Office (FEMA’s CRS contractor) prior to adoption. Once pre-adoption approval has been provided, all planning partners will formally adopt the plan update. All partners understand that DMA compliance and its benefits cannot be achieved until the plan is adopted. Copies of the resolutions adopting this plan for all planning partners and the final approval letter from FEMA can be found in Appendix G of this volume.

27.2 PLAN MAINTENANCE STRATEGY

A hazard mitigation plan must present a plan maintenance process that includes the following (44 CFR Section 201.6.c.4):

- A section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan over a 5-year cycle
- A process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate
- A discussion on how the community will continue public participation in the plan maintenance process.

This section details the formal process that will ensure that the 2017 Ada County Multi-Hazard Mitigation Plan remains an active and relevant document and that the planning partners maintain their eligibility for applicable funding sources. The plan maintenance process includes a schedule for monitoring and evaluating the plan annually and producing an updated plan every five years. This chapter also describes how public participation will be integrated throughout the plan maintenance and implementation process. It explains how the mitigation strategies outlined in this Plan will be incorporated into existing planning mechanisms and programs, such as comprehensive land-use planning processes, capital improvement planning, and building code enforcement and implementation. The Plan’s format allows sections to be reviewed and updated when new data become available, resulting in a plan that will remain current.

27.3 PLAN IMPLEMENTATION

The effectiveness of the hazard mitigation plan depends on its implementation and incorporation of its action items into partner jurisdictions’ existing plans, policies and programs. Together, the action items in the Plan

provide a framework for activities that the partners can implement over the next 5 years. The planning team and the Steering Committee have established goals and objectives and have prioritized mitigation actions that will be implemented through existing plans, policies and programs.

Ada County Emergency Management & Community Resilience (EMCR) will have lead responsibility for overseeing the Plan implementation and maintenance strategy. Plan implementation and evaluation will be a shared responsibility among all planning partnership members and agencies identified as lead agencies in the mitigation action plans (see planning partner annexes in Volume 2 of this plan).

27.4 STEERING COMMITTEE

The Steering Committee is a volunteer body that oversaw the development of the Plan and made recommendations on key elements of the plan, including the maintenance strategy. It was the Steering Committee's position that an oversight committee with representation similar to the initial Steering Committee should have an active role in the Plan maintenance strategy. Therefore, it is recommended that a steering committee remain a viable body involved in key elements of the Plan maintenance strategy. The new steering committee should strive to include representation from the planning partners, as well as other stakeholders in the planning area.

The principal role of the new steering committee in this plan maintenance strategy will be to review the annual progress report and provide input to EMCR on possible enhancements to be considered at the next update. Future plan updates will be overseen by a steering committee similar to the one that participated in this update process, so keeping an interim steering committee intact will provide a head start on future updates. Completion of the progress report is the responsibility of each planning partner, not the responsibility of the steering committee. The steering committee's role will be to review the progress report in an effort to identify issues needing to be addressed by future plan updates.

27.5 ANNUAL PROGRESS REPORT

The minimum task of each planning partner will be the evaluation of the progress of its individual action plan during a 12-month performance period. This review will include the following:

- Summary of any hazard events that occurred during the performance period and the impact these events had on the planning area
- Review of mitigation success stories
- Review of continuing public involvement
- Brief discussion about why targeted strategies were not completed
- Re-evaluation of the action plan to determine if the timeline for identified projects needs to be amended (such as changing a long-term project to a short-term one because of new funding)
- Recommendations for new projects
- Changes in or potential for new funding options (grant opportunities)
- Impact of any other planning programs or initiatives that involve hazard mitigation.

The planning team has created a template to guide the planning partners in preparing a progress report (see Appendix H). The plan maintenance steering committee will provide feedback to the planning team on items included in the template. It is the intent of the planning team to prepare an annual report on the progress of the plan. This report should be used as follows:

- Posted on the EMCR website page dedicated to the hazard mitigation plan
- Presented to planning partner governing bodies to inform them of the progress of actions implemented during the reporting period
- For planning partners that participate in the Community Rating System, the report can be provided as part of the CRS annual re-certification package. The CRS requires an annual recertification to be submitted by October 1 of every calendar year for which the community has not received a formal audit. To meet this recertification timeline, the planning team will strive to complete progress reports between June and September each year.

Uses of the progress report will be at the discretion of each planning partner. Annual progress reporting is not a requirement specified under 44 CFR. However, it may enhance the planning partnership's opportunities for funding. While failure to implement this component of the plan maintenance strategy will not jeopardize a planning partner's compliance under the DMA, it may jeopardize its opportunity to partner and leverage funding opportunities with the other partners. Each planning partner was informed of these protocols at the beginning of this planning process, and each partner acknowledged these expectations with submittal of a letter of intent to participate in this process.

27.6 PLAN UPDATE

Local hazard mitigation plans must be reviewed, revised if appropriate, and resubmitted for approval in order to remain eligible for benefits under the DMA (44 CFR, Section 201.6.d.3). The Ada County partnership intends to update the hazard mitigation plan on a 5-year cycle from the date of initial plan adoption. This cycle may be accelerated to less than 5 years based on the following triggers:

- A Presidential Disaster Declaration that impacts the planning area
- A hazard event that causes loss of life
- An update of the County or participating city's comprehensive plan

It will not be the intent of future updates to develop a complete new hazard mitigation plan for the planning area. The update will, at a minimum, include the following elements:

- The update process will be convened through a steering committee.
- The hazard risk assessment will be reviewed and, if necessary, updated using best available information and technologies.
- The action plans will be reviewed and revised to account for any actions completed, dropped, or changed and to account for changes in the risk assessment or new partnership policies identified under other planning mechanisms (such as the comprehensive plan).
- The draft update will be sent to appropriate agencies and organizations for comment.
- The public will be given an opportunity to comment on the update prior to adoption.
- The partnership governing bodies will adopt their respective portions of the updated plan.

27.7 CONTINUING PUBLIC INVOLVEMENT

The public will continue to be apprised of the plan’s progress through the EMCR website, including providing copies of annual progress reports on the website. Each planning partner has agreed to provide links to the County hazard mitigation plan website on their individual jurisdictional websites to increase avenues of public access to the plan. EMCR has agreed to maintain the hazard mitigation plan website. This site will not only house the final plan, it will become the one-stop shop for information regarding the plan, the partnership and plan implementation. Upon initiation of future update processes, a new public involvement strategy will be initiated based on guidance from a new steering committee. This strategy will be based on the needs and capabilities of the planning partnership at the time of the update. At a minimum, this strategy will include the use of local media outlets within the planning area.

27.8 INCORPORATION INTO OTHER PLANNING MECHANISMS

The information on hazard, risk, vulnerability and mitigation contained in this plan is based on the best science and technology available at the time this update was prepared. The Ada County Comprehensive Plan and the comprehensive plans of the partner cities are considered to be integral parts of this plan. The County and partner cities, through adoption of comprehensive plans and zoning ordinances, have planned for the impact of natural hazards. The Plan update process provided the County and the cities with the opportunity to review and expand on policies contained within these planning mechanisms. The planning partners used their comprehensive plans and the hazard mitigation plan as complementary documents that work together to achieve the goal of reducing risk exposure to the citizens of the Ada County. An update to a comprehensive plan may trigger an update to the hazard mitigation plan.

All municipal planning partners support the creation of a linkage between the hazard mitigation plan and their individual comprehensive plans by identifying a mitigation action as such and giving that action a high priority. Other planning processes and programs to be coordinated with the recommendations of the hazard mitigation plan may include the following:

- Partners’ emergency response plans
- Capital improvement programs
- Municipal codes
- Community design guidelines
- Water-efficient landscape design guidelines
- Stormwater management programs
- Water system vulnerability assessments
- Master fire protection plans.

Some action items do not need to be implemented through regulation. Instead, they can be implemented through the creation of new educational programs, continued interagency coordination, or improved public participation. As information becomes available from other planning mechanisms that can enhance this plan, that information will be incorporated via the update process.

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2022 Ada County Multi-Hazard Mitigation Plan

Appendix A. Community Survey Results

Respondents: 3537 displayed, 3537 total

Status: Open

Launched Date: 10/28/2021

Closed Date: 04/30/2022

1. Where do you live?

	Response Total	Response Percent	Points	Avg
Boise	582	48%	n/a	n/a
Meridian	280	23%	n/a	n/a
Garden City	23	2%	n/a	n/a
Eagle	105	9%	n/a	n/a
Star	65	5%	n/a	n/a
Kuna	64	5%	n/a	n/a
Hidden Springs Dry	8	1%	n/a	n/a
Creek Ranch	0	0%	n/a	n/a
Avimor	10	1%	n/a	n/a
Cartwright Ranch	3	0%	n/a	n/a
Unincorporated Ada	36	3%	n/a	n/a
County Outside Ada County	20	2%	n/a	n/a
Other, please specify view	14	1%	n/a	n/a
Total Respondents		1210	100%	
		(skipped this question)	2327	

2. Do you work in Ada County?

	Response Total	Response Percent	Points	Avg
Yes	724	60%	n/a	n/a
No	412	34%	n/a	n/a
Telecommute	63	5%	n/a	n/a
Total Respondents		1199	100%	
		(skipped this question)	2338	

3. Which of the following hazard events have you or anyone in your household experienced in the past within Ada County? (Check all that apply)

	Response Total	Response Percent	Points	Avg
Drought	465	40%	n/a	n/a
Earthquake	602	52%	n/a	n/a
Flood	126	11%	n/a	n/a
Hazardous Materials	65	6%	n/a	n/a
Household Fire	34	3%	n/a	n/a
Landslide	11	1%	n/a	n/a
Severe Weather (wind, lightning, winter storm, etc.)	694	60%	n/a	n/a
Wildfire	191	17%	n/a	n/a
Cyber Disruption	108	9%	n/a	n/a
Radiological Event	7	1%	n/a	n/a
Utility Failure	499	43%	n/a	n/a
Civil Disturbance	93	8%	n/a	n/a
Pandemic	840	73%	n/a	n/a
None	100	9%	n/a	n/a
Other, please specify view	49	4%	n/a	n/a
Total Respondents		1157		

4. How concerned are you about the following hazards in Ada County? (Check one response for each hazard)

	Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned	Response Total	Points	Avg
Air Quality	10.2% (106)	20.98% (218)	25.99% (270)	23.39% (243)	19.44% (202)	1039	n/a	n/a
Climate Change	31.32% (327)	14.56% (152)	15.52% (162)	15.33% (160)	23.28% (243)	1044	n/a	n/a
Civil Disturbance	24.83% (256)	29.29% (302)	27.16% (280)	13.58% (140)	5.14% (53)	1031	n/a	n/a
Dam/Levee Failure	45.9% (476)	27.58% (286)	18.32% (190)	5.69% (59)	2.51% (26)	1037	n/a	n/a
Disease/Epidemic	20.59% (215)	25.1% (262)	23.08% (241)	18.1% (189)	13.12% (137)	1044	n/a	n/a
Drought	8.14% (86)	19.51% (206)	26.14% (276)	27.18% (287)	19.03% (201)	1056	n/a	n/a
Earthquake	34.25% (360)	38.44% (404)	20.17% (212)	5.14% (54)	2% (21)	1051	n/a	n/a
Flood	46.2% (480)	30.8% (320)	16.55% (172)	4.81% (50)	1.64% (17)	1039	n/a	n/a
Hazardous Materials	42.44% (441)	31.67% (329)	17.32% (180)	5.77% (60)	2.79% (29)	1039	n/a	n/a
Household Fire	31.16% (325)	37.97% (396)	20.23% (211)	6.62% (69)	4.03% (42)	1043	n/a	n/a
Landslide	72.65% (757)	17.75% (185)	6.72% (70)	2.11% (22)	0.77% (8)	1042	n/a	n/a
Severe Weather	21.13% (221)	35.37% (370)	26.96% (282)	12.43% (130)	4.11% (43)	1046	n/a	n/a
Wildfire	20.83% (217)	26.3% (274)	22.84% (238)	16.89% (176)	13.15% (137)	1042	n/a	n/a
Volcano (Ash fall)	67.98% (705)	18.9% (196)	9.45% (98)	2.51% (26)	1.16% (12)	1037	n/a	n/a
Radiological Event	58.28% (602)	24.01% (248)	10.75% (111)	4.07% (42)	2.9% (30)	1033	n/a	n/a
Utility Failure	16.18% (168)	35.65% (370)	27.65% (287)	14.16% (147)	6.36% (66)	1038	n/a	n/a
Cyber Disruption	19.02% (198)	28.53% (297)	27.28% (284)	16.81% (175)	8.36% (87)	1041	n/a	n/a
Other	69.88% (297)	9.88% (42)	12.47% (53)	4.24% (18)	3.53% (15)	425	n/a	n/a

Total Respondents 1078

(skipped this question) 2459

5. Which of the following steps has your household taken to prepare for a hazard event?(Check all that apply)

	Response Total	Response Percent	Points	Avg
Received first aid/CPR training	663	63%	n/a	n/a
Made a fire escape plan	476	45%	n/a	n/a
Created a household preparedness plan (designated a meeting place, etc.)	333	32%	n/a	n/a
Identified utility shutoffs	678	64%	n/a	n/a
Stored sand bags	39	4%	n/a	n/a
Prepared a disaster supply kit	338	32%	n/a	n/a
Installed smoke detectors on each level of the house	954	90%	n/a	n/a
Stored food and water	587	56%	n/a	n/a
Stored flashlights and batteries	811	77%	n/a	n/a
Purchased and learned how to program a NOAA Weather Radio	141	13%	n/a	n/a
Stored a battery-powered radio	358	34%	n/a	n/a
Stored a fire extinguisher	789	75%	n/a	n/a

Stored medical supplies (first aid kit, medications)		787	74%	n/a	n/a
Purchased natural hazard insurance (Flood, Earthquake, Wildfire)		138	13%	n/a	n/a
Established a "defensible space" around your home		280	26%	n/a	n/a
Use of fire resistive landscapes		174	16%	n/a	n/a
Have anchored service utilities to my home (water heater, furnace, wood stove, etc.)		277	26%	n/a	n/a
Signed up for Code Red		322	30%	n/a	n/a
Planned for loss of cell service		174	16%	n/a	n/a
None		25	2%	n/a	n/a
Other, please specify view		35	3%	n/a	n/a

Total Respondents 1057
(skipped this question) 2480

6. Which of the following methods do you think are most effective for providing hazard and disaster information? (Check all that apply)

		Response Total	Response Percent	Points	Avg
Newspaper		225	22%	n/a	n/a
Informational Brochures		235	23%	n/a	n/a
City Newsletters		231	22%	n/a	n/a
Public Meetings		211	21%	n/a	n/a
Workshops		160	16%	n/a	n/a
Schools		259	25%	n/a	n/a
TV News		624	61%	n/a	n/a
TV Ads		294	29%	n/a	n/a
Radio News		577	56%	n/a	n/a
Radio Ads		304	30%	n/a	n/a
Internet		778	76%	n/a	n/a
Outdoor Advertisements		188	18%	n/a	n/a
Fire Department/Rescue		369	36%	n/a	n/a
Law Enforcement		366	36%	n/a	n/a
Church (faith-based institutions)		223	22%	n/a	n/a
CERT Classes		122	12%	n/a	n/a
Public Awareness Campaign (e.g., Flood Awareness Week, Winter Storm Preparedness Month)		481	47%	n/a	n/a
Books		59	6%	n/a	n/a
Chamber of Commerce		68	7%	n/a	n/a
Academic Institutions		119	12%	n/a	n/a
Public Library		241	23%	n/a	n/a

Red Cross Information		254	25%	n/a	n/a
Community Safety Events		307	30%	n/a	n/a
Fair Booths		183	18%	n/a	n/a
Word of Mouth		266	26%	n/a	n/a
Social Media (Twitter, Facebook, LinkedIn, NextDoor)		632	61%	n/a	n/a
Auto-dial information from "9-1-1" center		252	24%	n/a	n/a
YouTube/Streaming Service		186	18%	n/a	n/a
Employer		251	24%	n/a	n/a
Smart Phone		597	58%	n/a	n/a
Other, please specify	<input type="button" value="view"/>	35	3%	n/a	n/a

Total Respondents 1029

(skipped this question) 2508

7. Is your property located in or near an identified floodplain?

		Response Total	Response Percent	Points	Avg
Yes		140	14%	n/a	n/a
No		734	73%	n/a	n/a
Not Sure		138	14%	n/a	n/a

Total Respondents 1012 100%

(skipped this question) 2525

8. Do you have flood insurance?

		Response Total	Response Percent	Points	Avg
Yes		78	8%	n/a	n/a
No		846	84%	n/a	n/a
Not Sure		79	8%	n/a	n/a

Total Respondents 1003 100%

(skipped this question) 2534

9. Is your property located near an earthquake fault?

		Response Total	Response Percent	Points	Avg
Yes		65	6%	n/a	n/a
No		502	50%	n/a	n/a
Not Sure		440	44%	n/a	n/a

Total Respondents 1007 100%

(skipped this question) 2530

10. Do you have earthquake insurance?

		Response Total	Response Percent	Points	Avg
Yes		49	5%	n/a	n/a
No		829	82%	n/a	n/a
Not Sure		130	13%	n/a	n/a

Total Respondents 1008 100%

(skipped this question) 2529

11. Is your property located in an area at risk for wildfires?

		Response Total	Response Percent	Points	Avg
Yes		189	19%	n/a	n/a
No		667	67%	n/a	n/a

Not Sure **144** **14%** **n/a** **n/a**

Total Respondents 1000 100%

(skipped this question) 2537

Section 6, Item B.

12. Have you ever had problems getting homeowner's or renter's insurance due to risks from natural hazards?

	Response Total	Response Percent	Points	Avg
Yes	5	0%	n/a	n/a
No	943	94%	n/a	n/a
Not Sure	43	4%	n/a	n/a

If "Yes," which natural hazard was involved?

14 **1%** **n/a** **n/a**

[view](#)

Total Respondents 1004 100%

(skipped this question) 2533

13. Do you have any special access or functional needs within your household that would require early warning or specialized response during disasters?

	Response Total	Response Percent	Points	Avg
Yes	100	10%	n/a	n/a
No	893	90%	n/a	n/a

Total Respondents 993

(skipped this question) 2544

14. If residence is in a hazard risk zone (e.g., dam failure zone, flood zone, landslide hazard area, high fire risk area) was this disclosed to you by a real estate agent, seller, or landlord before you purchased or moved into your home?

	Response Total	Response Percent	Points	Avg
Yes	90	9%	n/a	n/a
No	196	20%	n/a	n/a
Not Sure	132	14%	n/a	n/a
Not Applicable	551	57%	n/a	n/a

Total Respondents 969 100%

(skipped this question) 2568

15. If you own your home, which of the following incentives would encourage you to spend money to retrofit your home to protect against disasters? (Check all that apply)

	Response Total	Response Percent	Points	Avg
Insurance premium discount	556	57%	n/a	n/a
Mortgage discount	282	29%	n/a	n/a
Low interest rate loan	212	22%	n/a	n/a
Grant funding	378	39%	n/a	n/a
"Rebate" program	516	53%	n/a	n/a
None	73	7%	n/a	n/a
Not Applicable	141	14%	n/a	n/a
Other, please specify	25	3%	n/a	n/a

[view](#)

Total Respondents 975

(skipped this question) 2562

16. If you own a home, how much money would you be willing to spend to retrofit your home to reduce risks associated with disasters? (for example, by elevating a home above the flood level, performing seismic upgrades, or replacing a combustible roof with non-combustible roofing)

	Response Total	Response Percent	Points	Avg
\$10,000 or above	81	8%	n/a	n/a
\$5,000 to \$9,999	148	15%	n/a	n/a
\$1,000 to \$4,999	183	19%	n/a	n/a
Less than \$1,000	67	7%	n/a	n/a

Nothing		46	5%	n/a	n/a
Not Sure		229	24%	n/a	n/a
Not Applicable		211	22%	n/a	n/a
Total Respondents		965	100%		
		(skipped this question)		2572	

17. How supportive are you of the restriction on land use within known high-hazard areas?

		Response Total	Response Percent	Points	Avg
Very supportive		533	55%	n/a	n/a
Not very supportive		70	7%	n/a	n/a
Somewhat supportive		218	22%	n/a	n/a
Adamantly oppose		40	4%	n/a	n/a
noncommittal		109	11%	n/a	n/a
Total Respondents		970	100%		
		(skipped this question)		2567	

18. What types of projects do you believe the Local, State or Federal agencies should be doing in order to reduce damage and disruption from hazard events within Ada County? Please rank each option as a high, medium or low priority.

	High	Medium	Low	Response Total	Points	Avg
Retrofit and strengthen essential facilities such as police, fire, schools and hospitals.	58.73% (545)	34.16% (317)	7.11% (66)	928	n/a	n/a
Retrofit infrastructure such as roads, bridges, drainage facilities, levees, water supply, waste water and power supply facilities.	81.31% (757)	16% (149)	2.69% (25)	931	n/a	n/a
Fund capital projects such as dams, levees, flood walls, drainage improvements and bank stabilization projects.	50.49% (468)	38.4% (356)	11.11% (103)	927	n/a	n/a
Strengthen codes and regulations to include higher regulatory standards in hazard areas.	43.07% (398)	39.61% (366)	17.32% (160)	924	n/a	n/a
Acquire at-risk properties and maintain as open space.	33.87% (313)	35.93% (332)	30.19% (279)	924	n/a	n/a
Assist at-risk property owners with securing funding for mitigation.	23.68% (216)	44.85% (409)	31.47% (287)	912	n/a	n/a
Provide better public information about risk, and the exposure to hazards within the operational area.	52% (481)	38.92% (360)	9.08% (84)	925	n/a	n/a
Implement projects that restore the natural environments capacity to absorb the impacts from natural hazards.	57.24% (530)	32.72% (303)	10.04% (93)	926	n/a	n/a
Implement projects that mitigate the potential impacts from climate change.	45.37% (421)	24.57% (228)	30.06% (279)	928	n/a	n/a
Total Respondents				939		
		(skipped this question)		2598		

19. Please indicate how you feel about the following statement: It is the responsibility of government (local, state and federal) to provide education and programs that promote citizen actions that will reduce exposure to the risks associated with hazards.

		Response Total	Response Percent	Points	Avg
Strongly Disagree		64	7%	n/a	n/a
Somewhat Disagree		81	9%	n/a	n/a

Neither Agree nor Disagree		112	12%	n/a	n/a
Somewhat Agree		402	43%	n/a	n/a
Strongly Agree		280	30%	n/a	n/a
Total Respondents		939	100%		
		(skipped this question)		2598	

20. Please indicate how you feel about the following statement: It is my responsibility to educate myself and take actions that will reduce my exposure to the risks associated with natural hazards.

		Response Total	Response Percent	Points	Avg
Strongly Disagree		37	4%	n/a	n/a
Somewhat Disagree		18	2%	n/a	n/a
Neither Agree nor Disagree		27	3%	n/a	n/a
Somewhat Agree		312	33%	n/a	n/a
Strongly Agree		547	58%	n/a	n/a
Total Respondents		941	100%		
		(skipped this question)		2596	

21. Please indicate how you feel about the following statement: Information about the risks associated with hazards is readily available and easy to locate.

		Response Total	Response Percent	Points	Avg
Strongly Disagree		81	9%	n/a	n/a
Somewhat Disagree		228	24%	n/a	n/a
Neither Agree nor Disagree		278	30%	n/a	n/a
Somewhat Agree		266	28%	n/a	n/a
Strongly Agree		87	9%	n/a	n/a
Total Respondents		940	100%		
		(skipped this question)		2597	

22. Please indicate your age range:

		Response Total	Response Percent	Points	Avg
Under 18		0	0%	n/a	n/a
18 to 30		56	6%	n/a	n/a
31 to 40		103	11%	n/a	n/a
41 to 50		148	16%	n/a	n/a
51 to 60		200	21%	n/a	n/a
61 or older		429	46%	n/a	n/a
Total Respondents		936	100%		
		(skipped this question)		2601	

23. How many people currently live in your household?

		Response Total	Response Percent	Points	Avg
1		149	16%	n/a	n/a
2		452	48%	n/a	n/a
3		150	16%	n/a	n/a
4		117	12%	n/a	n/a
5		43	5%	n/a	n/a
6		21	2%	n/a	n/a
7 or more		5	1%	n/a	n/a
Total Respondents		937	100%		
		(skipped this question)		2600	

24. Please indicate the primary language spoken in your household.

		Response Total	Response Percent	Points	Avg
English		925	99%	n/a	n/a

Spanish	0	0%	n/a	n/a
Other Indo-European Languages	2	0%	n/a	n/a
Asian and Pacific Island Languages	1	0%	n/a	n/a
Other, please specify view	6	1%	n/a	n/a
Total Respondents		934	100%	
		(skipped this question)	2603	

25. Please indicate your gender:

	Response Total	Response Percent	Points	Avg
Male	360	39%	n/a	n/a
Female	555	60%	n/a	n/a
Non-binary	8	1%	n/a	n/a
Total Respondents		923	100%	
		(skipped this question)	2614	

26. Please indicate your highest level of education.

	Response Total	Response Percent	Points	Avg
Grade school/No schooling	2	0%	n/a	n/a
Some high school	3	0%	n/a	n/a
High school graduate/GED	42	5%	n/a	n/a
Some college/Trade school	223	24%	n/a	n/a
College degree	426	46%	n/a	n/a
Graduate degree	229	25%	n/a	n/a
Other, please specify view	6	1%	n/a	n/a
Total Respondents		931	100%	
		(skipped this question)	2606	

27. How long have you lived in Ada County?

	Response Total	Response Percent	Points	Avg
Less than 1 year	20	2%	n/a	n/a
1 to 5 years	167	18%	n/a	n/a
6 to 10 years	122	13%	n/a	n/a
11 to 20 years	154	16%	n/a	n/a
More than 20 years	460	49%	n/a	n/a
I do not live in Ada County	14	1%	n/a	n/a
Total Respondents		937	100%	
		(skipped this question)	2600	

28. How much is your gross household income?

	Response Total	Response Percent	Points	Avg
\$20,000 or less	22	2%	n/a	n/a
\$20,001 to \$49,999	100	11%	n/a	n/a
\$50,000 to \$74,999	183	20%	n/a	n/a
\$75,000 to \$99,999	171	19%	n/a	n/a
\$100,000 or more	352	38%	n/a	n/a

Not Sure		87	10%	n/a	n/a
Total Respondents		915	100%		
		(skipped this question)	2622		
29. Comments					
Total Respondents			173		
		(skipped this question)	3364		

Section 6, Item B.

2022 Ada County Multi-Hazard Mitigation Plan

Appendix B. Summary of Federal and State Agencies, Programs and Regulations

B. SUMMARY OF FEDERAL AND STATE AGENCIES, PROGRAMS AND REGULATIONS

Existing laws, ordinances, plans and programs at the federal and state level can support or impact hazard mitigation actions identified in this plan. Hazard mitigation plans are required to include a review and incorporation, if appropriate, of existing plans, studies, reports, and technical information as part of the planning process (44 CFR, Section 201.6(b)(3)). The following federal and state programs have been identified as programs that may interface with the actions identified in this plan. Each program enhances capabilities to implement mitigation actions or has a nexus with a mitigation action in this plan. Information presented in this section can be used to review local capabilities to implement the actions found in the jurisdictional annexes of Volume 2. Each planning partner has individually reviewed existing local plans, studies, reports, and technical information in its jurisdictional annex, presented in Volume 2.

FEDERAL

Americans with Disabilities Act

The Americans with Disabilities Act (ADA) seeks to prevent discrimination against people with disabilities in employment, transportation, public accommodation, communications, and government activities. Title II of the ADA deals with compliance with the Act in emergency management and disaster-related programs, services, and activities. It applies to state and local governments as well as third parties, including religious entities and private nonprofit organizations.

The ADA has implications for sheltering requirements and public notifications. During an emergency alert, officials must use a combination of warning methods to ensure that all community members have all necessary information. Those with hearing impairments may not hear radio, television, sirens, or other audible alerts, while those with visual impairments may not see flashing lights or other visual alerts. Two technical documents for shelter operators address physical accessibility needs of people with disabilities, as well as medical needs and service animals.

The ADA intersects with disaster preparedness programs in regards to transportation, social services, temporary housing, and rebuilding. Persons with disabilities may require additional assistance in evacuation and transit (e.g., vehicles with wheelchair lifts or paratransit buses). Evacuation and other response plans should address the unique needs of community members. Local governments may be interested in implementing a special-needs registry to identify the home addresses, contact information, and needs for community members who may require more assistance.

FEMA hazard mitigation project grant applications require full compliance with applicable federal acts. Any action identified in this plan that falls within the scope of this act will need to meet its requirements.

Bureau of Land Management

The U.S. Bureau of Land Management (BLM) funds and coordinates wildfire management programs and structural fire management and prevention on BLM lands. BLM works closely with the Forest Service and state and local governments to coordinate fire safety activities. The Interagency Fire Coordination Center in Boise, Idaho serves as the center for this effort.

Civil Rights Act

The Civil Rights Act of 1964 prohibits discrimination based on race, color, religion, sex or nation origin and requires equal access to public places and employment. The Act is relevant to emergency management and hazard mitigation in that it prohibits local governments from favoring the needs of one population group over another. Local government and emergency response must ensure the continued safety and well-being of all community members equally, to the extent possible. FEMA hazard mitigation project grant applications require full compliance with applicable federal acts. Any action identified in this plan that falls within the scope of this act will need to meet its requirements.

Clean Water Act

The federal Clean Water Act (CWA) employs regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's surface waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water."

Evolution of CWA programs over the last decade has included a shift from a program-by-program, source-by-source, and pollutant-by-pollutant approach to more holistic watershed-based strategies. Under the watershed approach, equal emphasis is placed on protecting healthy waters and restoring impaired ones. Numerous issues are addressed, not just those subject to CWA regulatory authority. Involvement of stakeholder groups in the development and implementation of strategies for achieving and maintaining water quality and other environmental goals is a hallmark of this approach.

The CWA is important to hazard mitigation in several ways. There are often permitting requirements for any construction within 200 feet of water of the United States, which may have implications for mitigation projects identified by a local jurisdiction. Additionally, CWA requirements apply to wetlands, which serve important functions related to preserving and protecting the natural and beneficial functions of floodplains and are linked with a community's floodplain management program. Finally, the National Pollutant Discharge Elimination System is part of the CWA and addresses local stormwater management programs. Stormwater management plays a critical role in hazard mitigation by addressing urban drainage or localized flooding issues within jurisdictions.

FEMA hazard mitigation project grant applications require full compliance with applicable federal acts. Any action identified in this plan that falls within the scope of this act will need to meet its requirements.

Community Development Block Grant Disaster Resilience Program

In response to disasters, Congress may appropriate additional funding for the U.S. Department of Housing and Urban Development Community Development Block Grant programs to be distributed as Disaster Recovery grants (CDBG-DR). These grants can be used to rebuild affected areas and provide seed money to start the recovery process. CDBG-DR assistance may fund a broad range of recovery activities, helping communities and neighborhoods that otherwise might not recover due to limited resources. CDBG-DR grants often supplement disaster programs of FEMA, the Small Business Administration, and the U.S. Army Corps of Engineers. Housing and Urban Development generally awards noncompetitive, nonrecurring CDBG-DR grants by a formula that considers disaster recovery needs unmet by other federal disaster assistance programs. To be eligible for CDBG-DR funds, projects must meet the following criteria:

- Address a disaster-related impact (direct or indirect) in a presidentially declared county for the covered disaster
- Be a CDBG-eligible activity (according to regulations and waivers)
- Meet a national objective.

Incorporating preparedness and mitigation into these actions is encouraged, as the goal is to rebuild in ways that are safer and stronger. CDBG-DR funding is a potential alternative source of funding for actions identified in this plan.

Community Rating System

The CRS is a voluntary program within the NFIP that encourages floodplain management activities that exceed the minimum NFIP requirements. Flood insurance premiums are discounted to reflect the reduced flood risk resulting from community actions meeting the following three goals of the CRS:

- Reduce flood losses.
- Facilitate accurate insurance rating.
- Promote awareness of flood insurance.

For participating communities, flood insurance premium rates are discounted in increments of 5 percent. For example, a Class 1 community would receive a 45 percent premium discount, and a Class 9 community would receive a 5 percent discount. (Class 10 communities are those that do not participate in the CRS; they receive no discount.) The discount partially depends on location of the property. Properties outside the special flood hazard area receive smaller discounts: a 10-percent discount if the community is at Class 1 to 6 and a 5-percent discount if the community is at Class 7 to 9. The CRS classes for local communities are based on 18 creditable activities in the following categories:

- Public information
- Mapping and regulations
- Flood damage reduction
- Flood preparedness.

CRS activities can help to save lives and reduce property damage. Communities participating in the CRS represent a significant portion of the nation's flood risk; over 66 percent of the NFIP's policy base is located in

these communities. Communities receiving premium discounts through the CRS range from small to large and represent a broad mixture of flood risks, including both coastal and riverine flood risks.

Disaster Mitigation Act

The DMA is the current federal legislation addressing hazard mitigation planning. It emphasizes planning for disasters before they occur. It specifically addresses planning at the local level, requiring plans to be in place before Hazard Mitigation Assistance grant funds are available to communities. This plan is designed to meet the requirements of DMA, improving eligibility for future hazard mitigation funds.

Emergency Relief for Federally Owned Roads Program

The U.S. Forest Service's Emergency Relief for Federally Owned Roads Program was established to assist federal agencies with repair or reconstruction of tribal transportation facilities, federal lands transportation facilities, and other federally owned roads that are open to public travel and have suffered serious damage by a natural disaster over a wide area or by a catastrophic failure. The program funds both emergency and permanent repairs. Eligible activities under this program meet some of the goals and objectives for this plan and the program is a possible funding source for actions identified in this plan.

Emergency Watershed Program

The USDA Natural Resources Conservation Service (NRCS) administers the Emergency Watershed Protection (EWP) Program, which responds to emergencies created by natural disasters. Eligibility for assistance is not dependent on a national emergency declaration. The program is designed to help people and conserve natural resources by relieving imminent hazards to life and property caused by floods, fires, windstorms, and other natural occurrences. EWP is an emergency recovery program. Financial and technical assistance are available for the following activities (Natural Resources Conservation Service, 2018):

- Remove debris from stream channels, road culverts, and bridges
- Reshape and protect eroded banks
- Correct damaged drainage facilities
- Establish cover on critically eroding lands
- Repair levees and structures
- Repair conservation practices.

This federal program could be a possible funding source for actions identified in this plan.

Endangered Species Act

The federal Endangered Species Act (ESA) was enacted in 1973 to conserve species facing depletion or extinction and the ecosystems that support them. The act sets forth a process for determining which species are threatened and endangered and requires the conservation of the critical habitat in which those species live. The ESA provides broad protection for species of fish, wildlife and plants that are listed as threatened or endangered. Provisions are made for listing species, as well as for recovery plans and the designation of critical habitat for listed species. The ESA outlines procedures for federal agencies to follow when taking actions that may jeopardize listed species and

contains exceptions and exemptions. It is the enabling legislation for the Convention on International Trade in Endangered Species of Wild Fauna and Flora. Criminal and civil penalties are provided for violations of the ESA and the Convention.

Federal agencies must seek to conserve endangered and threatened species and use their authorities in furtherance of the ESA's purposes. The ESA defines three fundamental terms:

- Endangered means that a species of fish, animal or plant is “in danger of extinction throughout all or a significant portion of its range.” (For salmon and other vertebrate species, this may include subspecies and distinct population segments.)
- Threatened means that a species “is likely to become endangered within the foreseeable future.” Regulations may be less restrictive for threatened species than for endangered species.
- Critical habitat means “specific geographical areas that are...essential for the conservation and management of a listed species, whether occupied by the species or not.”

Five sections of the ESA are of critical importance to understanding it:

- Section 4: Listing of a Species—The National Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries) is responsible for listing marine species; the U.S. Fish and Wildlife Service is responsible for listing terrestrial and freshwater aquatic species. The agencies may initiate reviews for listings, or community members may petition for them. A listing must be made “solely on the basis of the best scientific and commercial data available.” After a listing has been proposed, agencies receive comment and conduct further scientific reviews for 12 to 18 months, after which they must decide if the listing is warranted. Economic impacts cannot be considered in this decision, but it may include an evaluation of the adequacy of local and state protections. Critical habitat for the species may be designated at the time of listing.
- Section 7: Consultation—Federal agencies must ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed or proposed species or adversely modify its critical habitat. This includes private and public actions that require a federal permit. Once a final listing is made, non-federal actions are subject to the same review, termed a “consultation.” If the listing agency finds that an action will “take” a species, it must propose mitigations or “reasonable and prudent” alternatives to the action; if the proponent rejects these, the action cannot proceed.
- Section 9: Prohibition of Take—It is unlawful to “take” an endangered species, including killing or injuring it or modifying its habitat in a way that interferes with essential behavioral patterns, including breeding, feeding or sheltering.
- Section 10: Permitted Take—Through voluntary agreements with the federal government that provide protections to an endangered species, a non-federal applicant may commit a take that would otherwise be prohibited as long as it is incidental to an otherwise lawful activity (such as developing land or building a road). These agreements often take the form of a “Habitat Conservation Plan.”
- Section 11: Citizen Lawsuits—Civil actions initiated by any citizen can require the listing agency to enforce the ESA's prohibition of taking or to meet the requirements of the consultation process.

FEMA hazard mitigation project grant applications require full compliance with applicable federal acts. Any action identified in this plan that falls within the scope of this act will need to meet its requirements.

Federal Energy Regulatory Commission Dam Safety Program

The Federal Energy Regulatory Commission (FERC) cooperates with a large number of federal and state agencies to ensure and promote dam safety. More than 3,000 dams are part of regulated hydroelectric projects in the FERC program. Two-thirds of these are more than 50 years old. As dams age, concern about their safety and integrity grows, so oversight and regular inspection are important. FERC inspects hydroelectric projects on an unscheduled basis to investigate the following:

- Potential dam safety problems
- Complaints about constructing and operating a project
- Safety concerns related to natural disasters
- Issues concerning compliance with the terms and conditions of a license.

Every five years, an independent engineer approved by the FERC must inspect and evaluate projects with dams higher than 32.8 feet (10 meters), or with a total storage capacity of more than 2,000 acre-feet.

FERC monitors seismic research and applies it in performing structural analyses of hydroelectric projects. FERC also evaluates the effects of potential and actual large floods on the safety of dams. During and following floods, FERC visits dams and licensed projects, determines the extent of damage, if any, and directs any necessary studies or remedial measures the licensee must undertake. The FERC publication *Engineering Guidelines for the Evaluation of Hydropower Projects* guides the FERC engineering staff and licensees in evaluating dam safety. The publication is frequently revised to reflect current information and methodologies.

FERC requires licensees to prepare emergency action plans and conducts training sessions on how to develop and test these plans. The plans outline an early warning system if there is an actual or potential sudden release of water from a dam due to failure. The plans include operational procedures that may be used, such as reducing reservoir levels and reducing downstream flows, as well as procedures for notifying affected community members and agencies responsible for emergency management. These plans are frequently updated and tested to ensure that everyone knows what to do in emergency situations.

Federal Wildfire Management Policy and Healthy Forests Restoration Act

Federal Wildfire Management Policy and Healthy Forests Restoration Act (2003). These documents call for a single comprehensive federal fire policy for the Interior and Agriculture Departments (the agencies using federal fire management resources). They mandate community-based collaboration to reduce risks from wildfire.

National Dam Safety Act

Potential for catastrophic flooding due to dam failures led to passage of the National Dam Inspection Act in 1972, creation of the National Dam Safety Program in 1996, and reauthorization of the program through the Dam Safety Act in 2006. National Dam Safety Program, administered by FEMA requires a periodic engineering analysis of the majority of dams in the country; exceptions include the following:

- Dams under jurisdiction of the Bureau of Reclamation, Tennessee Valley Authority, or International Boundary and Water Commission
- Dams constructed pursuant to licenses issued under the Federal Power Act

- Dams that the Secretary of the Army determines do not pose any threat to human life or property.

The goal of this FEMA-monitored effort is to identify and mitigate the risk of dam failure so as to protect lives and property of the public. The National Dam Safety Program is a partnership among the states, federal agencies, and other stakeholders that encourages individual and community responsibility for dam safety. Under FEMA's leadership, state assistance funds have allowed all participating states to improve their programs through increased inspections, emergency action planning, and purchases of needed equipment. FEMA has also expanded existing and initiated new training programs. Grant assistance from FEMA provides support for improvement of dam safety programs that regulate most of the dams in the United States.

National Environmental Policy Act

The National Environmental Policy Act requires federal agencies to consider the environmental impacts of proposed actions and reasonable alternatives to those actions, alongside technical and economic considerations. The National Environmental Policy Act established the Council on Environmental Quality, whose regulations (40 CFR Parts 1500-1508) set standards for compliance. Consideration and decision-making regarding environmental impacts must be documented in an environmental impact statement or environmental assessment. Environmental impact assessment requires the evaluation of reasonable alternatives to a proposed action, solicitation of input from organizations and individuals that could be affected, and an unbiased presentation of direct, indirect, and cumulative environmental impacts. FEMA hazard mitigation project grant applications require full compliance with applicable federal acts. Any action identified in this plan that falls within the scope of this act will need to meet its requirements.

National Fire Plan

The 2001 National Fire Plan was developed based on the National Fire Policy. A major aspect of the National Fire Plan is joint risk reduction planning and implementation carried out by federal, state and local agencies and communities. The National Fire Plan presented a comprehensive strategy in five key initiatives:

- Firefighting—Be adequately prepared to fight fires each fire season.
- Rehabilitation and Restoration—Restore landscapes and rebuild communities damaged by wildfires.
- Hazardous Fuel Reduction—Invest in projects to reduce fire risk.
- Community Assistance—Work directly with communities to ensure adequate protection.
- Accountability—Be accountable and establish adequate oversight, coordination, program development, and monitoring for performance.

National Flood Insurance Program

The National Flood Insurance Program (NFIP) makes federally backed flood insurance available to homeowners, renters, and business owners in participating communities that enact floodplain regulations. Participation and good standing under NFIP are prerequisites to grant funding eligibility under the Robert T. Stafford Act.

Flood Study and Mapping

For most participating communities, FEMA has prepared a detailed Flood Insurance Study. The study presents water surface elevations for floods of various magnitudes, including the 1-percent-annual-chance flood and the 0.2-percent-annual-chance flood.

Base flood elevations and the boundaries of the flood hazard areas are shown on Flood Insurance Rate Maps, which are the principle tool for identifying the extent and location of the flood hazard. Flood Insurance Rate Maps are the most detailed and consistent data source available, and for many communities they represent the minimum area of oversight under the local floodplain management program. Structures permitted or built in a jurisdiction before its first flood map was approved are called “pre-FIRM” structures, and structures built afterwards are called “post-FIRM.” The insurance rate is different for the two types of structures. In recent years, Flood Insurance Rate Maps have been digitized as Digital Flood Insurance Rate Maps, which are more accessible to community members, local governments and stakeholders.

Requirements for Development Regulations

NFIP participants must, at a minimum, regulate development in floodplain areas in accordance with NFIP criteria. Before issuing a permit to build in a floodplain, participating jurisdictions must ensure that three criteria are met:

- New buildings and those undergoing substantial improvements must, at a minimum, be elevated to protect against damage by the 1-percent-annual-chance flood.
- New floodplain development must not aggravate existing flood problems or increase damage to other properties.
- New floodplain development must exercise a reasonable and prudent effort to reduce its adverse impacts on threatened salmonid species.

NFIP participation is limited to local governments that possess permit authority and have the ability to adopt and enforce regulations that govern land use. This does not typically apply to special purpose districts.

Repetitive Loss Properties and Areas

A repetitive loss property is defined by FEMA as an NFIP-insured property that has experienced any of the following since 1978, regardless of any changes in ownership:

- Four or more paid losses in excess of \$1,000
- Two paid losses in excess of \$1,000 within any rolling 10-year period
- Three or more paid losses that equal or exceed the current value of the insured property.

Repetitive loss properties make up 1 to 2 percent of flood insurance policies in force nationally, yet they account for 40 percent of the nation’s flood insurance claim payments. The government has instituted programs encouraging communities to identify and mitigate the causes of repetitive losses. A recent report on repetitive losses by the National Wildlife Federation found that 20 percent of these properties are outside any mapped 1 percent annual chance floodplain. The key identifiers for repetitive loss properties are the existence of flood insurance policies and claims paid by the policies.

FEMA-sponsored programs, such as the CRS, require participating communities to identify repetitive loss areas. A repetitive loss area is the portion of a floodplain holding structures that FEMA has identified as meeting the

definition of repetitive loss. Identifying repetitive loss areas helps to identify structures that are at risk but are not on FEMA's list of repetitive loss structures because no flood insurance policy was in force at the time of loss.

National Incident Management System

The National Incident Management System (NIMS) is a systematic approach for government, nongovernmental organizations, and the private sector to work together to manage incidents involving hazards. The NIMS provides a flexible but standardized set of incident management practices. Incidents typically begin and end locally, and they are managed at the lowest possible geographical, organizational, and jurisdictional level. In some cases, success depends on the involvement of multiple jurisdictions, levels of government, functional agencies, and emergency responder disciplines. These cases necessitate coordination across a spectrum of organizations. Communities using NIMS follow a comprehensive national approach that improves the effectiveness of emergency management and response personnel across the full spectrum of potential hazards (including natural hazards, technological hazards, and human-caused hazards) regardless of size or complexity.

Although participation is voluntary, federal departments and agencies are required to make adoption of NIMS by local and state jurisdictions a condition to receive federal preparedness grants and awards. The content of this plan is considered to be a viable support tool for any phase of emergency management. The NIMS program is considered as a response function, and information in this hazard mitigation plan can support the implementation and update of all NIMS-compliant plans within the planning area.

National Landslide Preparedness Act

The 2021 National Landslide Preparedness Act authorized a national landslide hazards reduction program and a 3D elevation program within the USGS. This broadened the existing Landslide Hazards Program (under the Natural Hazards Mission Area) and the 3D Elevation Program (under the National Geospatial Program). The act required coordination among federal agencies through an Interagency Coordinating Committee on Landslide Hazards representing USGS and other agencies. The act calls for development of a national strategy for landslide loss reduction and a publicly accessible national landslide database of landslide hazard and risk.

Presidential Executive Order 11988, Floodplain Management

Executive Order 11988 requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. It requires federal agencies to provide leadership and take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial values of floodplains. The requirements apply to the following activities (FEMA, 2015a):

- Acquiring, managing, and disposing of federal lands and facilities
- Providing federally undertaken, financed, or assisted construction and improvements
- Conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulation, and licensing.

Presidential Executive Order 11990, Protection of Wetlands

Executive Order 11990 requires federal agencies to provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. The requirements apply to the following activities:

- Acquiring, managing, and disposing of federal lands and facilities
- Providing federally undertaken, financed, or assisted construction and improvements
- Conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulation, and licensing.

All actions identified in this plan will seek full compliance with all applicable presidential executive orders.

Rural Development Program

The mission of the U.S. Department of Agriculture (USDA) Rural Development Program is to help improve the economy and quality of life in rural America. The program provides project financing and technical assistance to help rural communities provide the infrastructure needed by rural businesses, community facilities, and households. The program addresses rural America's need for basic services, such as clean running water, sewage and waste disposal, electricity, and modern telecommunications and broadband. Loans and competitive grants are offered for various community and economic development projects and programs, such as the development of essential community facilities including fire stations. This program is a potential source of funding for actions identified in this plan.

U.S. Army Corps of Engineers Dam Safety Program

The U.S. Army Corps of Engineers operates and maintains approximately 700 dams nationwide. It is also responsible for safety inspections of some federal and non-federal dams in the United States that meet the size and storage limitations specified in the National Dam Safety Act. The Corps has inventoried dams; surveyed each state and federal agency's capabilities, practices and regulations regarding design, construction, operation and maintenance of the dams; and developed guidelines for inspection and evaluation of dam safety. The Corps maintains the National Inventory of Dams, which contains information about a dam's location, size, purpose, type, last inspection and regulatory status.

U.S. Army Corps of Engineers Flood Hazard Management

The following U.S. Army Corps of Engineers authorities and programs related to flood hazard management:

- The Floodplain Management Services program offers 100-percent federally funded technical services such as development and interpretation of site-specific data related to the extent, duration and frequency of flooding. Special studies may be conducted to help a community understand and respond to flood risk. These may include flood hazard evaluation, flood warning and preparedness, or flood modeling.
- For more extensive studies, the Corps of Engineers offers a cost-shared program called Planning Assistance to States and Tribes. Studies under this program generally range from \$25,000 to \$100,000 with the local jurisdiction providing 50 percent of the cost.

- The Corps of Engineers has several cost-shared programs (typically 65 percent federal and 35 percent non-federal) aimed at developing, evaluating and implementing structural and non-structural capital projects to address flood risks at specific locations or within a specific watershed:
 - The Continuing Authorities Program for smaller-scale projects includes Section 205 for Flood Control, with a \$7 million federal limit and Section 14 for Emergency Streambank Protection with a \$1.5 million federal limit. These can be implemented without specific authorization from Congress.
 - Larger scale studies, referred to as General Investigations, and projects for flood risk management, for ecosystem restoration or to address other water resource issues, can be pursued through a specific authorization from Congress and are cost-shared, typically at 65 percent federal and 35 percent non-federal.
 - Watershed management planning studies can be specifically authorized and are cost-shared at 50 percent federal and 50 percent non-federal.
- The Corps of Engineers provides emergency response assistance during and following natural disasters. Public Law 84-99 enables the Corps to assist state and local authorities in flood fight activities and cost share in the repair of flood protective structures. Assistance is provided in the following categories:
 - Preparedness—The Flood Control and Coastal Emergency Act establishes an emergency fund for preparedness for emergency response to natural disasters; for flood fighting and rescue operations; for rehabilitation of flood control and hurricane protection structures. Funding for Corps of Engineers emergency response under this authority is provided by Congress through the annual Energy and Water Development Appropriation Act. Disaster preparedness activities include coordination, planning, training and conduct of response exercises with local, state and federal agencies.
 - Response Activities—Public Law 84-99 allows the Corps of Engineers to supplement state and local entities in flood fighting urban and other non-agricultural areas under certain conditions (Engineering Regulation 500-1-1 provides specific details). All flood fight efforts require a project cooperation agreement signed by the public sponsor and the sponsor must remove all flood fight material after the flood has receded. Public Law 84-99 also authorizes emergency water support and drought assistance in certain situations and allows for “advance measures” assistance to prevent or reduce flood damage conditions of imminent threat of unusual flooding.
 - Rehabilitation—Under Public Law 84-99, an eligible flood protection system can be rehabilitated if damaged by a flood event. The flood system would be restored to its pre-disaster status at no cost to the federal system owner, and at 20-percent cost to the eligible non-federal system owner. All systems considered eligible for Public Law 84-99 rehabilitation assistance have to be in the Rehabilitation and Inspection Program prior to the flood event. Acceptable operation and maintenance by the public levee sponsor are verified by levee inspections conducted by the Corps on a regular basis. The Corps has the responsibility to coordinate levee repair issues with interested federal, state, and local agencies following natural disaster events where flood control works are damaged.

These authorities and programs are all available to the planning partners to support any related mitigation actions.

U.S. Bureau of Reclamation Safety Evaluation of Existing Dams Program

The U.S. Bureau of Reclamation’s Safety Evaluation of Existing Dams Program was officially implemented in 1978 with passage of the Reclamation Safety of Dams Act (Public Law 95-578). This act was amended in 1984 under Public Law 98-404, in 2000 under Public Law 106-377, in 2002 under Public Law 107-117, and in 2004 under Public Law 108-439. Program development and administration of dam safety activities is the responsibility of the Bureau of Reclamation’s Dam Safety Office located in Denver, Colorado.

Dams must be operated and maintained in a safe manner, ensured through inspections for safety deficiencies, analyses utilizing current technologies and designs, and corrective actions if needed based on current engineering practices. In addition, future evaluations should include assessments of benefits foregone with the loss of a dam. For example, a failed dam can no longer provide needed fish and wildlife benefits.

The primary emphasis of the Safety Evaluation of Existing Dams program is to perform site evaluations and to identify potential safety deficiencies on Bureau of Reclamation and other Interior Department dams. The basic objective is to quickly identify dams which pose an increased threat to the public, and to quickly complete the related analyses in order to expedite corrective action decisions and safeguard the public and associated resources.

The program focuses on evaluating and implementing actions to resolve safety concerns at Bureau of Reclamation dams. Under this program, the Bureau of Reclamation completes studies and identifies and implements needed corrective action on Bureau of Reclamation dams. The selected course of action relies on assessments of risks and liabilities with environmental and public involvement input to the decision-making process.

U.S. Fire Administration

There are federal agencies that provide technical support to fire agencies/organizations. For example, the U.S. Fire Administration, which is a part of FEMA, provides leadership, advocacy, coordination, and support for fire agencies and organizations.

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service fire management strategy uses prescribed fire to maintain early successional fire-adapted grasslands and other ecological communities throughout the National Wildlife Refuge system.

STATE

State and Local Building Codes

Idaho's building code largely reflects international codes, with provisions for wind, seismic and snow loading. As of October 1, 2008, the Idaho building code became mandatory for all municipalities in the state. As of January 1, 2015, the building codes include the following:

- 2012 International Building Code
- 2012 International Residential Code Parts I, II, II, IV and IX
- 2012 International Energy Conservation Code
- 2012 International Existing Building Code
- Idaho administrative rules 07.03.01 (Rules of Building Safety), amending the above codes. There are significant changes to the energy conservation provisions for one- and two-family dwellings.

Subdivision Regulations

Subdivision regulations form part of the process utilized by local governments to carry out the requirements of their comprehensive plans and zoning ordinances. In Idaho, local governments have the authority to define the term "subdivision" as they prefer. State enabling authority does not contain standards or requirements that would

be considered to exceed those commonly found elsewhere, nor are subdivision regulations mandated. Subdivision regulations are important in hazard prone areas as they can specify requirements for layout and location of infrastructure, lots and other facilities as land is developed.

Comprehensive Plans and Zoning

Title 67, Chapter 65, which is Idaho's local land use enabling authority, includes a stated, specific purpose of local land use regulation "to protect life and property in areas subject to natural hazards and disasters." Tools to do this include comprehensive planning and zoning. Consistent with Idaho law, a comprehensive plan provides the policy basis for a community's zoning ordinance, which contains the specific standards and requirements and processes for making land use and development decisions. In Idaho, a comprehensive plan is required to include a section on hazards (67-6508(g)):

The plan with maps, charts, and reports shall be based on the following components as they may apply to land use regulations and actions unless the plan specifies reasons why a particular component is unneeded ... Hazardous Areas -- An analysis of known hazards as may result from susceptibility to surface ruptures from faulting, ground shaking, ground failure, landslides or mudslides; avalanche hazards resulting from development in the known or probable path of snow slides and avalanches, and floodplain hazards.

As part of comprehensive planning, a future land use map is prepared indicating suitable projected land uses for the jurisdiction. The implementation tool to realize the vision in the comprehensive plan is the zoning ordinance. Zoning protects the rights of property owners while promoting the general welfare of the community. By dividing land into categories according to use, and setting regulations for these categories, a zoning ordinance can govern private land use and segregate incompatible uses. The purpose of zoning is to locate particular land uses where they are most appropriate, considering public utilities, road access and the established development pattern.

Floodplain Zoning

Idaho communities are authorized to adopt floodplain zoning to regulate any mapped or unmapped flood hazard area. Additionally, Idaho communities may adopt standards that exceed the minimum standards of the NFIP. In March 2010, the Idaho Legislature passed House Bill 556, which changes Idaho's floodplain zoning enabling authority to exempt operation, maintenance, cleaning or repair of any of any canal ditch, irrigation, drainage or diversion structure from floodplain zoning. Floodplain zoning is important in flood hazard areas to provide for appropriate development standards and enable communities to participate in the NFIP and therefore be eligible for flood insurance and flood mitigation programs. The recent law change would appear to be in conflict with federal minimum regulatory standards for communities participating in the NFIP and could therefore endanger community participation in the program.

Idaho Department of Water Resources Dam Safety Program

The Dam Safety Program of Idaho's Department of Water Resources monitors dams at the state level. The Department currently regulates nearly 600 water storage dams and more than 20 mine tailings impoundment structures throughout the state. The program regulates dams greater than or equal to 10 feet in height or reservoirs greater than or equal to 50 acre-feet in storage capacity. Each dam inspected by IDWR has a classification for size and risk:

- Large—40 feet high or more or with a storage capacity of more than 4,000 acre feet of water. *104 dams are currently listed as large.*
- Intermediate—More than 20 but less than 40 feet high or with a storage capacity of 100 to 4,000 acre feet of water. *198 dams are currently listed as intermediate.*
- Small—20 feet high or less and a storage capacity of less than 100 acre feet of water. *244 dams are currently listed as small.*

All statutory sized dams must be inspected by the IDWR no less than every five years. The frequency between individual dam inspections depends on such items as the project's physical condition, method of construction, maintenance record, age, hazard rating, and size and storage capacity. Inspection reports prepared by the IDWR for non-federal dams are available through the state office in Boise (Idaho Dam Safety Web Site, 2011).

Idaho Disaster Preparedness Act of 1975

The Idaho Disaster Preparedness Act of 1975 (Chapter 10, Title 46 of the Idaho Code) created the Bureau of Disaster Services and subsequently the Office of Emergency Management, and provided for the creation of local organizations for disaster preparedness. According to the Act, it is the policy of the State of Idaho to plan and prepare for disasters and emergencies resulting from natural or manmade causes, enemy attack, sabotage or other hostile action. State law was put into place to do the following:

- Create an Office of Emergency Management.
- Prevent and reduce damage, injury, and loss of life and property resulting from natural or man-made catastrophes.
- Prepare assistance for prompt and efficient search, rescue and care.
- Provide for rapid restoration and rehabilitation.
- Prescribe the roles of government in prevention, preparation and response to disaster.
- Authorize and encourage cooperation in disaster prevention, preparation and response.
- Provide for coordination of activities.
- Provide a disaster management system.
- Provide for payment of obligations and expenses incurred by the state of Idaho through the Office of Emergency Management.

Idaho Silver Jackets Program

The Silver Jackets Program is the state-level implementation of the Army Corps of Engineers National Flood Risk Management Program. The core member agencies will establish a continuous intergovernmental collaborative team working with other state and federal agencies to do the following:

- Provide assistance in identifying and prioritizing actions to reduce the threat, vulnerability and consequences of flooding in the State of Idaho.
- Facilitate strategic planning and implementation of life-cycle mitigation, response and recovery actions to reduce the threat, vulnerability and consequences of flooding in the State of Idaho.
- Create or supplement a process to collaboratively identify issues and implement or recommend solutions.

- Identify and implement ways to leverage available resources and information between agencies.
- Increase and improve flood risk communication and outreach.
- Promote wise stewardship of the taxpayers' investments.
- Develop more comprehensive state flood risk management policies and strategies.
- Develop advanced hydrologic predictive services to reduce loss of life and property damage from flooding.

2022 Ada County Multi-Hazard Mitigation Plan

Appendix C. Concepts and Methods Used for Hazard Mapping

C. CONCEPTS AND METHODS USED FOR HAZARD MAPPING

TO BE COMPLETED

2022 Ada County Multi-Hazard Mitigation Plan

Appendix D. Detailed Risk Assessment Results

Exposure and Estimated Loss

Jurisdiction	Estimated Population (1)	Total Number of Buildings (2)	Total Number of Residential Buildings (2)	Total Building Value (Structure and contents in \$) (2)	Estimated Building Exposure						
					Buildings Exposed (2)	Population Exposed (3)	% of Population Exposed	Value Structure in \$ Exposed (2)	Value Contents in \$ Exposed (2)	Value (Structure and contents in \$) Exposed (2)	% of Total Value Exposed
Boise	229,776	81,552	76,386	\$61,280,836,767	0	0	0.0%	\$0	\$0	\$0	0.0%
Eagle	31,699	12,437	11,810	\$9,838,649,929	0	0	0.0%	\$0	\$0	\$0	0.0%
Garden City	11,920	4,385	3,664	\$3,705,101,875	0	0	0.0%	\$0	\$0	\$0	0.0%
Kuna	23,937	8,831	8,663	\$3,886,826,099	0	0	0.0%	\$0	\$0	\$0	0.0%
Meridian	121,182	40,812	39,226	\$28,959,315,273	1,917	5,891	4.9%	\$903,251,412	\$485,875,710	\$1,389,127,122	4.8%
Star	11,259	5,065	4,957	\$2,845,160,473	0	0	0.0%	\$0	\$0	\$0	0.0%
Unincorporated	64,626	21,720	21,506	\$12,472,792,807	140	409	0.6%	\$52,531,955	\$27,946,028	\$80,477,983	0.6%
Total	494,399	174,802	166,212	\$122,988,683,223	2,057	6,300	1.3%	\$955,783,367	\$513,821,738	\$1,469,605,105	1.2%

- Notes: (1) 2020 estimates from "Population Decennial Census & Annual Estimates" downloaded from Idaho Department of Labor website.
 (2) Values based off of 2021 tax assessor data provided by Ada County
 (3) Percent of residential buildings exposed multiplied by the Estimated Population
 (4) Calculated using a Census block level, general building stock (GBS) analysis in Hazus 5.
 (5) Calculated using a Census block level, general building stock (GBS) analysis in Hazus 5.1, and adjusted to reflect the estimated population
 (6) Calculated using a user-defined (UDF) analysis in Hazus 5.1

Jurisdiction	Economic Impact							
	Structure Debris (Tons) (4)	Displaced Population (5)	People Requiring Short-Term Shelter (5)	Buildings Impacted (6)	Value Structure in \$ Damaged (6)	Value Contents in \$ Damaged (6)	Total Value (Structure and Contents in \$) Damaged (6)	% of Total Value Damaged
Boise	0	0	0	0	\$0	\$0	\$0	0.0%
Eagle	0	0	0	0	\$0	\$0	\$0	0.0%
Garden City	0	0	0	0	\$0	\$0	\$0	0.0%
Kuna	0	0	0	0	\$0	\$0	\$0	0.0%
Meridian	9,113	2,302	161	1,887	\$91,184,948	\$59,622,255	\$150,807,203	0.5%
Star	0	0	0	0	\$0	\$0	\$0	0.0%
Unincorporated	1,648	68	7	138	\$6,389,396	\$4,132,240	\$10,521,636	0.1%
Total	10,761	2,370	168	2,025	\$97,574,344	\$63,754,495	\$161,328,839	0.1%

Notes:

Jurisdiction	Acres of Inundation Area	Number of Structures in Inundation Area (2)							
		Residential	Commercial	Industrial	Agriculture	Religion	Government	Education	Total
Boise	0	0	0	0	0	0	0	0	0
Eagle	0	0	0	0	0	0	0	0	0
Garden City	0	0	0	0	0	0	0	0	0
Kuna	0	0	0	0	0	0	0	0	0
Meridian	860	1,907	8	0	0	1	0	1	1917
Star	0	0	0	0	0	0	0	0	0
Unincorporated	1,611	136	2	0	2	0	0	0	140
Total	2,470	2,043	10	0	2	1	0	1	2057

Notes:

Jurisdiction	Estimated Population (1)	Total Number of Buildings (2)	Total Number of Residential Buildings (2)	Total Building Value (Structure and contents in \$) (2)	Estimated Building Exposure						
					Buildings Exposed (2)	Population Exposed (3)	% of Population Exposed	Value Structure in \$ Exposed (2)	Value Contents in \$ Exposed (2)	Value (Structure and contents in \$) Exposed (2)	% of Total Value Exposed
Boise	229,776	81,552	76,386	\$61,280,836,767	25,734	72,113	31.4%	\$12,866,040,555	\$8,581,720,881	\$21,447,761,436	35.0%
Eagle	31,699	12,437	11,810	\$9,838,649,929	6,536	15,994	50.5%	\$3,487,091,072	\$2,109,863,128	\$5,596,954,199	56.9%
Garden City	11,920	4,385	3,664	\$3,705,101,875	4,383	11,920	100.0%	\$2,161,203,941	\$1,503,098,230	\$3,664,302,171	98.9%
Kuna	23,937	8,831	8,663	\$3,886,826,099	0	0	0.0%	\$0	\$0	\$0	0.0%
Meridian	121,182	40,812	39,226	\$28,959,315,273	0	0	0.0%	\$0	\$0	\$0	0.0%
Star	11,259	5,065	4,957	\$2,845,160,473	4,206	9,315	82.7%	\$1,521,064,449	\$839,698,865	\$2,360,763,313	83.0%
Unincorporated	64,626	21,720	21,506	\$12,472,792,807	373	1,052	1.6%	\$276,335,622	\$193,538,207	\$469,873,829	3.8%
Total	494,399	174,802	166,212	\$122,988,683,223	41,232	110,394	22.3%	\$20,311,735,638	\$13,227,919,311	\$33,539,654,949	27.3%

- Notes: (1) 2020 estimates from "Population Decennial Census & Annual Estimates" downloaded from Idaho Department of Labor website.
 (2) Values based off of 2021 tax assessor data provided by Ada County
 (3) Percent of residential buildings exposed multiplied by the Estimated Populatio
 (4) Calculated using a Census block level, general building stock (GBS) analysis in Hazus 5.
 (5) Calculated using a Census block level, general building stock (GBS) analysis in Hazus 5.1, and adjusted to reflect the estimated populati
 (6) Calculated using a user-defined (UDF) analysis in Hazus 5.1

Jurisdiction	Economic Impact							
	Structure Debris (Tons) (4)	Displaced Population (5)	People Requiring Short-Term Shelter (5)	Buildings Impacted (6)	Value Structure in \$ Damaged (6)	Value Contents in \$ Damaged (6)	Total Value (Structure and Contents in \$) Damaged (6)	% of Total Value Damaged
Boise	4,617,669	66,414	2,577	25,632	\$8,520,691,228	\$6,532,377,833	\$15,053,069,061	24.6%
Eagle	974,977	12,642	547	6,532	\$2,189,011,480	\$1,580,665,864	\$3,769,677,344	38.3%
Garden City	863,391	11,701	487	4,383	\$1,538,041,053	\$1,235,897,533	\$2,773,938,586	74.9%
Kuna	0	0	0	0	\$0	\$0	\$0	0.0%
Meridian	0	0	0	0	\$0	\$0	\$0	0.0%
Star	416,524	9,065	285	4,203	\$1,001,199,124	\$629,776,445	\$1,630,975,569	57.3%
Unincorporated	74,302	580	38	373	\$162,961,705	\$137,612,687	\$300,574,392	2.4%
Total	6,946,864	100,402	3,933	41,123	\$13,411,904,589	\$10,116,330,362	\$23,528,234,951	19.1%

Notes:

Jurisdiction	Acres of Inundation Area	Number of Structures in Inundation Area (2)							
		Residential	Commercial	Industrial	Agriculture	Religion	Government	Education	Total
Boise	11,499	23,973	1,615	0	13	59	46	28	25734
Eagle	6,290	5,959	558	1	1	3	10	4	6536
Garden City	2,702	3,664	703	0	4	6	4	2	4383
Kuna	0	0	0	0	0	0	0	0	0
Meridian	1	0	0	0	0	0	0	0	0
Star	3,222	4,101	95	0	1	7	2	0	4206
Unincorporated	9,480	350	19	2	1	1	0	0	373
Total	33,195	38,047	2990	3	20	76	62	34	41232

Notes:

Jurisdiction	Estimated Exposure					Economic Impact						
	Estimated Population (1)	% Population Exposed	Total Number of Buildings (2)	Total Building Value (Structure and contents in \$) (2)	% of Total Value Exposed	Structure Debris (x 1,000 Tons) (3)	Number of Displaced Households (3)	People Requiring Short-Term Shelter (3)	Value Structure in \$ Damaged (4)	Value Contents in \$ Damaged (4)	Total Value (Structure and Contents in \$) Damaged (4)	% of Total Value Damaged
Boise	229,776	100%	81,552	\$61,280,836,767	100%	1.17	0	0	\$418,057	\$343,588	\$761,645	0.0%
Eagle	31,699	100%	12,437	\$9,838,649,929	100%	0.08	0	0	\$22,267	\$21,464	\$43,731	0.0%
Garden City	11,920	100%	4,385	\$3,705,101,875	100%	0.13	0	0	\$20,703	\$20,032	\$40,735	0.0%
Kuna	23,937	100%	8,831	\$3,886,826,099	100%	0.02	0	0	\$5,452	\$5,458	\$10,910	0.0%
Meridian	121,182	100%	40,812	\$28,959,315,273	100%	0.30	0	0	\$104,495	\$97,832	\$202,327	0.0%
Star	11,259	100%	5,065	\$2,845,160,473	100%	0.02	0	0	\$13,784	\$12,221	\$26,005	0.0%
Unincorporated	64,626	100%	21,720	\$12,472,792,807	100%	0.08	0	0	\$38,368	\$43,041	\$81,408	0.0%
TOTAL	494,399	100%	174,802	\$122,988,683,223	100%	1.81	0	0	\$623,125	\$543,636	1,166,761	0.0%

Notes: (1) 2020 estimates from "Population Decennial Census & Annual Estimates" downloaded from Idaho Department of Labor website
 (2) Values based off of 2021 tax assessor data provided by Ada County
 (3) Calculated using a Census tract level, general building stock (GBS) analysis in Hazus 5.
 (4) Calculated using an Advanced Engineering Building Model (AEBM) analysis in Hazus 5.

Section 6, Item B.

Jurisdiction	Estimated Exposure					Economic Impact						
	Estimated Population (1)	% Population Exposed	Total Number of Buildings (2)	Total Building Value (Structure and contents in \$) (2)	% of Total Value Exposed	Structure Debris (x 1,000 Tons) (3)	Number of Displaced Households (3)	People Requiring Short-Term Shelter (3)	Value Structure in \$ Damaged (4)	Value Contents in \$ Damaged (4)	Total Value (Structure and Contents in \$) Damaged (4)	% of Total Value Damaged
Boise	229,776	100%	81,552	\$61,280,836,767	100%	16.95	5	3	\$43,934,732	\$29,987,476	\$73,922,209	0.1%
Eagle	31,699	100%	12,437	\$9,838,649,929	100%	1.45	0	0	\$5,633,649	\$3,269,503	\$8,903,152	0.1%
Garden City	11,920	100%	4,385	\$3,705,101,875	100%	1.73	0	0	\$2,189,122	\$1,744,551	\$3,933,673	0.1%
Kuna	23,937	100%	8,831	\$3,886,826,099	100%	0.36	0	0	\$1,037,176	\$784,797	\$1,821,973	0.0%
Meridian	121,182	100%	40,812	\$28,959,315,273	100%	4.85	0	0	\$13,615,042	\$10,233,618	\$23,848,661	0.1%
Star	11,259	100%	5,065	\$2,845,160,473	100%	0.42	0	0	\$5,649,585	\$2,301,750	\$7,951,335	0.3%
Unincorporated	64,626	100%	21,720	\$12,472,792,807	100%	1.52	0	0	\$4,715,298	\$3,745,354	\$8,460,652	0.1%
TOTAL	494,399	100%	174,802	\$122,988,683,223	100%	27.28	5	3	\$76,774,603	\$52,067,050	128,841,653	0.1%

- Notes: (1) 2020 estimates from "Population Decennial Census & Annual Estimates" downloaded from Idaho Department of Labor websi
 (2) Values based off of 2021 tax assessor data provided by Ada County
 (3) Calculated using a Census tract level, general building stock (GBS) analysis in Hazus 5.
 (4) Calculated using an Advanced Engineering Building Model (AEBM) analysis in Hazus 5.

Jurisdiction	Estimated Exposure					Economic Impact						
	Estimated Population (1)	% Population Exposed	Total Number of Buildings (2)	Total Building Value (Structure and contents in \$) (2)	% of Total Value Exposed	Structure Debris (x 1,000 Tons) (3)	Number of Displaced Households (3)	People Requiring Short-Term Shelter (3)	Value Structure in \$ Damaged (4)	Value Contents in \$ Damaged (4)	Total Value (Structure and Contents in \$) Damaged (4)	% of Total Value Damaged
Boise	229,776	100%	81,552	\$61,280,836,767	100%	15.52	1	0	\$246,262,265	\$121,964,676	\$368,226,941	0.6%
Eagle	31,699	100%	12,437	\$9,838,649,929	100%	3.28	0	0	\$93,283,212	\$36,220,159	\$129,503,371	1.3%
Garden City	11,920	100%	4,385	\$3,705,101,875	100%	1.94	1	0	\$75,061,519	\$30,863,816	\$105,925,335	2.9%
Kuna	23,937	100%	8,831	\$3,886,826,099	100%	0.28	0	0	\$3,281,006	\$1,797,653	\$5,078,659	0.1%
Meridian	121,182	100%	40,812	\$28,959,315,273	100%	6.27	0	0	\$87,369,033	\$45,862,545	\$133,231,578	0.5%
Star	11,259	100%	5,065	\$2,845,160,473	100%	1.04	0	0	\$23,830,178	\$8,596,781	\$32,426,959	1.1%
Unincorporated	64,626	100%	21,720	\$12,472,792,807	100%	1.35	0	0	\$26,820,176	\$13,655,417	\$40,475,593	0.3%
TOTAL	494,399	100%	174,802	\$122,988,683,223	100%	29.68	2	1	\$555,907,389	\$258,961,047	814,868,435	0.7%

Notes: (1) 2020 estimates from "Population Decennial Census & Annual Estimates" downloaded from Idaho Department of Labor website
 (2) Values based off of 2021 tax assessor data provided by Ada County
 (3) Calculated using a Census tract level, general building stock (GBS) analysis in Hazus 5.
 (4) Calculated using an Advanced Engineering Building Model (AEBM) analysis in Hazus 5.

Jurisdiction	Estimated Exposure					Economic Impact						
	Estimated Population (1)	% Population Exposed	Total Number of Buildings (2)	Total Building Value (Structure and contents in \$) (2)	% of Total Value Exposed	Structure Debris (x 1,000 Tons) (3)	Number of Displaced Households (3)	People Requiring Short-Term Shelter (3)	Value Structure in \$ Damaged (4)	Value Contents in \$ Damaged (4)	Total Value (Structure and Contents in \$) Damaged (4)	% of Total Value Damaged
Boise	229,776	100%	81,552	\$61,280,836,767	100%	3.49	0	0	\$35,929,180	\$24,887,455	\$60,816,634	0.1%
Eagle	31,699	100%	12,437	\$9,838,649,929	100%	0.74	0	0	\$8,674,006	\$4,689,704	\$13,363,709	0.1%
Garden City	11,920	100%	4,385	\$3,705,101,875	100%	0.40	0	0	\$3,293,981	\$2,176,965	\$5,470,946	0.1%
Kuna	23,937	100%	8,831	\$3,886,826,099	100%	0.08	0	0	\$702,346	\$383,245	\$1,085,591	0.0%
Meridian	121,182	100%	40,812	\$28,959,315,273	100%	1.79	0	0	\$19,945,635	\$12,372,053	\$32,317,688	0.1%
Star	11,259	100%	5,065	\$2,845,160,473	100%	0.20	0	0	\$2,694,628	\$1,404,258	\$4,098,886	0.1%
Unincorporated	64,626	100%	21,720	\$12,472,792,807	100%	0.29	0	0	\$5,054,054	\$3,126,817	\$8,180,871	0.1%
TOTAL	494,399	100%	174,802	\$122,988,683,223	100%	6.99	0	0	\$76,293,829	\$49,040,497	125,334,326	0.1%

Notes: (1) 2020 estimates from "Population Decennial Census & Annual Estimates" downloaded from Idaho Department of Labor websi
 (2) Values based off of 2021 tax assessor data provided by Ada County
 (3) Calculated using a Census tract level, general building stock (GBS) analysis in Hazus 5.
 (4) Calculated using an Advanced Engineering Building Model (AEBM) analysis in Hazus 5.

Section 6, Item B.

Jurisdiction	Estimated Population (1)	Total Number of Buildings (2)	Total Number of Residential Buildings (2)	Total Building Value (Structure and contents in \$) (2)	Estimated Building Exposure						
					Buildings Exposed (2)	Population Exposed (3)	% of Population Exposed	Value Structure in \$ Exposed (2)	Value Contents in \$ Exposed (2)	Value (Structure and contents in \$) Exposed (2)	% of Total Value Exposed
Boise	229,776	81,552	76,386	\$61,280,836,767	1,470	4,094	1.8%	\$1,252,551,619	\$850,224,927	\$2,102,776,545	3.4%
Eagle	31,699	12,437	11,810	\$9,838,649,929	743	1,857	5.9%	\$659,514,095	\$418,242,230	\$1,077,756,325	11.0%
Garden City	11,920	4,385	3,664	\$3,705,101,875	1,224	3,767	31.6%	\$620,366,748	\$377,689,327	\$998,056,075	26.9%
Kuna	23,937	8,831	8,663	\$3,886,826,099	22	58	0.2%	\$19,381,677	\$16,277,555	\$35,659,232	0.9%
Meridian	121,182	40,812	39,226	\$28,959,315,273	626	1,684	1.4%	\$370,927,805	\$278,101,082	\$649,028,888	2.2%
Star	11,259	5,065	4,957	\$2,845,160,473	117	245	2.2%	\$45,284,433	\$26,534,107	\$71,818,540	2.5%
Unincorporated	64,626	21,720	21,506	\$12,472,792,807	230	655	1.0%	\$117,691,227	\$71,735,057	\$189,426,285	1.5%
Total	494,399	174,802	166,212	\$122,988,683,223	4,432	12,361	2.5%	\$3,085,717,605	\$2,038,804,285	\$5,124,521,890	4.2%

- Notes: (1) 2020 estimates from "Population Decennial Census & Annual Estimates" downloaded from Idaho Department of Labor website.
 (2) Values based off of 2021 tax assessor data provided by Ada County
 (3) Percent of residential buildings exposed multiplied by the Estimated Population
 (4) Calculated using a Census block level, general building stock (GBS) analysis in Hazus 5.
 (5) Calculated using a Census block level, general building stock (GBS) analysis in Hazus 5.1, and adjusted to reflect the estimated population
 (6) Calculated using a user-defined (UDF) analysis in Hazus 5.1

Jurisdiction	Economic Impact							
	Structure Debris (Tons) (4)	Displaced Population (5)	People Requiring Short-Term Shelter (5)	Buildings Impacted (6)	Value Structure in \$ Damaged (6)	Value Contents in \$ Damaged (6)	Total Value (Structure and Contents in \$) Damaged (6)	% of Total Value Damaged
Boise	7,437	1,042	133	568	\$29,358,874	\$16,924,899	\$46,283,773	0.1%
Eagle	108	466	61	16	\$993,721	\$524,059	\$1,517,780	0.0%
Garden City	776	2,225	153	130	\$5,344,786	\$3,540,063	\$8,884,849	0.2%
Kuna	46	4	1	9	\$290,426	\$150,771	\$441,197	0.0%
Meridian	515	231	45	185	\$4,398,207	\$3,610,346	\$8,008,553	0.0%
Star	103	92	7	52	\$1,959,574	\$1,126,172	\$3,085,746	0.1%
Unincorporated	609	84	16	77	\$6,725,995	\$12,248,103	\$18,974,098	0.2%
Total	9,595	4,144	416	1,037	\$49,071,584	\$38,124,412	\$87,195,996	0.1%

Notes:

Jurisdiction	Acres of Floodplain	Number of Structures in Floodplain (2)							Total
		Residential	Commercial	Industrial	Agriculture	Religion	Government	Education	
Boise	2,386	1,361	104	0	1	0	2	2	1470
Eagle	2,640	692	49	1	0	1	0	0	743
Garden City	845	1,158	62	0	0	3	1	0	1224
Kuna	420	21	0	0	0	0	0	1	22
Meridian	590	545	74	1	0	1	3	2	626
Star	728	108	9	0	0	0	0	0	117
Unincorporated	14,673	218	9	1	1	1	0	0	230
Total	22,282	4,103	307	3	2	6	6	5	4432

Notes:

Section 6, Item B.

Jurisdiction	Estimated Population (1)	Total Number of Buildings (2)	Total Number of Residential Buildings (2)	Total Building Value (Structure and contents in \$) (2)	Estimated Building Exposure						
					Buildings Exposed (2)	Population Exposed (3)	% of Population Exposed	Value Structure in \$ Exposed (2)	Value Contents in \$ Exposed (2)	Value (Structure and contents in \$) Exposed (2)	% of Total Value Exposed
Boise	229,776	81,552	76,386	\$61,280,836,767	11,717	31,429	13.7%	\$8,229,803,359	\$5,856,652,153	\$14,086,455,512	23.0%
Eagle	31,699	12,437	11,810	\$9,838,649,929	2,714	6,498	20.5%	\$1,881,964,156	\$1,186,674,067	\$3,068,638,223	31.2%
Garden City	11,920	4,385	3,664	\$3,705,101,875	3,535	10,017	84.0%	\$1,705,051,525	\$1,121,705,710	\$2,826,757,235	76.3%
Kuna	23,937	8,831	8,663	\$3,886,826,099	22	58	0.2%	\$19,381,677	\$16,277,555	\$35,659,232	0.9%
Meridian	121,182	40,812	39,226	\$28,959,315,273	1,596	4,575	3.8%	\$729,082,292	\$485,624,132	\$1,214,706,424	4.2%
Star	11,259	5,065	4,957	\$2,845,160,473	887	1,908	16.9%	\$325,964,252	\$194,228,809	\$520,193,061	18.3%
Unincorporated	64,626	21,720	21,506	\$12,472,792,807	350	974	1.5%	\$218,495,513	\$139,530,081	\$358,025,594	2.9%
Total	494,399	174,802	166,212	\$122,988,683,223	20,821	55,458	11.2%	\$13,109,742,774	\$9,000,692,506	\$22,110,435,281	18.0%

- Notes: (1) 2020 estimates from "Population Decennial Census & Annual Estimates" downloaded from Idaho Department of Labor website.
 (2) Values based off of 2021 tax assessor data provided by Ada County
 (3) Percent of residential buildings exposed multiplied by the Estimated Population
 (4) Calculated using a Census block level, general building stock (GBS) analysis in Hazus 5.
 (5) Calculated using a Census block level, general building stock (GBS) analysis in Hazus 5.1, and adjusted to reflect the estimated population
 (6) Calculated using a user-defined (UDF) analysis in Hazus 5.1

Jurisdiction	Economic Impact							
	Structure Debris (Tons) (4)	Displaced Population (5)	People Requiring Short-Term Shelter (5)	Buildings Impacted (6)	Value Structure in \$ Damaged (6)	Value Contents in \$ Damaged (6)	Total Value (Structure and Contents in \$) Damaged (6)	% of Total Value Damaged
Boise	515,520	20,532	1,070	10,626	\$1,000,297,727	\$1,153,983,725	\$2,154,281,452	3.5%
Eagle	21,743	3,562	226	1,086	\$149,359,357	\$201,632,462	\$350,991,819	3.6%
Garden City	79,607	8,679	405	3,235	\$292,165,606	\$288,077,249	\$580,242,855	15.7%
Kuna	138	4	1	13	\$703,406	\$377,929	\$1,081,336	0.0%
Meridian	14,043	1,246	125	1,049	\$93,542,910	\$75,706,549	\$169,249,459	0.6%
Star	3,592	1,074	54	544	\$36,998,042	\$28,169,821	\$65,167,862	2.3%
Unincorporated	3,721	151	23	181	\$17,174,017	\$19,018,506	\$36,192,523	0.3%
Total	638,364	35,247	1,904	16,734	\$1,590,241,066	\$1,766,966,241	\$3,357,207,306	2.7%

Notes:

Jurisdiction	Acres of Floodplain	Number of Structures in Floodplain (2)							
		Residential	Commercial	Industrial	Agriculture	Religion	Government	Education	Total
Boise	6,398	10,448	1,172	1	10	23	45	18	11717
Eagle	4,046	2,421	279	1	1	3	9	0	2714
Garden City	2,092	3,079	445	0	2	4	3	2	3535
Kuna	420	21	0	0	0	0	0	1	22
Meridian	976	1,481	106	1	0	3	3	2	1596
Star	1,205	840	39	0	1	5	2	0	887
Unincorporated	16,542	324	22	1	2	1	0	0	350
Total	31,679	18,614	2063	4	16	39	62	23	20821

Notes:

Jurisdiction	Estimated Population (1)	Total Number of Buildings (2)	Total Number of Residential Buildings (2)	Total Building Value (Structure and contents in \$) (2)	Landslide Category Greater than 30% Slope (3)						
					Estimated Exposure						
					Estimated Buildings Exposed (2)	Population Exposed (4)	% of Population Exposed	Value Structure in \$ Exposed (2)	Value Contents in \$ Exposed (2)	Value (Structure and contents in \$) Exposed (2)	% of Total Value
Boise	229,776	81,552	76,386	\$61,280,836,767	436	1,309	0.6%	\$178,842,812	\$89,671,917	\$268,514,729	0.4%
Eagle	31,699	12,437	11,810	\$9,838,649,929	16	43	0.1%	\$5,633,927	\$2,816,963	\$8,450,890	0.1%
Garden City	11,920	4,385	3,664	\$3,705,101,875	0	0	0.0%	\$0	\$0	\$0	0.0%
Kuna	23,937	8,831	8,663	\$3,886,826,099	0	0	0.0%	\$0	\$0	\$0	0.0%
Meridian	121,182	40,812	39,226	\$28,959,315,273	1	3	0.0%	\$332,839	\$166,419	\$499,258	0.00%
Star	11,259	5,065	4,957	\$2,845,160,473	0	0	0.0%	\$0	\$0	\$0	0.0%
Unincorporated	64,626	21,720	21,506	\$12,472,792,807	97	279	0.4%	\$46,154,003	\$25,268,272	\$71,422,275	0.6%
Total	494,399	174,802	166,212	122,988,683,223	550	1,634	0.3%	\$230,963,580	\$117,923,572	\$348,887,153	0.3%

Jurisdiction	Estimated Population (1)	Total Number of Buildings (2)	Total Number of Residential Buildings (2)	Total Building Value (Structure and contents in \$) (2)	Landslide Category 15-30% Slope (3)						
					Estimated Exposure						
					Estimated Buildings Exposed (2)	Population Exposed (4)	% of Population Exposed	Value Structure in \$ Exposed (2)	Value Contents in \$ Exposed (2)	Value (Structure and contents in \$) Exposed (2)	% of Total Value
Boise	229,776	81,552	76,386	\$61,280,836,767	1,976	5,899	2.6%	\$848,951,056	\$437,350,990	\$1,286,302,046	2.1%
Eagle	31,699	12,437	11,810	\$9,838,649,929	102	274	0.9%	\$73,690,306	\$36,845,153	\$110,535,459	1.1%
Garden City	11,920	4,385	3,664	\$3,705,101,875	3	0	0.0%	\$2,517,835	\$2,517,835	\$5,035,671	0.1%
Kuna	23,937	8,831	8,663	\$3,886,826,099	0	0	0.0%	\$0	\$0	\$0	0.0%
Meridian	121,182	40,812	39,226	\$28,959,315,273	29	87	0.1%	\$10,968,363	\$5,888,610	\$16,856,973	0.1%
Star	11,259	5,065	4,957	\$2,845,160,473	14	32	0.3%	\$5,086,178	\$2,543,089	\$7,629,267	0.3%
Unincorporated	64,626	21,720	21,506	\$12,472,792,807	540	1,611	2.5%	\$258,009,979	\$129,824,504	\$387,834,483	3.1%
Total	494,399	174,802	166,212	122,988,683,223	2,664	7,902	1.6%	\$1,199,223,718	\$614,970,181	\$1,814,193,899	1.5%

Notes: (1) 2020 estimates from "Population Decennial Census & Annual Estimates" downloaded from Idaho Department of Labor websi
 (2) Values based off of 2021 tax assessor data provided by Ada County
 (3) Slope data created from Boise Foothills DEM (from 2015 LiDAR) and USGS 10m-resolution DEM
 (4) Percent of residential buildings exposed multiplied by the Estimated Population.

Jurisdiction	Number of Structures in Category Greater than 30% Slope (2)							
	Residential	Commercial	Industrial	Agriculture	Religion	Government	Education	Total
Boise	435	1	0	0	0	0	0	436
Eagle	16	0	0	0	0	0	0	16
Garden City	0	0	0	0	0	0	0	0
Kuna	0	0	0	0	0	0	0	0
Meridian	1	0	0	0	0	0	0	1
Star	0	0	0	0	0	0	0	0
Unincorporated	93	4	0	0	0	0	0	97
Total	545	5	0	0	0	0	0	550

Jurisdiction	Number of Structures in Category 15-30% Slope (2)							
	Residential	Commercial	Industrial	Agriculture	Religion	Government	Education	Total
Boise	1,961	14	0	0	1	0	0	1,976
Eagle	102	0	0	0	0	0	0	102
Garden City	0	3	0	0	0	0	0	3
Kuna	0	0	0	0	0	0	0	0
Meridian	28	1	0	0	0	0	0	29
Star	14	0	0	0	0	0	0	14
Unincorporated	536	4	0	0	0	0	0	540
Total	2,641	22	0	0	1	0	0	2,664

Notes:

Jurisdiction	Estimated Population (1)	Total Number of Buildings (2)	Total Number of Residential Buildings (2)	Total Building Value (Structure and contents in \$) (2)	Wildfire Hazard Category High (3)						
					Estimated Exposure						
					Estimated Buildings Exposed (2)	Population Exposed (4)	% of Population Exposed	Value Structure in \$ Exposed (2)	Value Contents in \$ Exposed (2)	Value (Structure and contents in \$) Exposed (2)	% of Total Value
Boise	229,776	81,552	76,386	\$61,280,836,767	3,434	10,315	4.5%	\$1,770,215,793	\$929,177,639	\$2,699,393,432	4.4%
Eagle	31,699	12,437	11,810	\$9,838,649,929	70	188	0.6%	\$21,530,853	\$10,765,426	\$32,296,279	0.3%
Garden City	11,920	4,385	3,664	\$3,705,101,875	0	0	0.0%	\$0	\$0	\$0	0.0%
Kuna	23,937	8,831	8,663	\$3,886,826,099	0	0	0.0%	\$0	\$0	\$0	0.0%
Meridian	121,182	40,812	39,226	\$28,959,315,273	0	0	0.0%	\$0	\$0	\$0	0.0%
Star	11,259	5,065	4,957	\$2,845,160,473	0	0	0.0%	\$0	\$0	\$0	0.0%
Unincorporated	64,626	21,720	21,506	\$12,472,792,807	2,535	7,573	11.7%	\$1,190,302,910	\$607,159,249	\$1,797,462,158	14.4%
Total	494,399	174,802	166,212	122,988,683,223	6,039	18,075	3.7%	\$2,982,049,555	\$1,547,102,314	\$4,529,151,869	3.7%

Jurisdiction	Estimated Population (1)	Total Number of Buildings (2)	Total Number of Residential Buildings (2)	Total Building Value (Structure and contents in \$) (2)	Wildfire Hazard Category Moderate (3)						
					Estimated Exposure						
					Estimated Buildings Exposed (2)	Population Exposed (4)	% of Population Exposed	Value Structure in \$ Exposed (2)	Value Contents in \$ Exposed (2)	Value (Structure and contents in \$) Exposed (2)	% of Total Value
Boise	229,776	81,552	76,386	\$61,280,836,767	5,700	16,593	7.2%	\$2,285,803,448	\$1,352,489,488	\$3,638,292,936	5.9%
Eagle	31,699	12,437	11,810	\$9,838,649,929	1,545	4,056	12.8%	\$1,000,699,140	\$532,145,055	\$1,532,844,195	15.6%
Garden City	11,920	4,385	3,664	\$3,705,101,875	19	62	0.5%	\$11,675,144	\$5,837,572	\$17,512,716	0.5%
Kuna	23,937	8,831	8,663	\$3,886,826,099	4	11	0.0%	\$1,378,646	\$689,323	\$2,067,968	0.1%
Meridian	121,182	40,812	39,226	\$28,959,315,273	0	0	0.0%	\$0	\$0	\$0	0.0%
Star	11,259	5,065	4,957	\$2,845,160,473	205	466	4.1%	\$69,937,654	\$34,968,827	\$104,906,482	3.7%
Unincorporated	64,626	21,720	21,506	\$12,472,792,807	1,838	5,445	8.4%	\$1,048,703,413	\$808,192,147	\$1,856,895,561	14.9%
Total	494,399	174,802	166,212	122,988,683,223	9,311	26,632	5.4%	\$4,418,197,446	\$2,734,322,412	\$7,152,519,858	5.8%

- Notes: (1) 2020 estimates from "Population Decennial Census & Annual Estimates" downloaded from Idaho Department of Labor website
- (2) Values based off of 2021 tax assessor data provided by Ada County
- (3) Hazard XXX data provided by XXX.
- (4) Percent of residential buildings exposed multiplied by the Estimated Population

Jurisdiction	Number of Structures in Category High(2)							
	Residential	Commercial	Industrial	Agriculture	Religion	Government	Education	Total
Boise	3,429	5	0	0	0	0	0	3,434
Eagle	70	0	0	0	0	0	0	70
Garden City	0	0	0	0	0	0	0	0
Kuna	0	0	0	0	0	0	0	0
Meridian	0	0	0	0	0	0	0	0
Star	0	0	0	0	0	0	0	0
Unincorporated	2,520	12	1	1	0	1	0	2,535
Total	6,019	17	1	1	0	1	0	6,039

Jurisdiction	Number of Structures in Category Moderate (2)							
	Residential	Commercial	Industrial	Agriculture	Religion	Government	Education	Total
Boise	5,516	173	3	0	5	2	1	5,700
Eagle	1,511	33	0	0	0	1	0	1,545
Garden City	19	0	0	0	0	0	0	19
Kuna	4	0	0	0	0	0	0	4
Meridian	0	0	0	0	0	0	0	0
Star	205	0	0	0	0	0	0	205
Unincorporated	1,812	22	3	0	0	1	0	1,838
Total	9,067	228	6	0	5	4	1	9,311

Notes:

Risk Ranking

RISK RANKING-Dam Failure - Blacks Creek										
	Probability		Impact on People				Impact on Property			
	Probability (High, Medium, Low, None)	Probability Factor (3,2,1,0)	% Population Exposed	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor	% of Total Value Exposed	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor
Boise	None	0	0.00%	None	0	0	0.00%	None	0	0
Eagle	None	0	0.00%	None	0	0	0.00%	None	0	0
Garden City	None	0	0.00%	None	0	0	0.00%	None	0	0
Kuna	None	0	0.00%	None	0	0	0.00%	None	0	0
Meridian	Low	1	4.86%	Low	1	3	4.80%	Low	1	2
Star	None	0	0.00%	None	0	0	0.00%	None	0	0
Unincorporated	Low	1	0.63%	Low	1	3	0.65%	Low	1	2
Total	None	0	1.27%	Low	1	3	1.19%	Low	1	2

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Impact on Economy						
	% of Total Value Damaged	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor	Risk Ranking Score	Hazard Risk Rating
Boise	0.00%	None	0	0	0	Low
Eagle	0.00%	None	0	0	0	Low
Garden City	0.00%	None	0	0	0	Low
Kuna	0.00%	None	0	0	0	Low
Meridian	0.52%	Low	1	1	6	Low
Star	0.00%	None	0	0	0	Low
Unincorporated	0.08%	Low	1	1	6	Low
Total	0.13%	Low	1	1	0	Low

RISK RANKING-Dam Failure - Lucky Peak										
	Probability		Impact on People				Impact on Property			
	Probability (High, Medium, Low, None)	Probability Factor (3,2,1,0)	% Population Exposed	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor	% of Total Value Exposed	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor
Boise	Low	1	31.38%	High	3	9	35.00%	High	3	6
Eagle	Low	1	50.46%	High	3	9	56.89%	High	3	6
Garden City	Low	1	100.00%	High	3	9	98.90%	High	3	6
Kuna	None	0	0.00%	None	0	0	0.00%	None	0	0
Meridian	None	0	0.00%	None	0	0	0.00%	None	0	0
Star	Low	1	82.73%	High	3	9	82.97%	High	3	6
Unincorporated	Low	1	1.63%	Low	1	3	3.77%	Low	1	2
Total	Low	1	22.33%	Medium	2	6	27.27%	High	3	6

Impact on Economy						
	% of Total Value Damaged	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor	Risk Ranking Score	Hazard Risk Rating
Boise	24.56%	High	3	3	18	Medium
Eagle	38.31%	High	3	3	18	Medium
Garden City	74.87%	High	3	3	18	Medium
Kuna	0.00%	None	0	0	0	Low
Meridian	0.00%	None	0	0	0	Low
Star	57.32%	High	3	3	18	Medium
Unincorporated	2.41%	Low	1	1	6	Low
Total	19.13%	High	3	3	15	Low

RISK RANKING										
	Probability		Impact on People				Impact on Property			
	Probability (High, Medium, Low, None)	Probability Factor (3,2,1,0)	% Population Exposed	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor	% of Total Value Exposed	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor
Boise	Medium	2	100.00%	High	3	9	100.00%	High	3	6
Eagle	Medium	2	100.00%	High	3	9	100.00%	High	3	6
Garden City	Medium	2	100.00%	High	3	9	100.00%	High	3	6
Kuna	Medium	2	100.00%	High	3	9	100.00%	High	3	6
Meridian	Medium	2	100.00%	High	3	9	100.00%	High	3	6
Star	Medium	2	100.00%	High	3	9	100.00%	High	3	6
Unincorporated	Medium	2	100.00%	High	3	9	100.00%	High	3	6
TOTAL	Medium	2	100.00%	High	3	9	100.00%	High	3	6

3-Earthquake - 100-year Probabilistic

Impact on Economy						
	% of Total Value Damaged	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor	Risk Ranking Score	Hazard Risk Rating
Boise	0.00%	None	0	0	30	Medium
Eagle	0.00%	None	0	0	30	Medium
Garden City	0.00%	None	0	0	30	Medium
Kuna	0.00%	None	0	0	30	Medium
Meridian	0.00%	None	0	0	30	Medium
Star	0.00%	None	0	0	30	Medium
Unincorporated	0.00%	None	0	0	30	Medium
TOTAL	0.00%	None	0	0	30	Medium

	RISK RANKING									
	Probability		Impact on People				Impact on Property			
	Probability (High, Medium, Low, None)	Probability Factor (3,2,1,0)	% Population Exposed	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor	% of Total Value Exposed	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor
Boise	Low	1	100.00%	High	3	9	100.00%	High	3	6
Eagle	Low	1	100.00%	High	3	9	100.00%	High	3	6
Garden City	Low	1	100.00%	High	3	9	100.00%	High	3	6
Kuna	Low	1	100.00%	High	3	9	100.00%	High	3	6
Meridian	Low	1	100.00%	High	3	9	100.00%	High	3	6
Star	Low	1	100.00%	High	3	9	100.00%	High	3	6
Unincorporated	Low	1	100.00%	High	3	9	100.00%	High	3	6
TOTAL	Low	1	100.00%	High	3	9	100.00%	High	3	6

-Earthquake - 500-year Probabilistic

Impact on Economy						
	% of Total Value Damaged	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor	Risk Ranking Score	Hazard Risk Rating
Boise	0.12%	Low	1	1	16	Medium
Eagle	0.09%	Low	1	1	16	Medium
Garden City	0.11%	Low	1	1	16	Medium
Kuna	0.05%	Low	1	1	16	Medium
Meridian	0.08%	Low	1	1	16	Medium
Star	0.28%	Low	1	1	16	Medium
Unincorporated	0.07%	Low	1	1	16	Medium
TOTAL	0.10%	Low	1	1	16	Medium

RISK RANKING										
	Probability		Impact on People				Impact on Property			
	Probability (High, Medium, Low, None)	Probability Factor (3,2,1,0)	% Population Exposed	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor	% of Total Value Exposed	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor
Boise	Low	1	100.00%	High	3	9	100.00%	High	3	6
Eagle	Low	1	100.00%	High	3	9	100.00%	High	3	6
Garden City	Low	1	100.00%	High	3	9	100.00%	High	3	6
Kuna	Low	1	100.00%	High	3	9	100.00%	High	3	6
Meridian	Low	1	100.00%	High	3	9	100.00%	High	3	6
Star	Low	1	100.00%	High	3	9	100.00%	High	3	6
Unincorporated	Low	1	100.00%	High	3	9	100.00%	High	3	6
TOTAL	Low	1	100.00%	High	3	9	100.00%	High	3	6

i-Earthquake - Squaw Creek M7.03

Impact on Economy						
	% of Total Value Damaged	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor	Risk Ranking Score	Hazard Risk Rating
Boise	0.60%	Low	1	1	16	Medium
Eagle	1.32%	Low	1	1	16	Medium
Garden City	2.86%	Low	1	1	16	Medium
Kuna	0.13%	Low	1	1	16	Medium
Meridian	0.46%	Low	1	1	16	Medium
Star	1.14%	Low	1	1	16	Medium
Unincorporated	0.32%	Low	1	1	16	Medium
TOTAL	0.66%	Low	1	1	16	Medium

RISK RANKING-Ea										
	Probability		Impact on People				Impact on Property			
	Probability (High, Medium, Low, None)	Probability Factor (3,2,1,0)	% Population Exposed	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor	% of Total Value Exposed	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor
Boise	Low	1	100.00%	High	3	9	100.00%	High	3	6
Eagle	Low	1	100.00%	High	3	9	100.00%	High	3	6
Garden City	Low	1	100.00%	High	3	9	100.00%	High	3	6
Kuna	Low	1	100.00%	High	3	9	100.00%	High	3	6
Meridian	Low	1	100.00%	High	3	9	100.00%	High	3	6
Star	Low	1	100.00%	High	3	9	100.00%	High	3	6
Unincorporated	Low	1	100.00%	High	3	9	100.00%	High	3	6
TOTAL	Low	1	100.00%	High	3	9	100.00%	High	3	6

Earthquake - Big Flat - Jake Creek M6.81

Impact on Economy

	% of Total Value Damaged	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor	Risk Ranking Score	Hazard Risk Rating
Boise	0.10%	Low	1	1	16	Medium
Eagle	0.14%	Low	1	1	16	Medium
Garden City	0.15%	Low	1	1	16	Medium
Kuna	0.03%	Low	1	1	16	Medium
Meridian	0.11%	Low	1	1	16	Medium
Star	0.14%	Low	1	1	16	Medium
Unincorporated	0.07%	Low	1	1	16	Medium
TOTAL	0.10%	Low	1	1	16	Medium

RISK RANKING-Flood - 100-year										
	Probability		Impact on People				Impact on Property			
	Probability (High, Medium, Low, None)	Probability Factor (3,2,1,0)	% Population Exposed	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor	% of Total Value Exposed	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor
Boise	High	3	1.78%	Low	1	3	3.43%	Low	1	2
Eagle	High	3	5.86%	Low	1	3	10.95%	Medium	2	4
Garden City	High	3	31.60%	High	3	9	26.94%	High	3	6
Kuna	High	3	0.24%	Low	1	3	0.92%	Low	1	2
Meridian	High	3	1.39%	Low	1	3	2.24%	Low	1	2
Star	High	3	2.18%	Low	1	3	2.52%	Low	1	2
Unincorporated	High	3	1.01%	Low	1	3	1.52%	Low	1	2
Total	High	3	2.50%	Low	1	3	4.17%	Low	1	2

Impact on Economy						
	% of Total Value Damaged	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor	Risk Ranking Score	Hazard Risk Rating
Boise	0.08%	Low	1	1	18	Medium
Eagle	0.02%	Low	1	1	24	Medium
Garden City	0.24%	Low	1	1	48	High
Kuna	0.01%	Low	1	1	18	Medium
Meridian	0.03%	Low	1	1	18	Medium
Star	0.11%	Low	1	1	18	Medium
Unincorporated	0.15%	Low	1	1	18	Medium
Total	0.07%	Low	1	1	18	Medium

RISK RANKING-Flood - 500-year										
	Probability		Impact on People				Impact on Property			
	Probability (High, Medium, Low, None)	Probability Factor (3,2,1,0)	% Population Exposed	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor	% of Total Value Exposed	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor
Boise	Medium	2	13.68%	Medium	2	6	22.99%	Medium	2	4
Eagle	Medium	2	20.50%	Medium	2	6	31.19%	High	3	6
Garden City	Medium	2	84.03%	High	3	9	76.29%	High	3	6
Kuna	Medium	2	0.24%	Low	1	3	0.92%	Low	1	2
Meridian	Medium	2	3.78%	Low	1	3	4.19%	Low	1	2
Star	Medium	2	16.95%	Medium	2	6	18.28%	Medium	2	4
Unincorporated	Medium	2	1.51%	Low	1	3	2.87%	Low	1	2
Total	Medium	2	11.22%	Medium	2	6	17.98%	Medium	2	4

Impact on Economy						
	% of Total Value Damaged	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor	Risk Ranking Score	Hazard Risk Rating
Boise	3.52%	Low	1	1	22	Medium
Eagle	3.57%	Low	1	1	26	Medium
Garden City	15.66%	High	3	3	36	High
Kuna	0.03%	Low	1	1	12	Low
Meridian	0.58%	Low	1	1	12	Low
Star	2.29%	Low	1	1	22	Medium
Unincorporated	0.29%	Low	1	1	12	Low
Total	2.73%	Low	1	1	22	Medium

RISK RANKING- Landslide Hazard (Categories Greater than 30% Slope & 1										
	Probability		Impact on People			Impact on Property				
	Probability (High, Medium, Low, None)	Probability Factor (3,2,1,0)	% Population Exposed	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor	% of Total Value Exposed	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor
Boise	Medium	2	3.14%	Low	1	3	2.54%	Low	1	2
Eagle	Medium	2	1.00%	Low	1	3	1.21%	Low	1	2
Garden City	Low	1	0.00%	None	0	0	0.14%	Low	1	2
Kuna	Medium	2	0.00%	None	0	0	0.00%	None	0	0
Meridian	Low	1	0.07%	Low	1	3	0.06%	Low	1	2
Star	Medium	2	0.28%	Low	1	3	0.27%	Low	1	2
Unincorporated	Medium	2	2.92%	Low	1	3	3.68%	Low	1	2
Total	Medium	2	1.93%	Low	1	3	1.76%	Low	1	2

5-30% Slope)						
Impact on Economy						
	% of Total Value Damaged	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor	Risk Ranking Score	Hazard Risk Rating
Boise	0.63%	Low	1	1	12	Low
Eagle	0.30%	Low	1	1	12	Low
Garden City	0.03%	Low	1	1	3	Low
Kuna	0.00%	None	0	0	0	Low
Meridian	0.01%	Low	1	1	6	Low
Star	0.07%	Low	1	1	12	Low
Unincorporated	0.92%	Low	1	1	12	Low
Total	0.44%	Low	1	1	12	Low

RISK RANKING- Wildfire Hazard (Categories High & Moderate)										
	Probability		Impact on People				Impact on Property			
	Probability (High, Medium, Low, None)	Probability Factor (3,2,1,0)	% Population Exposed	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor	% of Total Value Exposed	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor
Boise	Medium	2	11.71%	Medium	2	6	10.34%	Medium	2	4
Eagle	Medium	2	13.39%	Medium	2	6	15.91%	Medium	2	4
Garden City	Medium	2	0.52%	Low	1	3	0.47%	Low	1	2
Kuna	Medium	2	0.05%	Low	1	3	0.05%	Low	1	2
Meridian	Medium	2	0.00%	None	0	0	0.00%	None	0	0
Star	Medium	2	4.14%	Low	1	3	3.69%	Low	1	2
Unincorporated	Medium	2	20.14%	Medium	2	6	29.30%	High	3	6
Total	Medium	2	9.04%	Low	1	3	9.50%	Low	1	2

3)

Impact on Economy						
	% of Total Value Damaged	Impact (High, Medium, Low, None)	Impact Factor	Weighted Impact Factor	Risk Ranking Score	Hazard Risk Rating
Boise	2.59%	Low	1	1	22	Medium
Eagle	3.98%	Low	1	1	22	Medium
Garden City	0.12%	Low	1	1	12	Low
Kuna	0.01%	Low	1	1	12	Low
Meridian	0.00%	None	0	0	0	Low
Star	0.92%	Low	1	1	12	Low
Unincorporated	7.32%	Medium	2	2	28	Medium
Total	2.37%	Low	1	1	12	Low

Exposed Critical Facilities

Dam Failure - Blacks Creek

Jurisdiction	Communications	Energy	Food, Water, Shelter	Hazardous Material	Health & Medical	Safety & Security	Transportation	Total
Boise	0	0	0	0	0	0	0	0
Eagle	0	0	0	0	0	0	0	0
Garden City	0	0	0	0	0	0	0	0
Kuna	0	0	0	0	0	0	0	0
Meridian	0	0	0	0	0	1	14	15
Star	0	0	0	0	0	0	0	0
Unincorporated	2	0	0	0	0	0	5	7
Total	2	0	0	0	0	1	19	22

Dam Failure - Lucky Peak

Jurisdiction	Communications	Energy	Food, Water, Shelter	Hazardous Material	Health & Medical	Safety & Security	Transportation	Total
Boise	78	7	61	4	16	184	78	428
Eagle	11	2	25	1	5	12	23	79
Garden City	71	0	19	4	4	6	8	112
Kuna	0	0	0	0	0	0	0	0
Meridian	0	0	0	0	0	0	0	0
Star	2	0	6	0	1	6	22	37
Unincorporated	0	6	13	0	3	3	21	46
Total	162	15	124	9	29	211	152	702

Flood - 100-year

Jurisdiction	Communications	Energy	Food, Water, Shelter	Hazardous Material	Health & Medical	Safety & Security	Transportation	Total
Boise	1	0	24	0	1	13	39	78
Eagle	1	0	3	0	0	0	4	8
Garden City	1	0	2	3	0	1	2	9
Kuna	0	0	0	0	0	0	3	3
Meridian	4	1	2	1	1	1	18	28
Star	0	0	0	0	0	0	2	2
Unincorporated	0	3	9	0	1	1	55	69
Total	7	4	40	4	3	16	123	197

Flood - 500-year

Jurisdiction	Communications	Energy	Food, Water, Shelter	Hazardous Material	Health & Medical	Safety & Security	Transportation	Total
Boise	49	6	40	0	11	159	73	338
Eagle	6	1	13	0	2	8	6	36
Garden City	8	0	14	4	3	6	7	42
Kuna	0	0	0	0	0	0	3	3
Meridian	5	2	3	1	2	1	19	33
Star	0	0	3	0	0	5	4	12
Unincorporated	0	3	13	0	1	3	58	78
Total	68	12	86	5	19	182	170	542

Landslide - Categories Greater than 30% Slope & 15-30% Slope

Jurisdiction	Communications	Energy	Food, Water, Shelter	Hazardous Material	Health & Medical	Safety & Security	Transportation	Total
Boise	4	0	3	0	0	0	7	14
Eagle	0	0	1	0	0	0	2	3
Garden City	0	0	0	0	0	0	2	2
Kuna	0	0	0	0	0	0	0	0
Meridian	0	0	0	0	0	0	0	0
Star	0	0	1	0	0	0	0	1
Unincorporated	10	1	12	0	0	1	7	31
Total	14	1	17	0	0	1	18	51

Wildfire - Categories High & Moderate

Jurisdiction	Communications	Energy	Food, Water, Shelter	Hazardous Material	Health & Medical	Safety & Security	Transportation	Total
Boise	13	1	29	1	1	6	15	66
Eagle	1	0	4	0	0	2	0	7
Garden City	0	0	0	0	0	0	0	0
Kuna	0	0	0	0	0	0	0	0
Meridian	0	0	0	0	0	0	0	0
Star	0	0	0	0	0	0	0	0
Unincorporated	75	16	64	3	2	5	16	181
Total	89	17	97	4	3	13	31	254

2022 Ada County Multi-Hazard Mitigation Plan

Appendix E. Wildfire Mitigation Activities Over Previous Performance Period

IDAHO FIREWISE-ADA COUNTY SPECIFIC

2017

Educational Events: (32)

Cooperators:

- Boise Fire Department
- Bureau of Land Management
- College of Western Idaho

Organized Garden Tours: (8)

Home Assessments: (7)

Communities Assisted: (7)

- Quail Ridge
- Columbia Village
- El Paseo
- Warm Springs Mesa

- Briar Hills
- Highland Cove
- Hidden Springs

Fuels Reduction – Existing Project Maintenance:

Firewise Demonstration Gardens

Mechanical removal = 30 cubic yards

2018

Educational Events: (36)

Cooperators:

- Boise Fire Department
- Bureau of Land Management
- US Forest Service
- College of Western Idaho
- D & B Supply
- Zamzows
- Treasure Valley Land Trust
- Idaho Botanical Garden
- Idaho Nursery & Landscape Association
- Centennial Rotary Club
- Capital High School
- NRCS

Organized Garden Tours: (11)

Home Assessments: (6)

Communities Assisted (6)

- Central Foothills
- Warm Springs Mesa
- Avimor
- Columbia Village
- Tandem Ridge
- Briar Hill

Project: March 2018 - ongoing

Firewise Demonstration Garden, Jim Hall Foothills Learning Center

Contact:

Martha Brabec, Foothills Restoration Spec

Boise City Parks & Recreation

mbrabec@cityofboise.org

Office: (208)493-2535

Description/scope:

- Approximately 1,500 sq ft area
- Removal of existing landscape
- Weed control
- Landscape design assistance and installation

Fuels Reduction – Existing Project Maintenance:

Firewise Demonstration Gardens

Mechanical removal = 30 cubic yards

2019

Education Events: (19)

Cooperators:

- Boise Fire Department
- Bureau of Land Management
- US Forest Service
- College of Western Idaho
- D & B Supply
- Zamzows
- Idaho Botanical Garden
- Idaho Nursery & Landscape Association
- Capital High School
- Boise State University
- NRCS
- Idaho Smart Growth

Organized Garden Tours: (10)

Home Assessments: (11)

Communities Assisted: (8)

- Morningside Heights
- Barber Valley
- Avimor
- Columbia Village
- Central Foothills
- Warm Springs Mesa
- Tandem Ridge
- Briar Hills
- Hidden Springs
- Quail Ridge

Fuels Reduction – Existing Project Maintenance:
Firewise Demonstration Gardens

- Mechanical removal = 30 cubic yards

2020

Education Events: (5)

Cooperators:

- Boise Fire Department
- College of Western Idaho
- Franz Witte
- Idaho Botanical Garden
- Idaho Smart Growth
- Boise State University

Organized Garden Tours: (6)

Home Assessments: (3)

Communities Assisted: (2)

- Harris Ranch North
- Quail Ridge

Project: September 2020-ongoing

Children’s Firewise Garden, Bernardine Quinn Riverside Park

Contacts:

Wendy Larimore, Associate Landscape Architect

Boise Parks & Recreation

wlarimore@cityofboise.org

Office: (208)409-4142

Kristin Gnojewski

Boise Parks & Recreation

kgnojewski@cityofboise.org

Olivia Harman, Olivia Landscape Design

olivia.harman123@gmail.com

208-577-1387

Description/scope

- Approximately ½ acre
- Landscape design assistance and installation

Fuels Reduction – Existing Project Maintenance:

Firewise Demonstration Gardens

Mechanical removal = 30 cubic yards

2021

Education Events: (6)

Cooperators:

- Boise Fire Department
- College of Western Idaho
- Idaho Botanical Garden
- Idaho Nursery & Landscape Association

Organized Garden Tours: (6)

Home Assessments: (2)

Communities Assisted: (2)

- Harris Ranch North
- Hidden Springs

Project: April 2021

Private residence

Contact:

Brittany Brand

3217 N Wagon Wheel Ct Boise, ID 83702

brittanybrand@boisestate.edu

(513) 532-7362

Description/scope

- Mechanically removed 10 cubic yards of Juniper

Fuels Reduction – Existing Project Maintenance:

Firewise Demonstration Gardens

Mechanical removal = 30 cubic yards

Project:

City of Eagle Chipping Event

Cubic yards: 20

Website Maintenance: 20 hours annually

Grants Provided: \$3,000 Annually to Project Learning Tree (Fire Education)

Planned classes for 2022:

EYC training events (2)

IBG Treasure Valley Garden Certificate Program (1)

BOISE BLM PROJECT SUMMARY

- Surprise Valley Fuel Break
- Multiple entries 9/1/2017 – 11/1/19
- Bill Moore Project Coordinator SW Idaho RC&D swidrcd@idahorcd.org (208) 573-4875
- Hazardous vegetation removal, chemical spraying, reseeding fuel break along north rim of Surprise Valley neighborhood.
- SW Idaho RC&D, Bureau of Land Management

- Surprise Valley North Rim Condo Hazardous Fuel Reduction
- Multiple entries 9/1/2020 – 11/1/21
- Bill Moore Project Coordinator SW Idaho RC&D swidrcd@idahorcd.org (208) 573-4875
- Hazardous fuel removal around Surprise Valley North Rim Condos
- SW Idaho RC&D, Bureau of Land Management

- Canyon Point Fuel Break
- Multiple entries 9/1/2017 – 11/1/19
- Jared Jablonski Fire Mitigation Education BLM jjablonski@blm.gov (208) 384-3210
- Seeding and planting forged kochia green strip on BLM land around Canyon Point neighborhood
- Bureau of Land Management

- Idaho Department of Transportation Roadside Vegetation Treatment
- Multiple entries 1/1/2017 – 12/31/21
- Michael Garz District 3 Operations Manager ITD michael.garz@itd.idaho.gov (208) 334-8347
- SW Idaho Interstate 84 mowing, seeding, spraying
- Idaho Department of Transportation, Bureau of Land Management

- Eagle Roadside Vegetation Treatment
- 9/1/19 – 11/30/19
- Bill Moore Project Coordinator SW Idaho RC&D swidrcd@idahorcd.org (208) 573-4875
- Highway 55 roadside mowing and seeding
- SW Idaho RC&D, Bureau of Land Management, Eagle Fire Department

- Highland Nines
- 9/1/21 – 10/31/21
- Bill Moore Project Coordinator SW Idaho RC&D swidrcd@idahorcd.org (208) 573-4875
- Hazardous fuel removal common areas Highland Nines neighborhood
- SW Idaho RC&D, Bureau of Land Management

Current Projects & Initiatives (separate projects):

- Idaho Department of Transportation Roadside Vegetation Treatment
- Multiple entries 1/1/2017 – 12/31/21
- Michael Garz District 3 Operations Manager ITD michael.garz@itd.idaho.gov (208) 334-8347
- Interstate 84 mowing, seeding, spraying
- Idaho Department of Transportation, Bureau of Land Management

Planned Projects & Initiatives:

- Highland Nines
- 9/1/22 -11/1/22

- Bill Moore Project Coordinator SW Idaho RC&D swidrcd@idahorcd.org (208) 573-4875
- Further hazardous fuel removal in common areas Highland Nines neighborhood
- SW Idaho RC&D, Bureau of Land Management

- Idaho Department of Transportation Roadside Vegetation Treatment
- Multiple entries 1/1/2017 – 12/31/21
- Michael Garz District 3 Operations Manager ITD michael.garz@itd.idaho.gov (208) 334-8347
- Interstate 84 mowing, seeding, spraying
- Idaho Department of Transportation, Bureau of Land Management

BOISE STATE HAZARD & CLIMATE RESILIENCY INSTITUTE

Prior Projects & Initiatives (separate projects):

- **Name of Project:**

Using active-learning and goal-setting strategies to promote wildfire hazard awareness and preparedness

- **Approximate Start Date and Completion Date:**

July 2019 - October 2020

- **Project Contacts (name, title, agency, email & phone):**

Brittany Brand, Director for the Boise State Hazard and Climate Resilience Institute,
brittanybrand@boisestate.edu, 513-532-7362

Carson MacPherson-Krutsky, Research Scientists for the Boise State Hazard and Climate Resilience Institute,
carsonmk@gmail.com

- **Description/Scope of individual project with mitigation methods and quantitative measures (e.g. acres, cubic yards, structures, people, etc.)**

Promoting the adoption of household preparedness to natural hazards represents a critical step toward building resilient communities. However, despite the efforts of stakeholders who provide hazard preparedness recommendations to the public, the level of disaster preparedness across the world remains low. We hypothesize that the passive way in which natural hazard and risk information is most often delivered (i.e., lecture style; pamphlets; websites) inhibits participants' ability to connect with the materials, limiting both their attention and knowledge retention.

Our study examines how knowledge, perceptions, and attitudes toward preparedness actions influence preparedness behavior of residents of Boise's Wildland Urban Interface (WUI). As part of our study, we implemented a questionnaire before and after a 90-minute education workshop designed to help participants better understand WUI hazards, personalize their household risk, and develop positive attitudes toward taking mitigation and preparedness actions. The workshop, developed in collaboration with the Boise Fire Department and Idaho Firewise, uses active-learning and goal setting strategies to help participants engage with the material and set reasonable, measurable, and achievable goals.

Analysis of pre- and post-questionnaires show an overwhelmingly positive shift in knowledge, perceptions, attitudes, and preparedness intentions after experiencing the workshop. For example, our attendees reported feeling more able to protect their family and property from the threat of wildfire after our workshop. They also reported an intention to take action to reduce household risk after the workshop.

Our research demonstrates the efficacy of active-learning and goal-setting strategies to engage homeowners who live in the wildland urban interface (WUI) in a way that helps them personalize their wildfire risk and develop positive attitudes toward preparing. This work also demonstrates how giving the audience a voice through active-learning allows stakeholders to both recognize and resolve inaccurate risk perceptions, lack of trust in message sources, and negative attitudes toward preparing for future hazard events.

- **Cooperators, to show multiple levels of involvement (e.g. Federal agencies, State agencies, other local agencies, not-for-profits and other NGO's, etc.)**

Content Collaborators include Jerry McAdams (Wildfire Mitigation Specialist with the Boise Fire Department), Brett Van Paepeghem (Idaho Firewise), and the Fire Adapted Communities Learning Network

CWPP PROJECTS

Project Name	Dates	Categories	Activities	Partners	Impacts
2021					
Hidden Springs Town Association Annual Fire Fuel Reduction Project 2021	June 17-21, 2021	Fuels Reduction, Education	The importance of fuel reduction and creating defensible space along with details of the event were promoted on the community website, social media and email newsletter. Residents were given access to a checklist and asked to register for complimentary curbside pick-up of debris. Hopkins Evergreens crews picked up the debris and branches chipped were chipped for use at the community farm and bagged leaves and other organic debris were taken to the landfill. Great Outdoors Event.	Lisa Ahrens, Town Manager; Chuck Vertrees, Open Space Committee Chair, Hidden Springs Open Space Committee; Brett Hopkins, Hopkins Evergreens, NFPA for Firewise Educational Materials.	Hidden Springs Community - population:
Hidden Springs Wild-Fire Mitigation Efforts 2021	June 1 – July 1, 2021	Fuels Reduction	Hopkins Evergreen crews trimmed Association open space property adjacent to resident lots to help with the wildfire mitigation efforts (total of nine (9) acres / see blue on map).	Lisa Ahrens, Town Manager; Chuck Vertrees, Open Space Committee Chair, Hidden Springs Open Space Committee; Brett Hopkins, Hopkins Evergreens, NFPA for Firewise Educational Materials.	total of nine (9) acres
2020					
Hidden Springs Town Association Annual Fire Fuel Reduction Project 2020	May 1 & 2, 2020	Fuels Reduction, Education	The importance of fuel reduction and creating defensible space along with details of the event were promoted on the community website, social media and email newsletter. Residents were given	Lisa Ahrens, Town Manager; Chuck Vertrees, Open Space Committee Chair, Hidden Springs Open Space Committee; Brett Hopkins, Hopkins Evergreens;	Hidden Springs Community - population:

Project Name	Dates	Categories	Activities	Partners	Impacts
			access to a checklist and asked to register for complimentary curbside pick-up of debris. Hopkins Evergreens crews picked up the debris and branches chipped were chipped for use at the community farm and bagged leaves and other organic debris were taken to the landfill.	NFPA for Firewise Educational Materials.	

EAGLE FIRE LETTER TO BE INSERTED

ADA COUNTY PARKS

Prior Projects & Initiatives (separate projects):

- Firewise Landscaping Homeowner Incentive Program
- Summer 2020
- Martha Brabec, Ecologist, City of Boise Parks and Rec, mbrabec@cityofboise.org, 208-493-2535
- Homeowners who have fire-prone vegetation in their landscaping can receive a free firewise plant upon proof of removal.
- Idaho Firewise and Draggin Wing High Desert Nursery
- City of Boise Fire Mitigation Brochure Distribution
- 2020
- Martha Brabec/Jerry McAdams
- The City of Boise offers three free programs to WUI residents: 1) Citizen Fuel Reduction Policy, 2) Wildfire Safety Home Assessments, and 3) Neighborhood Chipping Program. Flyers were developed and distributed during 2020 to over 2000 homes in the WUI.
- Idaho Department of Lands Western States Fire Manager's Grant, HOAs and Neighborhood Associations

Current Projects & Initiatives (separate projects):

Projects are on-going and therefore qualify as past and current.

- City of Boise Hazardous Fuels Reduction – Slope Mowing
- 2016 - current
- Martha Brabec
- Slope mowing in City owned reserves to reduce hazardous fuels in high-threat areas. Measurable metrics are acres treated.
- Land Trust of the Treasure Valley, Boise Fire
- Neighborhood Chipping Program
- Spring 2020 – current
- Martha Brabec/Jerry McAdams
- WUI residents who receive a free wildfire safety home assessment from Boise Fire are eligible to receive free chipping services through this program. Hazardous debris is piled curbside and picked up on pre-scheduled Fridays. Measurable metrics are cubic yards of debris removed.
- City of Boise Neighborhood Associations, Boise Fire, BPR Community Forestry, Idaho Department of Lands
- Hulls Gulch Restoration/Hazardous Fuels Reduction
- 2018 - current
- Martha Brabec

- Hazardous fuels reduction and invasive species management adjacent to wetlands in Hulls Gulch. Debris is chipped and left on site or removed in dump trucks.
- BLM Wildfire Community Assistance Grant funded portions of Phase 1 and 3 of this project. IDL Western States Fire Manager's grant will likely fund an additional and final phase in Fall 2022.

Planned Projects & Initiatives:

- Stack Rock Hazardous Fuels Reduction
- Spring 2022 – on-going
- Martha Brabec and Boise Fire
- The City of Boise will reduce hazardous fuels at Stack Rock, the City's only forested property, starting in spring 2022. Mechanical or hand treatment methods will be used to encourage aspen regeneration by removing standing, down dead timber, and ladder fuels; thin; and remove underbrush—for the improvement of stand condition and increase resilience of stands to disturbance. Slash will either be utilized for firewood, pile burned or chipped.
- USFS and IDL Western State's Fire Manager's Grant.
- East Boise Riparian Corridor Project
- Spring 2022
- Golden Eagle Audubon Society (GEAS)/City of Boise
- The project goal is to restore 50+ acres of important wildlife habitat along the Boise River by 2023. Invasive tree and dead down debris removal is large component of the habitat restoration, and accumulated slash will be removed by Boise Fire and other project partners.
- Ada County Parks and Waterways, Boise River Enhancement Network, Boise Fire, Boise Parks and Recreation, Idaho Foundation for Parks and Lands, and others.

HIGHLANDS NINES FUEL REDUCTION PROJECT

Started June of 2020

Projected completion date Fall 2023

The major thinning element of the project was completed the last week of September 2021, what remains is focused spraying of invasive weed concentrations (one complete, two to go) and overseeding.

Contacts:

Mike Hill

Highlands Nines HOA VP

mjhill33@gmail.com

208-863-1050

Dave Churchill

Highlands Nines HOA President

dave.churchill4681@gmail.com

208-606-5903

SCOPE:

Create fire breaks and thin and remove brush within the common areas of the Highlands Nines development located at the top of Braemere Rd. in Boise. Additionally focused spraying of concentrations of invasive weeds and overseeding of treated areas.

Phase One was fuel load reduction which was completed in September of 2021.

Work performed by contractor Forest Management

Approximately 8 acres were treated

A total of 13 dump truck loads of chipped vegetation were removed.

Phase Two is spraying of invasive weed concentrations

Work to be performed by Ada County Noxious Weed Control

Estimated to require 3-4 sprayings, First spraying complete in Fall of 2021

Phase Three is overseeding of sprayed areas once the invasive weeds are removed.

Project participants included the Highlands Nines HOA, Highlands Neighborhood Association, BLM, City of Boise Fire Department, Ada County Noxious Weed Control, Forest Management (Contractor), Southwest Idaho RC&D and input from multiple potential contractors.

- 1) The number of housing units protected by the project is 84.
- 2) The project covered 8 acres.

HIDDEN SPRINGS TOWN ASSOCIATION (HSTA) FIREWISE INITIATIVES 2015-2022

HSTA Prior Projects & Initiatives:

Hidden Springs Town Association Annual Fire Fuel Reduction Project 2021

June 17 -21, 2021

Lisa Ahrens, Town Manager; Chuck Vertrees, Open Space Committee Chair, Hidden Springs Open Space Committee; Brett Hopkins, Hopkins Evergreens, NFPA for Firewise Educational Materials.

The Association hosted a fire fuel’s reduction project. The importance of fuel reduction and creating defensible space along with details of the event were promoted on the community website, social media and email newsletter. Residents were given access to a checklist and asked to register for complimentary curbside pick-up of debris. Hopkins Evergreens crews picked up the debris and branch es chipped were chipped for use at the community farm and bagged leaves and other organic debris were taken to the landfill.



Hidden Springs Great Outdoors Event 2021

June 16, 2021

Lisa Ahrens, Town Manager; Chuck Vertrees, Open Space Committee Chair, Hidden Springs Open Space Committee; Brett Hopkins, Hopkins Evergreens; Boise Fire; Idaho Firewise.

The Association hosted the Great Outdoors event to educate residents on the importance of caring for community open spaces including Firewise best practices. In addition to educational booths, there was live music, food trucks and educational passport activity to encourage participation.



Hidden Springs Wild-Fire Mitigation Efforts 2021

June 1 – July 1, 2021

Lisa Ahrens, Town Manager; Chuck Vertrees, Open Space Committee Chair, Hidden Springs Open Space Committee; Brett Hopkins, Hopkins Evergreens; Boise Fire; Idaho Firewise; City of Boise Foothills Restoration.

Hopkins Evergreen crews trimmed Association open space property adjacent to resident lots to help with the wildfire mitigation efforts (total of nine (9) acres / see blue on map). Hopkins followed guidelines and safe practices for trimming and seeding per the City of Boise Foothills Restoration Specialists, Idaho Firewise and the Boise Fire Department.

The following activities were performed:

- Weed trimming of grass understory, with plastic blades or plastic string, on HSTA property within 20 feet of property line if property is directly adjacent to HSTA property.
- Care taken to leave perennial native grasses, as they typically stay green thru August, are more resistant to fire and natural re-seeding helps combat cheat-grass and medusa head.
- Fall broadcast seeding of native grasses (Approved native grasses will be determined by the Foothills Restoration Specialist with guidance from NRCS).

The following guidelines were followed:

- Grass was not cut shorter than 6 inches in length.
- Cut or trimmed organic materials were bagged and removed from the site to reduce the spread of non-native invasive grasses, and to reduce wildfire risk.

The following best practices were observed:

- A fire extinguisher was on hand with all crews.
- Residents in homes adjacent to the marked areas were asked to have a garden hose easily accessible.
- Crews all had working cellphone in case a fire started.
- Hot equipment was not laid on dry grass where it may ignite flammable grasses.
- Refueling took place on paved surfaces.

Hidden Springs Town Association Annual Fire Fuel Reduction Project 2020

May 1 & 2, 2020

Lisa Ahrens, Town Manager; Chuck Vertrees, Open Space Committee Chair, Hidden Springs Open Space Committee; Brett Hopkins, Hopkins Evergreens; NFPA for Firewise Educational Materials.

The Association hosted a fire fuel's reduction project. The importance of fuel reduction and creating defensible space along with details of the event were promoted on the community website, social media and email newsletter. Residents were given access to a checklist and asked to register for complimentary curbside pick-up of debris. Hopkins Evergreens crews picked up the debris and branches chipped were chipped for use at the community farm and bagged leaves and other organic debris were taken to the landfill.

Hidden Springs Wild-Fire Mitigation Efforts 2020

June 1 – July 1, 2017

Lisa Ahrens, Town Manager; Chuck Vertrees, Open Space Committee Chair, Hidden Springs Open Space Committee; Brett Hopkins, Hopkins Evergreens; Boise Fire; Idaho Firewise; City of Boise Foothills Restoration.

Hopkins Evergreen crews trimmed Association open space property adjacent to resident lots to help with the wildfire mitigation efforts (total of nine (9) acres see map above). Hopkins followed guidelines and safe practices for trimming and seeding per the City of Boise Foothills Restoration Specialists, Idaho Firewise and the Boise Fire Department.

The following activities were performed:

- Weed trimming of grass understory, with plastic blades or plastic string, on HSTA property within 20 feet of property line if property is directly adjacent to HSTA property.
- Care taken to leave perennial native grasses, as they typically stay green thru August, are more resistant to fire and natural re-seeding helps combat cheat-grass and medusa head.
- Fall broadcast seeding of native grasses (Approved native grasses will be determined by the Foothills Restoration Specialist with guidance from NRCS).

The following guidelines were followed:

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- Crews all had working cellphone in case a fire started.
- Hot equipment was not laid on dry grass where it may ignite flammable grasses.
- Refueling took place on paved surfaces.

Hidden Springs Town Association Annual Fire Fuel Reduction Project 2019

May 3 & 4, 2019

Lisa Ahrens, Town Manager; Chuck Vertrees, Open Space Committee Chair, Hidden Springs Open Space Committee; Brett Hopkins, Hopkins Evergreens; NFPA for Firewise Educational Materials.

The Association hosted a fire fuel's reduction project. The importance of fuel reduction and creating defensible space along with details of the event were promoted on the community website, social media and email newsletter. Residents were given access to a checklist and asked to register for complimentary curbside pick-up of debris. Hopkins Evergreens crews picked up the debris and branches chipped were chipped for use at the community farm and bagged leaves and other organic debris were taken to the landfill.

Hidden Springs Wild-Fire Mitigation Efforts 2019

June 1 – July 1, 2019

Lisa Ahrens, Town Manager; Chuck Vertrees, Open Space Committee Chair, Hidden Springs Open Space Committee; Brett Hopkins, Hopkins Evergreens; Boise Fire; Idaho Firewise; City of Boise Foothills Restoration.

Hopkins Evergreen crews trimmed Association open space property adjacent to resident lots to help with the wildfire mitigation efforts (total of nine (9) acres see map above). Hopkins followed guidelines and safe practices for trimming and seeding per the City of Boise Foothills Restoration Specialists, Idaho Firewise and the Boise Fire Department.

The following activities were performed:

- Weed trimming of grass understory, with plastic blades or plastic string, on HSTA property within 20 feet of property line if property is directly adjacent to HSTA property.
- Care taken to leave perennial native grasses, as they typically stay green thru August, are more resistant to fire and natural re-seeding helps combat cheat-grass and medusa head.
- Fall broadcast seeding of native grasses (Approved native grasses will be determined by the Foothills Restoration Specialist with guidance from NRCS).

The following guidelines were followed:

- Grass was not cut shorter than 6 inches in length.
- Cut or trimmed organic materials were bagged and removed from the site to reduce the spread of non-native invasive grasses, and to reduce wildfire risk.

The following best practices were observed:

- A fire extinguisher was on hand with all crews.
- Residents in homes adjacent to the marked areas were asked to have a garden hose easily accessible.
- Crews all had working cellphone in case a fire started.
- Hot equipment was not laid on dry grass where it may ignite flammable grasses.
- Refueling took place on paved surfaces.

Hidden Springs Town Association Annual Fire Fuel Reduction Project 2018

May 4 & 5, 2018

Lisa Ahrens, Town Manager; Chuck Vertrees, Open Space Committee Hidden Springs Open Space Committee; Brett Hopkins, Hopkins Evergreens; NFPA for Firewise Educational Materials. The Association a fire fuel’s reduction project. The importance of fuel reduction and creating defensible space along with details of the event were promoted co mmunity website, social media and email newsletter. Residents were access to a checklist and asked to register for complimentary curbside up of debris. Hopkins Evergreens crews picked up the debris and branches chipped were chipped for use at the community farm and bagged leaves and other organic debris were taken to the landfill.



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Hidden Springs Wild-Fire Mitigation Efforts 2018

June 1 – July 1, 2018

Lisa Ahrens, Town Manager; Chuck Vertrees, Open Space Committee Chair, Hidden Springs Open Space Committee; Brett Hopkins, Hopkins Evergreens; Boise Fire; Idaho Firewise; City of Boise Foothills Restoration. Hopkins Evergreen crews trimmed Association open space property adjacent to resident lots to help with the wildfire mitigation efforts (total of nine (9) acres see map above). Hopkins followed guidelines and safe practices for trimming and seeding per the City of Boise Foothills Restoration Specialists, Idaho Firewise and the Boise Fire Department.

The following activities were performed:

- Weed trimming of grass understory, with plastic blades or plastic string, on HSTA property within 20 feet of property line if property is directly adjacent to HSTA property.
- Care taken to leave perennial native grasses, as they typically stay green thru August, are more resistant to fire and natural re-seeding helps combat cheat-grass and medusa head.
- Fall broadcast seeding of native grasses (Approved native grasses will be determined by the Foothills Restoration Specialist with guidance from NRCS).

The following guidelines were followed:

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The following best practices were observed:

- A fire extinguisher was on hand with all crews.
- Residents in homes adjacent to the marked areas were asked to have a garden hose easily accessible.
- Crews all had working cellphone in case a fire started.
- Hot equipment was not laid on dry grass where it may ignite flammable grasses.
- Refueling took place on paved surfaces.

Hidden Springs Town Association Wildfire Preparedness Day 2017 – Plan – Prepare - Protect

May 20, 2017

Lisa Ahrens, Town Manager; Chuck Vertrees, Open Space Committee Chair, Hidden Springs Open Space Committee; Brett Hopkins, Hopkins Evergreens; NFPA; Boise Fire; Idaho Firewise. focus of the event was on community safety as well as a home and garden component with an emphasis on Firewise and sustainable products and companies. Educational workshops (Creating Defensible Space, Firewise Landscaping, Community Wood Chipping Project) and presentations were hosted in the Community Clubhouse from 11:00 – 3:00pm with a Home and Garden show on the Village Green. The event featured live music, a climbing Pinewood Derby competition, food and drink available for purchase Dry Creek Mercantile.



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Hidden Springs Wild-Fire Mitigation Efforts 2017

June 1 – July 1, 2017

Lisa Ahrens, Town Manager; Chuck Vertrees, Open Space Committee Chair, Hidden Springs Open Space Committee; Brett Hopkins, Hopkins Evergreens; Boise Fire; Idaho Firewise; City of Boise Foothills Restoration.

Hopkins Evergreen crews trimmed Association open space property adjacent to resident lots to help with the wildfire mitigation efforts (total of nine (9) acres - see blue on map). Hopkins followed guidelines and safe

practices for trimming and seeding per the City of Boise Foothills Restoration Specialists, Idaho Firewise and the Boise Fire Department.

The following activities were performed:

- Weed trimming of grass understory, with plastic blades or plastic string, on HSTA property within 20 feet of property line if property is directly adjacent to HSTA property.
- Care taken to leave perennial native grasses, as they typically stay green thru August, are more resistant to fire and natural re-seeding helps combat cheat-grass and medusa head.
- • Fall broadcast seeding of native grasses (Approved native grasses will be determined by the Foothills Restoration Specialist with guidance from NRCS).
- The following guidelines were followed:
- Grass was not cut shorter than 6 inches in length.
- Cut or trimmed organic materials were bagged and removed from the site to reduce the spread of non-native invasive grasses, and to reduce wildfire risk.

The following best practices were observed:

- A fire extinguisher was on hand with all crews.
- Residents in homes adjacent to the marked areas were asked to have a garden hose easily accessible.
- Crews all had working cellphone in case a fire started.
- Hot equipment was not laid on dry grass where it may ignite flammable grasses.
- Refueling took place on paved surfaces.

Hidden Springs Great Outdoors Event 2016

May 21, 2016

Lisa Ahrens, Town Manager; Chuck Vertrees, Open Space Committee Chair, Hidden Springs Open Space Committee; Brett Hopkins, Hopkins Evergreens; Boise Fire; Idaho Firewise.

Hidden Springs Wild-Fire Mitigation Efforts 2016

June 1 – July 1, 2016

Lisa Ahrens, Town Manager; Chuck Vertrees, Open Space Committee Chair, Hidden Springs Open Space Committee; Brett Hopkins, Hopkins Evergreens; Boise Fire; Idaho Firewise; City of Boise Foothills Restoration. Hopkins Evergreen crews trimmed Association open space property adjacent to resident lots to help with the wildfire mitigation efforts (total of nine (9) acres - see blue on map). Hopkins followed guidelines and safe practices for trimming and seeding per the City of Boise Foothills Restoration Specialists, Idaho Firewise and the Boise Fire Department.

The following activities were performed:

- Weed trimming of grass understory, with plastic blades or plastic string, on HSTA property within 20 feet of property line if property is directly adjacent to HSTA property.
- Care taken to leave perennial native grasses, as they typically stay green thru August, are more resistant to fire and natural re-seeding helps combat cheat-grass and medusa head.

- Fall broadcast seeding of native grasses (Approved native grasses will be determined by the Foothills Restoration Specialist with guidance from NRCS).

The following guidelines were followed:

- Grass was not cut shorter than 6 inches in length.
- Cut or trimmed organic materials were bagged and removed from the site to reduce the spread of non-native invasive grasses, and to reduce wildfire risk.

IDAHO POWER

Prior Projects & Initiatives (separate projects):

- Name of Project: Pole vegetation removal and sterilant treatment.
- Approximate Start Date and Completion Date 2019-2021
- Project Contacts (name, title, agency, email & phone) Brent Van Patten, Engineering Leader, bvanpatten@idahopower.com, 208-388-2514
- Description/Scope of individual project with mitigation methods and quantitative measures (e.g. acres, cubic yards, structures, people, etc.) cleared vegetation and applied ground sterilant around the bases of poles/structures near our Boise Bench Substation and poles along HWY 21 between Warm Springs Ave and Wilderness Ranch
- Cooperators, to show multiple levels of involvement (e.g. Federal agencies, State agencies, other local agencies, not-for-profits and other NGO's, etc.) n/a

Current Projects & Initiatives (separate projects):

- Name of Project: Vegetation Management-Wildfire Mitigation
- Approximate Start Date and Projected Completion Date: Ongoing
- Project Contacts (name, title, agency, email & phone): Brent Van Patten, Engineering Leader, bvanpatten@idahopower.com, 208-388-2514
- Description/Scope of individual project with mitigation methods and quantitative measures (e.g. acres, cubic yards, structures, people, etc.): Perform annual line patrols in elevated wildfire risk zones to verify adequate clearance between trees and overhead powerlines and mitigate any hazard trees and clearance issues we find
- Cooperators, to show multiple levels of involvement (e.g. Federal agencies, State agencies, other local agencies, not-for-profits and other NGO's, etc.) n/a

Current Projects & Initiatives (separate projects):

- Name of Project: Vegetation Management
- Approximate Start Date and Projected Completion Date: Ongoing
- Project Contacts (name, title, agency, email & phone): Brent Van Patten, Engineering Leader, bvanpatten@idahopower.com, 208-388-2514
- Description/Scope of individual project with mitigation methods and quantitative measures (e.g. acres, cubic yards, structures, people, etc.): Prunes trees away from overhead transmission and distribution power lines on regular intervals (multi-year cycles)
- Cooperators, to show multiple levels of involvement (e.g. Federal agencies, State agencies, other local agencies, not-for-profits and other NGO's, etc.) n/a

Prior Projects & Initiatives (separate projects):

- Name of Project: Idaho Power Company Oregon Trail Fire Area Vegetation Management

- Approximate Start Date and Completion Date: 2017-2022 once annually prior to 4th of July, generally June 20th-30th (a second mow may occur depending on plant growth and weather conditions)
- Project Contacts (name, title, agency, email & phone): Sarah Funk, Vegetation Ecologist, Idaho Power Company, sfunk@idahopower.com, 208-870-8890 (mobile)
- Description/Scope of individual project with mitigation methods and quantitative measures (e.g. acres, cubic yards, structures, people, etc.): Annually mow approximately 61.4 acres of green strip area (planted with forage kochia) to maintain short stature vegetation, annually sterilization of approximately 3 miles of roadway/firebreak around Idaho Power property near E. Amity and S. Holcomb Roads, in 2021 vegetation sterilization treatments of up to 10 feet around each distribution and transmission structures on Idaho Power property, annual spot treatments of noxious weed on entire site and within firebreak (total 215 acres).
- Cooperators, to show multiple levels of involvement (e.g. Federal agencies, State agencies, other local agencies, not-for-profits and other NGO's, etc.): Boise City Fire, BLM, neighborhood associations

Prior Projects & Initiatives (separate projects):

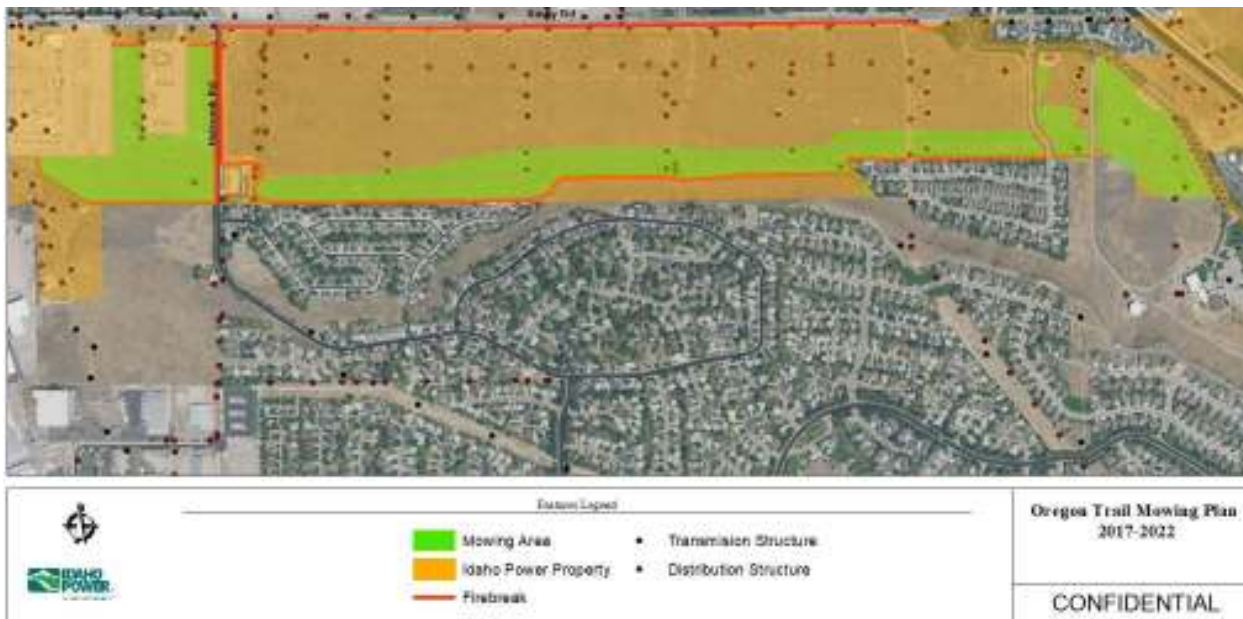
- Name of Project: Idaho Power Company Oregon Trail Fire Area Vegetation Management-forage kochia planting in green strip
- Approximate Start Date and Completion Date: December 2017
- Project Contacts (name, title, agency, email & phone): Sarah Funk, Vegetation Ecologist, Idaho Power Company, sfunk@idahopower.com, 208-870-8890 (mobile)
- Description/Scope of individual project with mitigation methods and quantitative measures (e.g. acres, cubic yards, structures, people, etc.): Planted forage kochia on top of light snow in winter 2017 on approximately 26 acres within the green strip on Idaho Power property at S. Holcomb and E. Amity Road
- Cooperators, to show multiple levels of involvement (e.g. Federal agencies, State agencies, other local agencies, not-for-profits and other NGO's, etc.): n/a

Current Projects & Initiatives (separate projects): Mowing and vegetation sterilization treatments (listed above with same parameters)

- Name of Project: Idaho Power Company Oregon Trail Fire Area Vegetation Management
- Approximate Start Date and Projected Completion Date: 2022 mow once annually prior to 4th of July, generally June 20th-30th (a second mow may occur depending on plant growth and weather conditions)
- Project Contacts (name, title, agency, email & phone): Sarah Funk, Vegetation Ecologist, Idaho Power Company, sfunk@idahopower.com, 208-870-8890 (mobile)
- Description/Scope of individual project with mitigation methods and quantitative measures (e.g. acres, cubic yards, structures, people, etc.): Annually mow approximately 61.4 acres of green strip area (planted with forage kochia) to maintain short stature vegetation, annually sterilization of approximately 3 miles of roadway/firebreak around Idaho Power property near E. Amity and S. Holcomb Roads, annual spot treatments of noxious weed on entire site and within firebreak (total 215 acres).
- Cooperators, to show multiple levels of involvement (e.g. Federal agencies, State agencies, other local agencies, not-for-profits and other NGO's, etc.): Boise City Fire, BLM, neighborhood associations

Planned Projects & Initiatives: Mowing and vegetation treatments

- Name of Project: Idaho Power Company Oregon Trail Fire Area Vegetation Management
- Projected Start Date and Projected Completion Date: 2023-2028-mow once annually prior to 4th of July, generally June 20th-30th (a second mow may occur depending on plant growth and weather conditions)
- Project Contacts (name, title, agency, email & phone): Sarah Funk, Vegetation Ecologist, Idaho Power Company, sfunk@idahopower.com, 208-870-8890 (mobile)
- Description/Scope of individual project with mitigation methods and quantitative measures (e.g. acres, cubic yards, structures, people, etc.): Annually mow approximately 61.4 acres of green strip area (planted with forage kochia) to maintain short stature vegetation, annually sterilization of approximately 3 miles of roadway/firebreak around Idaho Power property near E. Amity and S. Holcomb Roads, annual spot treatments of noxious weed on entire site and within firebreak (total 215 acres).
- Cooperators, to show multiple levels of involvement (e.g. Federal agencies, State agencies, other local agencies, not-for-profits and other NGO's, etc.): Boise City Fire, BLM, neighborhood associations



IDAHO DEPARTMENT OF FISH AND GAME

Prior Projects & Initiatives

Name of Project: Hammer Flat Herbicide Treatment

Approximate Start Date and Completion Date: Winter 2018

Project Contact:

Ann Moser, Wildlife Habitat Biologist

Boise River Wildlife Management Area

Idaho Department of Fish and Game

ann.moser@idfg.idaho.gov

208-334-2115

Project Description:

Idaho Department of Fish and Game (IDFG) owns and manages Hammer Flat, a key property at the wildland/urban interface above the intersection of Highway 21 and Warm Springs Ave. In winter 2018, IDFG worked with Ada County to treat 66 acres of Hammer Flat with the herbicide Imazapic. Imazapic was used at 6 oz/acre to target invasive annual grasses, particularly highly flammable cheatgrass.

Cooperators: Ada County Weed, Pest and Mosquito Abatement

Ongoing Annual Projects

Name of Project: Boise River Wildlife Management Area Road Maintenance

Approximate Start Date and Completion Date: Annually

Project Contact:

Ann Moser, Wildlife Habitat Biologist

Boise River Wildlife Management Area

Idaho Department of Fish and Game

ann.moser@idfg.idaho.gov

208-334-2115

Project Description:

Boise River Wildlife Management Area (BRWMA) staff maintain 11 miles of motorized trails on IDFG property in the Boise foothills. Road maintenance includes grading, mowing, and herbicide spraying in the roadway, as well as herbicide spraying within 10 feet on either side of the roadway. We also maintain an additional 3.5 miles of access roads for administrative use, but they are not open to public vehicles. Road maintenance ensures safe travel on our dirt roads, as well as limits the potential for a fire start from the road.

Cooperators: None. Annual road maintenance is done with IDFG staff and funding.

Name of Project: Boise River Wildlife Management Area Field Mowing

Approximate Start Date and Completion Date: Annually as needed

Project Contact:

Ann Moser, Wildlife Habitat Biologist

Boise River Wildlife Management Area

Idaho Department of Fish and Game

ann.moser@idfg.idaho.gov

208-334-2115

Project Description: There are approximately 35 acres of grass fields adjacent to the BRWMA office and shop on State Highway 21; about 27.5 acres are accessible with a mower. The fields are primarily composed of intermediate wheatgrass and smooth brome, but cheatgrass is also present. These fields are mowed annually, as needed, to minimize the fire risk to our facilities and adjacent wildlife habitat. One of these fields borders Highway 21 for about 1 mile, thus mowing the field minimizes risk of a fire start from the highway.

Cooperators: None. Field mowing is completed with IDFG staff and funding.

Name of Project: Boise River Wildlife Management Area Boundary

Approximate Start Date and Completion Date: Annually as needed

Project Contact:

Ann Moser, Wildlife Habitat Biologist

Boise River Wildlife Management Area

Idaho Department of Fish and Game

ann.moser@idfg.idaho.gov

208-334-2115

Project Description: BRWMA staff annually mow and/or apply herbicide to 3.9 miles of our boundary where we interface with urban lands. We mow or spray 1.6 miles of fence that separates IDFG property and housing developments on the Boise Front above Warm Springs Ave. We also mow 2.3 miles of IDFG property above the Black Cliffs on Highway 21. The goal is to minimize fire risk to our property as well as adjacent private property.

Cooperators: Fence mowing and herbicide spraying is completed with IDFG staff and funding. We have occasionally contracted with Ada County to conduct the herbicide spraying.

SOUTHWEST IDAHO RC&D WILDFIRE FUELS REDUCTION PROJECTS

Surprise Valley Wildfire Fuels Reduction Project

Start Date: January 2017 End Date: December 2021
 Project Sponsor: Surprise Valley HOA
 Contact Person: Steve King
 Mailing Address: 5240 S Surprise Way, Boise, Idaho 83716
 Phone: (208) 284 7673 E-mail: spking83@gmail.com

The project reduced the wildfire risk to 416 homes and 70 condos located in Southeast Boise. In total approximately 6600 by 40 feet of fire break was established. This area had fuels removed and reseeded to reduced wildfire vegetation.

The SWID RC&D received a grant of approximately \$90,000 from the BLM Community assistance program to fund this project. Joshua Renz was the RC&D contact with BLM.

Avimor Firebreak Project

Person Submitting Proposal: Rusty Coffelt
 Start Date: 07/30/2018 End Date: December 2018.
 Organization Name: Eagle Fire Protection District
 Mailing Address: 1119 E. State St. Suite #240
 Contact Person Name: Scott Buck
 Contact Person Phone: 208 914 8294
 Contact Person Email: sbuck@eaglefire.org

Agreement or Announcement Title: Avimor Village Fuel Mitigation Project
 Estimated Period of Performance: 2 years (Fall 2018/Fall 2019)
 Proposed Project Location: Avimor Village Community

Avimor Village, a Fire Wise community, is a village of 350+ homes, surrounded by foothills heavily covered in grass, sage and other wild vegetation. It is our mission to improve life safety, reduce damage to infrastructure and control the spread of wildfire in the Wildland Urban Interface through fuels

reduction by creating defensible wildfire fuels mitigation space 30 feet wide and five miles in length. The SWID RC&D received a grant of approximately \$43,000 from the BLM Community Assistance Program to fund this project.

Key Personnel:

Dan Richter- Managing Partner of the Avimor Development

Brad Pfannmuller- General Manager Avimor Village

Charlie Baun- Conservation Consultant

Rusty Coffelt- Fire Chief Eagle Fire Department

Jamie Vincent- Deputy Chief of Operations Eagle Fire Department

Scott Buck- Deputy Fire Marshal Eagle Fire Department

Joshua Renz - was the RC&D contact with BLM

Highland Nines Fuels Reduction Project

Person Submitting Proposal: Mike Hill

Start Date: 2/15/2021 End Date: November 2021

Organization Name: Highlands Nines HOA

Mailing Address: 1322 E. Braemere Rd. Boise, ID 83702

Contact Person Name: Mike Hill

Contact Person Phone: 208-863-1050

Contact Person Email: mjhill33@gmail.com

The Highlands Nines development is surrounding on three sides by open Foothill's land making it particularly susceptible to Wildland fire risk. Fuels reduction within the Nines development decreases the chances of a fire spreading to other surrounding neighborhoods in the Boise foothills.

The expected benefit is to significantly reduce the ability of a wild land fire to spread from a common area into housing and also to make it less likely flying embers landing in the common area would ignite a fire which could spread into housing.

In addition, the Nines HOA is working with the City of Boise Fire Department to complete the work required to become a Firewise USA site, this work involves the individual homeowner's lots but is also expected to reduce the risk of wildland fire in the overall Nines development.

Financial/Technical Project needs:

Highlands Nines HOA has consulted with other HOA's (Surprise Valley, Hidden Springs), wild land fire experts from the BLM (Jerad Johnson), Pat Durland (Stone Creek Fire LLC), Jerry McAdams (City of Boise Fire Department), Martha Brabec (Foothills Restoration Specialist - City of Boise) and experienced contractors to develop a plan to reduce the fuel load in the common areas and create a defensible barrier on the property lines. Jared Jablonski was the RC&D's contact at BLM for technical assistance.

Highlands Nines HOA will rely on the experience of the contractor selected to a significant degree regarding the specifics of the vegetation removal.

Estimated cost for completion of the first phase of the Highland Nines HOA Fuel Reduction project ended up being about \$24,000 which the SWID RC&D received a grant from the BLM Community Assistance Program to fund.

- 1) Removal of vegetation on the perimeter of the common areas that abut the homeowner's property lines to create a fuel break. At this time, I do not have an acreage or number of homes effected but there were thirteen dump trucks of chipped vegetation were removed.
- 2) Spraying of noxious/invasive weeds and reseeding within the common areas are to be done when funding becomes available.

US ARMY CORPS OF ENGINEERS

USACE will be creating some fuel breaks along the back of many boat-in campsites at Placer Point and Charcoal Flat this spring, assisted by IDFG. This was one element of our Lakeview Hike/Bike trail plan that moved forward, while the project in general was tabled. The fuel break is in effort to preserve high value areas of the Boise River Wildlife Management Area from fire starts originating at our boat in sites, and to also give time for recreators to flee fires descending upon them from the WMA.

- We'll begin in June 2022 when high water allows access to these areas. There's no other access.
- The break will be about 10 feet wide.
- The segments are 2400 feet and 4200 feet in length.
- Once cleared of vegetation, we'll maintain this break with herbicide. It will receive light use from visitors using it to visit the vault restrooms. We had originally planned that a recreational trail connecting this area to the dam would have provided sufficient use to eliminate the need for herbicides (same as Ridge to Rivers trail use).

We continue to provide baseline fire prevention measures generally entailing the use of herbicides to maintain bare ground road shoulders along Lucky Peak owned parking lots and roadways, maintain a bare ground 10' radius around recreation site fire amenities (ground grill, cooking grills), and maintain as bare ground many of our service roads. The attached files may help visualize the fuel breaks and service roads.

Does this help you out? Let me know if there is anything else we can provide.

Keith Hyde

Natural Resources Manager

CISM Peer Supporter

Lucky Peak Lake, Boise ID

Walla Walla District

U.S. Army Corps of Engineers

O 208.343.0671

C 208.954.7120

VOIP 208.555.4302

keith.b.hyde@usace.army.mil

Glenns Ferry Wildfire Fuels Reduction Projects

Person Submitting Proposal: Christy Acord for the City of Glenns Ferry

Start Date: June 2021 End Date December 2021

Start and end dates only reflect purchase of the equipment.

Organization Name: City of Glenns Ferry

Mailing Address: P.O. Box 910 Glenns Ferry, Idaho 83633

Contact Person Name: Mayor Monty White

Contact Person Phone: 208-366-7418

Contact Person Email: Mayorgf@rtci.net

Estimated Period of Performance: June 2021

Brush Hog \$6,600:

The SWID RC&D received a community assistance grant from the BLM for this equipment.

Mini Excavator \$55,000:

This was funded by the SWID RC&D through community assistance grant from the BLM for \$10,000, the City of Glenns Ferry for approximately \$15,000 and a \$30,000 grant to the City of Glenns Ferry through a USDA RD equipment grant for the remainder.

Proposed Project Location:

The Glenns Ferry Municipal Airport, (The Curly Chambers Airport), has repaved and repaired the runway, and has seen a dramatic increase in usage of the area. It has been identified by the Glenns Ferry Fire Department that the area surrounding the runway, parking area, and hangars is a fire risk. In order to reduce this fire risk, our mission is to remove the vegetation along the runways and parking area, and to keep this vegetation and any new vegetation cut in the future.

The Glenns Ferry Highway District has also shown interest and will be using the brush hog to trim back vegetation along the roadways surrounding Glenns Ferry. A verbal agreement with the City of Glenns Ferry Public Works Manager, and Glenns Ferry Highway District is in place. The King Hill Rural Fire Department will also be using this equipment to reduce the fuel along the roadways that are the most prone to summer fires, and stated this equipment will be especially useful around the Flint Mesa area, and other areas that are utilized for outdoor recreation during the summer months.

Personnel involved:

Johnny Hernandez/Scott Nichols-Glenns Ferry Public Works Manager. Responsible for arranging Glenns Ferry Municipal Airport fuels reduction.

Derek Janousek-Glenns Ferry Fire Chief, King Hill Rural Fire Department coordinator. Jim Gluch-Glenns Ferry Highway District is responsible for coordination to reduce fuels along roadways in the Elmore County area.

Jared Jablonski was the RC&D's contact at BLM for technical assistance.

MEADOW CREEK HOA FUELS REDUCTION PROJECT

Start Date: 7/28/20 End Date: December 2021

Project Advocate:

Centerville Fire VFD Mailing Address: 115 Grimes Pass Rd., Centerville, ID 83631-4138

Phone: (208) 392-4191 Fax:

E-mail: baumhoff.bruce@gmail.com

Project Contact Person: Trinia Richardson

Mailing Address: PO Box 189

Idaho City, ID 83631

Phone: (208) 807-0073 Fax:

E-mail: trichardson@co.boise.id.us

The meadow Creek subdivision is located in Centerville Idaho. It has approximately 30 residential structures. The roads through Meadow Creek subdivision are overgrown with grass, sage, and ponderosa pines and are very prone to fire due to the dry weather conditions in this area. Centerville Volunteer Fire Department would like to work with Boise County to reduce the overgrown fuels and provide for a safer ingress/egress for the residents in the area, as well as emergency response personnel.

Description of Project to be Accomplished and Expected Benefits:

The fuels reduction project objective is to reduce the fuel load along the roads that are owned by the Meadow Creek HOA.

This project will significantly reduce the ability of wild land fire to spread throughout the subdivision, as well as adjoining subdivisions. This work will also provide for a safe ingress/egress routes for residents as well as emergency response personnel.

Financial/Technical Project needs:

Boise County Fire Mitigation Forester (Trinia Richardson), Centerville Fire Chief (Bruce Baumhoff), BLM wild land fire expert (Jared Jablonski), and Meadow Creek HOA President (Chris Cash) worked together to develop a plan to reduce the fuel load. We relied on an experienced contractor to complete the fuels reduction.

The cost was \$17,386.00 which was funded through a grant the RC&D received from the BLM Community Assistance Program. Jared Jablonski was the RC&D's contact at BLM for technical assistance.

2022 Ada County Multi-Hazard Mitigation Plan

Appendix F. Ada County Firefighting Resources and Capabilities

Boise National Forest 2021 Designators

Designators have been established for key positions within Fire Management on the Boise National Forest consistent with the Intermountain Region's policy for designators and fire emergency vehicle marking standards. The intent of the designator and emergency vehicle standard is to enhance emergency and daily operations through standard nomenclature, represent the Boise NF as a cohesive professional federal fire organization while retaining unit identity, and avoid miss-communications that can be associated with using a person's last name.

The use of designators is primarily for radio communication and emergency vehicle striping and is intended to clearly identify a person's working title within the Boise National Forest organization, associated NWCG qualification standards or Line Officer status.

Supervisors Office

Position	Designator	Name	Location
Forest Supervisor	Supervisor 1	Tawnya Brummett	Supervisors Office
Deputy Forest Supervisor	Supervisor 2	David Francomb	Supervisors Office
Forest FMO	Chief 1	Rich Zimmerlee	Supervisors Office
Forest AFMO	Chief 2	Steve Baran	Supervisors Office
Forest Fire Planner	Chief 3	Vacant	Supervisors Office
Forest Fuels Planner	Fuels 1	Ryan Jones	Supervisors Office
Forest Aviation Officer	Marolf	Doug Marolf	Supervisors Office
Forest Fire Training Officer	Figgins	Julia Figgins	Supervisors Office
Interagency Center Manager	Leguineche	Jill Leguineche	Supervisors Office/BDC

D-1 Mountain Home Ranger District

Position	Designator	Name	Location
District Ranger	Ranger 1	Stephaney Kerley	Mtn. Home Office
FMO	Division 1	Mike Brady	Mtn. Home Office
AFMO-Suppression	Battalion 1	Ryan Erne	Mtn. Home Office
AFMO-Fuels	Battalion 14	Wes Duncan	Mtn. Home Office
Fuels Tech	Fuels 141	Mike Elles	Mtn. Home Office
Crew 11	Crew 11		
Mtn. Home Crew Supervisor	Captain 11	Preston Glaisyer	Lucky Peak Station
Mtn. Home Asst. Crew Sup.	11 Alpha	Ian Turner	Lucky Peak Station
Mtn. Home Squad Leader	11 Bravo	Clint Buchan-Barnett	Lucky Peak Station
Engine 411	Engine 411		
Mtn. Home Engine SFEO	Captain 411	Beau Burley	Mtn. Home Office
Mtn. Home Engine FEO	Engineer 411	Andrew Geringer	Mtn. Home Office
Mtn. Home Engine AFEO	Engine Operator 411	Nick Becharas	Mtn. Home Office
Engine 412	Engine 412		
Lucky Peak Engine SFEO	Captain 412	Colby Bertalotto	Lucky Peak Station
Lucky Peak Engine FEO	Engineer 412	Paul Mitchell	Lucky Peak Station
Lucky Peak Engine AFEO	Engine Operator 412	Craig Fluor	Lucky Peak Station
Engine 413	Engine 413		
Lester Creek Engine SFEO	Captain 413	Joel Welch	Lester Creek Station
Lester Creek Engine FEO	Engineer 413	Johnathan Blodgett	Lester Creek Station

Lester Creek Engine AFEO	Engine Operator 413	Aaron Badillo	Lester Creek Station
Prevention			
Prevention	Prevention 11	Chad Cline	Mtn. Home Office
Prevention	Patrol 12	Vacant	Lester Creek Station
Prevention	Patrol 21	Taryn Robinson	Lucky Peak Station
Prevention	Patrol 22	Alex Abols	Lucky Peak Station
Lucky Peak Helitack	Helicopter Superintendent 421	Jeremy Schwandt	Lucky Peak Station
Lucky Peak Helitack	Captain 421A	Jose Munguia	Lucky Peak Station
Lucky Peak Helitack	Captain 421B		Lucky Peak Station
Lucky Peak Helitack	Squad 421C	Morgan Meserth	Lucky Peak Station
Lucky Peak Helitack	Squad 421D	Colin Vickers	Lucky Peak Station
Lucky Peak Helitack Vehicle	Heli-tender 421		Lucky Peak Station
Lucky Peak Fuel Truck	LP Fuel Truck 421		Lucky Peak Station

D-3 Idaho City Ranger District

District Ranger	Ranger 3	Brant Petersen	Idaho City Office
FMO	Division 3	Chris Boldman	Idaho City Office
AFMO-Suppression	Battalion 3	Randy Lamb	Idaho City Office
AFMO-Fuels	Battalion 34	Allyn Spanfellner	Idaho City Office
Fuels Tech	Fuels 341	Ed Hunt	Idaho City Office
Engine 431	Engine 431		
Idaho City Engine SFEO	Captain 431	Ryan Green	Idaho City Station
Idaho City Engine FEO	Engineer 431	CJ Carter	Idaho City Station
Idaho City Engine AFEO	Engine Operator 431	Daniel Kurth	Idaho City Station
Engine 432	Engine 432		
Idaho City Engine SFEO	Captain 432	Anthony Rojo	Idaho City Station
Idaho City Engine FEO	Engineer 431	Nick Adamson	Idaho City Station
Idaho City Engine AFEO	Engine Operator 432	Cooper Wartonick	Idaho City Station
Crew 3	Crew 3		
Crew 3 Supervisor	Captain 3	Gordon Wells	Idaho City Station
Crew 3 Asst. Supervisor	3A	Andrew Nielsen	Idaho City Station
Crew 3 Squad Ldr	3B	Blake Bishop	Idaho City Station
Crew 3 Squad Ldr	3C	Denver Price	Idaho City Station
Prevention			
Prevention	Patrol 31	Chris Hightower	Idaho City Station
Prevention	Patrol 32	Kallie Leggett	Idaho City Station
Idaho City Hotshots	Crew 2		
Hotshot Superintendent	Superintendent 2	Brian Cardoza	Idaho City Station
ICIHC Captain	Captain 2A	Vacant	Idaho City Station
ICIHC Captain	Captain 2B	Steve Traverso	Idaho City Station
ICIHC Squad Ldr	Squad 2C	Todd Wanner	Idaho City Station
ICIHC Squad Ldr	Squad 2D	Holt Jaeger	Idaho City Station

D-4 Cascade Ranger District

District Ranger	Ranger 4	Jake Strohmeyer	Cascade Office
FMO	Division 4	Josh Warden	Cascade Office

AFMO-Suppression	Battalion 4	Patrick Morgan	Cascade Office
AFMO-Fuels	Battalion 44	Jim Bishop	Cascade Office
Fuels Tech	Fuels 441	Tim Dulhanty	Cascade Office
Crew 41	Crew 41		
Crew 41 Supervisor	Captain 41	Rory Anderton	Cascade Office
Crew 41 Assistant Supervisor	41A	Shane Kelley	Cascade Office
Crew 41 Squad Ldr	41B	Stanton Schaeffer	Cascade Office
Engine 441	Engine 441		
Cascade Engine SFEO	Captain 441	James Brown	Cascade Office
Cascade Engine FEO	Engineer 441	Matt Haupt	Cascade Office
Cascade Engine AFEO	Engine Operator 441	Jeff Henderson	Cascade Office
Prevention			
Prevention	Patrol 41	Kim Drake	Cascade Office
Prevention	Patrol 42	Darcey Doyle	Cascade Office

D-5 Lowman Ranger District

District Ranger	Ranger 5	Vacant	Lowman Office
FMO	Division 5	Colin Good	Lowman Office
AFMO –Suppression	Battalion 5	Richard “Aaron” Schneider	Lowman Office
AFMO-Fuels	Battalion 54	Ryan Shannahan	Lowman Office
Fuels Tech	Fuels 541	Guy Blom	Lowman Office
Engine 451	Engine 451		
Lowman Engine SFEO	Captain 451	Colter Stewart	Lowman Station
Lowman Engine FEO	Engineer 451	Andy Wagner	Lowman Station
Lowman Engine AFEO	Engine Operator 451	Vacant	Lowman Station
Crew 5	Crew 5		
Crew 5 Supervisor	Captain 5	Chris Knight	Lowman Station
C 5 Assistant Supervisor	5A	Nick Terrell	Lowman Station
C 5 Squad Ldr	5B	John Wagner	Lowman Station
C 5 Squad Ldr	5C	Jason Overfelt	Lowman Station
Prevention			
Prevention	Patrol 51	Vacant	Lowman Station
Prevention	Patrol 52	Mary Wagner	Lowman Station

D-6 Emmett Ranger District

District Ranger	Ranger 6	Katie Wood	Emmett Office
FMO	Division 6	Quincy Chung	Emmett Office
AFMO-Suppression	Battalion 6	Tim Garity	Garden Valley Office
AFMO-Fuels	Battalion 64	Justin Yankey	Emmett Office
Fuels Tech	Fuels 641	Zachary Van Abbema	Emmett Office
Engine 461	Engine 461		
Garden Valley Engine SFEO	Captain 461	Vacant	Garden Valley Station
Garden Valley Engine FEO	Engineer 461	Andrew Patota	Garden Valley Station
Garden Valley Engine AFEO	Engine Operator 461	Sam Lewis	Garden Valley Station
Prevention			
Prevention	Patrol 61	Willie Rockhill	Garden Valley Station
Prevention	Patrol 62	Vacant	Emmett Office
Prevention	Patrol 63	Sarah Jorgenson	Emmett Office

Garden Valley Helitack	Helicopter Superintendent 422	Dan Crowell	Garden Valley Station
Garden Valley Helitack	Captain 422A	DW Cook	Garden Valley Station
Garden Valley Helitack	Squad Ldr 422B	Karl Briggs	Garden Valley Station
Garden Valley Helitack	Squad Ldr 422C	Jacob Lancaster	Garden Valley Station
GV Helitack Vehicle	Heli-tender 422		Garden Valley Station
GV Fuel Truck	GV Fuel Truck 422		Garden Valley Station
Boise Hotshots	Crew 7		Garden Valley Station
BIHC Superintendent	Superintendent 7	Deon Berner	Garden Valley Station
BIHC Captain	Captain 7A	Dave Rogan	Garden Valley Station
BIHC Captain	Captain 7B	Allison Lund	Garden Valley Station
BHIC Squad Ldr	Squad 7C	Chris Lowers	Garden Valley Station
BHIC Squad Ldr	Squad 7D	Michael Wynkoop	Garden Valley Station

Chief – Equivalent to Fire Staff Officer, Forest FMO or Forest AFMO.

Division Chief – Equivalent to FMO. The designator will be used to identify the FMO or, provided that the incumbent meets the minimum DIVS and ICT3 qualification. Currency is required (see PMS 310-1 pg 11 definition of 'currency'). In the event that the incumbent does not meet the qualification criteria or loses currency, they will revert to a designator that recognizes their GS-11 status, but will not be designated as a Division Chief.

Battalion Chief – Equivalent to district AFMO, fire or fuels. The incumbent must meet the minimum DIVS and/or ICT3 qualification. Currency is required (see PMS 310-1 pg 11 definition of 'currency'). In the event that the incumbent does not meet these criteria, or loses currency, they will revert to a designator that recognizes their AFMO status, but will not be designated as a Battalion Chief. For example: Fuels-X4 (X signifying the District number).

Engines – All Boise NF engines will follow Intermountain Region Fire Emergency Vehicle Markings standards. Example: ID-BOF-ENG-431, where '4' designates the type, where '3' designates Idaho City RD, and '1' indicates the station identifier for that engine on that district.

Captain – Is a designator for Module Leaders, such as Engine Captain, Type 2 I.A. Crew Captain, or Hotshot Captain. Captains will only use their designator when they are away from their assigned module. At all other times they will use their module designator.

Example: Captain-431 would use this designator when he is on the hill and is requesting something from Engine-431; or Captain-431 remained in station while Engine-431 is out doing project work... ie "Engine-431", this is "Captain-431".

Engineer – Is the R-4 Engine Committee standard designator for the Assistant Captain on a wildland fire engine, ie Engineer-431.

Prevention - A prevention unit consists of one Prevention Officer without pumping capability.

Patrol - A patrol unit consists of a Type 6 or 7 engine with one firefighter. The minimum qualification for a Patrol Officer is FFT2. Note: To be utilized as a Type 6 or 7 engine on a wildfire, the staffing level must meet Redbook standards for personnel and qualification, and Fireline Handbook standards for equipment.

Type 2 I.A. Crews - When on-forest, the Type 2 I.A. Crews will use their Crew-3, Crew-5, designators. When off-forest on assignment, the Type 2 I.A. Crews will go by Boise NF Crew-3, 5.

When Crews breaks down into their 6 person squads for Initial Attack, they will use their designators indicating Crew and Squad identifiers as:

Designator	Assistants	Squad
Crew – 2 IHC	Alpha	Bravo
Crew – 3		Charlie
Crew – 5		
Crew – 7 IHC		

US Bureau of Land Management

Last Update: February 2021

OVERHEAD

POSITION	NAME	IDENTIFIER	OFFICE PHONE
FIRE MANAGEMENT OFFICER	RUSS BABIAK	CHIEF 1-1	208.384.3401
ASST FIRE MANAGEMENT OFFICER	VACANT	CHIEF 1-2	208.384.3453
FUELS PROGRAM MANAGER	LANCE OKESON	CHIEF 1-3	208.384.3486
FIRE PLANNER	VACANT		208.384.3461
FIRE PREVENTION & MITIGATION	JOSH RENZ	CHIEF 1-4	208.384.3444
FIRE OPERATIONS SUPERVISOR - SOUTHERN AREA	DAN BETTS	BAT 30	208.384.3471
FIRE OPERATIONS SUPERVISOR - BOISE AREA	JUSTIN SCHELLENBERG	BAT 20	208.384.3481
FIRE OPERATIONS SUPERVISOR - NORTHERN AREA	LINDSEY NEIWERT	BAT 10	208.384.3284
FIRE OPERATIONS SUPERVISOR – BOISE AREA	DENNIS KONRAD	BAT 21	208.384.3264
FIRE OPERATIONS SUPERVISOR - AVIATION	RAY RADDATZ	BAT 40	208.334.1028
FIRE OPERATIONS SUPERVISOR - FUELS	CHRIS CROMWELL	CHIEF 1-5	208.384.3469
FIRE INVESTIGATOR	BOISE	INV 1	208.384.3409
FIRE INVESTIGATOR	BOISE	INV 2	208.384.3482
DAILY SUPERVISOR	WILD WEST	SUPT 11	208.384.3281
DAILY SUPERVISOR	UNIT A BOISE	SUPT 21	208.384.3286
DAILY SUPERVISOR	UNIT B BOISE	SUPT 22	208.384.3472
DAILY SUPERVISOR	UNIT C BOISE	SUPT 23	208.384.3283
DAILY SUPERVISOR	HAMMETT	SUPT 31	208.366.7722
DAILY SUPERVISOR	BRUNEAU	SUPT 32	208.845.2011
PREVENTION / INFORMATION	Jared Jablonski	FIRE INFO	208.384.3378

ENGINES

RESOURCE	LOCATION	IDENTIFIER	TYPE
ENGINE	STAR	E1301	TYPE 3
ENGINE	STAR	E1411	TYPE 4
ENGINE	STAR	E1412	TYPE 4
ENGINE	UNIT A - BOISE	E1415	TYPE 4

ENGINE	UNIT A - BOISE	E1421	TYPE 4
ENGINE	UNIT A - BOISE	E1422	TYPE 4
ENGINE	UNIT B - BOISE	E1416	TYPE 4
ENGINE	UNIT B - BOISE	E1424	TYPE 4
ENGINE	UNIT B - BOISE	E1425	TYPE 4
ENGINE	UNIT C - BOISE	E1427	TYPE 4
ENGINE	UNIT C - BOISE	E1428	TYPE 4
ENGINE	HAMMETT	E1302	TYPE 4
ENGINE	HAMMETT	E1432	TYPE 4
ENGINE	HAMMETT	E1433	TYPE 4
ENGINE	BRUNEAU	E1434	TYPE 4
ENGINE	BRUNEAU	E1435	TYPE 4
ENGINE	BRUNEAU	E1436	TYPE 4

HEAVY EQUIPMENT

RESOURCE	LOCATION	IDENTIFIER	TYPE
DOZER	BOISE	DZ1833	2
DOZER	BOISE	DZ1834	2
DOZER	BRUNEAU	DZ1831	2
DOZER	BRUNEAU	DZ1832	2
WATER TENDER	BOISE	WT1931	2
WATER TENDER	BOISE	WT1932	2
WATER TENDER	BRUNEAU	WT1933	1
FUEL TENDER	BOISE	FT1199	

AVIATION

RESOURCE	LOCATION	IDENTIFIER	TYPE
AIR ATTACK	BOISE	AA5DT	FW
HELICOPTER	BOISE	803PJ	1

Boise District BLM Call Numbers 2021

<u>Call #</u>	<u>Name</u>	<u>Title</u>	<u>Call #</u>	<u>Resource</u>	<u>Location</u>
Chief 1-1	Russ Babiak	FMO	E1411	Engine Type IV	Wild West
Chief 1-2	Vacant	AFMO	E1412	Engine Type IV	Wild West
	Vacant	Fire Operations Manager	E1301	Engine Type III	Wild West
Chief 1-3	Lance Okeson	Fuels Program Coordinator			
Chief 1-4	Josh Renz	Prevention/Information	E1415	Engine Type IV	Unit A Boise
Investigation/Prevention			E1421	Engine Type IV	Unit A Boise
Investigation 1	Chelsea Rounds	Daily-Investigator	E1422	Engine Type IV	Unit A Boise
Investigation 2	Vacant	Daily-Investigator	E1416	Engine Type IV	Unit B Boise
Information 1	Jared Jablonski	Information Officer	E1424	Engine Type IV	Unit B Boise
Information 2	Vacant	Information Officer	E1425	Engine Type IV	Unit B Boise
Battalion/FOS Group			E1427	Engine Type IV	Unit C Boise
Bat 10	Lindsey Neiwert	871-1843	E1428	Engine Type IV	Unit C Boise
Bat 20	Justin Schellenburg	871-1835			
Bat 21	Dennis Konrad	871-7544	E1432	Engine Type IV	Hammett
Bat 30	Dan Betts	871-1830	E1433	Engine Type IV	Hammett
Unit Superintendents			E1302	Engine Type III	Hammett
Supt 11- Wild West	Nick Loveless	871-7538	E1434	Engine Type IV	Bruneau
Supt 21 - Boise Yard	Chad Niblett	401-4295	E1435	Engine Type IV	Bruneau
Supt 22 - Boise Yard	TJ Gholson	484-8878	E1436	Engine Type IV	Bruneau
Supt 23 - Boise Yard	Ben Rojas	871-7520			
Supt 31- Hammett	Ray Bilbao	789-4259	Heavy Equipment		
Supt 32 - Bruneau	James Brummond	908-1629	DZ1831	Dozer D6R	Bruneau
*Supts will be qualified as a TFLD and ICT4 or will use Chase as Designator			DZ1832	Dozer D6T	Bruneau
Helitack			DZ1833	Dozer D6T	Boise
HT40	Chase Truck	White Chase	DZ1834	Dozer D6T	Boise
HT43	Chase Truck	White Chase			
HT44	Chase Truck	Yellow Chase	WT1931	Water Tender Type II/3500 gal	Boise
Fuels			WT1932	Water Tender Type II/3500 gal	Boise
Fuels 51	Chris Cromwell	Monitoring	WT1933	Water Tender Type I/6500 gal	Bruneau
Fuels 52	Shared	Archeology			
Fuels 53	Courtney Wyatt	Fuels Ops	FT1199	Fuel Tender	Boise
Fuels 54	Chris Cromwell	Monitoring			
Fuels 55	Shared	Fuels Ops	Air Attack		
Fuels 56	Fuels 1 Ton	TerraTorch/Warehouse	Helicopter		
			425DT		Air Attack Base, Boise
			803PJ (Type 1 Helo)		Air Attack Base, Boise

The district is divided into 3 areas. North, Middle, and South

- 1 - all resources stationed in the North will have a 1 designator
- 2 - all resources stationed in the Boise Yard will have a 2 designator
- 3 - all resources stationed in the South will have a 3 designator
- 4 - all resources assigned to Helitack will have a 4 designator
- 5 - all resources assigned to Fuels group will have a 5 designator
- 8 - all resources assigned to the Heavy equipment group will have a 8 designator

Boise Fire Department

Personnel

Administration		
Title	Name	Identifier
Fire Chief	Mark Niemeyer	101
Planning & Administration Asst. Chief	Kim Brown	
Emergency Services Asst. Chief	Brad Bolen	102
Support Services Asst. Chief	Romeo Gervais	103
Operations/EMS Division Chief	Aaron Hummel	104
Special Operations Division Chief	Paul Roberts	105
Training & Safety Division Chief	Steve Rasulo	107
Logistics Division Chief	Lance Carbone	108
Fire Marshal Division Chief	Mike Bisagno	109
Wildfire Division Chief	Tony Piscopo	110
Emergency Management Manager	Rachel Holford	115
Operations		
Title	Name	Identifier
Battalion Chief BC1/A	Jonas Dethman	134
Battalion Chief BC2/A	Greg Ramey	136
Battalion Chief BC3/A	John Peugh	138
Battalion Chief BC1/B	Tom Moore	139
Battalion Chief BC2/B	Mike Walker	133
Battalion Chief BC3/B	Roy Mitchell	135
Battalion Chief BC1/C	Terry Theriot	137
Battalion Chief BC2/C	Brian Ashton	131
Battalion Chief BC3/C	Shawn Res	132
Logistics		
Title	Name	Identifier
Captain Logistics	Kevin Wilson	121
Captain Logistics	VACANT	122
Captain Logistics	Brian Skinner	123
Captain Logistics	Dan Hopkins	124
Supply/Inventory Specialist	Jen Sword	
Training		
Title	Name	Identifier
Captain Training	Jeremy Kircher	151
Captain Training	Shawn Cope	152
Captain Training	Marcus Rainey	153
Captain Training	Kurt Freeman	154
Captain Training	Stephen Madigan	155
Captain Training	Chad Cain	156
Captain Training	Vacant	

Prevention		
Title	Name	Identifier
Captain Inspector/ Investigator	Joel Damron	141
Captain Inspector	Dray Thompson	142
WUI Mitigation Captain	Jerry McAdams	143
Captain Investigator/Pub Ed	Roy Boehm	144
Captain Inspector	Jesse Tappert	145
Captain Inspector	DeWaine Kuehl	146
Captain Inspector/Investigator	Forrest France	147
Captain Inspector	Justin Wright	148

Apparatus

Category	#	Type	Availability	Staffing	Designator
Structural Engine	16	II	In-Service	3 Personnel	E1,E2,E3,E4,E5,E6,E7,E8,E9,E10,E11, E12,E14,E15,E16,E17
Structural Engine	5	II	Reserve	Not Staffed	R2,R10,R8,R10,R16
Structural Engine	1	II	Training	Not Staffed	TRN!, TRN2, TRN3
Aerial Platform	2	I	In-Service	4 Personnel	T4,T7
Aerial Ladder	1	I	In-Service	4 Personnel	T5 (Tiller)
Heavy Rescue	1	II	In-Service	Per Incident	RSQ7- ITR2
Command	3		In-Service	1 Person	BC1, BC2, BC3
Wildland Engine	5	IV	In-Service	3 Personnel	BR2,BR9,BR13,BR14,BR15
Wildland Engine	1	V	In-Service	Per Incident	BR16
Wildland Engine	2	VI	In-Service	Per Incident	BR01,BR12
Water Tender	3	I	In-Service	1 Person	WT12,WT14,WT16
HazMat	1	I	In-Service	Per Incident	HazMat 17 (Hackney)- RRT4
HazCom	1		In-Service	Per Incident	HazCom 17 (30' Command)- RRT4
Rescue Squad	1		In-Service	Per Incident	Squad 7
Rescue Trailer	1		In-Service	Per Incident	
Boat	1	III	In-Service	Per Incident	Dive 1
Jet Ski	2		In-Service	Per Incident	Jet Ski 1
ARFF Command	1		In- Service	1 Person	Smokey 7
ARFF	1		In- Service	2 Personnel	Smokey 9 (1500 gal)
ARFF	1		In- Service	2 Personnel	Smokey 10 (3000 gal)
ARFF	1		Reserve	Not Staffed	Smokey 8
Foam Engine	1		In-Service	Per Incident	Foam 6 (1160 gal)
Air Trailer	1		In-Service	Per Incident	Air (SCBA)

Rehab	1		In-Service	Per Incident	Rehab
AHIMT3	1		In-Service	Per Incident	Boise City AHIMT3

Eagle Fire District

Administration and Personnel

Title	Name	Identifier
Fire Chief	Tyler Lewis	401
Deputy Chief – Fire Marshal	Scott Buck	402
Deputy Chief-Support Services	Jamie Vincent	403
Division Chief-Deputy Fire Marshal	John Francesconi	404
Deputy Chief-Operations	Theron Hudson	406
Division Chief-Training	Kelsey Backen	405
		407
Safety Officer	Kelly Chadd	451
Safety Officer	Tyler Assmus	452
51 Career Firefighters		

Apparatus

Station: #1 – 966 E. Iron Eagle Dr. Eagle, Idaho

Category	Type	Staffing	Identifiers	Availability
Quint	1	3-4 Personnel	T41	In Service
Heavy Rescue		3-4 Personnel	R41	In Service
Squad 41-Swift Water Rescue		1-4 Personnel	SQ41	In Service
Brush Engine	6	3-4 Personnel	B41	In Service
Brush Engine	6	3-4 Personnel	Reserve Brush	Reserve
Reserve Engine	1	3-4 Personnel	Reserve Engine	Reserve
ATV/Tactical Rescue Vehicle		3-4 Personnel	TRV41	In Service
Command – Battalion 41		1	465	In Service
Command – Fire Chief		1	473	In Service
Command- Response Chief		1	474	In Service
Command – Investigation		1	462	In Service
Command – Safety		1	471	In Service
Command – Investigation		1	466	In Service
Command – Response Chief		1	472	In Service
Command – Response Chief		1	461	In Service
Rehab Trailer		Per Incident	Rehab	In Service
Incident Communications Trailer		Per Incident	ICT	In Service

Station #2 – 3180 E. Floating Feather Rd. Eagle, Idaho

Structural Engine	1	3-4 Personnel	E42	In Service
Brush Engine	6	3-4 Personnel	B42	In Service
ATV / Tactical Rescue Vehicle		3-4 Personnel	TRV42	In Service
Dozer 42		1 Person	DOZ42	In Service

Station #3 – 825 N. Cactus Creek Ave. Eagle, Idaho

Structural Engine	1	3-4 Personnel	E43	In Service
Brush Engine	6	3-4 Personnel	B43	In Service
Water Tender		1-2 Personnel	WT43	In Service

Station #5– 5871 W. Hidden Springs Dr. Boise, Idaho

Structural Engine	1	3-4 Personnel	E45	In Service
Brush Engine	5	3 Personnel	B45	In Service
ATV/Tactical Rescue		3-4 Personnel	TRV45	In Service

**Idaho Department of Lands-
Southwest Idaho Forest Protective District**

Casper Urbanek Fire Warden
Tyke Lofing Assistant Fire Warden
Bryan Durkin Assistant Fire Warden
Bob Pietras Area Manager

Aircraft: Available statewide from mid-June through mid-October (extended when needed)

Helicopters – Two Type 2 helicopters with seven-person helitack staffed in Coeur d’Alene and Lewiston area.

Single Engine Air Tanker (SEAT): McCall (2), Grangeville (2),
Fire Boss Scooper: Coeur d’Alene (2)

Equipment:	<u>Call #</u>	<u>Resource</u>	<u>Location</u>
	E-06	Engine Type 5	Boise
	E-25	Engine Type 5	Boise Basin
	E-12	Engine Type 5	High Valley

Crews:	<u>Call #</u>	<u>Resource</u>	<u>Location</u>
	Crew 39	Type 2 IDOC crew	Idaho City / Boise

Additional Type 2 IDOC crews may be available from Orofino and St. Anthony, ID

Other staff includes:

Fire Information, Investigation, Prevention, and Mitigation programs are administered by district fire staff.

The Fire Management Bureau staff in Coeur d’Alene and Boise provides state-wide support in fire business, resource and incident management, and interagency fire cache operations.

Kuna Rural Fire District

Personnel

Title	Name	Identifier
Fire Chief	Perry Palmer	601
Assistant Fire Chief	Terry Gammel	602
Battalion Chief		603
Captain	TJ Lawrence	6842
Captain	Joe Link	6830
Captain	John Charlton	6847

Apparatus

Category	Identifier
Structure Engine	E-61 (Type 2)
Structure Engine	E-62 (Type 2)
Water Tender	WT-61
Brush Squad	BR-61 (Type 4)
Brush Squad	BR-62 (Type 3)
Ambulance	KM-61 (Type 2)
Ambulance	KM-63 (Type 2)
Command F-150	602
Command Explorer	601

Kuna Rural Fire District

Personnel

Title	Name	Identifier
Fire Chief	T.J. Lawrence	601
Assistant Fire Chief	None	602
Battalion Chief	None	603
Captain	Matt Coffelt	6857
Captain	Joe Link	6830
Captain	John Charlton	6847

Apparatus

Category	Identifier
Structure Engine	E-61 (Type 1)
Structure Engine	E-62 (Type 1)
Water Tender	WT-61
Brush	BR-61 (Type 4)
Brush	BR-62 (Type 4)
Squad F-150	SQ-61
Command GMC 1500	601

Meridian Fire Department

Personnel

Title	Name	Identifier
Chief	Kristopher Blume	301
Deputy Chief Operations	Charlie Butterfield	302
Division Chief Logistics	Justin Winkler	307
Deputy Chief Prevention	Joe Bongiorno	304
Division Chief of Training	Jordan Reese	305
Division Chief of EMS	JD Hendrick	306

Battalion Chief A Shift	Kristian Forbey	BC31
Battalion Chief B Shift	Tyler Rountree	BC31
Battalion Chief C Shift	Ken Welborn	BC31

Apparatus

Category	#	Type	Availability	Staffing	Identifier
Structural Engine	5	II	In-service	3 Personnel	E32, E33, E34, E35, E36
Structural Engine	3	II	Reserve	Not staffed	E31, E37, E38
Aerial Platform	1	II	In-service	4 Personnel	T31
Command	1		In-service	1 Person	BC31
Wildland Engine	2	VI	In-service	3 Personnel	BR34, BR35 - Cross Staffed with E34, E35
Water Tender	1	II	In-service	2 Personnel	WT32 Cross Staffed with E32 - 3000 Gallons
Command Trailer	1		In-service	Per incident	COMM Trailer

Star Fire Protection District/Middleton Rural Fire District

We are operating with a joint power's agreement as (Mid/Star Fire)

Stations #51, 52, 53

Personnel

Title	Name	Identifier
Fire Chief	Greg Timinsky	501
Operations Chief	David Sparks	502
Fire Marshal	Victor Islas	503
Career Firefighters (Star)	21	Stations 51 and 52
Career Firefighter (Middleton)	13	Station 53

Apparatus

Category	Identifier	Staffing / Availability
Structural Engine (Star)	E-51	Staffed with min of 3 per shift
Structural Engine (Star)	E-52	Staffed with min of 3 per shift
Structure Engine (Middleton)	E-53	Staffed with min of 3 per shift
Structural Engine (Mid/Star)	E-54	Reserve Engine
Tender (Star)	WT-51	Available Per Incident
Tender (Middleton)	WT-53	Available Per Incident
Brush Engine Type 3 (Star)	B-51	Available per Incident
Brush Engine Type 5 (Star)	B-52	Available per Incident
Brush Engine Type 3 (Middleton)	B-53	Available per Incident
Brush Engine Type 4 (Middleton)	B-54	Available per Incident
Air Trailer	A-51	Available Per Incident
Command Vehicle (Star)	501	Staffed or available per incident
Command Vehicle (Star)	502	Staffed or available per incident
Command Vehicle (Middleton)	503	Staffed or available per incident

2022 Ada County Multi-Hazard Mitigation Plan

Appendix G. Plan Adoption Resolutions from Planning Partners

G. PLAN ADOPTION RESOLUTIONS FROM PLANNING PARTNERS

TO BE PROVIDED WITH FINAL DRAFT

2022 Ada County Multi-Hazard Mitigation Plan

Appendix H. Progress Report Template

H. PROGRESS REPORT TEMPLATE

2022 Ada County Multi-Hazard Mitigation Plan Annual Progress Report

Reporting Period: *(Insert reporting period)*

Background: Ada County and participating cities and special purpose districts in the county developed a hazard mitigation plan to reduce risk from all hazards by identifying resources, information, and strategies for risk reduction. The federal Disaster Mitigation Act of 2000 requires state and local governments to develop hazard mitigation plans as a condition for federal disaster grant assistance. To prepare the plan, the participating partners organized resources, assessed risks from natural hazards within the county, developed planning goals and objectives, reviewed mitigation alternatives, and developed an action plan to address probable impacts from natural hazards. By completing this process, these jurisdictions maintained compliance with the Disaster Mitigation Act, achieving eligibility for mitigation grant funding opportunities afforded under the Robert T. Stafford Act. The plan can be viewed on-line at:

<https://adacounty.id.gov/accem>

Summary Overview of the Plan's Progress: The performance period for the 2022 Ada County Multi-Hazard Mitigation Plan became effective in **Month Year** with the final approval of the plan by FEMA. The initial performance period for this plan will be 5 years, with an anticipated update to the plan to occur before **August 2027**. As of this reporting period, the performance period for this plan is considered to be **%** complete. The hazard mitigation plan has targeted **hazard mitigation actions** to be pursued during the 5-year performance period. As of the reporting period, the following overall progress can be reported:

- ___ out of ___ actions (___%) reported ongoing action toward completion.
- ___ out of ___ actions (___%) were reported as being complete.
- ___ out of ___ actions (___%) reported no action taken.

Purpose: The purpose of this report is to provide an annual update on the implementation of the action plan identified in the 2017 Ada County Multi-Hazard Mitigation Plan. The objective is to ensure that there is a continuing and responsive planning process that will keep the hazard mitigation plan dynamic and responsive to the needs and capabilities of the partner jurisdictions. This report discusses the following:

- Natural hazard events that have occurred within the last year
- Changes in risk exposure within the planning area
- Mitigation success stories

- Review of the action plan
- Changes in capabilities that could impact plan implementation
- Recommendations for changes/enhancement.

The Multi-Hazard Mitigation Plan Steering Committee: The Multi-Hazard Mitigation Plan Steering Committee, made up of planning partners and stakeholders within the planning area, reviewed and approved this progress report at its annual meeting held on _____, 201_. It was determined through the plan’s development process that a steering committee would remain in service to oversee maintenance of the plan. At a minimum, the Steering Committee will provide technical review and oversight on the development of the annual progress report. It is anticipated that there will be turnover in the membership annually, which will be documented in the progress reports. For this reporting period, the Steering Committee membership is as indicated in Table 1.

Table 1. Steering Committee Members		
Name	Title	Jurisdiction/Agency

Natural Hazard Events within the Planning Area: During the reporting period, there were __ natural hazard events in the planning area that had a measurable impact on people or property. A summary of these events is as follows:

- _____
- _____

Changes in Risk Exposure in the Planning Area: *(Insert brief overview of any natural hazard event in the planning area that changed the probability of occurrence or ranking of risk for the hazards addressed in the hazard mitigation plan)*

Mitigation Success Stories: *(Insert brief overview of mitigation accomplishments during the reporting period)*

Review of the Action Plan: Table 2 reviews the action plan, reporting the status of each action. Reviewers of this report should refer to the hazard mitigation plan for more detailed descriptions of each action and the prioritization process.

Address the following in the “status” column of the following table:

- Was any element of the action carried out during the reporting period?
- If no action was completed, why?
- Is the timeline for implementation for the action still appropriate?
- If the action was completed, does it need to be changed or removed from the action plan?

Table 2. Action Plan Matrix

Action Taken? (Yes or No)	Time Line	Priority	Status	Status (X, O,✓)
Action # _ —			[description]	
Action # _ —			[description]	
Action # _ —			[description]	
Action # _ —			[description]	
Action # _ —			[description]	
Action # _ —			[description]	
Action # _ —			[description]	
Action # _ —			[description]	
Action # _ —			[description]	
Action # _ —			[description]	
Action # _ —			[description]	
Action # _ —			[description]	

Completion status legend:
 ✓ = Project Completed
 O = Action ongoing toward completion
 X = No progress at this time

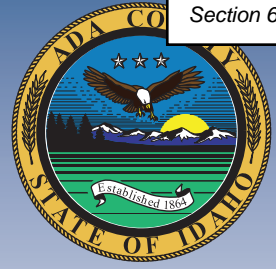
Changes That May Impact Implementation of the Plan: *(Insert brief overview of any significant changes in the planning area that would have a profound impact on the implementation of the plan. Specify any changes in technical, regulatory and financial capabilities identified during the plan’s development)*

Recommendations for Changes or Enhancements: Based on the review of this report by the Multi-Hazard Mitigation Plan Steering Committee, the following recommendations will be noted for future updates or revisions to the plan:

- _____
- _____
- _____
- _____

Public review notice: *The contents of this report are considered to be public knowledge and have been prepared for total public disclosure. Copies of the report have been provided to the governing boards of all planning partners and to local media outlets and the report is posted on the Ada County Multi-Hazard Mitigation Plan website. Any questions or comments regarding the contents of this report should be directed to:*

Paul “Crash” Marusich, CEM
Deputy Director
Ada County Emergency Management & Community Resilience
7200 Barrister Dr., Boise, ID 83704
(208) 577-4750 office
Email: pmarusich@adaweb.net



2022 Ada County Multi-Hazard Mitigation Plan

Public Review Draft | July 2022



Volume 2
Planning Partner
Annexes



TETRA TECH

2022 Ada County Multi-Hazard Mitigation Plan

Volume 2—Planning Partner Annexes

July 2022

PREPARED FOR

Ada County Emergency Management & Community Resilience
7200 Barrister Drive Phone: 208-577-4750
Boise ID 83704-9293 www.adacounty.id.gov/emergencymanagement

PREPARED BY

Tetra Tech
90 South Blackwood Avenue Phone: 208.939.4391
Eagle, ID 83616 Fax: 208.939.4402
tetratech.com

Tetra Tech Project #103S7664

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INTRODUCTION

BACKGROUND

A multi-jurisdictional approach to hazard mitigation planning is an efficient way for numerous jurisdictions to meet the requirements of the federal Disaster Mitigation Act (DMA). The Federal Emergency Management Agency (FEMA) encourages multi-jurisdictional hazard mitigation planning. To fully meet the DMA requirements, participating jurisdictions must participate in the hazard mitigation planning process and officially adopt the completed and approved plan (44 CFR Section 201.6.a(4)).

For the *2022 Ada County Multi-Hazard Mitigation Plan*, a planning partnership was formed to meet DMA requirements for eligible local governments in Ada County. The DMA defines a local government as follows:

“Any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity.”

Two types of planning partners participated in this process:

- Municipalities and the County
- Special purpose districts.

Each participating planning partner has prepared a jurisdiction-specific annex to this plan. This volume of the *2022 Ada County Multi-Hazard Mitigation Plan* presents these annexes, along with information on the process by which they were created.

THE PLANNING PARTNERSHIP

Initial Solicitation and Letters of Intent

The planning team solicited the participation of the County and all County-recognized special purpose districts at the outset of this project. A kickoff meeting was conducted by the core planning team on June 24, 2021, where a presentation was made to introduce the mitigation plan update and solicit planning partner commitment to the plan update process. All eligible local governments within the planning area were invited to attend. Various agency and citizen stakeholders were also invited to this meeting. The goals of the meeting were as follows:

- Provide an overview of the Disaster Mitigation Act.

- Provide an update on the planning process to date.
- Outline the Ada County plan update work plan.
- Describe the benefits of multi-jurisdictional planning.
- Outline planning partner expectations.
- Solicit planning partners.

All interested local governments were provided with a list of planning partner expectations developed by the planning team and were informed of the obligations required for participation. Local governments wishing to join the planning effort were asked to provide the planning team with a “notice of intent to participate” that agreed to the planning partner expectations as described in the section below and designated a point of contact for their jurisdiction. In all, formal commitment was received from 21 planning partners by the planning team, and the Ada County Planning Partnership was formed. The letters of intent to participate are on file with Ada County Emergency Management & Community Resilience (EMCR) and are available for review upon request.

Maps showing the location of participating special purpose districts are provided at the end of this introduction. Maps of local hazards for participating cities are provided in each city’s individual annex. Overall maps for Ada County are included in Volume 1 of this plan.

Planning Partner Expectations

The planning team developed the following list of planning partner expectations, which were confirmed at the kickoff meeting:

- Provide a “Letter of Intent to Participate.”
- Support and participate in the selection and function of the Steering Committee overseeing the development of the update. Support includes allowing this body to make decisions regarding plan development and scope on behalf of the partnership.
- Provide support for the public involvement strategy developed by the Steering Committee in the form of mailing lists, possible meeting space, and media outreach such as newsletters, newspapers or direct-mailed brochures.
- Participate in plan update development activities such as:
 - Steering Committee meetings
 - Public meetings or open houses
 - Workshops and planning partner training sessions
 - Public review and comment periods prior to adoption.

Attendance will be tracked at such activities, and attendance records will be used to track and document participation for each planning partner. No minimum level of participation will be established, but each planning partner should attempt to attend all such activities.

- Perform a “consistency review” of all technical studies, plans, and ordinances specific to hazards identified within the planning area to determine the existence of plans, studies or ordinances not consistent with the equivalent documents reviewed in preparation of the County plan. For example: if a planning partner has a floodplain management plan that makes recommendations that are not consistent with any of the County’s basin plans, that plan will need to be reviewed for probable incorporation into the plan for the partner’s area.

- Review the risk assessment and identify hazards and vulnerabilities specific to the local jurisdiction. Resources will be provided for jurisdiction-specific mapping and technical consultation to aid in this task, but the determination of risk and vulnerability will be up to each partner.
- Review the mitigation recommendations chosen for the overall county and determine if they meet the needs of the jurisdiction. Projects within each jurisdiction consistent with the overall plan recommendations will need to be identified, prioritized and reviewed to determine their benefits and costs.
- Create an action plan that identifies each project, who will oversee the task, how it will be financed and when it is estimated to occur.
- Complete the normal pre-adoption process prior to submitting the plan to the local governing body for adoption. For example, if it is the community's normal process to submit a planning document to a Planning Commission prior to submittal to council for adoption, then that process must be followed for the adoption of this plan.
- Agree to the plan implementation and maintenance protocol established in Volume 1
- Formally adopt the plan.

Failure to meet these criteria could result in a partner being dropped from the partnership by the Steering Committee, and thus losing eligibility under the scope of this plan.

ANNEX-PREPARATION PROCESS

Templates

Templates were created to help the planning partners prepare their jurisdiction-specific annexes. Since special purpose districts operate differently from incorporated municipalities, separate templates were created for the two types of jurisdictions. The templates were created so that all criteria of Section 201.6 of 44 CFR would be met, based on the partners' capabilities and mode of operation. Templates available for the planning partners' use were specific as to whether the partner is a municipality or a special purpose district and whether the annex is an update to a previous hazard mitigation plan or a first-time hazard plan. Each partner was asked to participate in a technical assistance workshop during which key elements of the template were completed by a designated point of contact for each partner and a member of the planning team. The templates were set up to lead each partner through a series of steps that would generate the DMA-required elements that are specific for each partner. The templates and their instructions can be found in Appendix A to this volume of the Multi-Hazard Mitigation Plan.

Risk Ranking

Each planning partner was asked to rank each risk specifically for its jurisdiction, based on the impact on its population or facilities. Cities were asked to base this ranking on probability of occurrence and the potential impact on people, property and the economy. Special purpose districts were asked to base this ranking on probability of occurrence and the potential impact on their constituency, their vital facilities and the facilities' functionality after an event. The methodology followed that used for the countywide risk ranking presented in Volume 1. A principal objective of this exercise was to familiarize the partnership with how to use the risk assessment as a tool to support other planning and hazard mitigation processes. Tools utilized for the ranking included the following:

- The risk assessment results developed for this plan
- Hazard maps for all hazards of concern
- Special district boundary maps that illustrated the sphere of influence for each special purpose district partner
- Hazard mitigation catalogs
- Federal funding and technical assistance catalogs
- Copies of partners' prior annexes, if applicable.

Prioritization

44 CFR requires actions identified in the action plan to be prioritized (Section 201.c.3.iii). The planning team and steering committee developed a methodology for prioritizing the action plans that meets the needs of the partnership and the requirements of 44 CFR. The actions were prioritized for implementation according to the following criteria:

- **High Priority**—An action that meets multiple objectives, has benefits that exceed costs, and has a secured source of funding. Action can be completed in the short term (1 to 5 years).
- **Medium Priority**—An action that meets multiple objectives, has benefits that exceed costs, and is eligible for funding though no funding has yet been secured for it. Action can be completed in the short term (1 to 5 years) once funding is secured. Medium-priority actions become high-priority actions once funding is secured.
- **Low Priority**—An action that will mitigate the risk of a hazard, has benefits that do not exceed the costs or are difficult to quantify, has no secured source of funding, and is not eligible for any known grant funding. Action can be completed in the long term (1 to 10 years). Low-priority actions are generally “wish-list” actions. They may be eligible for grant funding from programs that have not yet been identified.

The actions were prioritized for grant-funding pursuit according to the following criteria:

- **High Priority**—An action that meets identified grant eligibility requirements, has high benefits, and is listed as high or medium implementation priority; local funding options are unavailable or available local funds could be used instead for actions that are not eligible for grant funding.
- **Medium Priority**—An action that meets identified grant eligibility requirements, has medium or low benefits, and is listed as medium or low implementation priority; local funding options are unavailable.
- **Low Priority**—An action that has not been identified as meeting any grant eligibility requirements.

Benefit/Cost Review

44 CFR requires the prioritization of the action plan to emphasize a benefit/cost analysis of the proposed actions. Because some actions may not be implemented for up to 10 years, benefit/cost analysis was qualitative and not of the detail required by FEMA for project grant eligibility under relevant grant programs. A review of the apparent benefits versus the apparent cost of each project was performed. Parameters were established for assigning subjective ratings (high, medium, and low) to costs and benefits as follows:

Benefit ratings were defined as follows:

- **High**—Action will have an immediate impact on the reduction of risk exposure to life and property.
- **Medium**—Action will have a long-term impact on the reduction of risk exposure to life and property, or action will provide an immediate reduction in the risk exposure to property.
- **Low**—Long-term benefits of the action are difficult to quantify in the short term.

Cost ratings were defined as follows:

- **High**—Existing funding will not cover the cost of the action; implementation would require new revenue through an alternative source (for example, bonds, grants, and fee increases).
- **Medium**—The action could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the action would have to be spread over multiple years.
- **Low**—The action could be funded under the existing budget. The action is part of or can be part of an ongoing existing program.

Using this approach, actions with positive benefit versus cost ratios (such as high over high, high over medium, medium over low, etc.) are considered cost-beneficial. For many of the strategies identified in this action plan, the partners may seek financial assistance under federal funding programs that require detailed benefit/cost analyses. These analyses will be performed on actions at the time of application using appropriate benefit-cost models. For actions not seeking financial assistance from grant programs that require detailed analysis, the partners reserve the right to define “benefits” according to parameters that meet the goals and objectives of this plan.

Analysis of Mitigation Initiatives

Each planning partner reviewed its recommended initiatives to classify each initiative based on the hazard it addresses and the type of mitigation it involves. Mitigation types used for this categorization are as follows:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education and Awareness**—Actions to inform residents and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, wetland restoration and preservation, and green infrastructure.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

- **Climate Resiliency**—Actions that incorporate methods to mitigate and/or adapt to the impacts of climate change. Includes aquifer storage and recovery activities, incorporating future conditions projections in project design or planning, or actions that specifically address jurisdiction-specific climate change risks, such as sea-level rise or urban heat island effect.
- **Community Capacity Building**—Actions that increase or enhance local capabilities to adjust to potential damage, to take advantage of opportunities, or to respond to consequences. Includes staff training, memorandums of understanding, development of plans and studies, and monitoring programs.

FINAL COVERAGE UNDER THE PLAN

All planning partners whose annexes are included in this volume of the Ada County Hazard Mitigation Plan fully met the participation requirements specified by the Steering Committee, and will seek DMA compliance under this plan.

ACRONYMS AND ABBREVIATIONS

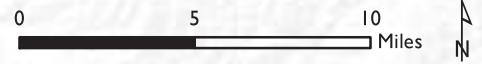
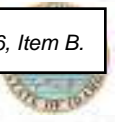
The following terms are used in the planning partner annexes:

- ACC—Ada County Code
- ACEMSD—Ada County Emergency Medical Services District
- ACHD—Ada County Highway District
- CFM—Certified Floodplain Manager
- COMPASS—Community Planning Association of Southwest Idaho
- CWPP—Community Wildfire Protection Plan
- EFD—Eagle Fire District
- EOP—Emergency Operations Plan
- EMCR—Ada County Emergency Management & Community Resilience
- EPA—Environmental Protection Agency
- ESD—Eagle Sewer District
- FCD—Flood Control District
- FEMA—Federal Emergency Management Agency
- FMA—Flood Mitigation Assistance
- GBAD—Greater Boise Auditorium District
- HMGP—Hazard Mitigation Grant Program
- HOA—Homeowners Association
- IPAWS—Integrated Public Alert & Warning System
- ISAWS—Idaho State Alert & Warning System
- ICC—International Code Council

- IDWR—Idaho Department of Water Resources
- ITD—Idaho Transportation Department
- KMC—Kuna Municipal Code
- KRFD—Kuna Rural Fire Protection District
- NACFR—North Ada County Fire & Rescue
- NFIP—National Flood Insurance Program
- NOAA—National Oceanic and Atmospheric Administration
- NPDES—National Pollutant Discharge Elimination System
- SCADA—Supervisory Control and Data Acquisition
- SFD—Star Joint Fire Protection District
- USGS—U.S. Geological Survey
- WFPD—Whitney Fire Protection District
- WUI—Wildland Urban Interface
- WWTP—Wastewater Treatment Plan

Ada County Section 6, Item B.

General Planning Area



Gem County

Boise County

Canyon County

Elmore County

STAR

EAGLE

GARDEN CITY

MERIDIAN

BOISE

KUNA

- Special Purpose Districts**
- Flood Control
 - Fire
 - School
 - Urban Renewal
 - Sewer
 - Auditorium
 - Sewer Water
 - Highway
 - Study Area
 - Ada County Boundary
 - County Boundary
 - Interstate
 - Major Road
 - Rail
 - Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

1. UNINCORPORATED ADA COUNTY

1.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Paul “Crash” Marusich, Deputy Director
 Ada County Emergency Management and Community Resilience (EMCR)
 7200 Barrister Dr.
 Boise, ID 83704
 Telephone: 208-577-4750
 e-mail Address: pmarusich@adacounty.id.gov

Alternate Point of Contact

Joe Lombardo, Director
 Ada County Emergency Management and Community Resilience (EMCR)
 7200 Barrister Dr.
 Boise, ID 83704
 Telephone: 208-577-4750
 e-mail Address: jlombardo@adacounty.id.gov

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 1-1.

Table 1-1. Local Hazard Mitigation Planning Team Members

Name	Title
Paul “Crash” Marusich	Deputy Director, EMCR
Stacey Yarrington	Community and Regional Planner, Ada County
Zach Kirk	Ada County Engineer/Floodplain Administrator

1.2 JURISDICTION PROFILE

1.2.1 Location and Features

Ada County is located in the southwestern part of Idaho and encompasses a land area of 1,060 square miles (including 5 miles of water). Ada County is the State of Idaho’s most populated county, containing nearly 27% of the state’s population. It is home to the capital city of Boise, which is also the largest city and the county seat where most of the county offices are located. In addition, the county is home to five other cities, Meridian, Eagle, Garden City, Star, and Kuna. Ada County is also home to the nation’s only countywide highway district, the Ada County Highway District (ACHD) which is served by a separate elected board. Surrounding counties are Boise (northeast), Canyon (west), Elmore (southeast), Gem (north), and Owyhee (southwest) as shown in Figure 1-1.

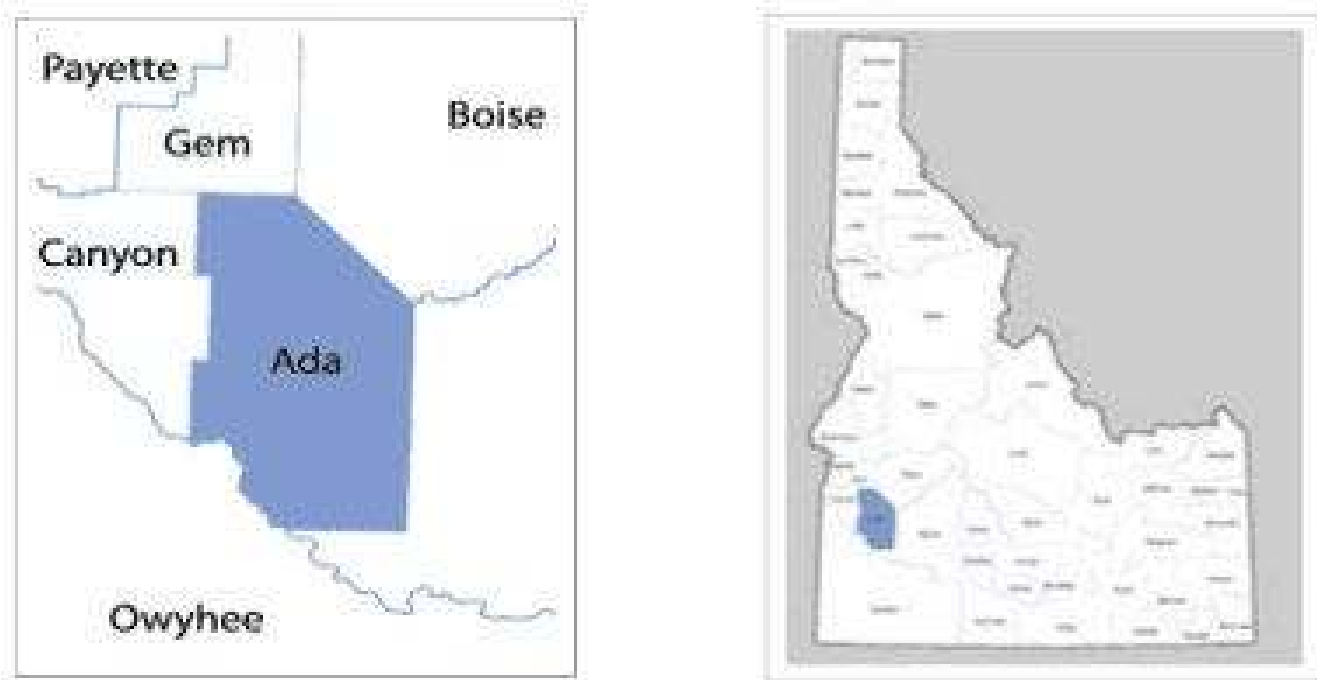


Figure 1-1. Ada County and Surroundings

The following highways run through Ada County: Interstate Highway 84/184, US 20, US 26, US 30, State Highway 21, State Highway 44, State Highway 55, and State Highway 69.

Major dams on the Boise River in Ada County include Lucky Peak and Arrow Rock Reservoir. Additionally, Anderson Ranch dam is another large dam that lies in Elmore County, up river of Ada County’s Lucky Peak Reservoir. Ada County has a number of smaller dams as well, including Barber dam—located on the Boise River just below Lucky Peak. There are a total of 26 dams in the county, 13 of which are classified as high-hazard dams. More information on dams is available via Ada County’s Emergency Management site at www.adaprepere.id.gov.

Key geographic features include the Boise River, which flows through the northern part of the county and the City of Boise. The northeastern part of Ada County is bordered by the foothills of the Boise Mountains (the foothills of the Rocky Mountains). The southwestern part of Ada County borders the Snake River.

Ada County is also home to the Boise Airport (Gowen Field), Gowen Field Air National Guard Base, and Boise State University—the state’s largest university with over 20,000 students, which lies within the City of Boise.

Ada County’s high desert semi-arid climate produces cold winters and hot and dry summers. January is the coldest month with average low temperatures in the low to mid 20s. July is the hottest month with average high temperatures peaking in the low to mid 90s. Average precipitation in Ada County is 12 inches per year, with most of the precipitation occurring during the cooler months and falling as snow at times. Very little precipitation falls during the summer months, though thunderstorms occasionally produce brief cloud bursts of rain.

1.2.2 History

Ada County was created by the Idaho Territorial Legislature on December 22, 1864. It is named after Ada Riggs, the first pioneer child born in the county, and daughter of H.C. Riggs, the co-founder of the City of Boise.

1.2.3 Governing Body Format

Ada County is headed by an elected three-member group, the Board of County Commissioners. The Board oversees departments both directly and through the County's Chief Operating Officer. Other county elected offices include a County Clerk, Treasurer, Assessor, Prosecutor, Coroner, and Sheriff.

The Board of County Commissioners is responsible for the adoption of this plan, Ada County Emergency Management and Community Resilience is responsible for its implementation.

1.3 CURRENT TRENDS

1.3.1 Population

According to COMPASS, the population of Unincorporated Ada County as of April 2022, was 66,240. Since 2017, the population has grown at an average annual rate of 2.2 percent.

1.3.2 Development

Ada County has scene unprecedented growth over the last several years. Development is once again at an all-time high, with no sign of a slowing economy. Ada County has grown in population by approximately 22.7% between 2010 and 2020 according to the U.S. Census. In 2020, Ada County issued 543 residential and 52 commercial building permits within unincorporated parts of the county. Ada County has 4 approved Planned Communities and interest is once again growing to create more Planned Communities within the unincorporated areas of the county.

Identifying previous and future development trends is achieved through a comprehensive review of permitting since completion of the previous plan and in anticipation of future development. Tracking previous and future growth in potential hazard areas provides an overview of increased exposure to a hazard within a community. Table 1-2 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

Table 1-2. Recent and Expected Future Development Trends

Criterion	Response																														
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan? <i>If yes, give the estimated area annexed and estimated number of parcels or structures.</i>	No																														
Is your jurisdiction expected to annex any areas during the performance period of this plan? <i>If yes, describe land areas and dominant uses.</i> <i>If yes, who currently has permitting authority over these areas?</i>	No																														
Are any areas targeted for development or major redevelopment in the next five years? <i>If yes, briefly describe, including whether any of the areas are in known hazard risk areas</i>	Yes A proposed PC located east of Kuna and south of Boise consisting of approximately 2,200 lots on approximately 750-acres. This proposed development is located within a WUI zone and has a Zone A Flood Plain thru a small portion of the site. A potential PC located east of Eagle and north of Boise consisting of approximately 250 lots on approximately 400-acres that surrounds an existing golf course. This proposed development is located within a WUI zone.																														
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #003366; color: white;"> <th></th> <th>2016</th> <th>2017</th> <th>2018</th> <th>2019</th> <th>2020</th> </tr> </thead> <tbody> <tr> <td>Single Family</td> <td style="text-align: center;">496</td> <td style="text-align: center;">520</td> <td style="text-align: center;">444</td> <td style="text-align: center;">553</td> <td style="text-align: center;">526</td> </tr> <tr> <td>Multi-Family</td> <td style="text-align: center;">0</td> <td style="text-align: center;">3</td> <td style="text-align: center;">1</td> <td style="text-align: center;">0</td> <td style="text-align: center;">9</td> </tr> <tr> <td>Other</td> <td style="text-align: center;">253</td> <td style="text-align: center;">199</td> <td style="text-align: center;">274</td> <td style="text-align: center;">224</td> <td style="text-align: center;">227</td> </tr> <tr> <td>Total</td> <td style="text-align: center;">749</td> <td style="text-align: center;">722</td> <td style="text-align: center;">719</td> <td style="text-align: center;">777</td> <td style="text-align: center;">762</td> </tr> </tbody> </table>		2016	2017	2018	2019	2020	Single Family	496	520	444	553	526	Multi-Family	0	3	1	0	9	Other	253	199	274	224	227	Total	749	722	719	777	762
		2016	2017	2018	2019	2020																									
	Single Family	496	520	444	553	526																									
	Multi-Family	0	3	1	0	9																									
	Other	253	199	274	224	227																									
Total	749	722	719	777	762																										
Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.	<ul style="list-style-type: none"> • Special Flood Hazard Areas: 140 • Landslide: 0 • Wildfire Risk Areas: 1,494 																														
Describe the level of buildout in the jurisdiction, based on your jurisdiction’s buildable lands inventory. If no such inventory exists, provide a qualitative description.	There are four approved Planned Communities (PCs) within Ada County with a total of over 4,300 residential lots approved. Build-out is at approximately 51%, with over 2,200 building permits issued between the PCs. The majority of the new-construction permits that are listed in the Wildfire Risk area above, are located within the PCs.																														

1.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 1-3.
- Development and permitting capabilities are presented in Table 1-4.
- An assessment of fiscal capabilities is presented in Table 1-5.
- An assessment of administrative and technical capabilities is presented in Table 1-6.
- An assessment of education and outreach capabilities is presented in Table 1-7.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 1-8.
- Classifications under various community mitigation programs are presented in Table 1-9.

Table 1-3. Planning and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, & Requirements				
Building Code <i>Comment: Title 7, Chapter 2, Ada County Code adopts the 2018 IBC, 02/16/2021</i>	Yes	No	Yes	Yes
Zoning Code <i>Comment: Title 8, ACC adopted with amendments: 7-21-2021</i>	Yes	No	No	Yes
Subdivisions <i>Comment: Title 8, ACC adopted with amendments: 7-21-2021</i>	Yes	No	No	Yes
Stormwater Management <i>Comment: Title 8, Chapter 4, ACC adopted: 12/8/2010</i>	Yes	No	Yes	Yes
Post-Disaster Recovery <i>Comment: Ordinance 914-Flood Hazard Overlay District-6-10-2020</i>	Yes	Yes	Yes	Yes
Real Estate Disclosure <i>Comment: Realtor Listing Disclosure Page shows if flood insurance is required.</i>	Yes	No	No	No
Growth Management <i>Comment: Ada County Comprehensive Plan, adopted November 2016; Ada Co. Zoning ordinance-Title 8, ACC, adopted with amendments on 7-21-2021</i>	Yes	No	No	Yes
Site Plan Review <i>Comment: Title 8, Chapter 4-ACC adopted: 12/8/2010</i>	Yes	No	No	Yes
Environmental Protection <i>Comment: Title 8, Article A-ACC adopted: 6-14-2000</i>	Yes	Yes	Yes	Yes
Flood Damage Prevention <i>Comment: Title 8, Chapter 3-ACC, Article F adopted 6-10-2020</i>	Yes	Yes	No	Yes
Emergency Management <i>Comment: Idaho Code § 46-1009</i>	Yes	No	Yes	Yes
Climate Change <i>Comment:</i>	No	No	No	No
Other <i>Comment: Flood Hazard Overlay District: Title 8, Chapter 3, article F, ACC, adopted: 6-10-2020 Wildland Urban Interface Overlay District: Title 8, Chapter 3, Article B, ACC, adopted: 6-14-2000 Southwest Planning Area Overlay District: Title 8, Chapter 3, article C, ACC adopted: 6-18-2008 Boise River Greenway Overlay District. Title 8, Chapter 3, article G, ACC, adopted: 6/14/2000 Hillside Overlay District. Title 8, Chapter 3, article H, ACC. Adopted: 12/8/2010 Cartwright Ranch Planned Community Zoning Ordinance, Title 8, Chapter 3, article K, ACC. Adopted: 2/10/2010 Dry Creek Planned Community Zoning Ordinance. Title 8, Chapter 3, article n, ACC. Adopted: 2/10/2010 Hidden Springs Zoning Ordinance & Specific Plan. Title 8, Ch. 21. Adopted: 3/12/1997 Private Roads. Title 8, Ch. 4, Article D, ACC. Adopted 10-2-2019</i>	Yes	No	No	Yes
Planning Documents				
General Plan <i>Is the plan equipped to provide linkage to this mitigation plan? Yes</i> <i>Comment: Ada County Comprehensive Plan, adopted 11/26/2007 Comprehensive Plan updated November 2016</i>	Yes	No	No	Yes
Capital Improvement Plan <i>How often is the plan updated? 4-year performance period, reviewed and updated annually</i> <i>Comment: ACHD 8-19-2020, Ada County CIP Plan updated annually.</i>	Yes	No	No	Yes

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Disaster Debris Management Plan <i>Comment:</i> : Recently developed Debris Management Annex is awaiting adoption as part of the community EOPs	Yes	No	No	Yes
Floodplain or Watershed Plan <i>Comment:</i> The 2022 Ada County Multi-Hazard Mitigation Plan will qualify as a flood hazard management plan under CRS criteria upon its completion and adoption.	Yes	No	No	Yes
Stormwater Plan <i>Comment:</i> EPA NPDES Municipal Separate Storm Sewer System Permit; Ada County Highway District-2-1-2021	Yes	No	No	Yes
Urban Water Management Plan <i>Comment:</i> Idaho Catalog of Stormwater Best Management Practices; April 2020	Yes	Yes	No	Yes
Habitat Conservation Plan <i>Comment:</i> Boise River Greenway Overlay District; 6-14-2020	Yes	Yes	No	Yes
Economic Development Plan <i>Comment:</i> Ada County 2025 Comp Plan; Pages 51-53	Yes	No	No	Yes
Shoreline Management Plan <i>Comment:</i>	No	No	No	No
Community Wildfire Protection Plan <i>Comment:</i> Mitigation Plan will serve as CWPP as approved by the Idaho Department of Lands ACC Title 8, Article 8; Wildland-Urban Fire Interface Overlay District-6-18-2008	Yes	No	No	Yes
Forest Management Plan <i>Comment:</i>	No	No	No	No
Climate Action Plan <i>Comment:</i> The 2022 Ada County Multi-Hazard Mitigation Plan will qualify as a flood hazard management plan under CRS criteria upon its completion and adoption.	Yes	No	No	Yes
Comprehensive Emergency Management Plan <i>Comment:</i> Ada County EOP (2018) and hazard specific plans fulfill this function .	Yes	No	Yes	Yes
Threat & Hazard Identification & Risk Assessment (THIRA) <i>Comment:</i> Ada County THIRA 2018, Ada County Multi-Hazard Mitigation Plan	Yes	No	No	Yes
Post-Disaster Recovery Plan <i>Comment:</i>	No	No	No	No
Continuity of Operations Plan <i>Comment:</i> Ada County COOP Plan; updated 2016	Yes	No	No	Yes
Public Health Plan <i>Comment:</i> Central District Health Department Emergency Operations Plan, 2020	No	Yes	No	Yes
Other <i>Comment:</i>	No	No	No	Yes

Table 1-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? <i>If no, who does? If yes, which department?</i>	Yes Ada County Development Services
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory?	No

Table 1-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service <i>If yes, specify:</i> Sewer=yes; Water=no; gas or electric=no	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	None
<i>If yes, specify:</i>	

Table 1-6. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices <i>If Yes, Department /Position:</i> Development Services/Planning & Zoning	Yes
Engineers or professionals trained in building or infrastructure construction practices <i>If Yes, Department /Position:</i> Development Services/Building Division	Yes
Planners or engineers with an understanding of natural hazards <i>If Yes, Department /Position:</i> Development Services/Engineering Division	Yes
Staff with training in benefit/cost analysis <i>If Yes, Department /Position:</i> Ability to contract for service	Yes
Surveyors <i>If Yes, Department /Position:</i> Development Services/Engineering Division	Yes
Personnel skilled or trained in GIS applications <i>If Yes, Department /Position:</i> Information Technology/GIS Info System Tech	Yes
Scientist familiar with natural hazards in local area <i>If Yes, Department /Position:</i> Planning partners available through universities and Idaho Office of Emergency Management	Yes
Emergency manager <i>If Yes, Department /Position:</i> Ada County Emergency Management and Community Resilience (EMCR)	Yes
Grant writers <i>If Yes, Department /Position:</i> Ability to contract for service	Yes
Other <i>If Yes, Department /Position:</i>	No

Table 1-7. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? <i>If yes, briefly describe:</i> Information regarding current and past hazard mitigation planning initiatives is easily accessible on the website.	Yes
Do you use social media for hazard mitigation education and outreach? <i>If yes, briefly describe:</i> Current Emergency Management Next Door, Facebook and Twitter accounts used for general EM education and outreach. Ability to post mitigation-specific information.	Yes
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe:</i> There is citizen representation on the Hazard Mitigation Steering Committee. Mitigation updates and initiatives are also discussed at the Ada City-County Emergency Management Executive Council and the Local Emergency Planning Committee meetings.	Yes
Do you have any other programs in place that could be used to communicate hazard-related information? <i>If yes, briefly describe:</i> EMCR conducts regular outreach through social media, website, public presentations, safety/preparedness events and public school programs.	Yes
Do you have any established warning systems for hazard events? <i>If yes, briefly describe:</i> Code Red– residents may sign up to receive emergency notifications and critical community alerts. System is IPAWS enabled and may additionally access that integrated system for public warnings. Ada County Emergency Management and Community Resilience developed a Joint Information System Plan that delineates the processes with developing a regional joint information system and center for coordinating public information messaging.	Yes

Table 1-8. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Development Services/Engineering Division
Who is your floodplain administrator? (department/position)	Director or appointee - Development Services (per flood ordinance)
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	06/10/2020
Does your floodplain management program meet or exceed minimum requirements? <i>If exceeds, in what ways?</i> 1.5-foot freeboard	Exceed
When was the most recent Community Assistance Visit or Community Assistance Contact?	02/12/2021
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <i>If so, state what they are.</i>	No
Are any RiskMAP projects currently underway in your jurisdiction? <i>If so, state what they are.</i>	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <i>If no, state why.</i> Remaining Zone A hazard areas in Unincorporated Ada County require additional analysis.	No
Does your floodplain management staff need any assistance or training to support its floodplain management program? <i>If so, what type of assistance/training is needed?</i> Funding for CFM ongoing training.	Yes

Criterion	Response
Does your jurisdiction participate in the Community Rating System (CRS)? <i>If yes, is your jurisdiction interested in improving its CRS Classification?</i> Yes <i>If no, is your jurisdiction interested in joining the CRS program?</i>	Yes
How many flood insurance policies are in force in your jurisdiction? <i>What is the insurance in force?</i> \$50,709,700 <i>What is the premium in force?</i> \$126,034	170
How many total loss claims have been filed in your jurisdiction? ^a <i>What were the total payments for losses?</i> \$134,106	32

a. According to FEMA Regional Flood Insurance Liaison, Region 10 as of April 21, 2022

Table 1-9. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code (INCITS 31-2009)	Yes	16001	2009
DUNS #	No	NA	NA
Community Rating System	Yes	7	02/12/2021
Building Code Effectiveness Grading Schedule (Idaho Not Listed in the 2019 Report)	No	NA	NA
Public Protection	See Fire District Planning Partner Annex		
Storm Ready	Yes	Gold	N/A
Firewise	Wilderness Ranch		2002
	Avimor		2007
	Hidden Springs		2009
	Central Foothills Neighborhood Association		2010
	Warm Springs Mesa		2010
	Morningside Heights HOA		2012
	Briar Hill		2012
	Columbia Village		2013
	Boise Heights		2018
	Cartwright Ranch		2021
	Dry Creek Ranch		2021
	East Valley Neighborhood		2021
Highlands Nines HOA		2021	

1.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as general planning and capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

1.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Ada County Comprehensive Plan**—The Comprehensive Plan for Ada County currently includes mitigation related policies as they related to the protection of human life and property from flood events. Additionally, the Comprehensive plan addresses the need for natural resource protection and the identification of known hazards within the County.
- Hazard Analysis developed for the Mitigation Plan is used to inform the Threat Hazard Inventory and Risk Assessment (THIRA). The THIRA includes gap analysis that ties response, mitigation and recovery capabilities together to help create a comprehensive approach to the hazards of concern.
- Hazard Analysis developed for the Mitigation Plan is used to inform the Hazard Specific Response Plans (Flood, Wildfire) within the County.

1.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- Future planning efforts and updates to County plans will incorporate the data and analysis contained in the Mitigation Plan and the THIRA.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

1.6 RISK ASSESSMENT

1.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 1-10 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 1-10. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
Funnel Cloud	N/A	10/25/2021	Strong winds, heavy rain, localized flooding
Heavy Rain/Flash Flooding	N/A	08/01/2021	Extensive precipitation and localized flooding
Thunderstorm/Microburst	N/A	6/22/2021	Wind Gusts 59 mph
Thunderstorm/Severe Winds	N/A	5/01/2021	Wind Gusts to 62 mph, small hail
High Winds	N/A	3/29/2021	Wind Gusts to 60 mph
High Winds	N/A	2/26/2021	Wind Gusts to 50-59 mph
Thunderstorm/Severe Winds	N/A	5/30/2020	Downed trees, powerlines, fences

Type of Event	FEMA Disaster #	Date	Damage Assessment
High Winds	N/A	5/06/2020	Wind Gusts to 59 mph, dust storms
Thunderstorm/Flash Flooding	N/A	4/30/2020	Street flooding caused road closures
Thunderstorm/Severe Winds	N/A	10/19/2019	Downed trees, powerlines, fences
Thunderstorm/Microburst	N/A	9/05/2019	Wind Gusts 80 mph downed trees
Funnel Cloud	N/A	5/20/2019	Strong showers, thunderstorms, localized flooding
Thunderstorms/Severe Winds	N/A	8/24 & 8/30/2017	Downed large trees, removed branches
Thunderstorm/Severe Winds	N/A	6/04/2017	Downed trees throughout area
Flooding –Boise River above flood stage 101 days, local stream flooding	DR-4342	2/2017 to 6/2017	Public Assistance in Unincorporated Ada County: \$312,575; PA Countywide: \$4,493,792
350% of Average Snowfall – County Declaration of Emergency	County Resolution # 2200	Winter 2016-17	Ada County Highway District incurred major expenses during this period
Hailstorm	N/A	3/21/2016	Hail size up to 1”
Thunderstorm/Wind/Power Outages	N/A	8/11/2015	Downed trees, one vehicle damaged by a large branch
Thunderstorm/Wind	N/A	8/10/2015	Gusts at 61 mph
Thunderstorms/Flash Flooding	N/A	7/08/2015	1”+ rainfall in less than one hour
Hailstorm	N/A	5/26/2015	Hail size up to 1.5”
High Winds	N/A	03/17/2014	Estimated gusts 60 mph
Severe Hail, Wind, Thunderstorm	N/A	9/05/2013	Road flooding up to 1’ deep
Flood	N/A	5/08/2012	\$540,000.00 - Garden City + ACHD
High Winds/ Micro-burst	N/A	8/21/2010	\$36,100
Highway 16 Wildfire	N/A	7/28/2010	No Data Available
High Winds	N/A	3/29/2009	\$36,700
Oregon Trail Wildfire	N/A	8/25/2008	\$1,700,000.00
Flood	N/A	6/5/2006	No Data Available
Flood	N/A	5/26/2006	No Data Available
Flood	N/A	5/11/2006	No Data Available
Flood	N/A	4/5/2006	No Data Available
Wildfire	N/A	7/26/2005	No Data Available
Wildfire	N/A	7/12/2004	No Data Available
Flood	N/A	7/7/2004	No Data Available
Wildfire	N/A	7/6/2003	No Data Available
Severe Storm/Thunderstorm—Wind	N/A	7/25/2002	Trees, powerlines down. 5,000 without power. Dust storm reduced visibility on I-84 causing 12-car pileup, 4 injured
Wildfire	N/A	7/4/2002	No Data Available
Wildfire	DR-1341	9/1/2000	Hazardous air quality, undisclosed damage.
Wildfire	N/A	7/2/2000	No Data Available
Wildfire	N/A	7/26/1999	No Data Available
Wildfire	N/A	7/19/1999	No Data Available
Flood	N/A	3/7/1999	No Data Available
Severe Storm/Thunderstorm—Wind	N/A	1/16/1999	No Data Available
Severe Storm/Thunderstorm—Wind	N/A	9/6/1998	\$38,000.00
Flood	N/A	5/17/1998	No Data Available

Type of Event	FEMA Disaster #	Date	Damage Assessment
Severe Hail, Wind, Thunderstorm	N/A	4/23/1998	\$20,000.00
High Wind	N/A	9/17/1997	\$62,000.00
Flood	DR-1177	9/11/1997	No Data Available
Flood	DR-1154	7/7/1997	No Data Available
Flood	N/A	1/1/1997	No Data Available
Wildfire	N/A	8/26/1996	No Data Available
Lightning/Wildfire	N/A	7/28/1995	No Data Available
Severe Storm/Thunderstorm—Wind	N/A	4/27/1995	\$50,500.00
Severe Winter Storm/Thunderstorm	N/A	12/1/1994	No Data Available
Flood	N/A	5/7/1993	No Data Available
Winter Weather—Snow	N/A	11/27/1992	No Data Available
Winter Weather –Blizzard	N/A	11/9/1992	No Data Available
Drought	N/A	10/1/1992	\$1,900,000.00 – crop damage
Heat—Wind	N/A	8/20/1992	\$1,900,000 .00– crop damage
Winter Weather—Unusually Cold	N/A	2/4/1989	\$12,800.00
Wildfire	N/A	8/2/1988	No Data Available
Severe Storm/Thunderstorm—Wind	N/A	6/15/1987	\$13,800.00
Flood	N/A	2/1/1986	No Data Available
Wind	N/A	4/15/1985	No Data Available
Flood	N/A	6/1/1983	No Data Available
Hail—Wind	N/A	8/11/1982	\$250,000.00
Flood	N/A	2/1/1982	No Data Available
Wind	N/A	6/30/1981	\$50,000.00
High Winds	N/A	3/29/1981	\$35,700.00
Flood	N/A	1/5/1979	No Data Available
Winter Weather—Extreme Cold	N/A	1/1/1979	\$61,300.00
Wind	N/A	12/15/1977	\$25,000.00
Severe Storm/Thunderstorm—Wind	N/A	6/8/1976	No Data Available
Severe Thunderstorm—Wind, Lightning	N/A	7/29/1975	No Data Available
Wind	N/A	2/26/1974	No Data Available
Flood	N/A	5/26/1973	No Data Available
Winter Weather—Freeze	N/A	12/8/1972	\$125,000.00
Winter Weather—Wind, Snow	N/A	1/9/1972	\$113,600.00
Strong Winds	N/A	3/30/1971	No Data Available
Flood	N/A	1/17/1971	No Data Available
Severe Hail—Wind	N/A	6/26/1970	\$17,200.00

1.6.2 Hazard Risk Ranking

Table 1-11 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy. Mitigation actions target hazards with high and medium rankings.

Table 1-11. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	Extreme Weather	33	High
2	Wildfire	28	Medium
3	Flood	18	Medium
4	Earthquake	16	Medium
5	Dam/Canal Failure	12	Medium
6	Landslide	12	Medium
7	Drought	9	Low
8	Volcano	6	Low

1.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for this jurisdiction. Available jurisdiction-specific risk maps of the hazards are provided at the end of this annex.

Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: 0
- Number of FEMA-identified Severe-Repetitive-Loss Properties: 0
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: N/A

Other Noted Vulnerabilities

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Critical infrastructure located in or near floodplains require mitigation actions that address a variety of issues to make the facilities more resilient and capable of maintaining continuity of operations.
- Inadequate water supply for fire suppression operations in some areas of the Wildland Urban Interface.

Mitigation actions addressing these issues were prioritized for consideration in the action plan in this annex.

1.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 1-12 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 1-12. Status of Previous Plan Actions

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>Action AC-001—Evaluate the cost-effectiveness of raising the walls around the Courthouse basement entries to mitigate the threat of water coming into the basement and flooding the electrical room and generator. Include the Parking structures to the east of the courthouse in the study.</p> <p><i>Comment: Project is considered no longer feasible, remove from plan.</i></p>		✓		
<p>Action AC-002—Install Bypass switches to 400 Benjamin—east electrical room to allow for tie-in of a back-up Generator. Maintain essential government services during loss of power. This building is also a backup location for other county offices that could lose functionality during a flood.</p> <p><i>Comment: Bypass and generator have been installed (2019)</i></p>	✓			
<p>Action AC-003—Perform a study to determine the most cost effective method of enhancing the back-up power at the Courthouse so that the facility could maintain full services to the public. Look into the possibility of placing the current Gen-Set on the roof of the facility to remove it from flood issues. A structural study of the building will be required.</p> <p><i>Comment: It was determined that transferring the transformers to Idaho Power would provide the best alternative for providing redundancies and return to service capabilities. This action was taken in 2019.</i></p>	✓			
<p>Action AC-004—Keep First Responder Facilities out of Flood areas wherever possible. When not possible due to response time issues, design the facilities to keep water from entering, i.e., retaining walls, raise finish floor elevations.</p> <p><i>Comment: Ongoing effort, must balance location circumstances with response times.</i></p>			✓	AC-6
<p>Action AC-005—Examine and determine the most effective method to harden irrigation canals (i.e., tiling) in areas of high urban interface to prevent the flooding of residences and businesses without losing essential ground water recharge.</p> <p><i>Comment: Project requires additional coordination with irrigation facility providers.</i></p>			✓	AC-7
<p>Action AC-006—Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include but are not limited to; enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.</p> <p><i>Comment: Ongoing process to include mailings to floodplain residents, insurance companies and lenders.</i></p>			✓	AC-3
<p>Action AC-007—Assess and prioritize non-structural seismic retrofit needs of County-owned facilities. Once appropriate, cost-effective retrofit measures have been identified, implement the actions based on available funding and resources.</p> <p><i>Comment: Projects are assessed on an as needed basis as part of budgeted building maintenance and remodeling. No major retrofit has been identified as of yet.</i></p>			✓	AC-8
<p>Action AC-008—Continue outreach to Irrigation Districts in an effort to encourage their participation in the Mitigation Plan as planning partners.</p> <p><i>Comment: This will be on ongoing action that will include coordination with the US Bureau of Reclamation.</i></p>			✓	AC-9
<p>Action AC-009—Consider appropriate higher regulatory standards that prevent or reduce risk to the built environment from the known hazards of concern.</p> <p><i>Comment: Continuing review of national standards and adoption of relevant codes to reduce risk.</i></p>			✓	AC-10

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>Action AC-010—Maintain an active Public Outreach strategy using the web, social media, emails and public presentations to inform the public how to personally prepare for and mitigate the hazards of concern.</p> <p><i>Comment: This is a constant process conducted by Ada County Emergency Management and Community Resilience (EMCR). The Community Outreach Specialist conducts in-person presentations, writes a monthly preparedness pointer and informs the public through the agency website and social media platforms: Facebook, Twitter, NextDoor .</i></p>			✓	AC-11
<p>Action AC-011—Maintain emergency alert phone system to notify residents of evacuations orders and procedures during a natural hazard event.</p> <p><i>Comment: Ada County Dispatch maintains CodeRed, an IPAWS enabled platform, to conduct Community Mass Notification as needed.</i></p>			✓	AC-12
<p>Action AC-012— Perform a study to determine the feasibility of creating Open Space and Mitigation District. The district would manage acquired lands using practices that balanced the needs of community open space and recreation with appropriate mitigation activities that reduce or eliminate 3 known hazards of concern. Purposed activities include but are not limited to the maintenance of lands purchased in the floodplain, slope stabilization through low biomass native vegetation projects and the creation and maintenance of fire safe buffers in the WUI.</p> <p><i>Comment: At this time, funding for such a district has not been identified.</i></p>			✓	AC-13
<p>Action AC-013—Participate in Dam Failure and high water release exercises conducted by Army Corps of Engineers</p> <p><i>Comment: The agency participates in annual exercises conducted by either USACE or BOR.</i></p>			✓	AC-14
<p>Action AC-014—Maintain an active dialogue with all the partners involved in the release rates of water from Lucky Peak Dam. Continue to seek a balance in the regulated flows that meets the needs of agricultural water users, flood control for urban areas and river recreationists.</p> <p><i>Comment: EMCR maintains an active dialogue with both USACE and the BOR. One of the primary points of contact is through the Idaho Silver Jackets.</i></p>			✓	AC-15
<p>Action AC-015—Continue to maintain/enhance the County’s classification under the Community Rating System.</p> <p><i>Comment: Ada County actively pursues this goal through emergency, mitigation and community planning.</i></p>			✓	AC-16
<p>Action AC-016—Integrate Multi-Hazard Mitigation Plan into the 2016 update to the Ada County Comprehensive Plan.</p> <p><i>Comment: Key elements of the Mitigation Plan were included in the Ada County 2025 Comprehensive Plan Update.</i></p>	✓			
<p>Action AC-017—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, prioritizing properties with a history of repetitive loss or very high exposure to risk.</p> <p><i>Comment: No buildings have been identified at this time.</i></p>			✓	AC-1
<p>Action AC-018—Support County-wide initiatives identified in Volume 1.</p> <p><i>Comment: Continue in the plan update</i></p>			✓	AC-17
<p>Action AC-019—Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Volume 1.</p> <p><i>Comment: BATool purchased and implemented as a means of streamlining this process for all partners.</i></p>			✓	AC-2
<p>Action AC-020—Where appropriate, relocate or harden governmental records and service facilities currently located in hazard-prone areas. If the facilities cannot be relocated, determine and employ the most cost-effective methodologies to protect facilities from future potential damage caused by the known hazards of concern.</p> <p><i>Comment: Records are in process of being digitized and maintained on servers outside of known hazard zones.</i></p>			✓	AC-18

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Action AC-021 —Evaluate flood, Dam Failure and earthquake risk to all Paramedic Stations and identify cost-effective solutions to mitigate those risks. <i>Comment: Tools have been developed to perform initial study.</i>			✓	AC-19
Action AC-022 —Identify and install appropriate resources to ensure Barber Dam operations are uninterrupted by a loss of power. Solutions include a SCADA (supervisory control and data acquisition) system upgrade and/or backup power (generator, battery etc.). <i>Comment: This project has been reviewed and found not to be feasible.</i>		✓		
Action AC-023 —Whenever possible, coordinate with local experts and employ natural environmental processes in mitigation activities that increase ecosystem resilience and reduce the impacts of flooding on the built environment. <i>Comment: Ongoing process, work to restore banks after 2017 flooding is being conducted in accordance with this initiative. Most of the repairs have been completed and included green solutions where applicable.</i>			✓	AC-20

1.8 HAZARD MITIGATION ACTION PLAN

Table 1-13 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 1-14 identifies the priority for each action. Table 1-15 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 1-13. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action AC-1 —Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas. <i>Hazards Mitigated:</i> Wildfire, Extreme Weather, Flood, Earthquake, Dam/Canal Failure, Landslide						
Existing	3, 8, 9	Ada County Planning and Development Services	EMCR	High	HMGP, BRIC, FMA, Increased Cost of Compliance (ICC)	Short-term
Action AC-2 —Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan. <i>Hazards Mitigated:</i> Wildfire, Extreme Weather, Flood, Earthquake, Dam/Canal Failure, Landslide, Drought, Volcano						
New & Existing	All	EMCR	N/A	Low	Staff Time, General Funds	Short-term
Action AC-3 —Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements:						
<ul style="list-style-type: none"> Enforce the flood damage prevention ordinance. Participate in floodplain identification and mapping updates. Provide public assistance/information on floodplain requirements and impacts. 						
<i>Hazards Mitigated:</i> Flood						
New & Existing	2, 3, 4, 6, 8, 9	Ada County Planning and Development Services	N/A	Low	Staff Time, General Funds	Ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action AC-4 — Coordinate with community stakeholders in both the public and private sectors to identify and pursue adaptive capacity strategies that could improve community resilience in relation to future climate conditions.						
<u>Hazards Mitigated:</u> Drought, Flood, Extreme Weather, Wildfire						
New & Existing	2, 3, 4, 6, 9, 10	EMCR	N/A	Low	Staff Time, General Funds	Ongoing
Action AC-5 — Identify and install the most suitable backup power solution for critical facilities and infrastructure that lack adequate backup power. Solutions may vary based on circumstances and could include but are not limited to generators, switches, battery storage, and solar systems.						
<u>Hazards Mitigated:</u> Flood, Extreme Weather, Earthquake						
Existing	1, 3, 10	Ada County Operations Dept.	N/A	Medium	Ada County, BRIC, FMA	Ongoing
Action AC-6 — Keep First Responder Facilities out of flood areas wherever possible. When not possible due to response time issues, design the facilities to keep water from entering, i.e., retaining walls, raise finish floor elevations.						
<u>Hazards Mitigated:</u> Flood, Extreme Weather						
New & Existing	1, 10	Ada County Operations	N/A	Medium	Ada County, BRIC, FMA	Ongoing
Action AC-7 — Examine and determine the most effective method to harden irrigation canals (i.e., tiling) in areas of high urban interface to prevent the flooding of residences and businesses without losing essential ground water recharge.						
<u>Hazards Mitigated:</u> Flood, Extreme Weather, Earthquake, Drought						
Existing	1, 2, 9, 10	Ada County Irrigation Districts	N/A	High	Ada County Irrigation Districts	Long-term
Action AC-8 — Assess and prioritize non-structural seismic retrofit needs of County-owned facilities. Once appropriate, cost-effective retrofit measures have been identified, implement the actions based on available funding and resources.						
<u>Hazards Mitigated:</u> Earthquake						
Existing	1, 2, 3	Ada County Operations Dept.	N/A	Medium	Ada County, BRIC	Long-term
Action AC-9 — Continue outreach to Irrigation Districts in an effort to encourage their participation in the Mitigation Plan as planning partners.						
<u>Hazards Mitigated:</u> Flood, Extreme Weather						
Existing	6, 9, 10	EMCR	N/A	Low	Ada County	Ongoing
Action AC-10 — Determine feasibility of adopting appropriate higher regulatory standards that prevent or reduce risk to the built environment from the known hazards of concern.						
<u>Hazards Mitigated:</u> Wildfire, Extreme Weather, Flood, Earthquake, Dam/Canal Failure, Landslide, Drought						
New and Existing	4, 5, 6	Ada County	N/A	Low	Ada County	Ongoing
Action AC-11 — Maintain an active Public Outreach strategy using the web, social media, emails and public presentations to inform the public how to personally prepare for and mitigate the hazards of concern.						
<u>Hazards Mitigated:</u> Wildfire, Extreme Weather, Flood, Earthquake, Dam/Canal Failure, Landslide, Drought						
New and Existing	2, 8, 9	EMCR	N/A	Low	EMCR	Ongoing
Action AC-12 — Maintain emergency alert phone system to notify residents of evacuations orders and procedures during a natural hazard event.						
<u>Hazards Mitigated:</u> Wildfire, Extreme Weather, Flood, Earthquake, Dam/Canal Failure, Landslide, Drought						
Existing	7, 8	Ada County Dispatch	N/A	Low	Ada County Dispatch	Ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
<p>Action AC-13— Perform a socioeconomic analysis that examines the creation and maintenance of an Open Space and Mitigation District. The district would manage acquired lands using practices that balanced the needs of community open space and recreation with appropriate mitigation activities that reduce or eliminate 3 known hazards of concern. Purposed activities include but are not limited to the maintenance of lands purchased in the floodplain, slope stabilization through low biomass native vegetation projects and the creation and maintenance of fire safe buffers in the WUI.</p> <p><u>Hazards Mitigated:</u> Flood, Wildfire, Landslide</p>						
New	3, 4, 6, 9	Partnership of jurisdictions and academia	N/A	Medium	Partnership of jurisdictions, BRIC	Long-term
<p>Action AC-14— Participate in Dam Failure and high water release exercises conducted by Army Corps of Engineers</p> <p><u>Hazards Mitigated:</u> Flood, Dam/Canal Failure</p>						
Existing	2, 9	EMCR	N/A	Low	EMCR	Ongoing
<p>Action AC-15— Maintain an active dialogue with all the partners involved in the release rates of water from Lucky Peak Dam. Continue to seek a balance in the regulated flows that meets the needs of agricultural water users, flood control for urban areas and river recreationists.</p> <p><u>Hazards Mitigated:</u> Dam/Canal Failure, Flood, Drought</p>						
New and Existing	2, 9	EMCR	N/A	Low	EMCR	Ongoing
<p>Action AC-16— Continue to maintain/enhance the County’s classification under the Community Rating System.</p> <p><u>Hazards Mitigated:</u> Flood</p>						
New and Existing	3, 4, 5, 6, 8	Ada County Planning and Development Services	N/A	Low	Ada County	Ongoing
<p>Action AC-17— Support County-wide initiatives identified in Volume 1.</p> <p><u>Hazards Mitigated:</u> Wildfire, Extreme Weather, Flood, Earthquake, Dam/Canal Failure, Landslide, Drought, Volcano</p>						
New and Existing	All	EMCR	N/A	Low	Ada County	Short-term
<p>Action AC-18— Where appropriate, relocate or harden governmental records and service facilities currently located in hazard-prone areas. If the facilities cannot be relocated, determine and employ the most cost-effective methodologies to protect facilities from future potential damage caused by the known hazards of concern.</p> <p><u>Hazards Mitigated:</u> Wildfire, Extreme Weather, Flood, Earthquake, Dam/Canal Failure, Landslide</p>						
Existing	1, 3, 10	Ada County Planning and Development Services	EMCR	High	FEMA Hazard Mitigation Grant Programs, ICC	Long-term
<p>Action AC-19— Evaluate flood, dam/canal failure and earthquake risk to all Paramedic Stations and identify cost-effective solutions to mitigate those risks.</p> <p><u>Hazards Mitigated:</u> Flood, Dam/Canal Failure, Earthquake</p>						
Existing	1, 3, 10	Ada County Emergency Medical Services District (ACEMSD)	N/A	Medium	ACEMSD, BRIC, FMA	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
<p>Action AC-20— Whenever possible, coordinate with local experts and employ natural environmental processes in mitigation activities that increase ecosystem resilience and reduce the impacts of flooding on the built environment.</p> <p><u>Hazards Mitigated:</u> Flood, Dam/Canal Failure</p>						
New and Existing	2, 5, 9	Ada County	N/A	Medium	Ada County, BRIC, FMA, Idaho Water Resources Board (IWRB)	Ongoing
<p>Action AC-21— Update the Black’s Creek Reservoir breach analysis and the resulting downstream flood inundation map using the most recent, highest resolution GIS data available. The model suggested for use should be HEC-RAS or an equivalent two-dimensional model that can satisfactorily recognize and address the hydrologic interactions with all natural and constructed geographic features that are located downstream of the facility. The breach analysis will model the reservoir at a full pool condition and will include two (2) scenarios consisting of (1) a non-flood failure (aka “sunny day”), and (2) a flood event failure during the 1% inflow design flood (aka 100-year flood).</p> <p><u>Hazards Mitigated:</u> Flood, Dam/Canal Failure</p>						
New and Existing	2, 6, 7, 8, 9	EMCR	City of Meridian	Medium	BRIC, FMA	Short-term
<p>Action AC-22— Design and complete a Greenbelt Pathway Riverbank Stabilization project that includes three separate areas adjacent the Boise River, within Unincorporated Ada County, that were damaged during the 2017 flood.</p> <p><u>Hazards Mitigated:</u> Flood, Soil Erosion, Extreme Weather</p>						
Existing	6, 10	Ada County Operations Dept.	N/A	Low	American Rescue Plan Act (ARPA) 2021	Short-term
<p>Action AC-23— Plan and complete a project to remove the horse barns located within the floodway of the Boise River on Expo Idaho land. The project will safely remove the structures, reduce flood risk, remove potential nonpoint source pollution, and stabilize the bare ground with natural solutions (i.e., native grasses) to prevent erosion.</p> <p><u>Hazards Mitigated:</u> Flood, Soil Erosion, Surface Water Contamination</p>						
Existing	3, 6, 9, 10	Ada County Operations Dept.	N/A	Low	ARPA 2021	Short-term
<p>Action AC-23— Work with Boise River Flood Control District #10 to develop a channel and gravel management plan, leveraging the Boise River Management Tool (2-D BRMT), including a Digital Elevation Model of difference (DoD) map and biomass model in the river along Unincorporated Ada County. (Coordinates with Flood Control District #10 Action FCD10-15)</p> <p><u>Hazards Mitigated:</u> Flood, Soil Erosion, Surface Water Contamination</p>						
New & Existing	2, 6, 8, 9, 10	Ada County Development Services	Flood Control District #10	Low	FCD#10, Ada County	Short-term
<p>Action AC-24— Integrate the Multi-Hazard Mitigation Plan into updates of the Ada County Comprehensive Plan.</p> <p><u>Hazards Mitigated:</u> All Hazards</p>						
New and Existing	2, 5, 6	Ada County Planning and Development Services	EMCR	Low	Ada County	Long-term

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date
 Acronyms used here are defined at the beginning of this volume.

Table 1-14. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	3	High	High	Yes	Yes	No	Medium	High
2	10	Medium	Low	Yes	No	Yes	High	Low
3	6	Medium	Low	Yes	No	Yes	High	Low
4	6	Medium	Low	Yes	No	Yes	High	Low
5	3	Medium	Medium	Yes	Yes	Yes	Medium	Medium
6	3	Medium	Medium	Yes	Yes	No	Low	Low
7	4	High	High	Yes	Yes	No	Low	Low
8	3	Medium	Medium	Yes	Yes	No	Medium	Medium
9	3	Low	Low	Yes	No	Yes	Low	Low
10	3	Medium	Low	Yes	No	Yes	High	Low
11	3	Medium	Low	Yes	No	Yes	High	Low
12	2	Medium	Low	Yes	Yes	Yes	High	Low
13	4	High	High	Yes	Yes	No	Medium	Medium
14	2	Low	Low	Yes	No	Yes	High	Low
15	2	Medium	Low	Yes	No	Yes	High	Low
16	5	Medium	Low	Yes	No	Yes	High	Low
17	10	Medium	Low	Yes	Yes	Yes	High	Low
18	3	High	High	Yes	Yes	No	Medium	Medium
19	3	Medium	Medium	Yes	Yes	No	Medium	Medium
20	3	High	Medium	Yes	Yes	No	Medium	High
21	5	Medium	Medium	Yes	Yes	No	Medium	High
22	2	Medium	Low	Yes	Yes	Yes	High	Low
23	4	Medium	Low	Yes	Yes	Yes	High	Low
24	3	Medium	Low	Yes	No	Yes	High	Low

a. See the introduction to this volume for explanation of priorities.

Table 1-15. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building ^b
High-Risk Hazards								
Extreme Weather	AC-10	AC-1, 6, 18	AC-9, 11	AC-7, 23	AC-5, 12	AC-22, 23	AC-4, 7	AC-2, 4, 7, 17, 24
Medium-Risk Hazards								
Wildfire	AC-10	AC-1, 18	AC-11		AC-12		AC-4	AC-2, 4, 13, 17, 24
Flood	AC-3, 10, 16	AC-1, 6, 16, 18, 19	AC-3, 9, 11, 16	AC-7, 15, 20, 23	AC-5, 12	AC-22, 23	AC-4, 7	AC-2, 3, 4, 7, 13, 14, 15, 16, 17, 20, 21, 24

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building ^b
Earthquake	AC-10	AC-1, 8, 18, 19	AC-11	AC-7	AC-5, 12		AC-7	AC-2, 7, 8, 17, 24
Dam/Canal Failure	AC-10	AC-1, 18, 19	AC-11	AC-15, 20	AC-12			AC-2, 14, 15, 17, 20, 21, 24
Low-Risk Hazards								
Landslide	AC-10	AC-1, 18	AC-11		AC-12			AC-2, 13, 17, 24
Drought	AC-10		AC-11	AC-7, 15	AC-12		AC-4, 7	AC-2, 4, 7, 15, 17, 24
Volcano								AC-2, 17

- a. See the introduction to this volume for explanation of mitigation types.
- b. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

1.9 PUBLIC OUTREACH

Table 1-16 lists public outreach activities for this jurisdiction.

Table 1-16. Local Public Outreach

Local Outreach Activity	Date	Number of People Involved
Social Media-Plan Update, Twitter/Facebook/NEXTDOOR	08/16/2021	7,000
Social Media- Mitigation Preparedness Pointer, Twitter/Facebook/NEXTDOOR	02/01/2022	6,200
Emergency Preparedness and Disaster Mitigation Booth at Micron	May 16 & 20, 2022	161

1.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **2017 Ada County Multi-Hazard Mitigation Plan** – The previous HMP was reviewed to update this annex.
- **Ada County Zoning Ordinance (Ordinance Number 389, 6-14-2000 with amended sections)** - The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **Ada County Building Code Ordinance (Ordinance Number 396, 10-16-2000 with amended sections)** - The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **Flood Hazard Overlay District (Ordinance Number 914, 6-10-2020) Flood Damage Prevention Ordinance**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.

- **Wildland-Urban Fire Interface Overlay District (Ordinance Number 699, 6-18-2008)** - The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **Hillside Overlay District (Ordinance Number 766, 12-8-2010)** - The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.
- **FEMA Regional Flood Insurance Liaison** – The liaison was used to obtain the most up to date FEMA Flood Insurance Policy numbers for unincorporated Ada County.

2. CITY OF BOISE

2.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Mallory Wilson, Emergency Preparedness Coordinator
 333 N. Mark Stall Place
 Boise, ID 83704
 Telephone: 208-570-6552
 e-mail Address: mgwilson@cityofboise.org

Alternate Point of Contact

Romeo Gervais, Assistant Fire Chief
 333 N. Mark Stall Place
 Boise, ID 83702
 Telephone: 208-570-6567
 e-mail Address: rgervais@cityofboise.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 2-1.

Table 2-1. Local Hazard Mitigation Planning Team Members

Name	Title
Mallory Wilson	Emergency Preparedness Coordinator
Rachel Holford	Emergency Preparedness Senior Manager
Jason Blais	Building Official Senior Manager
Jim Pardy	City Engineer
Doug Rhinehart	Public Works Project Coordinator
Sara Arkle	Parks Resources Superintendent
Jerry McAdams	Wildfire Mitigation Specialist
Amy Parrish	Climate/Energy Data Analyst

2.2 JURISDICTION PROFILE

2.2.1 Location and Features

The City of Boise is located in southwestern Idaho and northeastern Ada County in a region coined as the Treasure Valley. It is situated within the Boise River Valley at the base of the foothills of the Salmon River Mountains to the north and east. The Boise River traverses the city and is an aesthetic and recreational focal point of the community. The City is also crossed from east to west by a series of geological benches that step up in elevation from the Boise River, each bench representing a previous location of the Boise River floodplain in historic geologic time. A series of major irrigation canals generally follow the contours of the benches, bringing water from the Boise River to outlying farm fields. The extensive irrigation canal system represents a major physical reminder of Boise’s agricultural past and the continuing agricultural economy in the western portion of

the Treasure Valley. The southernmost portions of Boise extend into the high desert of the Snake River Plain and are characterized by basaltic soils and formations.

Boise is approximately 350 miles east of the Pacific Ocean, but local climate is shaped in part by maritime influences. In general, the Boise area has a relative mild climate for its northerly latitude. Summers are hot and winters cold, but below zero weather occurs infrequently. The growing season in Boise is 159 day, which again is substantial in relation to latitude. However, even the growing season can vary locally depending upon location within the valley, bench or foothills areas. On average, Boise receives approximately 13-inches of precipitation annually, mostly in the form of winter snow.

2.2.2 History

When trappers and fur traders first began visiting the Boise area in the early 1800s, Indian villages already existed along the Boise River. Fur trading continued as the prominent activity in the area until about 1835. Fort Boise was constructed by the Hudson Bay Company as a stockade in 1834. The original Fort Boise was abandoned in 1855 due to the decline of fur trading in the area.

The discovery of gold in the Boise Basin in 1862 instigated an immediate influx of prospectors and other settlers into the area. As a result of renewed growth, Fort Boise was reestablished in 1863 as an American Military post to protect the settlers. In 1863, a group of early citizens laid out a town-site that included a main road running north of and parallel to the Boise River with several blocks on each side. At this time, Boise was first suggested as the name of the growing community.

The Idaho territory was created by the federal government in 1863. Though Lewiston was initially designated as the territorial capital; that function was relocated to Boise in 1864. This was also the year Boise incorporated as a City. Idaho became the 43rd state in 1890, which further stimulated settlement in the Boise Valley. By 1900, Boise was a thriving community of 6,000 people. The completion of Arrowrock Dam in 1915 opened the valley irrigated farming and helped build the economic base of the community.

Boise continued to grow as a center for farming and mining activities in the region. In the early days, most employment was in retail trade, wholesaling and supply, services and agriculture. Employment in manufacturing and government increased slowly during the first few decades of the 20th century. The population of Boise grew from 6,000 in 1900 to over 205,000 in 2010, with high rates of growth occurring in the 1960s, 1970s, 1990s and the mid- 2000s. The expansion of manufacturing and government fueled much of the growth in the 1970s through early 1990s with Hewlett Packard Company and Micron constructing major electronics manufacturing facilities. Migration from other states, both for jobs and for lifestyle purposes, was a large part of the growth.

In the mid-1980s, downtown redevelopment projects, construction of the regional mall, and a booming housing industry were signs of strong and sustained growth leading into the 1990s. Boise continued to grow quickly throughout the 1990s with annual growth rates as high as 5%. The city experienced a decline in growth rate in the early 2000s with the technology market crash and 9/11, and then rebounded with extremely rapid growth at mid-decade. Growth within Boise has resumed and grown in the last five years.

2.2.3 Governing Body Format

Boise City has a strong Mayor and City Council form of government. The Mayor presides over City Council meetings, has the power to appoint, and serves as the City Manager. All legislative actions are adopted by the City

Council. Other boards and commissions are appointed to decide non-legislative items and/or make recommendations to the City Council.

The City Council is responsible for the adoption of this plan, City Staff is responsible for its implementation.

2.3 CURRENT TRENDS

2.3.1 Population

According to COMPASS, the population of the City of Boise as of April 2022 was 243,570. Since 2017, the population has grown at an average annual rate of 1.3 percent.

2.3.2 Development

Total building permits have stayed at a high level since 2016, with a temporary slowdown in 2020 as the pandemic set in (a high level of development resumed in the spring of 2021). Construction costs have increased significantly, which is reflected in permit values, and land values are significantly higher as well. Total permit counts since 2016 have increased, mainly due to trade permits (e.g., plumbing or electrical), commercial tenant improvement permits, and more home remodeling projects given rapid home price appreciation. Despite a significant housing shortage, new construction permits for single-family housing have stayed more or less level given limited tracts of undeveloped land within Boise compared to neighboring cities and rural county areas. Much infill development has occurred, which limits how much more can occur in the future. Downtown Boise has seen significant growth with numerous large commercial projects, many of which are large, multi-story multifamily projects. Growth in multifamily development is expected to continue. Commercial development has slowed somewhat with the pandemic and remote work, but given Boise’s recent growth, and continuing in-migration, it is expected to continue at a robust level for the foreseeable future. In sum, development is expected to continue at a high level, but the composition may change as Boise continues to urbanize and build upward, with limited potential to build outward.

Future growth is anticipated south of the city, with development near the airport, in previously undeveloped areas, and potential annexation of new areas for both housing and commercial development. Additional foothills development is expected to be limited. Development east and southeast of the city, into undeveloped areas, is also likely to occur, though for the near term may be limited. Table 2-2 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan.

Table 2-2. Recent and Expected Future Development Trends

Criterion	Response
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan? <i>If yes, give the estimated area annexed and estimated number of parcels or structures.</i>	Yes
Is your jurisdiction expected to annex any areas during the performance period of this plan? <i>If yes, describe land areas and dominant uses.</i> <i>If yes, who currently has permitting authority over these areas?</i>	Yes
	Estimate 500 or fewer acres annexed, and 250 or fewer buildings or structures. Mainly housing on the south/southwest side of the city, with some commercial/industrial also being added. Planning & Development Services

Criterion	Response																														
<p>Are any areas targeted for development or major redevelopment in the next five years? <i>If yes, briefly describe, including whether any of the areas are in known hazard risk areas</i></p>	<p style="text-align: center;">Yes</p> <p>South and southwest development as noted above. Also, some on the east/southeast end of the city near Micron’s facilities. New housing near Micron is a mostly undeveloped area with sagebrush. Also, while more limited now, some ongoing foothills housing development is in areas with sagebrush/wildland fire potential.</p>																														
<p>How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?</p>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #e6f2ff;"> <th></th> <th>2016</th> <th>2017</th> <th>2018</th> <th>2019</th> <th>2020</th> </tr> </thead> <tbody> <tr> <td style="text-align: left;">Single Family</td> <td>696</td> <td>726</td> <td>711</td> <td>704</td> <td>682</td> </tr> <tr> <td style="text-align: left;">Multi-Family</td> <td>58</td> <td>50</td> <td>34</td> <td>40</td> <td>41</td> </tr> <tr> <td style="text-align: left;">Other</td> <td>116</td> <td>137</td> <td>105</td> <td>105</td> <td>76</td> </tr> <tr style="background-color: #e6f2ff;"> <td style="text-align: left;">Total</td> <td>870</td> <td>913</td> <td>850</td> <td>849</td> <td>799</td> </tr> </tbody> </table>		2016	2017	2018	2019	2020	Single Family	696	726	711	704	682	Multi-Family	58	50	34	40	41	Other	116	137	105	105	76	Total	870	913	850	849	799
	2016	2017	2018	2019	2020																										
Single Family	696	726	711	704	682																										
Multi-Family	58	50	34	40	41																										
Other	116	137	105	105	76																										
Total	870	913	850	849	799																										
<p>Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.</p>	<ul style="list-style-type: none"> Special Flood Hazard Areas: Limited development in or near the river corridor, both residential and commercial. Landslide: Housing in one such area of foothills was abandoned – limited housing had been built there. High Liquefaction Areas: N/A Wildfire Risk Areas: Some in the foothills on the north and east/southeast sides of the city, and in undeveloped land to the southeast. 																														
<p>Describe the level of buildout in the jurisdiction, based on your jurisdiction’s buildable lands inventory. If no such inventory exists, provide a qualitative description.</p>	<p>Significant infill has occurred and limited areas to build upon remain. Without significant annexation, remaining infill and redevelopment areas will be built out and additional infill development will become increasingly limited. The city is bounded on the north by foothills and on the west and southwest by Eagle, Meridian, and a developed area of Ada County.</p>																														

2.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 2-3.
- Development and permitting capabilities are presented in Table 2-4.
- An assessment of fiscal capabilities is presented in Table 2-5.
- An assessment of administrative and technical capabilities is presented in Table 2-6.
- An assessment of education and outreach capabilities is presented in Table 2-7.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 2-8.
- Classifications under various community mitigation programs are presented in Table 2-9.

Table 2-3. Planning and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, & Requirements				
Building Code	Yes	No	Yes	No
<i>Comment: 2018 International Building Code (IBC)/Title 9, Building Codes and Regulations, Chapter 1A Building Code: adopted 1/1/2021 2018 International Existing Building Code (IEBC)/Title 9, Building Codes and Regulations, Chapter 10 Existing Building Code: adopted 1/1/2021 2018 International Residential Code (IRC)/Title 9, Building Codes and Regulations, Chapter 1B One-And-Two-Family Dwelling Building Code: adopted 1/1/2021</i>				
Zoning Code	Yes	No	No	Yes
<i>Comment: Title 11, Development Code</i>				
Subdivisions	Yes	No	No	No
<i>Comment: Title 11, Development Code</i>				
Stormwater Management	Yes	Yes	Yes	Yes
<i>Comment: Title 10, Public Utilities, Chapter 6, Stormwater Management and Discharge Control and Title 9, Building Codes and Regulations, Chapter 14, Construction Site Erosion Control, Boise shares responsibility with ACHD and others for the National Pollutant Discharge Elimination System (NPDES) program</i>				
Post-Disaster Recovery	No	No	No	No
<i>Comment: N/A</i>				
Real Estate Disclosure	No	No	No	No
<i>Comment: Idaho Statute 55-2508</i>				
Growth Management	Yes	No	No	No
<i>Comment: Blueprint Boise, Adopted 11/2011</i>				
Site Plan Review	Yes	No	No	No
<i>Comment: Requirement of Title 11, Development Code</i>				
Environmental Protection	Yes	Yes	No	Yes
<i>Comment: Blueprint Boise, Adopted 11/2011, Boise River Resource Management and Master Plan, Adopted 8/21/2014, Waterways Overlay Districts, Boise River System Overlay Districts, Title 11, Development Code</i>				
Flood Damage Prevention	Yes	No	No	Yes
<i>Comment: 2018 International Building Code (IBC)/Title 9, Building Codes and Regulations, Chapter 1A Building Code: adopted 1/1/2021 2018 International Residential Code (IRC)/Title 9, Building Codes and Regulations, Chapter 1B One-And-Two-Family Dwelling Building Code: adopted 1/1/2021 Title 11, Development Code</i>				
Emergency Management	Yes	Yes	No	Yes
<i>Comment: Boise City Office of Emergency Preparedness now in place; Ada County Emergency Management</i>				
Climate Change	Yes	No	No	Yes
<i>Comment: Boise's Climate Action Roadmap 2021</i>				
Other	No	No	No	No
<i>Comment: N/A</i>				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Planning Documents				
General Plan	Yes	No	No	Yes
<i>Is the plan equipped to provide linkage to this mitigation plan?</i>	Yes			
<i>Comment: Blueprint Boise, Adopted 11/2011</i>				
Capital Improvement Plan	Yes	No	No	No
<i>What types of capital facilities does the plan address? All city facilities</i>				
<i>How often is the plan updated? Annual budget, with 5-year capital improvement plan</i>				
Disaster Debris Management Plan	Yes	No	No	No
<i>Comment: Public Works Disaster Debris Operational Guidance document; Planning coordination with Ada County Debris Management Plan</i>				
Floodplain or Watershed Plan	Yes	Yes	No	Yes
<i>Comment: Ada County Multi-Hazard Mitigation Plan serves as the Flood Management Plan of record for all communities within the planning area that participate in CRS.</i>				
Stormwater Plan	Yes	Yes	Yes	Yes
<i>Comment: Stormwater Management Program</i>				
Urban Water Management Plan	No	No	No	No
<i>Comment: N/A</i>				
Habitat Conservation Plan	Yes	No	No	No
<i>Comment: Foothills and Open Space Management Plan, Boise River Resource Management and Master Plan, Adopted 8/21/2014</i>				
Economic Development Plan	Yes	No	No	No
<i>Comment: City of Boise Economic Development Strategic Plan, November 2021</i>				
Shoreline Management Plan	No	No	No	No
<i>Comment: Enter Comment</i>				
Community Wildfire Protection Plan	No	Yes	No	Yes
<i>Comment: The 2017 version of this plan serves as the CWPP. In addition, the 2021 update to the Ada County Multi-Hazard mitigation plan is being prepared to qualify as a CWPP for the Ada County Planning area.</i>				
Forest Management Plan	Yes	No	No	No
<i>Comment: 2015 Community Forestry Strategic Management Plan</i>				
Climate Action Plan	Yes	No	No	Yes
<i>Comment: Boise's Climate Action Roadmap, 2021</i>				
Comprehensive Emergency Management Plan	Yes	Yes	No	Yes
<i>Comment: 2020 City of Boise, Emergency Operations Plan</i>				
Threat & Hazard Identification & Risk Assessment (THIRA)	No	Yes	No	No
<i>Comment: Ada County THIRA, May 2015</i>				
Post-Disaster Recovery Plan	No	No	No	Yes
<i>Comment: Coordination with Ada County on future development of Recovery Plan</i>				
Continuity of Operations Plan	Yes	No	No	No
<i>Comment: City of Boise Continuity of Operations Plan in development</i>				
Public Health Plan	No	Yes	No	No
<i>Comment: Central District Health Department Emergency Operations Plan, 2019</i>				
Other	No	No	No	No
<i>Comment: N/A</i>				

Table 2-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? <i>If no, who does? If yes, which department?</i>	Yes Planning and Development Services
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory?	Yes

Table 2-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service <i>If yes, specify:</i> Geothermal, Solid Waste, Water Renewal (enterprise funds)	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes

Table 2-6. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices <i>If Yes, Department /Position:</i> City Planning and Development Staff and Public Works Engineers	Yes
Engineers or professionals trained in building or infrastructure construction practices <i>If Yes, Department /Position:</i> City Planning Staff and Public Works Engineers	Yes
Planners or engineers with an understanding of natural hazards <i>If Yes, Department /Position:</i> City Planning and Development Staff and Public Works Engineers	Yes
Staff with training in benefit/cost analysis <i>If Yes, Department /Position:</i> City Budget Staff	Yes
Surveyors <i>If Yes, Department /Position:</i> City Public Works Staff- City Surveyor	Yes
Personnel skilled or trained in GIS applications <i>If Yes, Department /Position:</i> City Planning and Development Staff, Public Works Staff, IT Staff, Fire Data Analyst	Yes
Scientist familiar with natural hazards in local area <i>If Yes, Department /Position:</i> Parks and Recreation – Foothills Restoration Specialist; Close coordination with Boise State University Hazard and Climate Resiliency Institute	Yes
Emergency manager <i>If Yes, Department /Position:</i> City Office of Emergency Management (2 Staff) Ada County Emergency Management (EMCR)	Yes
Grant writers <i>If Yes, Department /Position:</i> City Police and Fire Staff, Department of Finance and Administration Budget Staff and Grants Manager	Yes

Table 2-7. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes – City Community Engagement Department and some departments have designated public information officers
Do you have personnel skilled or trained in website development?	Yes – IT Staff, Community Engagement Department
Do you have hazard mitigation information available on your website? <i>If yes, briefly describe:</i> Wildfire and flood information on city website. Links to EMCR site.	Yes
Do you use social media for hazard mitigation education and outreach? <i>If yes, briefly describe:</i> City has Facebook, Twitter, and other accounts. Accounts are used to provide information during times throughout the year.	Yes
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe:</i> Planning and Zoning Commission, Parks and Recreation Commission, Public Works Commission, Building Code Committee	Yes
Do you have any other programs in place that could be used to communicate hazard-related information? <i>If yes, briefly describe:</i> Various city public education events throughout the year.	Yes
Do you have any established warning systems for hazard events? <i>If yes, briefly describe:</i> Code Red– residents may sign up to receive emergency notifications and critical community alerts. Access to IPAWS infrastructure through State system.	Yes

Table 2-8. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Planning and Development Services
Who is your floodplain administrator? (department/position)	Planning Director
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	2020
Does your floodplain management program meet or exceed minimum requirements? <i>If exceeds, in what ways?</i> Increased freeboard requirements in all SFHAs.	Exceeds
When was the most recent Community Assistance Visit or Community Assistance Contact?	Summer 2019
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <i>If so, state what they are.</i> Boise City annexed property that had existing violations (undersize culverts) that preexisted Boise City jurisdiction.	Yes
Are any RiskMAP projects currently underway in your jurisdiction? <i>If so, state what they are.</i>	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <i>If no, state why.</i> Updated mapping in progress	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? <i>If so, what type of assistance/training is needed?</i> Training for new floodplain administrator	Yes
Does your jurisdiction participate in the Community Rating System (CRS)? <i>If yes, is your jurisdiction interested in improving its CRS Classification?</i> No <i>If no, is your jurisdiction interested in joining the CRS program?</i> N/A	Yes

Criterion	Response
How many flood insurance policies are in force in your jurisdiction? ^a	950
<i>What is the insurance in force?</i> \$276,428,300	
<i>What is the premium in force?</i> \$624,142	
How many total loss claims have been filed in your jurisdiction? ^a	55
<i>What were the total payments for losses?</i> \$102,909	

a. According to FEMA statistics as of March 31, 2022

Table 2-9. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	Yes	1600108830	N/A
DUNS #	Yes	070017017	N/A
Community Rating System	Yes	6	2015
Building Code Effectiveness Grading Schedule	Yes	3	2021
Public Protection	Yes	3	2013
Storm Ready	Yes	N/A	N/A
Firewise	Yes	N/A	N/A

2.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as general planning and capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

2.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Blueprint Boise**—Provides guidance for development of areas impacted by hazards with similar but aligned goals.
- **Foothills and Open Space Management Plan**—Provides guidance for development of areas impacted by hazards with similar but aligned goals.
- **Boise River System Ordinance**—Provides guidance for development of areas impacted by hazards with similar but aligned goals.
- **Stormwater Management Plan**—Provides guidance and requirements for construction, industrial and municipal activities to meet NPDES requirements

2.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- As additional plans are created or updated we will consider inclusion of principals and goals of the Multi-Hazard Mitigation Plan.
- Future updates to the City of Boise Comprehensive Plan will reference this HMP in land use sections.
- **Boise’s Climate Action Roadmap**—Provides guidance for addressing current and future hazards related to the changing climate
- **City of Boise Emergency Operations Plan**—ensure next plan update aligns with hazard mitigation plan updates.
- **Disaster Recovery Plan**—Engage with County on recovery planning initiatives.
- **Community Wildfire Protection Plan**—will reference wildfire hazard maps and data in this HMP.
- **Stormwater Management Program**—flood and extreme weather data may be used in the program.
- **City of Boise Water Renewal Utility Plan**—will consider drought hazard data from the Hazard Mitigation Plan.
- **Emergency Preparedness**—further promote mitigation planning and grant opportunities within the city

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

2.6 RISK ASSESSMENT

2.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 2-10 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 2-10. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
Excessive Heat	N/A	6/28/2021	Cooling shelters; minimal local costs
Earthquake	N/A	3/31/2020	No local damage; evaluated infrastructure
COVID-19 Pandemic	DR-4534	1/20/2020 - ongoing	N/A
Winter Storms	N/A	December 2016	N/A
Flooding	DR-4342	3/29/2017	\$3,341,756.00
Severe Wind	N/A	3/29/2009	\$33,000 (countywide)
Wildfire	N/A	1/28/2009	\$1.66 Million
Flooding	N/A	9/11/1997	\$57,000
Wildfire	N/A	8/26/1996	\$3.3 million

Type of Event	FEMA Disaster #	Date	Damage Assessment
Severe Wind	N/A	4/27/1995	\$50,000 (countywide)
Flooding	N/A	02/1986	\$20,000
Flooding	N/A	06/1983	\$147,000 (countywide)
Earthquake	N/A	10/28/1983	Minimal local damage
Landslide	N/A	11/1980	Unknown
Flooding	N/A	1/12/1979	Unknown

2.6.2 Hazard Risk Ranking

Table 2-11 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy. Mitigation actions target hazards with high and medium rankings.

Table 2-11. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	Extreme Weather	33	High
2	Wildfire	22	Medium
3	Dam/Canal Failure	18	Medium
4	Flood	18	Medium
5	Earthquake	16	Medium
6	Landslide	12	Low
7	Drought	9	Low
8	Volcano	6	Low

2.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for this jurisdiction. Available jurisdiction-specific risk maps of the hazards are provided at the end of this annex.

Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: 0
- Number of FEMA-identified Severe-Repetitive-Loss Properties: 0
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: N/A

Other Noted Vulnerabilities

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Canal failure: Boise has numerous canals, many of which are situated above homes and businesses. Canal failure would result in flooding of those properties.
- Mass Gatherings: Increase in number and size of large special events taking place within the City.

Mitigation actions addressing these issues were prioritized for consideration in the action plan in this annex.

2.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 2-12 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>Action B-1—Esther Simplot Flood Channel (joint project with Boise City and Garden City); a flood study of the Boise River between Main St. and Veteran’s Memorial Park bridges is underway and expected to result in a project to construct side channels / channel modifications to greatly reduce flood potential in both Garden City and in Boise City</p> <p>Comment: Additional modifications planned to the river channel at Esther Simplot Whitewater Park. The final Letter of Map Revision (LOMR) is now anticipated to be submitted to FEMA for approval in 2023.. With the LOMR approval the Flood Insurance Rate Maps (FIRM) will be modified in this area to include all improvements and increased conveyance channels.</p>			✓	B-6
<p>Action B-2—Complete a Wildland-Urban Interface (WUI) risk assessment (a GIS exercise looking at vegetation in the undeveloped area, age of homes and other relevant factors). Improve individual parcel data with wildfire assessments. Provide a public portal to share data and educate on risk and community wildfire adaptation. Also see North Ada County Fire & Rescue (NACFR) and Whitney Fire District Initiatives.</p> <p>Comment: This is an ongoing program, which will likely need additional future funding to conduct updates to the Riskmap (e.g., LiDAR, Rapid Eye imagery and data translation).</p>			✓	B-7
<p>Action B-3—Conduct wildland fire prevention education and outreach to support and promote fire adapted communities. Focus on fuel reduction on private property around new and existing homes via incentivizing homeowners, providing free debris pick-up and replacement Firewise vegetation at a discount.</p> <p>Comment: Consistent funding mechanisms will need to be found to create an annual woody debris pickup program.</p>			✓	B-8
<p>Action B-4—Fire Station Seismic Upgrades: Boise Fire has already identified two buildings with major seismic problems (including the Logistics/Maintenance building) at a cost of two million dollars. This project will perform a vulnerability assessment on 16 other Fire facilities and initiate upgrades. Also see N. Ada County Fire & Rescue Initiative #2.</p> <p>Comment: Initial condition assessment of fire stations was completed with four slated for remodeling priority.</p>	✓			
<p>Action B-5—Flood Containment Facility Maintenance: Continue to maintain foothills flood containment facilities such as the Cottonwood flood ponds and flume, etc.</p> <p>Comment: Ongoing indefinitely. Facilities are inspected, monitored and maintained on reoccurring basis.</p>			✓	B-9

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>Action B-6—Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include but are not limited to; enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.</p> <p><i>Comment: The City continues to maintain good standing under the program.</i></p>			✓	B-4
<p>Action B-7—Continue to maintain/enhance the City’s classification under the Community Rating System</p> <p><i>Comment: The City continues to participate in the Community Rating System.</i></p>			✓	B-10
<p>Action B-8—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with properties with exposure to repetitive losses as a priority.</p> <p><i>Comment: Current discussions and analysis of potential plans are ongoing.</i></p>			✓	B-1
<p>Action B-9—Update and adopt a new Wildland Urban Interface (WUI) Code to replace the existing code. Improve and update existing WUI hazard zones.</p> <p><i>Comment: The City of Boise is currently leading a working group on adopting a consistent area-wide WUI code, and will be updating the Boise City Code as part of this process.</i></p>			✓	B-11
<p>Action B-10—Consider appropriate higher regulatory standards that prevent or reduce risk to the built environment from the known hazards of concern</p> <p><i>Comment: Ongoing discussions and considerations during all project planning, analysis, and educations programs.</i></p>			✓	B-12
<p>Action B-11— Support County-wide initiatives identified in Volume 1.</p> <p><i>Comment: Continued efforts to coordinate with identified stakeholders.</i></p>			✓	B-13
<p>Action B-12—Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Volume 1.</p> <p><i>Comment: Key representatives from each identified area continue to coordinate and provide information to and from their respective areas.</i></p>			✓	B-3
<p>Action B-13—Offer NOAA SKYWARN Spotter Training for community members to encourage awareness and better ability to provide local information for weather predictions.</p> <p><i>Comment: Have not seen any recent information from NWS on SKYWARN training opportunities. Will revisit if opportunities are made available again in the future.</i></p>		✓		
<p>Action B-14—For the Alto Via landslide, support evaluation of remediation, purchase or relocation of structures to prevent future damage and repetitive losses with the goal of pursuing mitigation.</p> <p><i>Comment: The City has no additional action planned in regards to the landslide, but will continue to monitor for any changes.</i></p>		✓		
<p>Action B-15—Whenever possible, coordinate with local experts and employ natural environmental processes in mitigation activities that increase ecosystem resilience and reduce the impacts of flooding on the built environment.</p> <p><i>Comment: The City of Boise continues to work with local experts in combination with best practices on all projects. Public Works Engineering staff is resolved in ensuring our riverbanks are not completely rocked and is using techniques to soften the bank repairs, when applicable, with vegetation and natural techniques.</i></p>			✓	B-14
<p>Action B-16—Meet and coordinate with private organizations, state, federal and other local agencies to develop, conduct and maintain wildfire mitigation projects.</p> <p><i>Comment: Ongoing with distinct need to build capacity. Stack Rock fuels mitigation will be a large, landscape-scale project.</i></p>			✓	B-15

2.8 HAZARD MITIGATION ACTION PLAN

Table 2-13 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 2-14 identifies the priority for each action. Table 2-15 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 2-13. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
<p>Action B-1—Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.</p> <p><u>Hazards Mitigated:</u> All Hazards</p>						
Existing	1, 2, 3, 4, 9	Planning and Development	Public Works, EMCR	High	HMGP, BRIC, FMA	Short-term
<p>Action B-2— Evaluate and integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community.</p> <p><u>Hazards Mitigated:</u> Flood, Drought, Extreme Weather, Wildfire, Landslide, Dam/Canal Failure, Earthquake</p>						
New & Existing	2, 5, 6	Boise Fire, Planning and Development, Public Works	Other City Departments as appropriate	Low	Staff Time, General Funds	Ongoing
<p>Action B-3—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.</p> <p><u>Hazards Mitigated:</u> All Hazards</p>						
New & Existing	1, 2, 6, 7, 8, 9, 10	Boise Fire, Planning and Development, Public Works	Parks and Recreation	Low	Staff Time, General Funds	Short-term
<p>Action B-4—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements:</p> <ul style="list-style-type: none"> • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts. <p><u>Hazards Mitigated:</u> Flood</p>						
New & Existing	1, 2, 9, 10	Planning and Development	N/A	Low	Staff Time, General Funds	Ongoing
<ul style="list-style-type: none"> • Action B-5—Coordinate with community stakeholders in both the public and private sectors to identify and pursue adaptive capacity strategies that could improve community resilience in relation to future climate conditions. • <p><u>Hazards Mitigated:</u> Drought, Flood, Extreme Weather, Wildfire</p>						
New & Existing	2, 3, 4, 6, 9, 10	Public Works	N/A	Low	Staff Time, General Funds	Short-term
<p>Action B-6— Esther Simplot Flood Channel (joint project with Boise City and Garden City); a flood study of the Boise River between Main St. and Veteran’s Memorial Park bridges is underway and expected to result in a project to construct side channels / channel modifications to greatly reduce flood potential in both Garden City and in Boise City</p> <p><u>Hazards Mitigated:</u> Flood</p>						
Existing	1, 2, 3, 9, 10	Public Works	N/A	Medium	Local Funds	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action B-7 — Complete a Wildland-Urban Interface (WUI) risk assessment (a GIS exercise looking at vegetation in the undeveloped area, age of homes and other relevant factors). Improve individual parcel data with wildfire assessments. Provide a public portal to share data and educate on risk and community wildfire adaptation. (Coordinates with North Ada County Fire & Rescue Action NACFR-5 and Whitney Fire Protection District Action WFD-9)						
<i>Hazards Mitigated:</i> Wildfire						
New & Existing	2, 4, 6, 8, 9, 10	Boise Fire	N/A	Medium	Western States Grant, HMGP Grant, Local Funds	Short-term and ongoing
Action B-8 — Conduct wildland fire prevention education and outreach via the internet, social media and direct public outreach to support and promote fire adapted communities. Focus on fuel reduction on private property around new and existing homes via incentivizing homeowners, providing free debris pick-up and replacement Firewise vegetation at a discount. (Coordinates with North Ada County Fire & Rescue Action NACFR-14, Whitney Fire Protection District Action WFD-7)						
<i>Hazards Mitigated:</i> Wildfire						
New and Existing	1, 8, 9, 10	Boise Fire	NACFR, Whitney Fire	Low	Western State Grant, Local Funds	Short-term and Ongoing
Action B-9 — Flood Containment Facility Maintenance: Continue to maintain foothills flood containment facilities such as the Cottonwood flood ponds and flume, etc.						
<i>Hazards Mitigated:</i> Flood						
Existing	1, 2, 9, 10	Public Works	N/A	Low	Local Funds	Short-term and Ongoing
Action B-10 — Continue to maintain/enhance the City's classification under the Community Rating System						
<i>Hazards Mitigated:</i> Flood						
New & Existing	1, 2, 9, 10	Public Works	Planning and Development Services	Low	Local Funds	Ongoing
Action B-11 — Update, adopt, and enforce a new Wildland Urban Interface (WUI) Code to replace the existing code. Improve and update existing WUI hazard zones. (Coordinates with North Ada County Fire & Rescue Action NACFR-3, Whitney Fire Protection District Action WFD-3)						
<i>Hazards Mitigated:</i> Wildfire						
New & Existing	1, 2, 4, 5, 6, 9, 10	Boise Fire	Planning and Development Services, NACFR, Whitney Fire	Low	Local Funds	Short-Term
Action B-12 — Consider appropriate higher regulatory standards that prevent or reduce risk to the built environment from the known hazards of concern.						
<i>Hazards Mitigated:</i> All hazards						
New & Existing	1, 2, 4, 5, 6, 9, 10	Planning and Development Services	N/A	Low	Local Funds	Ongoing
Action B-13 — Support County-wide initiatives identified in Volume 1.						
<i>Hazards Mitigated:</i> All Hazards						
New & Existing	1, 2, 6, 7, 8, 9, 10	EMCR	Boise Fire, Planning and Development, Public Works	Low	Local Funds	Short-Term and Ongoing
Action B-14 — Whenever possible, coordinate with local experts and employ natural environmental processes in mitigation activities that increase ecosystem resilience and reduce the impacts of flooding on the built environment.						
<i>Hazards Mitigated:</i> Flooding, Dam Failure						
New and Existing	2, 5, 9	Public Works	Parks and Recreation	Medium	Local Funds	Long-Term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
<p>Action B-15— Meet and coordinate with private organizations, state, federal and other local agencies to develop, conduct and maintain wildfire mitigation and fuel-reduction projects, including prescribed fire (Rx fire), pile-burning and managed fire. Increase capacity to conduct these projects through hiring personnel and expenditures for equipment and biological control methods. (Coordinates with Flood Control District #10 Action FCD10-12, North Ada County Fire & Rescue District Action NACFR-15, Whitney Fire Protection District WFD-8)</p> <p><u>Hazards Mitigated:</u> Wildfire</p>						
New & Existing	1, 6, 9, 10	Boise Fire	FCD #10, NACFR, Whitney Fire	Low	Local Funds	Short-Term and Ongoing
<p>Action B-16— Identify and construct Boise River enhancements to decrease river temperature in order to favor aquatic species by restoring native riparian vegetation, side channels, and wetlands. The side channel projects may also provide an opportunity to lower flood risks to certain areas along the river.</p> <p><u>Hazards Mitigated:</u> Flood</p>						
New and Existing	2, 10	Public Works	N/A	Medium	Local Funds, BRIC, HMGP	Short and Long Term
<p>Action B-17—Construction of new facility to serve as Fire Station 5. New building will be brought up to current seismic code.</p> <p><u>Hazards Mitigated:</u> Earthquake</p>						
New	1, 3, 10	Public Works	Boise Fire	Low	Local Funds	Short-Term
<p>Action B-18—Relocate Fire Logistics facility as part of broader support facilities campus relocation project. Current facility</p> <p><u>Hazards Mitigated:</u> Flood, Earthquake</p>						
New	1, 3, 10	Public Works	Boise Fire	Low	Local Funds	Short-Term
<p>Action B-19—Conduct a feasibility study for improvements in the South Channel Boise River near Eagle Island State Park. The City has been engaged with multiple stakeholders discussing potential improvements in the S Channel Boise River and on adjacent lands. Improvements include the creation of a side channel, bank stabilization, improved flood flow control including increased protection of the Idaho Fish and Game Fish Hatchery.</p> <p><u>Hazards Mitigated:</u> Flood</p>						
Existing	1, 2, 3, 10	Public Works	N/A	Medium	BRIC, HMGP, Local Funds	Short-Term
<p>Action B-20 – Reconnect Alta Harris Creek to the Boise River at Barber Pool. Trout Unlimited has worked for nearly ten years to reconnect Alta Harris Creek with the Boise River. A channel has been constructed and vegetation established. The final phase of this project is to connect the creek to an area above Barber Pool to provide continuous flow and to provide fish passage. This project will also provide flood risk reduction.</p> <p><u>Hazards Mitigated:</u> Flood</p>						
New and Existing	2, 10	Public Works	N/A	Medium	Local funds, BRIC, HMGP	Short and Long Term
<p>Action B-21 – Continue Firewise Community program for residents in the foothills and promote adoption of Firewise for development within the wildland urban interface overlay. (Coordinates with North Ada County Fire & Rescue Action NACFR-4, Whitney Fire Protection District WFD-5)</p> <p><u>Hazards Mitigated:</u> Wildfire</p>						
New and Existing	1, 2, 5, 6, 8, 9	Boise Fire Department	NACFR, Whitney Fire	Low	Local funds	Short-term and ongoing
<p>Action B-22 – Campaign to get neighborhoods to revise covenants and homeowners’ association (HOA) rules to mitigate natural hazards. (Coordinates with North Ada County Fire & Rescue Action NACFR-9)</p> <p><u>Hazards Mitigated:</u> Flood, Earthquake, Wildfire</p>						
New and Existing	2, 5, 6, 8, 9	Boise Fire Department	NACFR	Low	Staff Time, General Fund	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action B-23 – Establish Strategic Planning process for foothills. (Coordinates with North Ada County Fire & Rescue Action NACFR-11, Eagle Fire Protection District EFD-12)						
<i>Hazards Mitigated:</i> Wildfire						
Existing	2, 3, 4, 5, 6, 9	Boise Fire Department	NACFR	Medium	Rural Fire Assistance Grant, National Fire Plan	Long-term/Ongoing
Action B-24 – Develop/enhance ability to capture perishable data, including dollar values, after significant events. (Coordinates with North Ada County Fire & Rescue Action NACFR-12)						
<i>Hazards Mitigated:</i> All Hazards						
Existing	2	Boise Fire Department	NACFR	Low	Local Funds	Ongoing

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date
 Acronyms used here are defined at the beginning of this volume.

Table 2-14. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	5	High	High	Yes	Yes	No	Medium	High
2	3	Medium	Low	Yes	No	Yes	High	Low
3	7	Low	Low	Yes	No	Yes	High	Low
4	4	Medium	Low	Yes	No	Yes	High	Low
5	6	Medium	Low	Yes	No	Yes	High	Medium
6	5	High	Medium	Yes	Yes	No	Medium	Low
7	6	High	Medium	Yes	Yes	Yes	Medium	Medium
8	4	Medium	Low	Yes	Yes	Yes	Low	Low
9	4	Medium	Low	Yes	No	Yes	High	Low
10	4	Medium	Low	Yes	No	Yes	High	Low
11	7	High	Low	Yes	No	Yes	High	Low
12	7	Medium	Low	Yes	No	Yes	Medium	Low
13	7	Medium	Low	Yes	Yes	No	Medium	Medium
14	3	High	Medium	Yes	Yes	No	Medium	High
15	4	High	Low	Yes	No	Yes	High	Low
16	2	Medium	Medium	Yes	Yes	Yes	Medium	High
17	3	High	Low	Yes	No	Yes	High	Low
18	3	High	Low	Yes	No	Yes	High	Low
19	4	Medium	Medium	Yes	Yes	Yes	Medium	High
20	2	High	Medium	Yes	Yes	No	High	High
21	6	High	Low	Yes	Yes	Yes	High	High
22	5	High	Low	Yes	Yes	Yes	Medium	Medium
23	6	Medium	Medium	Yes	Yes	Yes	High	High
24	1	Low	Low	Yes	Yes	Yes	Medium	Medium

a. See the introduction to this volume for explanation of priorities.

Table 2-15. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building ^b
High-Risk Hazards								
Extreme Weather	B-2, 12, 3	B-1	B-13, 3		B-13		B-1, 2, 5, 6	B-2, 5, 24
Medium-Risk Hazards								
Dam Failure	B-2, 12, 3	B-1	B-13, 3		B-13			B-2, 24
Earthquake	B-2, 12, 3, 22	B-1, 17, 18	B-13, 3		B-13, 17, 18			B-2, 22, 24
Flood	B-2, 9, 4, 10, 12, 3, 14, 22	B-6, 9, 4, 10, 1, 14, 19	B-13, 3	B-6, 4, 10, 14, 16, 19, 20	B-9, 13	B-6, 16, 19, 20	B-1, 2, 4, 5, 6, 9, 14, 16, 19, 20	B-2, 5, 14, 19, 22, 24
Wildfire	B-2, 7, 8, 11, 12, 3, 15, 21, 22, 23	B-7, 8, 1, 11, 15	B-13, 3	B-6, 4, 10, 14	B-7, 8, 11, 13, 15		B-1, 2, 5, 7, 8, 11, 15	B-2, 5, 15, 21, 22, 23, 24
Low-Risk Hazards								
Drought	B-2, 12, 3	B-1	B-13, 3		B-13		B-2, 5	B-2, 5, 24
Landslide	B-2, 12	B-1						B-2, 24
Volcano		B-1						B-24

- a. See the introduction to this volume for explanation of mitigation types.
- b. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

2.9 PUBLIC OUTREACH

Table 2-16 lists public outreach activities for this jurisdiction.

Table 2-16. Local Public Outreach

Local Outreach Activity	Date	Number of People Involved
Wildfire mitigation/Firewise outreach activities	Various	Unknown

2.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **2017 Ada County Multi-Hazard Mitigation Plan** – The previous HMP was reviewed to update this annex.
- **City of Boise Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **City of Boise Flood Damage Prevention Ordinance**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.
- **Boise Water Renewal Utility Plan** – The plan was reviewed for potential projects that would lead to reduction of flood risk.

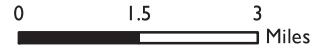
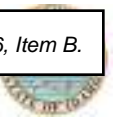
- **Boise’s Climate Action Roadmap** – Reviewed for integration opportunities and analysis of mitigation actions for climate resilience.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

CITY OF BOISE

Section 6, Item B.



Lucky Peak Dam Failure Inundation Area

Legend

Maximum Pool Inundation Area

Area inundated by dam failure occurring when pool elevation is at the top of the impounding structure.

Study Area

Ada County Boundary

City Boundary

County Boundary

Interstate

Major Roads

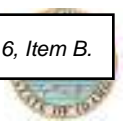
Rail

Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, IDWR

CITY OF BOISE

Section 6, Item B.



NEHRP Soil Classes

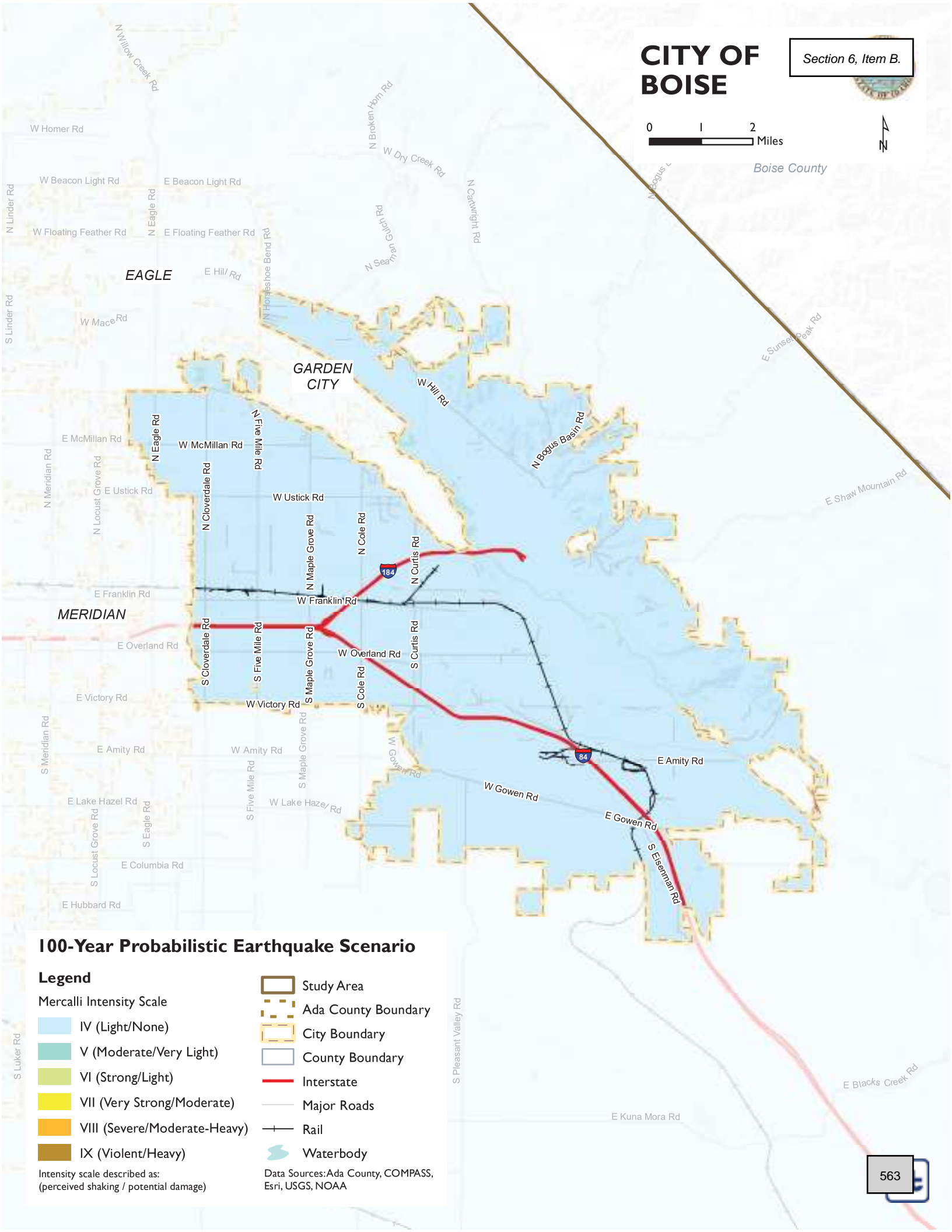
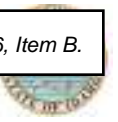
Legend

- C (Dense soil/soft rock)
- D (Stiff soil)
- E (Soft clay)
- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, Idaho Geological Survey

CITY OF BOISE

Section 6, Item B.



100-Year Probabilistic Earthquake Scenario

Legend

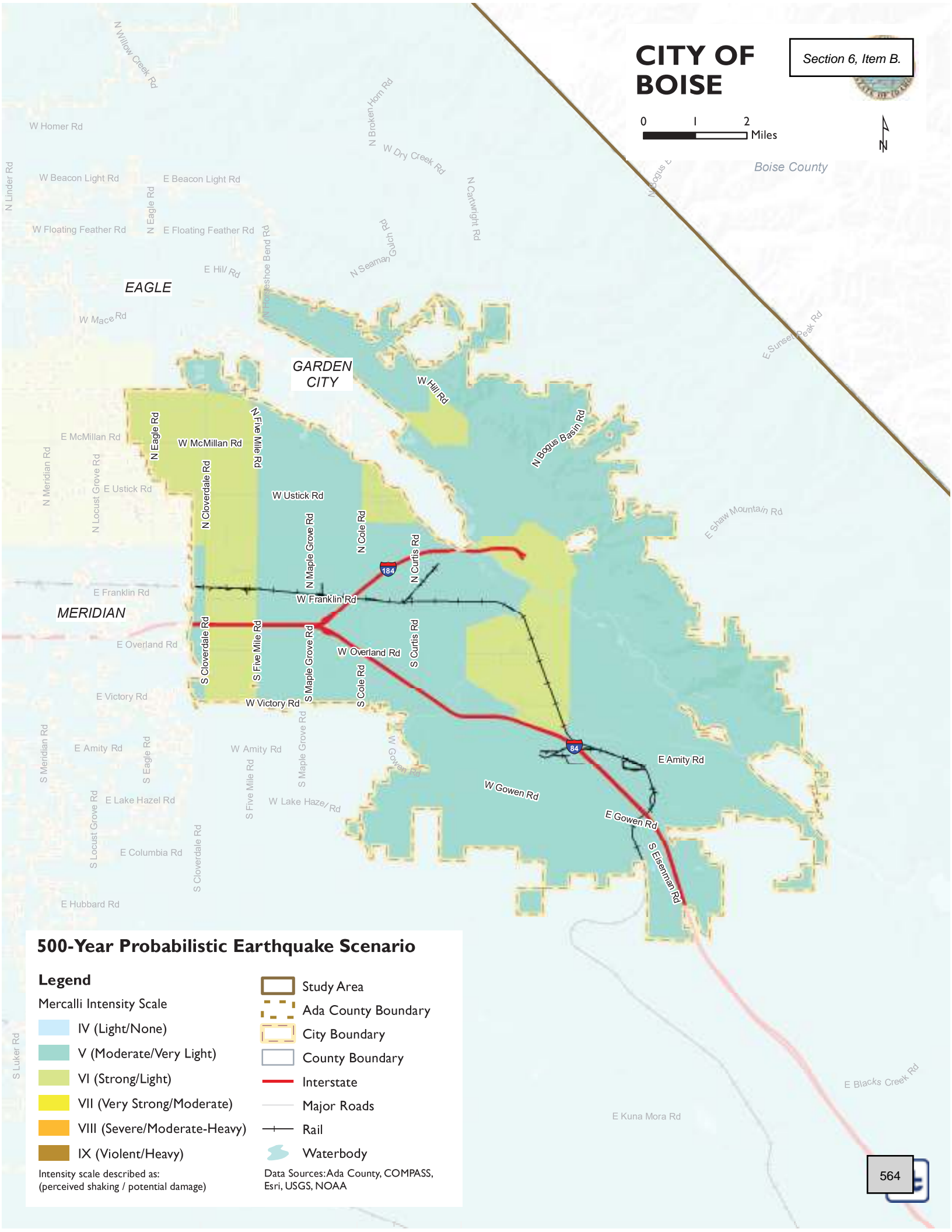
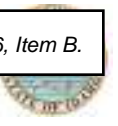
Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA



500-Year Probabilistic Earthquake Scenario

Legend

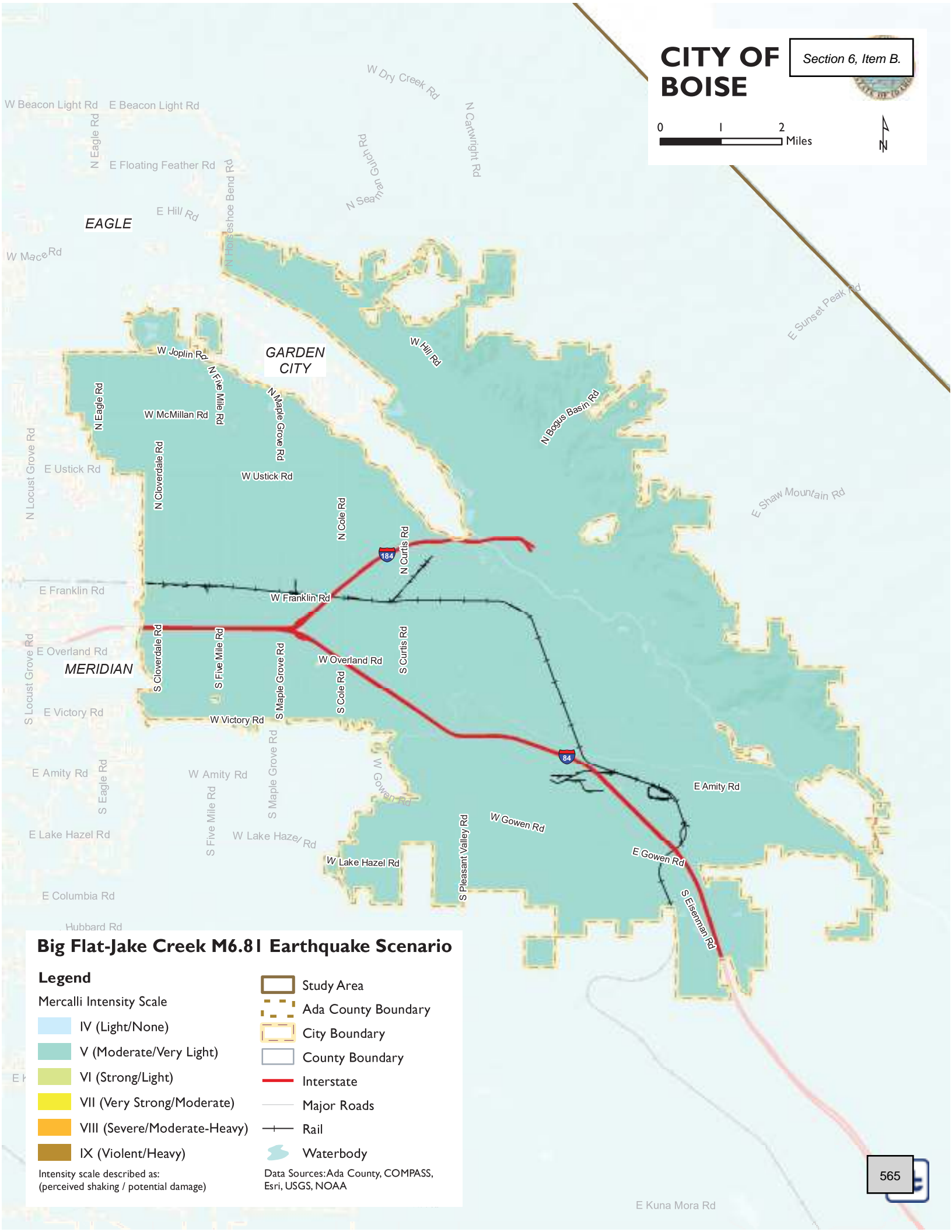
Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA



Big Flat-Jake Creek M6.81 Earthquake Scenario

Legend

Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

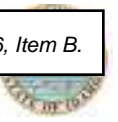
Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- + Rail
- Waterbody

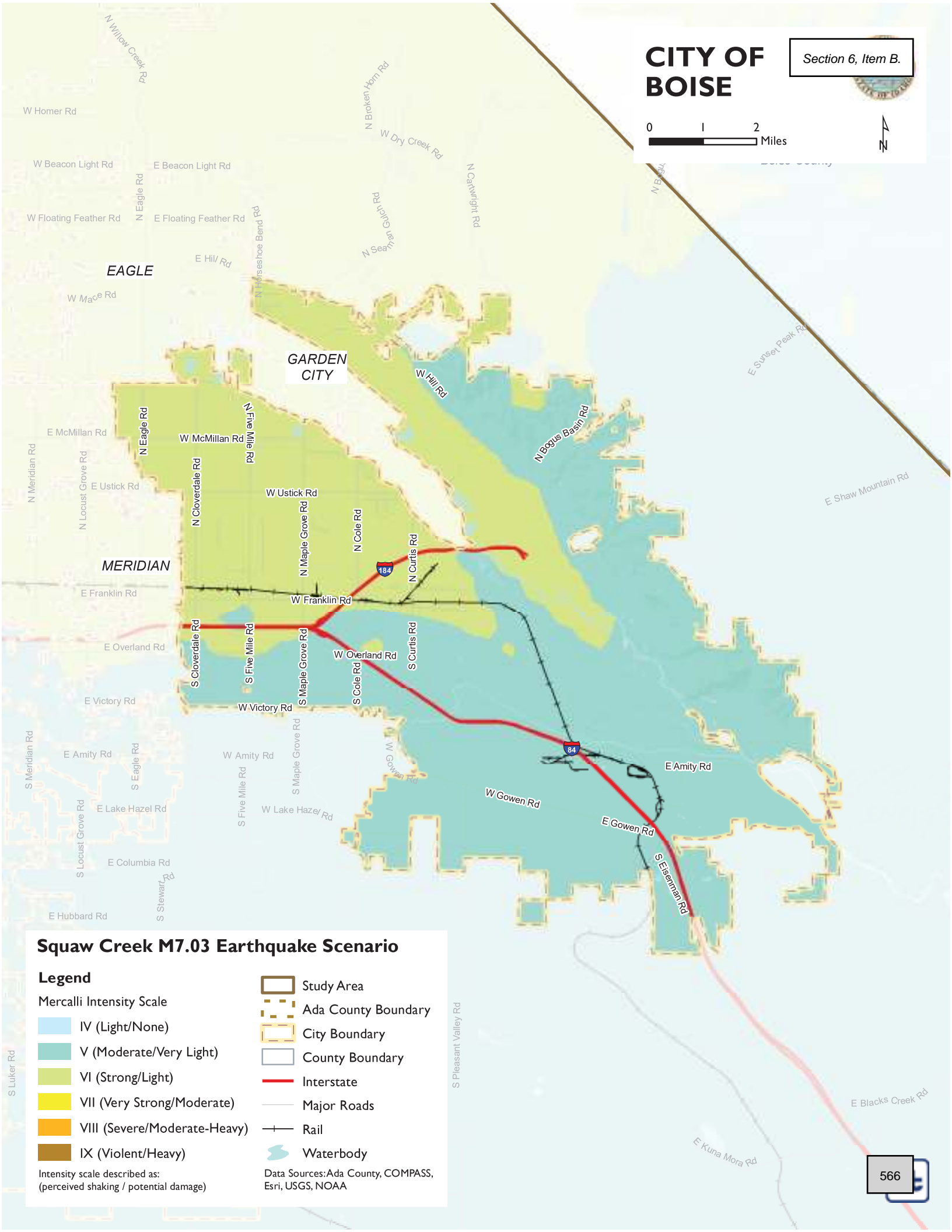
Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

CITY OF BOISE

Section 6, Item B.



0 1 2 Miles



Squaw Creek M7.03 Earthquake Scenario

Legend

Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

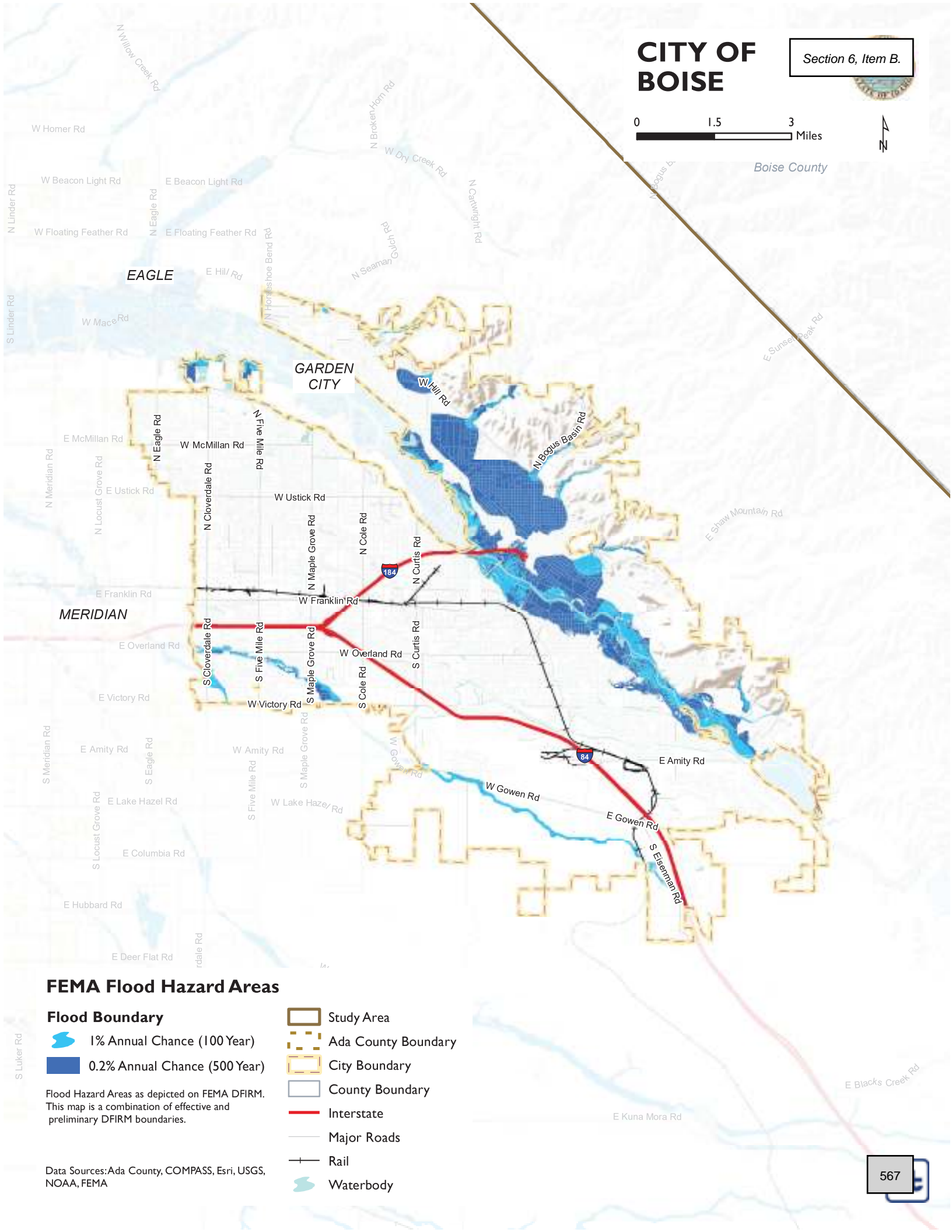
Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

CITY OF BOISE

Section 6, Item B.



Boise County



FEMA Flood Hazard Areas

Flood Boundary

- 1% Annual Chance (100 Year)
- 0.2% Annual Chance (500 Year)

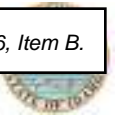
Flood Hazard Areas as depicted on FEMA DFIRM. This map is a combination of effective and preliminary DFIRM boundaries.

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

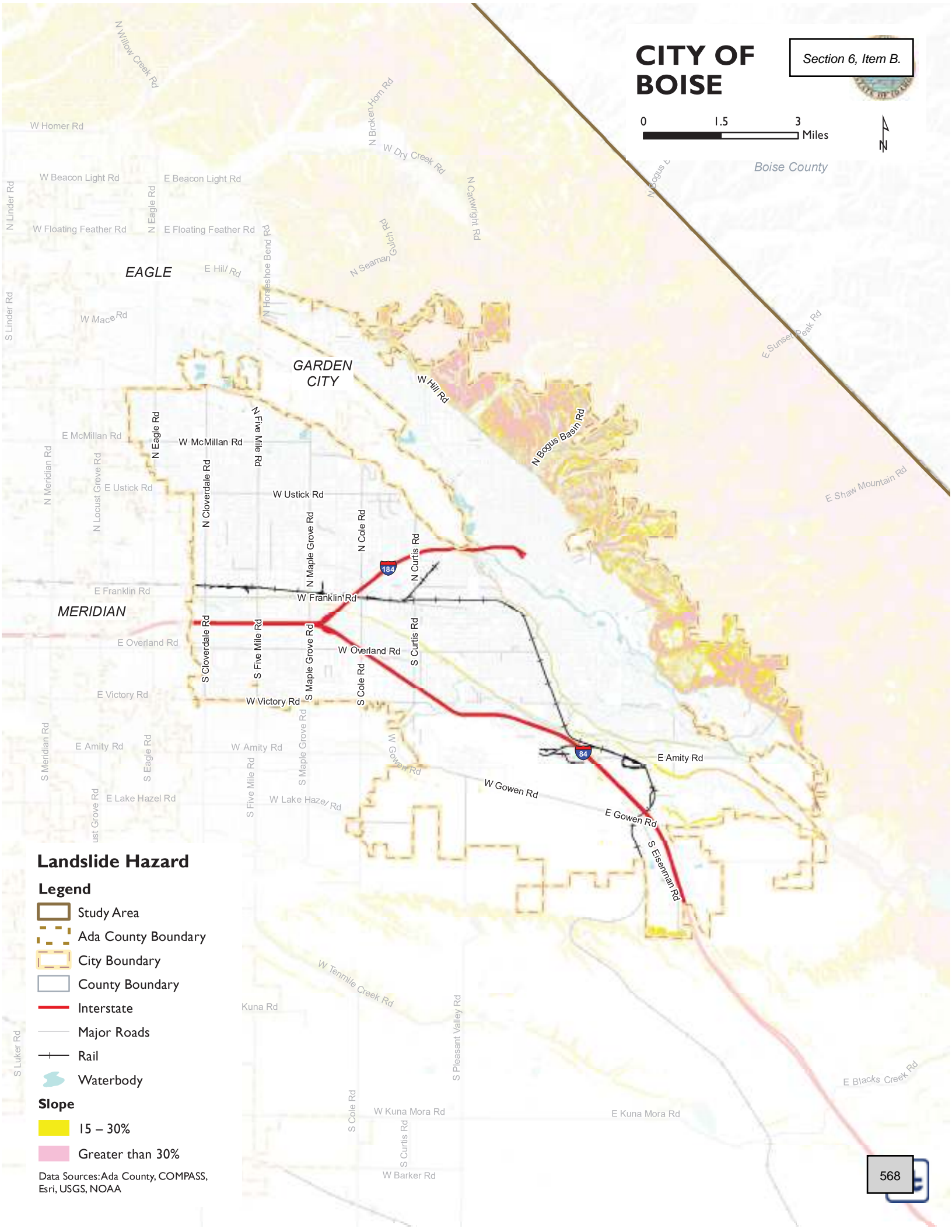
Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, FEMA

CITY OF BOISE

Section 6, Item B.



Boise County



Landslide Hazard

Legend

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

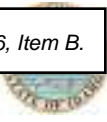
Slope

- 15 – 30%
- Greater than 30%

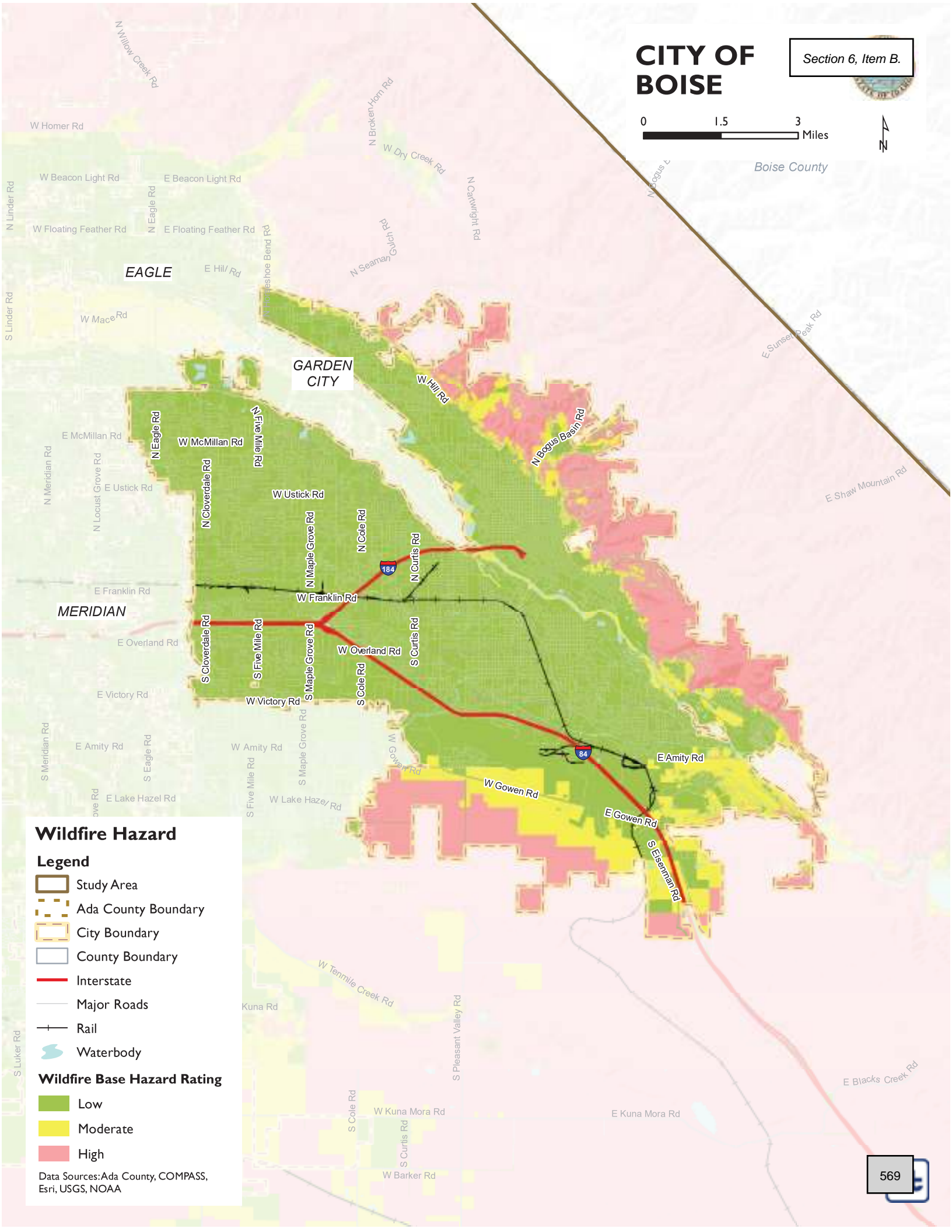
Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

CITY OF BOISE

Section 6, Item B.



Boise County



Wildfire Hazard Legend

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Wildfire Base Hazard Rating

- Low
- Moderate
- High

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

3. CITY OF EAGLE

3.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Michael Williams, CFM, Floodplain Administrator/Planner III
660 East Civic Lane
Eagle, Idaho 83616
Telephone: 208-489-8774
e-mail Address: mwilliams@cityofeagle.org

Alternate Point of Contact

Morgan Bessaw, CFM, Planner II
660 East Civic Lane
Eagle, Idaho 83616
Telephone: 208-489-8776
e-mail Address: mbessaw@cityofeagle.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 3-1.

Table 3-1. Local Hazard Mitigation Planning Team Members	
Name	Title
Michael Williams, CFM	Floodplain Administrator
Morgan Bessaw, AICP, CFM	Planner II

3.2 JURISDICTION PROFILE

3.2.1 Location and Features

The City of Eagle covers approximately 31 square miles, with elevation range from 2,566 feet to 3,100 feet. Strategically placed between the Boise foothills and the Boise River, Eagle has much to offer in the way of walking, horse and bike riding, a state-of-the-art skateboard park, ponds, and other water amenities. With the intersection of the state’s primary north-south highway (Highway 55) and a major east-west route (Highway 44) located in Eagle, access to and from the community is efficient and diverse.

Eagle, Idaho climate is warm during summer when temperatures tend to be in the 70s and very cold during winter when temperatures tend to be in the 30s. The warmest month of the year is July with an average maximum temperature of 87.60 degrees Fahrenheit, while the coldest month of the year is January with an average minimum temperature of 22.00 degrees Fahrenheit. Temperature variations between night and day tend to be relatively big during summer with a difference that can reach 31 degrees Fahrenheit, and fairly limited during winter with an average difference of 15 degrees Fahrenheit. The annual average precipitation at Eagle is 19.20 inches. Rainfall in is fairly evenly distributed throughout the year. The wettest month of the year is March with an average rainfall of 2.24 inches.

3.2.2 History

The City of Eagle was incorporated on May 27, 1971. Eagle’s early history was set in motion when gold was discovered in the Boise Basin in 1862, as well as in other Idaho mountain locations farther north. Many chose to seek their fortune mining, but a select few came to understand that the mining towns desperately needed the agricultural products that were fast becoming the mainstay of Boise and its river valley to the west, and they centered their efforts on those needs.

3.2.3 Governing Body Format

Eagle is governed by a mayor/council form of government, with four elected council members and an elected mayor. The City Council is responsible for the adoption of this plan, the mayor is responsible for its implementation.

3.3 CURRENT TRENDS

3.3.1 Population

According to COMPASS, the population of the City of Eagle as of April 2022 was 33,960. Since 2017, the population has grown at an average annual rate of 5.2 percent.

3.3.2 Development

Single family housing still is still the most common development, however, multi-family development, and commercial development is increasing in Eagle.

Identifying previous and future development trends is achieved through a comprehensive review of permitting since completion of the previous plan and in anticipation of future development. Tracking previous and future growth in potential hazard areas provides an overview of increased exposure to a hazard within a community. Table 3-2 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

Table 3-2. Recent and Expected Future Development Trends

Criterion	Response
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan? <i>If yes, give the estimated area annexed and estimated number of parcels or structures.</i>	Yes 851-acres containing approximately 15 structures. Most of the parcels were annexed to develop residential subdivisions.
Is your jurisdiction expected to annex any areas during the performance period of this plan? <i>If yes, describe land areas and dominant uses.</i> <i>If yes, who currently has permitting authority over these areas?</i>	Yes Primarily the foothills north of the city. The dominant use will be single-family residential Ada County, Boise County, and Gem County
Are any areas targeted for development or major redevelopment in the next five years? <i>If yes, briefly describe, including whether any of the areas are in known hazard risk areas</i>	Yes The city is experiencing exponential growth along with the other cities located within the Treasure Valley. The city anticipates the growth will continue through the next HMP timeframe. Some of the area where the City is anticipating growth is located within an area without base flood elevations. The area is currently being studied for submittal of a Conditional Letter of Map Revision (CLOMR).

Criterion	Response					
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?	2016	2017	2018	2019	2020	
	Single Family	494	670	699	492	523
	Multi-Family	0	18	9	18	1
	Other	23	26	18	33	11
	Total	517	714	726	543	535
Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.	<ul style="list-style-type: none"> • Special Flood Hazard Areas: 0 • Landslide: 0 <li style="padding-left: 150px;">• High Liquefaction Areas: 0 • Wildfire Risk Areas: 0 					
Describe the level of buildout in the jurisdiction, based on your jurisdiction’s buildable lands inventory. If no such inventory exists, provide a qualitative description.	The City does not maintain a buildable lands inventory. However, the City is experiencing exponential growth and anticipates the areas south of the foothills will be built out within the next 10-years.					

3.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 3-3.
- Development and permitting capabilities are presented in Table 3-4.
- An assessment of fiscal capabilities is presented in Table 3-5.
- An assessment of administrative and technical capabilities is presented in Table 3-6.
- An assessment of education and outreach capabilities is presented in Table 3-7.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 3-8.
- Classifications under various community mitigation programs are presented in Table 3-9.

Table 3-3. Planning and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, & Requirements				
Building Code	Yes	No	Yes	Yes
<i>Comment: Title 7, Chapter 1, Article A adopts the 2012 International Building Code (IBC). Effective January 1, 2015</i>				
Zoning Code	Yes	No	Yes	Yes
<i>Comment: Title 8, Chapters 1 thru 11. Adopted 4/11/2003</i>				
Subdivisions	Yes	No	No	Yes
<i>Comment: Title 9, Chapters 1 thru 6. Adopted: 11/15/1983</i>				
Stormwater Management	Yes	No	No	No
<i>Comment: Title 9, Chapter 4 (9-4-1-10) includes provisions for drainage. Adopted 1979. *Note-ACHD deploys stormwater standards as they pertain to roads.</i>				
Post-Disaster Recovery	No	No	No	No
<i>Comment:</i>				
Real Estate Disclosure	No	Yes	Yes	No
<i>Comment: Realtor Listing Disclosure Page shows if flood insurance is required.</i>				
Growth Management	Yes	No	No	Yes
<i>Comment: Title 7, Chapter 6 (Ord. 345, 5-11-1999) includes new growth and development</i>				
Site Plan Review	No	No	No	No
<i>Comment:</i>				
Environmental Protection	No	No	No	No
<i>Comment:</i>				
Flood Damage Prevention	Yes	No	No	Yes
<i>Comment: Flood Damage Prevention Ordinance, Title 10. Last amended 7/23/2019</i>				
Emergency Management	No	No	No	No
<i>Comment:</i>				
Climate Change	No	No	No	No
<i>Comment:</i>				
Planning Documents				
General Plan	Yes	No	Yes	Yes
<i>Is the plan equipped to provide linkage to this mitigation plan? Yes</i>				
<i>Comment: City of Eagle Comprehensive Plan adopted 11/15/2017.</i>				
Capital Improvement Plan	Yes	No	No	Yes
<i>How often is the plan updated? Yearly</i>				
<i>Comment: City of Eagle FY 2021-2025 Capital Plan Adopted October 27, 2020, Resolution 20-25</i>				
Disaster Debris Management Plan	No	No	No	No
<i>Comment:</i>				
Floodplain or Watershed Plan	Yes	No	No	Yes
<i>Comment: The 2022 Ada County Multi-Hazard Mitigation Plan will qualify as a flood hazard management plan under CRS criteria upon its completion and adoption.</i>				
Stormwater Plan	No	No	No	No
<i>Comment:</i>				
Urban Water Management Plan	No	No	No	No
<i>Comment:</i>				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Habitat Conservation Plan <i>Comment:</i>	No	No	No	No
Economic Development Plan <i>Comment: Economic Development component added as part of the Comprehensive Plan</i>	Yes	No	No	Yes
Shoreline Management Plan <i>Comment:</i>	No	No	No	No
Community Wildfire Protection Plan <i>Comment: The 2022 Ada County Multi-Hazard mitigation Plan is being prepared as a CWPP for the Ada County planning area.</i>	Yes	No	No	No
Forest Management Plan <i>Comment:</i>	No	No	No	No
Climate Action Plan <i>Comment:</i>	No	No	No	No
Comprehensive Emergency Management Plan <i>Comment:</i>	No	No	No	No
Threat & Hazard Identification & Risk Assessment (THIRA) <i>Comment: EMCR has prepared and maintains a THIRA for the Ada county operational area</i>	Yes	No	No	Yes
Post-Disaster Recovery Plan <i>Comment:</i>	No	No	No	No
Continuity of Operations Plan <i>Comment:</i>	No	No	No	No
Public Health Plan <i>Comment: Central District Health Department Emergency Operations Plan, 2013</i>	No	Yes	No	No

Table 3-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? <i>If no, who does? If yes, which department?</i>	Yes Planning and Zoning Department
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory?	No

Table 3-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service <i>If yes, specify:</i> Water	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes

Table 3-6. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices <i>If Yes, Department /Position:</i> Eagle Planning and Zoning	Yes
Engineers or professionals trained in building or infrastructure construction practices <i>If Yes, Department /Position:</i> Eagle Building Department	Yes
Planners or engineers with an understanding of natural hazards <i>If Yes, Department /Position:</i> Floodplain Administrator	Yes
Staff with training in benefit/cost analysis <i>If Yes, Department /Position:</i> Eagle Planning and Zoning	Yes
Surveyors <i>If Yes, Department /Position:</i>	No
Personnel skilled or trained in GIS applications <i>If Yes, Department /Position:</i> IT Department, GIS Technician	Yes
Scientist familiar with natural hazards in local area <i>If Yes, Department /Position:</i> Can contract for service	Yes
Emergency manager <i>If Yes, Department /Position:</i> Ada County Emergency Management	Yes
Grant writers <i>If Yes, Department /Position:</i> Steve Noyes, Trails and Pathways Superintendent	Yes
Other <i>If Yes, Department /Position:</i>	No

Table 3-7. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes (Ellen Mattila)
Do you have personnel skilled or trained in website development?	Yes (Ellen Mattila)
Do you have hazard mitigation information available on your website? <i>If yes, briefly describe:</i> Floodplain Information	Yes
Do you use social media for hazard mitigation education and outreach? <i>If yes, briefly describe:</i> Ada County & City Social Media	Yes
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe:</i> Planning & Zoning, Comprehensive Plan	Yes
Do you have any other programs in place that could be used to communicate hazard-related information? <i>If yes, briefly describe:</i> Website, email blast, PSA	Yes
Do you have any established warning systems for hazard events? <i>If yes, briefly describe:</i> Code Red/ISAWS – residents may sign up to receive emergency notifications and critical community alerts. Both systems are IPAWS enabled and may additionally access that integrated system for public warnings.	Yes

Table 3-8. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Eagle Planning and Zoning
Who is your floodplain administrator? (department/position)	Mike Williams, CFM, Planning and Zoning, Planner III
Are any certified floodplain managers on staff in your jurisdiction?	Yes (Mike Williams/Morgan Bessaw)

Criterion	Response
What is the date that your flood damage prevention ordinance was last amended?	07/23/2019
Does your floodplain management program meet or exceed minimum requirements? <i>If exceeds, in what ways?</i> Higher Standards	Exceed
When was the most recent Community Assistance Visit or Community Assistance Contact?	10/2020
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <i>If so, state what they are.</i>	No
Are any RiskMAP projects currently underway in your jurisdiction? <i>If so, state what they are.</i>	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <i>If no, state why.</i>	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? <i>If so, what type of assistance/training is needed?</i> Continuing Education	Yes
Does your jurisdiction participate in the Community Rating System (CRS)? <i>If yes, is your jurisdiction interested in improving its CRS Classification?</i> Yes <i>If no, is your jurisdiction interested in joining the CRS program?</i>	Yes
How many flood insurance policies are in force in your jurisdiction? ^a <i>What is the insurance in force?</i> \$113,010,600 <i>What is the premium in force?</i> \$209,571	312
How many total loss claims have been filed in your jurisdiction? ^a <i>What were the total payments for losses?</i> \$198,703	15

a. According to FEMA statistics as of March 31, 2022

Table 3-9. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	Yes	1600120380	N/A
DUNS #	Yes	024950599	N/A
Community Rating System	Yes	7	07/19/2021
Building Code Effectiveness Grading Schedule	Yes	C3/R4	N/A
Public Protection	Yes	3/9	N/A
Storm Ready	Yes	Participant	N/A
Firewise	No	N/A	N/A

3.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as general planning and capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

3.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- Eagle Comprehensive Plan, Chapter 6
- Eagle Comprehensive Plan, Chapter 7
- Eagle Comprehensive Plan, Chapter 11

3.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- All future updates to the City of Eagle Comprehensive Plan—the comprehensive plan will continue to use hazard mapping and hazard data in updates of the land use, hazard areas, and implementation chapters.
- Future Emergency Operation Plan updates for the City of Eagle—updates to the EOP will consider the natural and human-caused hazards in this HMP when developing strategies for emergency operations.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

3.6 RISK ASSESSMENT

3.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 3-10 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

3.6.2 Hazard Risk Ranking

Table 3-11 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy. Mitigation actions target hazards with high and medium rankings.

Table 3-10. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
COVID-19 Pandemic	DR-4534	1/20/2020-present	unknown
Flooding	DR-4342	3/29/2017-06/15/2017	Countywide: \$4,493,792
Rain on Snow Flood	N/A	2012	N/A
Wildfire	N/A	07/28/2010	\$7,000,000
Wildland Fire	N/A	07/11/2010	N/A
Wildland Fire	N/A	08/29/2009	N/A
Severe Storm	N/A	01/02/2009	N/A
Wildland Fire	N/A	09/18/2008	N/A
Wildland Fire	N/A	08/08/2006	N/A
Severe Storm	N/A	07/04/2006	N/A
Flood	N/A	6/2006	\$500,000.00
Flood	N/A	6/2006	\$100,000.00
Flood	N/A	1/1-5/1997	No estimates available
Flood	N/A	7/1983	\$50,000

Table 3-11. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	Extreme Weather	33	High
2	Flood	24	Medium
3	Wildfire	22	Medium
4	Dam/Canal Failure	18	Medium
5	Earthquake	16	Medium
6	Landslide	12	Low
7	Drought	9	Low
8	Volcano	6	Low

3.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for this jurisdiction. Available jurisdiction-specific risk maps of the hazards are provided at the end of this annex.

Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: 1
- Number of FEMA-identified Severe-Repetitive-Loss Properties: N/A
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: N/A

Other Noted Vulnerabilities

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Isolation – Some access in and out of the City are on State Highways and ACHD roadways which are located within areas of special flood hazard. These facilities may be impacted during a flood event (ie. bridges) and adjacent roadways which may not allow vehicular access.
- ITD and ACHD roadway drainage facilities may become overburdened and cause flooding in some areas of the City.
- A hospital is located within an area of special flood hazard and may not be accessible during a 1%-chance flood event.
- The Eagle Sewer District wastewater treatment plant is located in close proximity to the river and may be breached during a major flood event.
- Irrigation canal failures – There are several irrigation canals located throughout the City which in the event of a bank failure would cause damage to surrounding properties and structures.

Mitigation actions addressing these issues were prioritized for consideration in the action plan in this annex.

3.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 3-12 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 3-12. Status of Previous Plan Actions				
Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Action E-1 —Partner with Federal Agencies to install electronic flow monitoring stations on the North Channel of the Boise River Eagle Rd Bridge and Dry Creek Drainage at the Eagle Rd Bridge. Both monitoring stations shall be capable of feeding data to USGS stream flow web site, or other applicable collection sources. Comment: <i>No progress</i>			✓	E-10
Action E-2 —Partner with ACHD on bridge replacement of Dry Creek Bridge @ Floating Feather, w/o Eagle Rd Replacement. Replace structure to increase freeboard reduce restriction on Dry Creek. Comment: <i>Completed in 2018</i>	✓			
Action E-3 —Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include but are not limited to; enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts. Comment: <i>Ongoing</i>			✓	E-4
Action E-4 —Continue to maintain/enhance the City’s classification under the Community Rating System Comment: <i>Ongoing</i>			✓	E-11

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Action E-5 —Integrate Multi-Hazard Mitigation Plan into future updates to the City of Eagle Comprehensive Plan. <i>Comment: Ongoing</i>			✓	E-2
Action E-6 —Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with properties with exposure to repetitive losses as a priority. <i>Comment: Retain as ongoing since the city has a repetitive loss property</i>			✓	E-1
Action E-7 —Consider appropriate higher regulatory standards that prevent or reduce risk to the built environment from the known hazards of concern. <i>Comment: Ongoing – working on wildland urban interface ordinance</i>			✓	E-12
Action E-8 —Consider the formation of a Surface Water Utility district and/or a Capital Improvements program for drainage, as a method of funding the mitigation of stormwater impacts created by new development. <i>Comment: Remove – ACHD jurisdiction</i>		✓		
Action E-9 —Partner with other appropriate agencies within the planning area, such as Ada County, in the development of a comprehensive stormwater management plan that will evaluate the projected impacts of future development in the watersheds that impact the City of Eagle and make regional recommendations to mitigate those impacts. <i>Comment: Remove – ACHD jurisdiction</i>		✓		
Action E-10 —Support County-wide initiatives identified in Volume 1. <i>Comment: Ongoing</i>			✓	E-13
Action E-11 —Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Volume 1. <i>Comment: Ongoing</i>			✓	E-3
Action E-12 —In partnership with Eagle Fire Protection district, continue to support wildfire mitigation projects such as those sponsored by the Healthy Hills initiative within the eagle City limits or urban growth area. <i>Comment: Working with Eagle Fire Protection District on a Wildland Urban Interface Ordinance</i>			✓	E-7
Action E-13 —Whenever possible, coordinate with local experts and employ natural environmental processes in mitigation activities that increase ecosystem resilience and reduce the impacts of flooding on the built environment. <i>Comment: Working with Karl Gebhardt from Natural Resources Inc.</i>			✓	E-8

3.8 HAZARD MITIGATION ACTION PLAN

Table 3-13 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 3-14 identifies the priority for each action. Table 3-15 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 3-13. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
<p>Action E-1—Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.</p> <p><u>Hazards Mitigated:</u> Extreme Weather, Flood, Wildfire, Dam/Canal Failure, Earthquake, Landslide</p>						
Existing	3, 8, 9	Eagle Planning & Zoning	EMCR	High	HMGP, BRIC, FMA, Increased Cost of Compliance (ICC)	Short-term
<p>Action E-2—Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community, including updates to the City of Eagle Comprehensive Plan.</p> <p><u>Hazards Mitigated:</u> Extreme Weather, Flood, Wildfire, Dam/Canal Failure, Earthquake, Landslide</p>						
New & Existing	2, 5, 6	Eagle Planning & Zoning	N/A	Low	Staff Time, General Funds	Ongoing
<p>Action E-3—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.</p> <p><u>Hazards Mitigated:</u> Extreme Weather, Flood, Wildfire, Dam/Canal Failure, Earthquake, Landslide, Drought, Volcano</p>						
New & Existing	All	City of Eagle	EMCR	Low	Staff Time, General Funds	Short-term
<p>Action E-4—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements:</p> <ul style="list-style-type: none"> • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts. <p><u>Hazards Mitigated:</u> Flood</p>						
New & Existing	2, 3, 4, 6, 8, 9	City of Eagle	N/A	Low	Staff Time, General Funds	Ongoing
<p>Action E-5—Identify and pursue strategies to increase adaptive capacity to climate change.</p> <p><u>Hazards Mitigated:</u> Extreme Weather, Flood, Wildfire, Drought</p>						
New & Existing	2, 3, 4, 6, 9, 10	City of Eagle		Low	Staff Time, General Funds	Short-term
<p>Action E-6— Purchase generators for critical facilities and infrastructure that lack adequate backup power, including Lexington Hills well.</p> <p><u>Hazards Mitigated:</u> Extreme Weather, Earthquake, Drought</p>						
Existing	1, 6, 10	City Water Department		Med	Staff Time, General Funds, HMBP, BRIC	Ongoing
<p>Action E-7—In partnership with Eagle Fire Protection District, Middleton Rural Fire District, and Star Fire Protection District, continue to support wildfire mitigation projects such as those sponsored by the Healthy Hills Initiative within the Eagle city limits or urban growth area. (Coordinates with Eagle Fire Protection District Action EFD-10, Star Joint Fire Protection District Action SFD-6)</p> <p><u>Hazards Mitigated:</u> Wildfire</p>						
New & Existing	2, 4, 5, 6, 7, 8, 9	City of Eagle	Eagle Fire Protection, Middleton Rural Fire District, Star Fire Protection District	Low	Staff Time, HMGP, BRIC	Ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
<p>Action E-8—Whenever possible, coordinate with local experts and employ natural environmental processes in mitigation activities that increase ecosystem resilience and reduce the impacts of flooding on the built environment.</p> <p><u>Hazards Mitigated:</u> Extreme Weather, Flood, Dam/Canal Failure</p>						
New & Existing	2, 4, 5, 6, 8	City of Eagle	EMCR, Fire Departments, USACE	Low	Staff Time, HMG, BRIC	Ongoing
<p>Action E-9—Develop a Joint Emergency Operation Plan with Eagle City, Eagle Sewer District, and Eagle Fire Protection District: This plan is necessary to establish a single, comprehensive framework for the management of domestic incidents. The City of Eagle will lead this all-discipline action, but Eagle Sewer District and Eagle Fire District will aid in planning for all hazards. (Coordinates with Eagle Sewer District Action ESD-7 and Eagle Fire Protection District EFD-8)</p> <p><u>Hazards Mitigated:</u> All Hazards</p>						
New and Existing	All	City of Eagle	Eagle Sewer District, Eagle Fire District	Medium	City Funds, District Funds, HMGP	Short-term
<p>Action E-10— Partner with Federal Agencies to install electronic flow monitoring stations on the North Channel of the Boise River Eagle Rd Bridge at the Eagle Rd Bridge. Both monitoring stations shall be capable of feeding data to USGS stream flow web site, or other applicable collection sources.</p> <p><u>Hazards Mitigated:</u> Extreme Weather, Flood, Wildfire, Dam/Canal Failure</p>						
New and Existing	2, 7, 8, 9	City of Eagle	Eagle Fire District, EMCR, Federal Partners	Medium	FMA, BRIC, Local Funding	Short-term
<p>Action E-11— Continue to maintain/enhance the City’s classification under the Community Rating System</p> <p><u>Hazards Mitigated:</u> Flood</p>						
New and Existing	2, 3, 4, 6, 8, 9	City of Eagle		Low	General Funds	Ongoing
<p>Action E-12— Consider appropriate higher regulatory standards that prevent or reduce risk to the built environment from the known hazards of concern.</p> <p><u>Hazards Mitigated:</u> Extreme Weather, Flood, Wildfire, Dam/Canal Failure, Earthquake, Landslide, Drought</p>						
New and Existing	4, 6	Eagle Planning and Zoning		Low	General Funds	Short-term
<p>Action E-13— Support County-wide initiatives identified in Volume 1.</p> <p><u>Hazards Mitigated:</u> Extreme Weather, Flood, Wildfire, Dam/Canal Failure, Earthquake, Landslide, Drought, Volcano</p>						
New and Existing	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	City of Eagle	EMCR	Low	General Funds, Staff Time	Ongoing
<p>Action E-14— Create green infrastructure and alternate transportation routes by constructing a trail system alongside canals that will connect to the larger pathway that adjoins the Boise River. This system will provide additional routes for bicyclists who already use the current pathways as alternate transportation, which will reduce road congestion and vehicle emissions while allowing access to monitor, maintain, and repair canal systems as needed.</p> <p><u>Hazards Mitigated:</u> Dam/Canal Failure</p>						
New and Existing	6, 9	City of Eagle		High	General Funds, Grant Funding	Short-term

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date
 Acronyms used here are defined at the beginning of this volume.

Table 3-14. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	3	High	High	Yes	Yes	No	Medium	High
2	7	Medium	Low	Yes	No	Yes	High	Low
3	3	Low	Low	Yes	No	Yes	High	Low
4	6	Medium	Low	Yes	No	Yes	High	Low
5	6	Medium	Low	Yes	No	Yes	High	Low
6	3	High	Medium	Yes	Yes	No	Medium	High
7	7	Medium	Low	Yes	Yes	No	Medium	Medium
8	5	Medium	Low	Yes	Yes	No	Medium	Medium
9	10	Low	Low	Yes	Yes	Yes	High	Medium
10	4	Low	Medium	No	Yes	No	Low	Medium
11	6	Medium	Low	Yes	No	Yes	High	Low
12	2	Medium	Low	Yes	No	Yes	High	Low
13	10	Low	Low	Yes	No	Yes	High	Low
14	2	Low	High	No	Yes	No	Low	Medium

a. See the introduction to this volume for explanation of priorities.

Table 3-15. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building ^b
High-Risk Hazards								
Extreme Weather	E-12	E-1			E-6		E-5	E-2, 3, 8, 9, 10, 13
Medium-Risk Hazards								
Flood	E-4, 11, 12	E-1, 11	E-4				E-5	E-2, 3, 4, 8, 9, 10, 13
Wildfire	E-12	E-1		E-7			E-5	E-2, 3, 9, 10, 13
Dam/Canal Failure	E-12	E-1		E-14		E-14		E-2, 3, 7, 8, 9, 10, 13, 14
Earthquake	E-12	E-1			E-6			E-2, 3, 9, 13
Landslide	E-12	E-1						E-2, 3, 9, 13
Drought	E-12				E-6		E-5	E-3, 9, 13
Volcano								E-3, 9, 13

a. See the introduction to this volume for explanation of mitigation types.

b. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

3.9 PUBLIC OUTREACH

Table 3-16 lists public outreach activities for this jurisdiction.

Local Outreach Activity	Date	Number of People Involved
Meeting with Banbury HOAs	03/17	100+
Flood Insurance Rate Map Information (Realtors, Lending Institutions)	01/18	100+
Property owners within ASFH	01/20	50
Property owners within ASFH	01/21	50

3.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

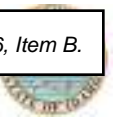
- **2017 Ada County Multi-Hazard Mitigation Plan** – The previous HMP was reviewed to update this annex.
- **City of Eagle Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **City of Eagle Flood Damage Prevention Ordinance**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.

The following outside resources and references were reviewed:

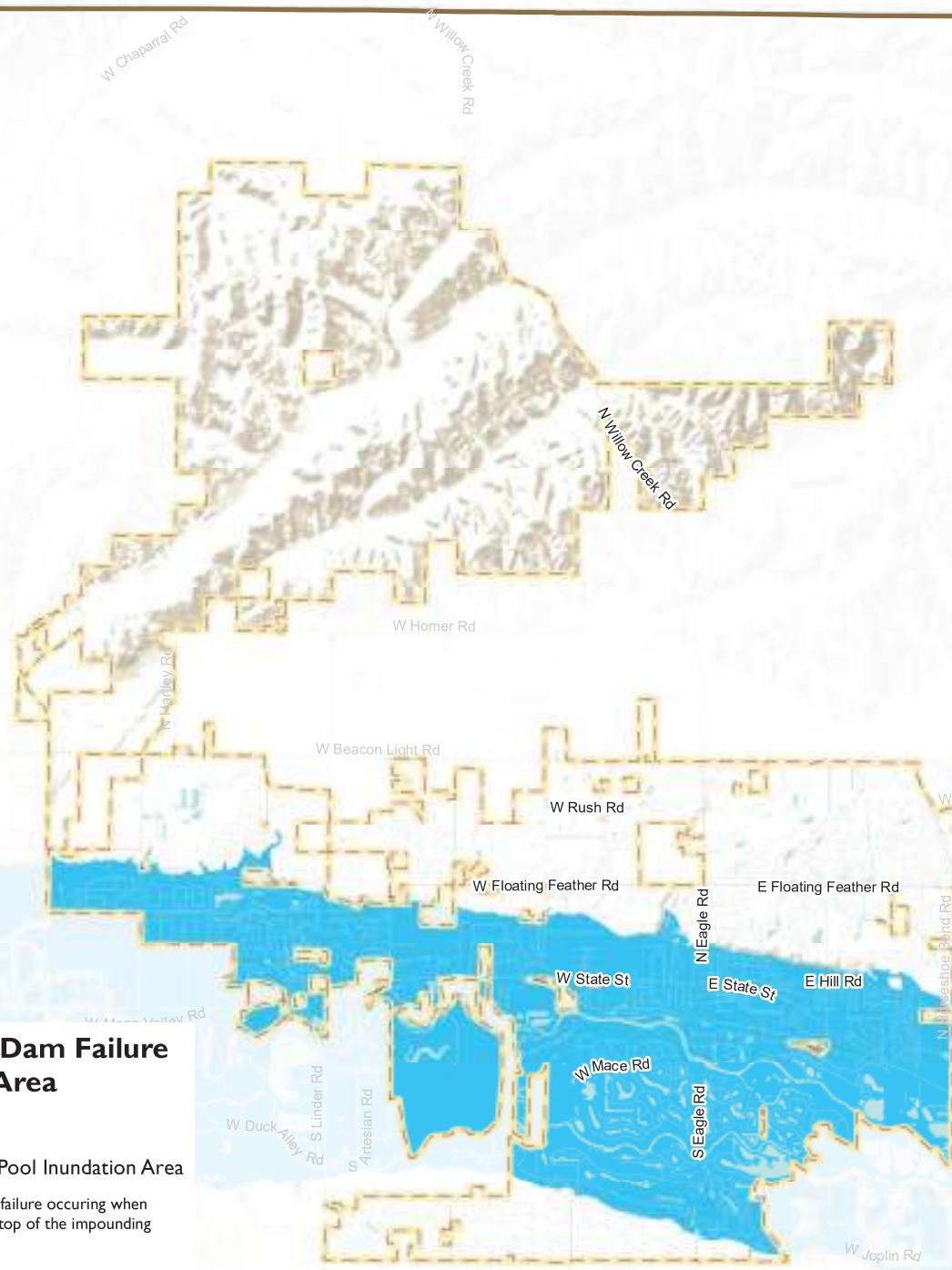
- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

CITY OF EAGLE

Section 6, Item B.



Gem County



Lucky Peak Dam Failure Inundation Area

Legend

Maximum Pool Inundation Area

Area inundated by dam failure occurring when pool elevation is at the top of the impounding structure.

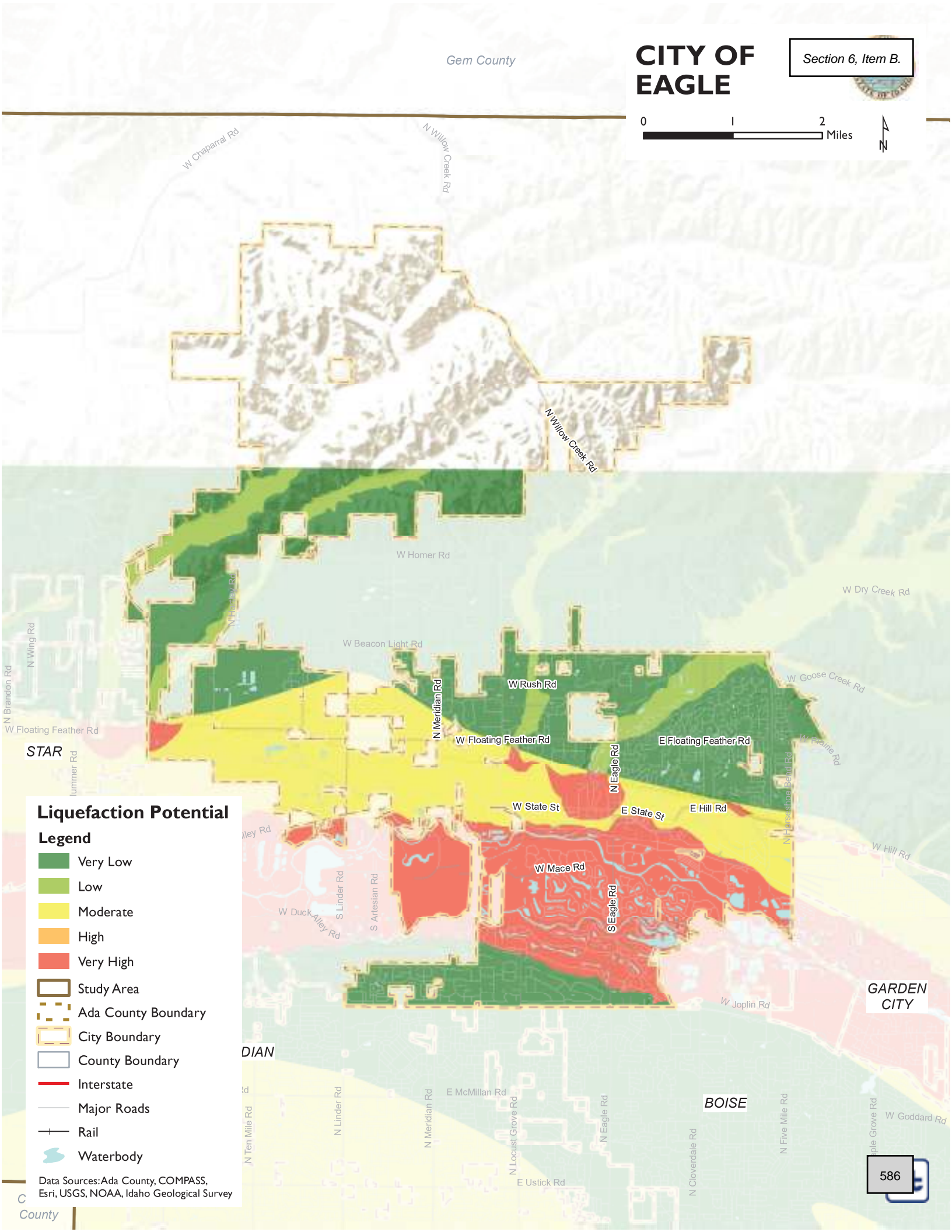
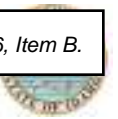
- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, IDWR

GARDEN CITY

MERIDIAN

BOISE



Liquefaction Potential

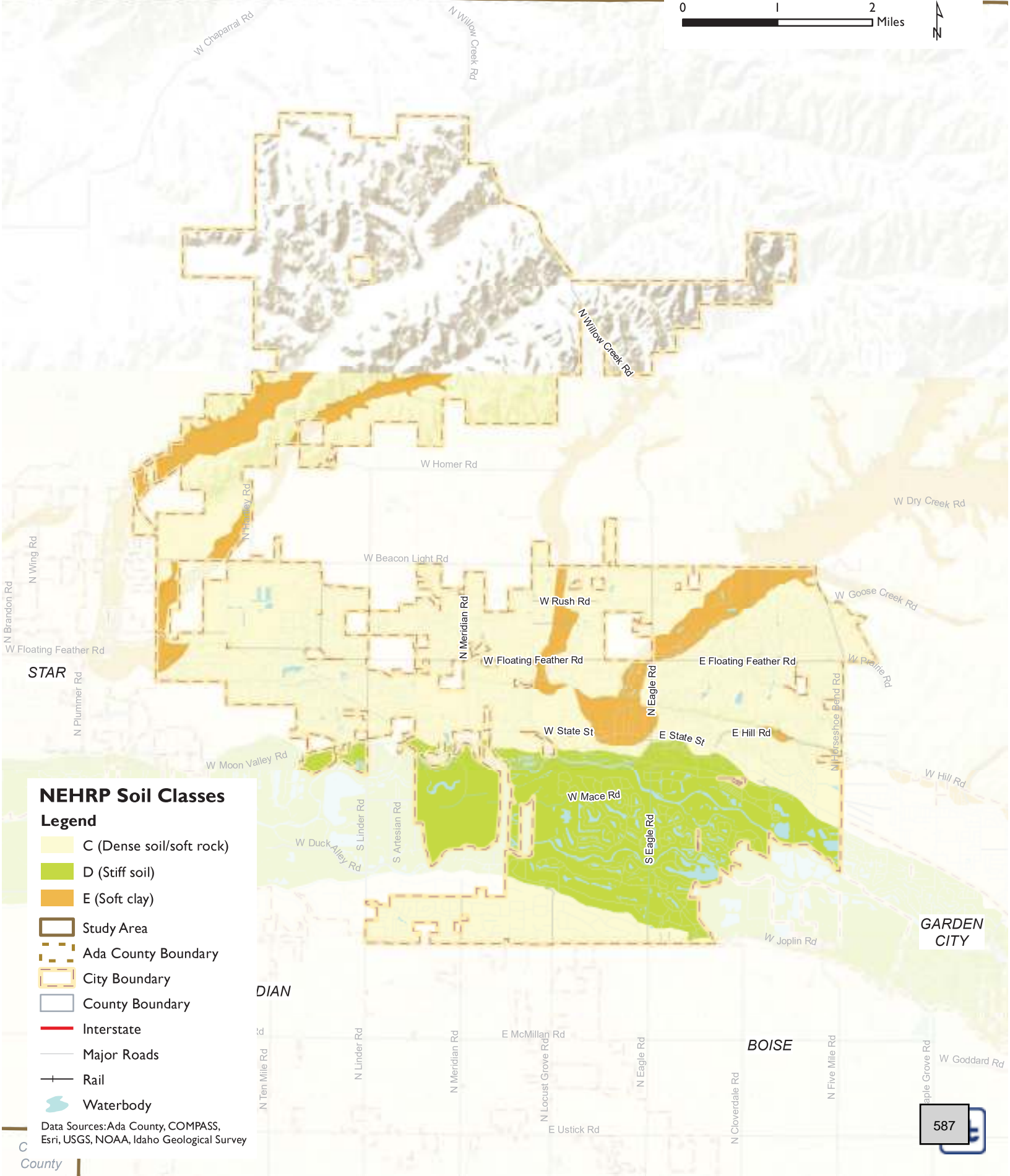
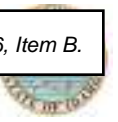
Legend

- Very Low
- Low
- Moderate
- High
- Very High
- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, Idaho Geological Survey

GARDEN CITY

BOISE



NEHRP Soil Classes

Legend

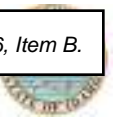
- C (Dense soil/soft rock)
- D (Stiff soil)
- E (Soft clay)
- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, Idaho Geological Survey

GARDEN CITY

CITY OF EAGLE

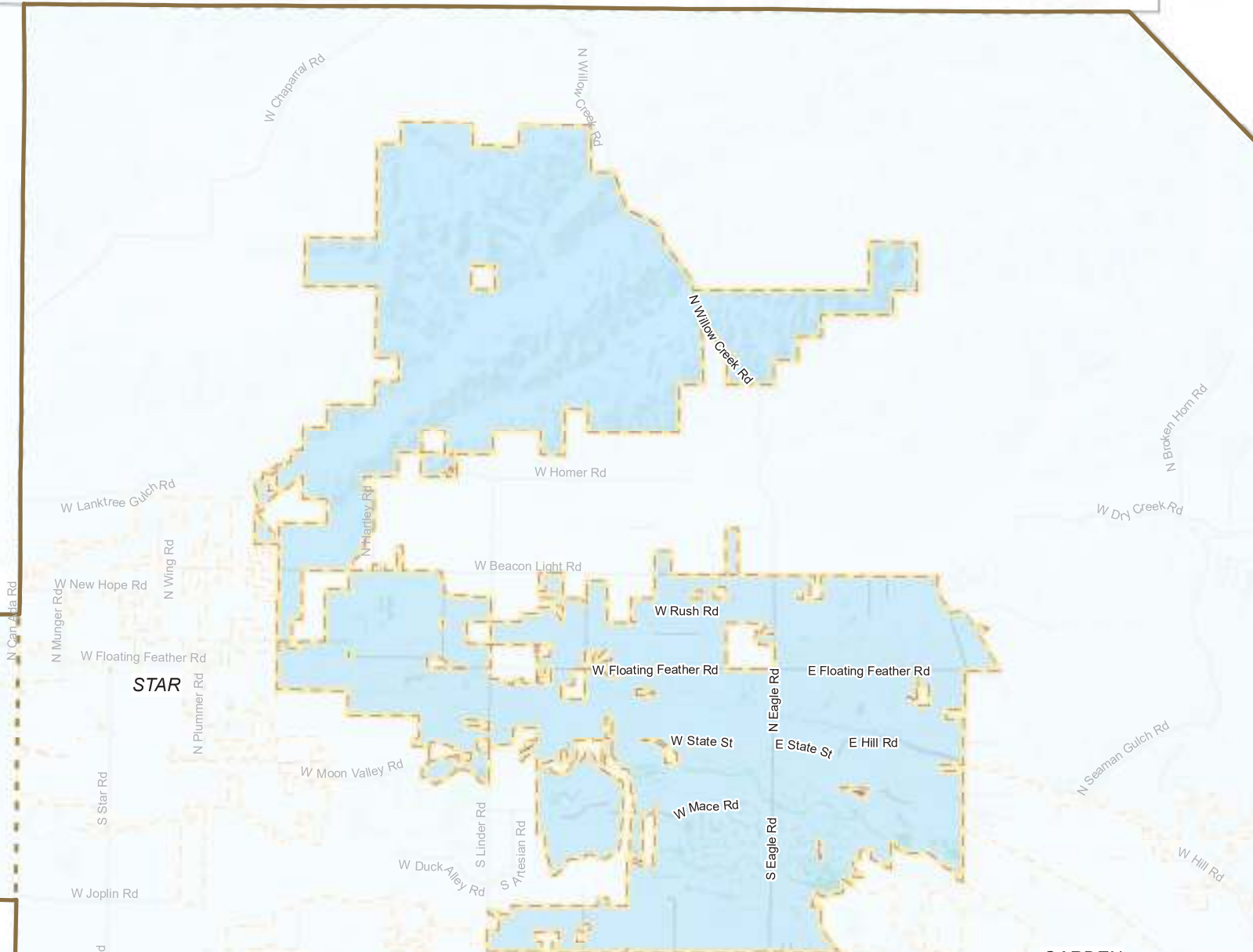
Section 6, Item B.



Gem County



ounty



STAR

GARDEN CITY

BOISE

100-Year Probabilistic Earthquake Scenario

Legend

Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

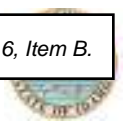
Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

CITY OF EAGLE

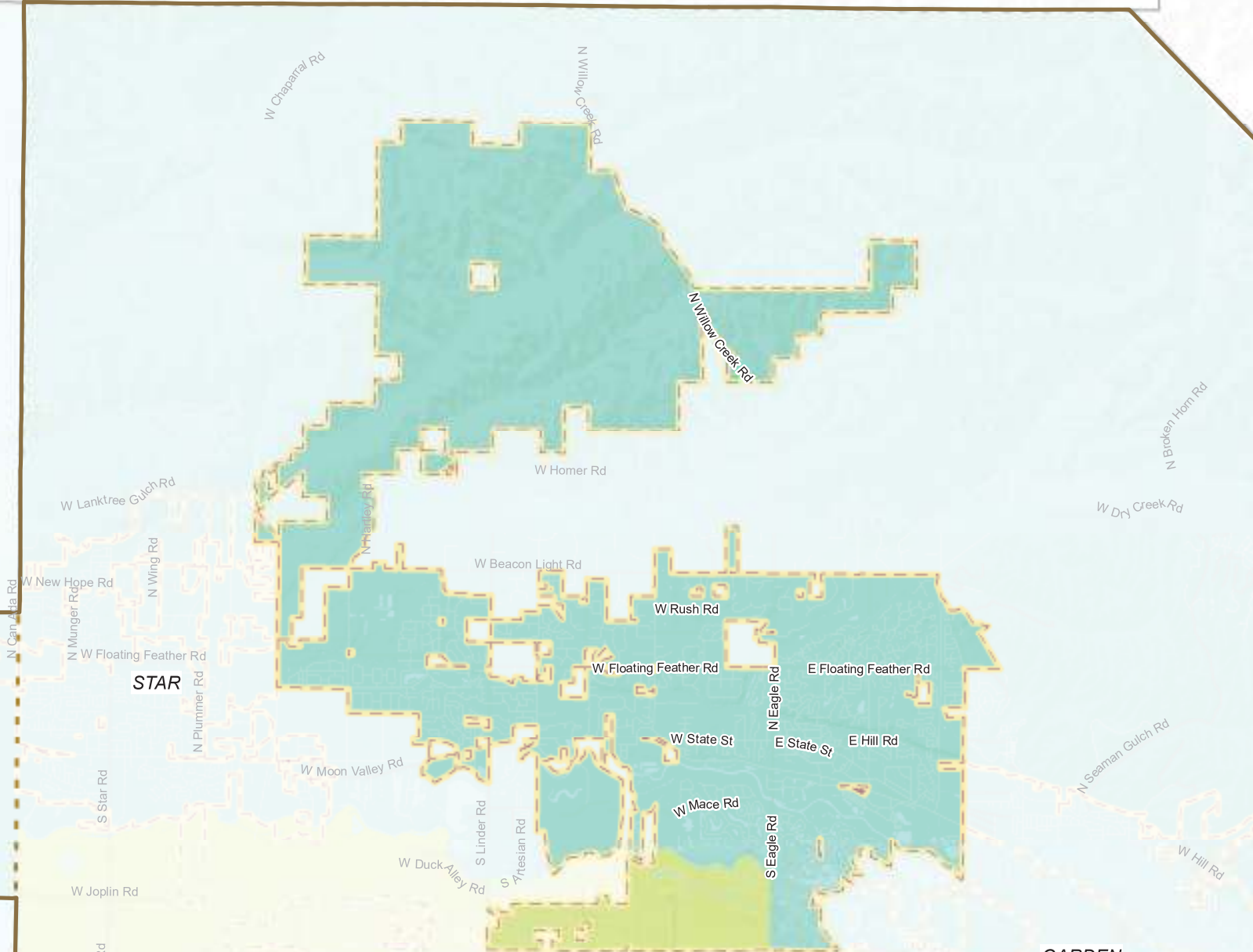
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Gem County



ounty



500-Year Probabilistic Earthquake Scenario

Legend

Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

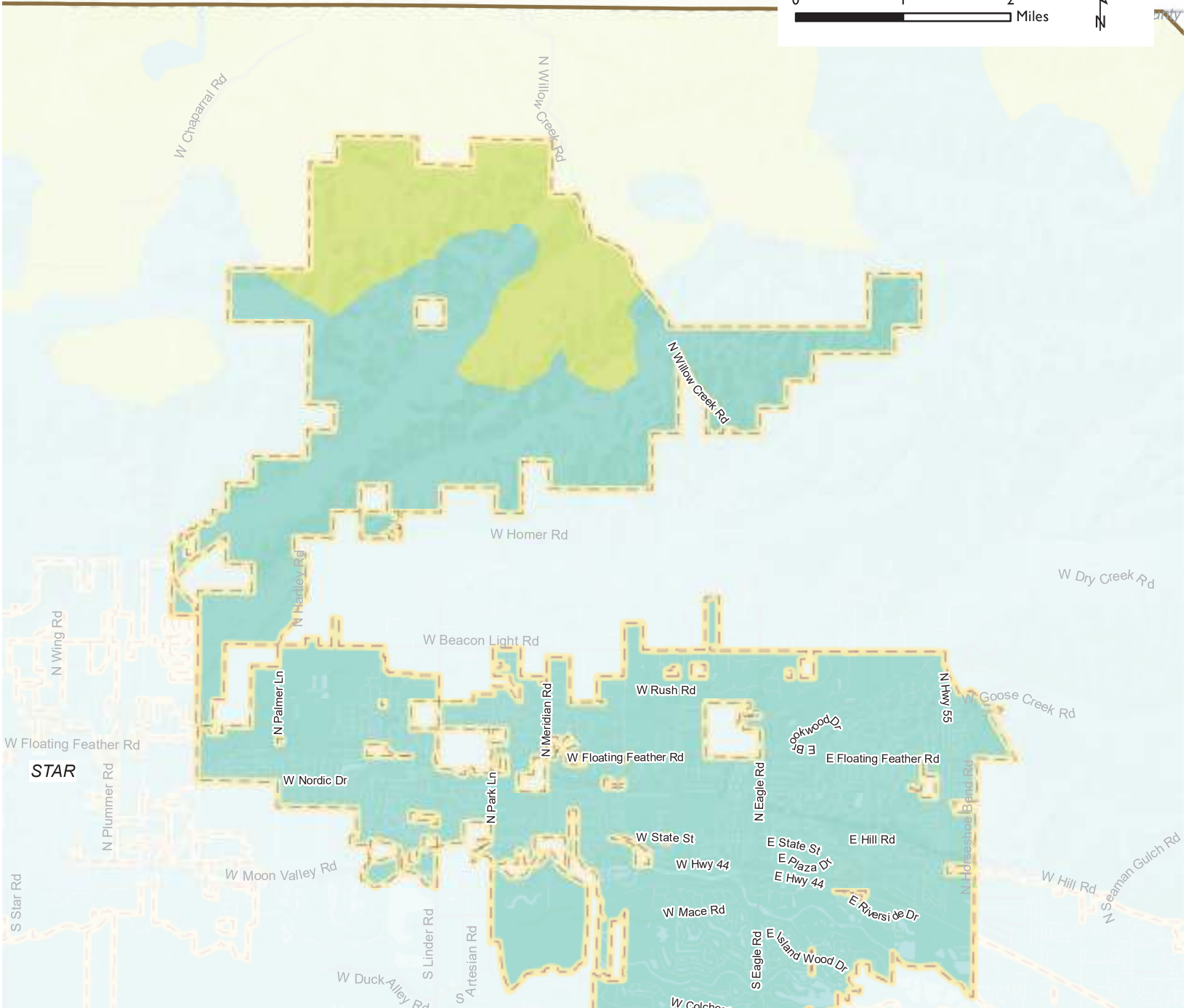
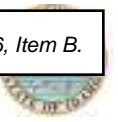
Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

GARDEN CITY

BOISE



Big Flat-Jake Creek M6.81 Earthquake Scenario

Legend

Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

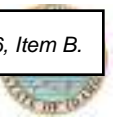
Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

GARDEN CITY

BOISE

CITY OF EAGLE

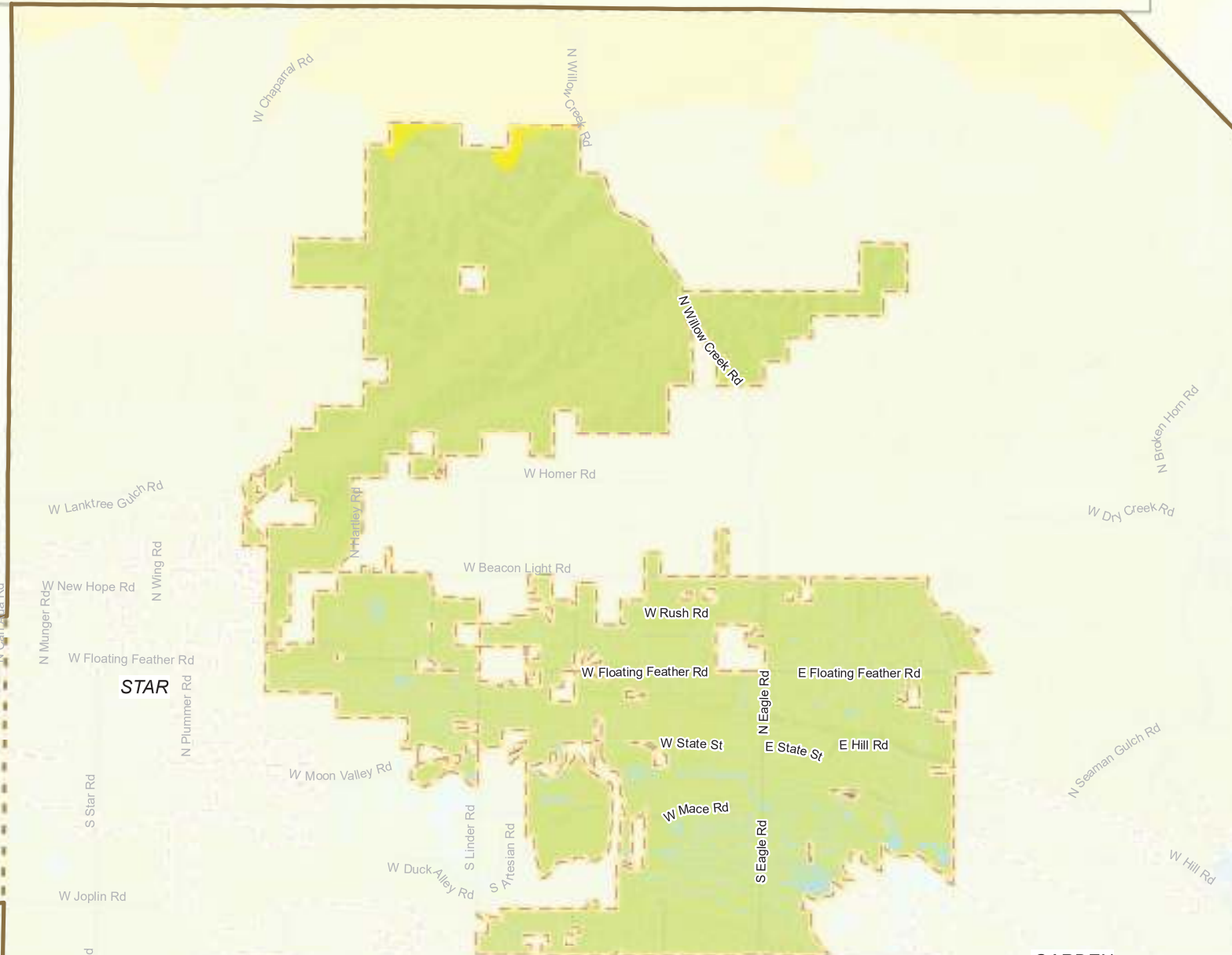
Section 6, Item B.



Gem County



ounty



Squaw Creek M7.03 Earthquake Scenario

Legend

Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

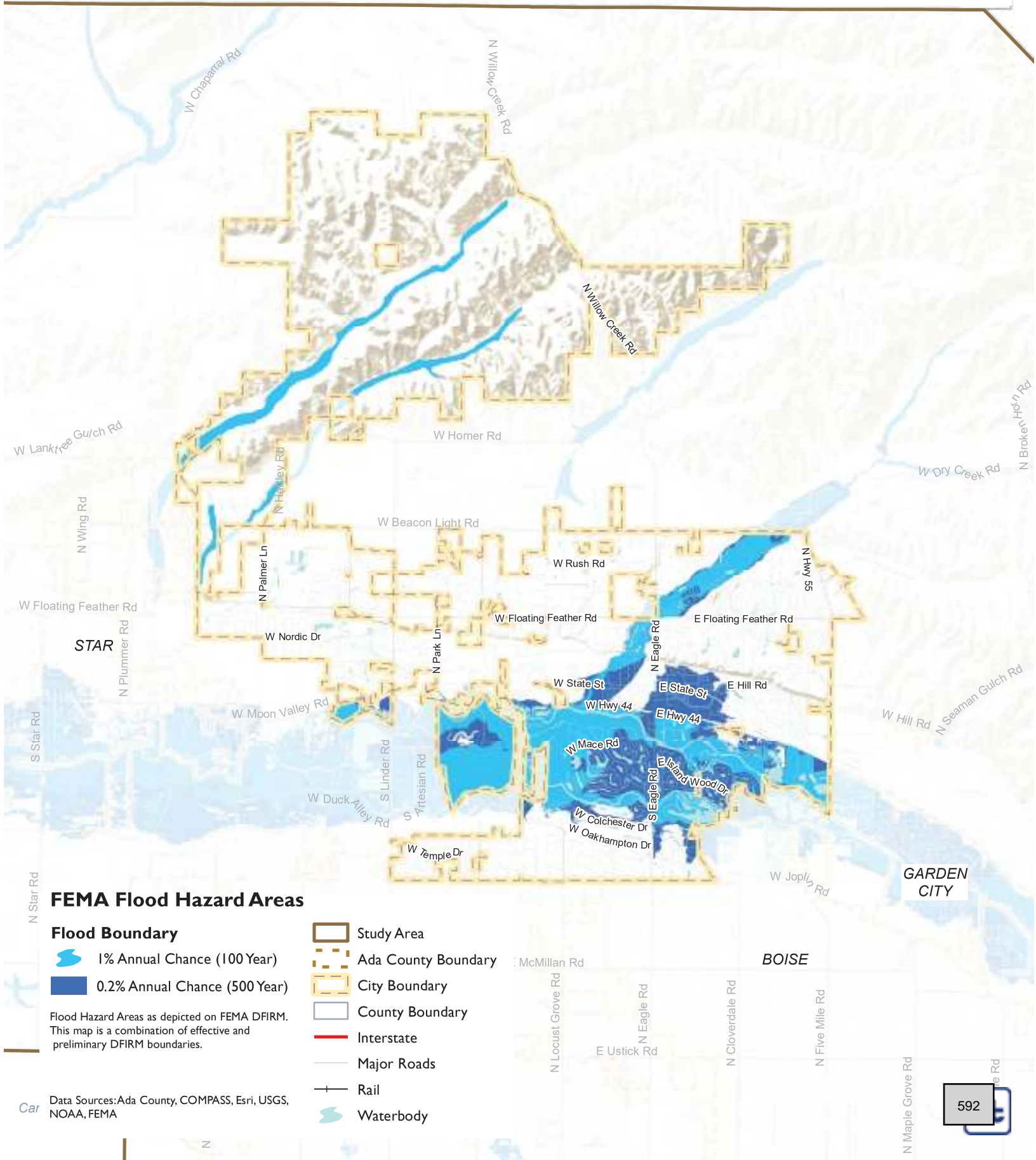
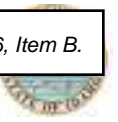
Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- + Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

GARDEN CITY

BOISE



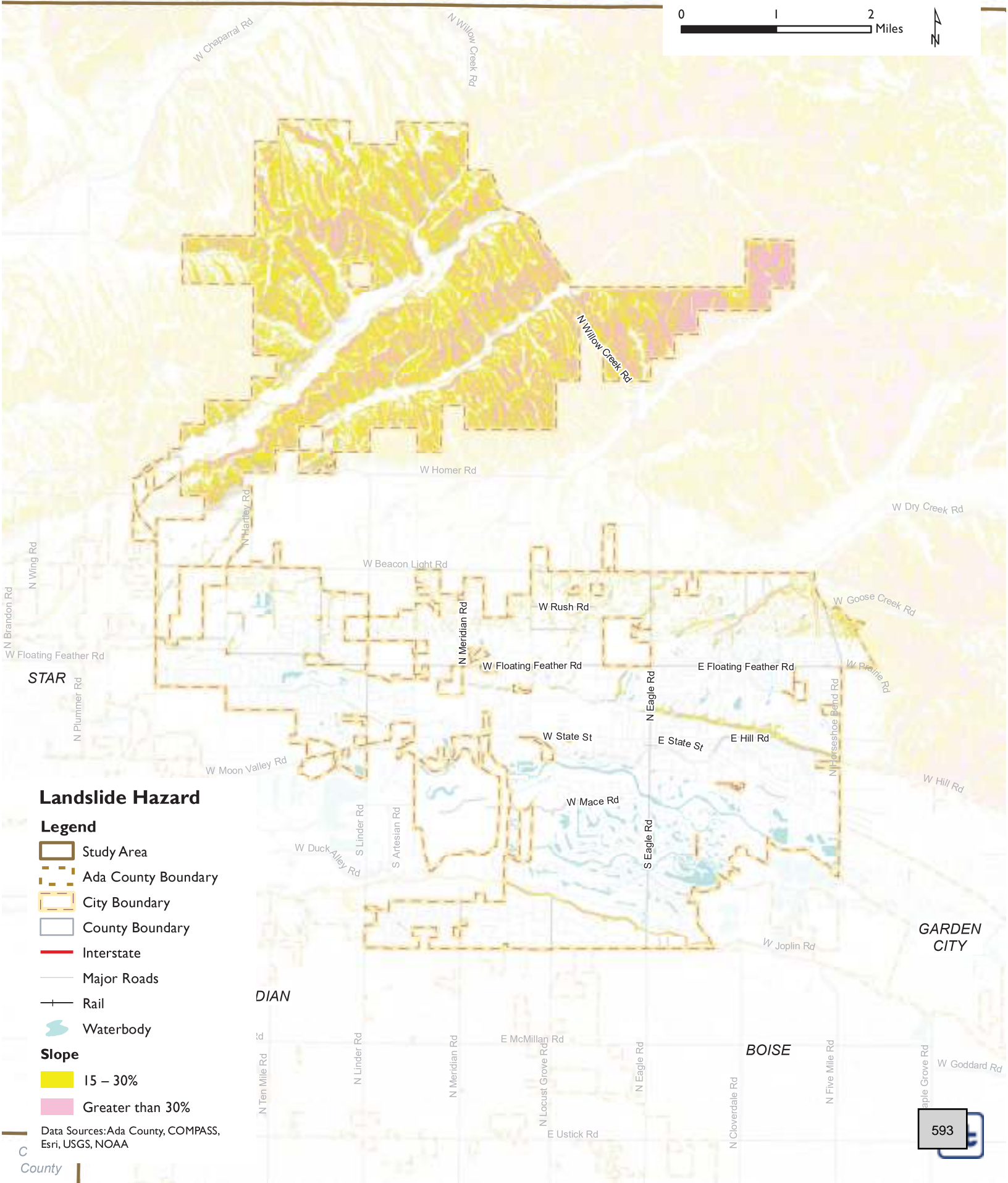
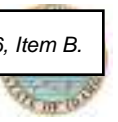
FEMA Flood Hazard Areas

- Flood Boundary
- 1% Annual Chance (100 Year)
- 0.2% Annual Chance (500 Year)

Flood Hazard Areas as depicted on FEMA DFIRM. This map is a combination of effective and preliminary DFIRM boundaries.

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, FEMA



Landslide Hazard

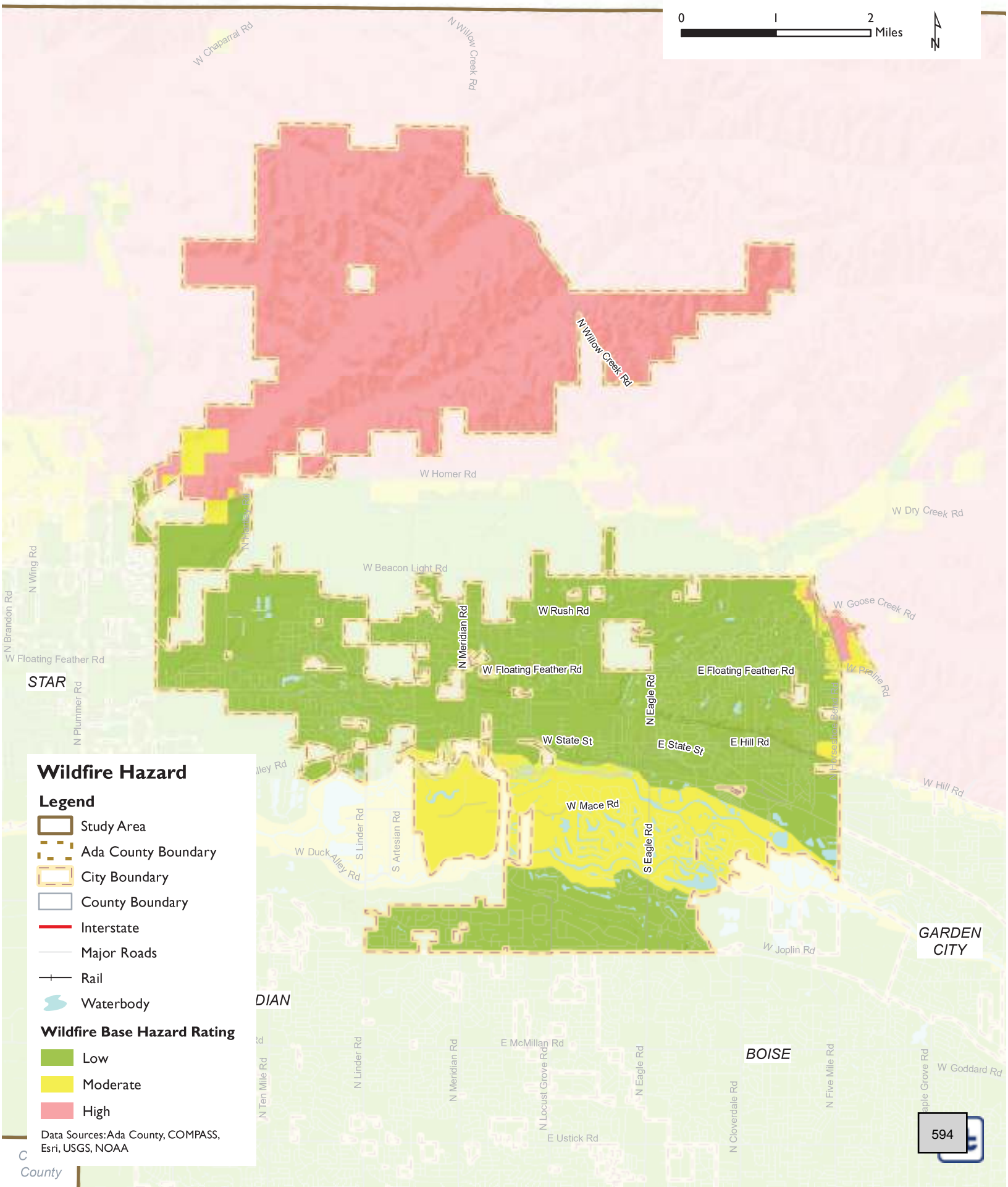
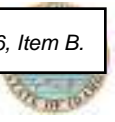
Legend

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Slope

- 15 – 30%
- Greater than 30%

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA



Wildfire Hazard

Legend

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Wildfire Base Hazard Rating

- Low
- Moderate
- High

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

GARDEN CITY

BOISE

4. CITY OF GARDEN CITY

4.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Jenah Thornborrow, Development Services Director
 6015 N Glenwood
 Garden City, ID 83714
 Telephone: (208) 472-2924
 e-mail Address: jthorn@gardencityidaho.org

Alternate Point of Contact

Colin Schmidt, Public Works Director
 6015 N Glenwood
 Garden City, ID 83714
 Telephone: (208) 472-2949
 e-mail Address: cschmidt@gardencityidaho.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 4-1.

Table 4-1. Local Hazard Mitigation Planning Team Members

Name	Title
Colin Schmidt	Public Works Director
Jenah Thornborrow	Development Services Director
Kena Champion	Development Services Administrative Assistant

4.2 JURISDICTION PROFILE

4.2.1 Location and Features

Garden City is nestled between Boise, Meridian, and Eagle lining the north and south banks of the Boise River. City elevations range from 2,550 feet to 2,698 feet, with an average of 2,620.9 feet. Garden City spans over the townships, sections, and ranges; 3N2E05 to 06, 4N1E14, 4N1E23 to 26, 4N1E36, 4N2E19, and 4N2E30 to 32.

Garden City has an average temperature of 52.0°F and receives an average of 12.19 inches of annual precipitation since 1865. Summers are typically warm to hot and dry averaging 71.9°F for June, July, and August since 1865. Winters are generally cold and dry with occasional snow showers averaging 32.5°F for December, January, and February since 1865. Spring and Fall are both mild with light precipitation averaging 51.0°F for March, April, and May and 52.3°F for September, October, and November since 1865.

4.2.2 History

Garden City was incorporated on May 22, 1949. The history of Garden City is tied to the Boise River which runs the length of the city. Native Americans camped on the riverbanks. The higher ground, known as “Government

Island,” was first a temporary military camp and later used by the U.S. Cavalry for pastures. The river often flooded the entire city area to the bench and deposited silt that created the rich agricultural soil.

During the 1920s, Thomas Jefferson Davis bought Government Island for agricultural use. Chinese farmed the area in small gardens, providing produce for residents and miners. Over time, the Chinese were forced out and by the 1940s just two families remained in the area. However, the legacy of the Chinese remains in the name of the city, which is derived from their gardens, and Chinden Boulevard, which was named in a contest, is derived from the “Chinese Garden.”

The “Village of Garden City” was incorporated in 1949 primarily for gambling. The “original townsite” encompassed 100 acres, including the area from 32nd to 37th streets. Before 1949, the area was unincorporated Ada County land. Developers had a vision for duplex housing and filed a subdivision with 50- by 150-foot lots along Chinden and 100- by 300-foot commercial lots. The streets were numbered in different directions to distinguish the area from Boise.

Gambling proceeds made Garden City a boomtown. The next year, annexations doubled the population of the village to approximately 800. Gambling provided funding for sewer, water, and street lighting. Gambling was outlawed by the state Legislature in 1953, and Garden City was expected to go away. Boise coveted Garden City’s liquor license revenues and there were several attempts at disincorporation. But in 1967, the village was chartered as a city. Much of the development of Garden City over the next few decades was a result of few land-use regulations or oversight.

In 2006 there was a large planning effort in the form of a new comprehensive plan and subsequent supportive zoning. This effort garnered considerable public support and supported a revisioning of the city.

The city has grown to incorporate roughly 4 square land miles from the Boise Bench on the south State Street on the north and Horseshoe Bend Road/ Branstetter Road on the west. The city is essentially built out but is in the process of infill development. While at one time the City had a sordid reputation, the City is becoming increasingly popular and is of the highest valued property in the valley.

4.2.3 Governing Body Format

Garden City is governed by a Mayor and four City Council members. There is a Planning and Zoning Commission, Library Board, and Design Review Committee with certain decision-making abilities. Recommending bodies include the Planning and Zoning Commission, Design Review Committee, and Parks and Waterways Committee.

The City Council is responsible for the adoption of this plan, the effected city departments are responsible for its implementation.

4.3 CURRENT TRENDS

4.3.1 Population

According to COMPASS, the population of Garden City as of April 2022 was 13,040. Since 2017, the population has grown at an average annual rate of 2.7 percent.

4.3.2 Development

Garden City sees a mix of commercial and residential uses. There is diversity in the residential stock of housing ranging from affordable to higher-end homes. Traditionally due to lenient zoning standards, much of the nonresidential uses were industrial, and much of the housing in the eastern portion of the city was in mobile/manufactured home parks. The developments north of the river and west of Glenwood are newer and mostly built with commercial uses that enjoy heavy automobile use along the arterials, with residential subdivisions on slightly larger lots that reflect a suburban character with curvilinear streets and cul-de-sacs.

Garden City has an enviable location. It is adjacent to the Boise River, is linked with major transportation arterials, and is close to downtown Boise, the commercial center of the Treasure Valley. While there is very little property available for greenfield development, many properties are under-utilized and ideal for infill development. As the valley continues to spread out and vehicle commuting becomes more difficult, and as trends continue to favor more compact development with a mix of uses, Garden City will continue to become even more desirable. Considering these factors, Garden City provides a market for the redevelopment of under-utilized properties.

Garden City is seeing fewer industrial uses. As the valley grows the housing types are shifting where the city is redeveloping. Many of the properties that were previously mobile/manufactured home communities are being redeveloped. Garden City continues to see an increase in mixed-use development, particularly artisans and small businesses, and increasing residential densities.

Identifying previous and future development trends are achieved through a comprehensive review of permitting since completion of the previous plan and in anticipation of future development. Tracking previous and future growth in potential hazard areas provides an overview of increased exposure to a hazard within a community. Table 1-2 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

Table 4-2. Recent and Expected Future Development Trends

Criterion	Response																														
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan? <i>If yes, give the estimated area annexed and estimated number of parcels or structures.</i>	Yes 6.4 acres vacant at time of annexation. Anticipated to contain 24 lots.																														
Is your jurisdiction expected to annex any areas during the performance period of this plan? <i>If yes, describe land areas and dominant uses.</i> <i>If yes, who currently has permitting authority over these areas?</i>	This is market driven TBD If annexed, Garden City																														
Are any areas targeted for development or major redevelopment in the next five years? <i>If yes, briefly describe, including whether any of the areas are in known hazard risk areas</i>	The city is seeing infill development throughout the City. Flood Hazard risks are anticipated to affect 74% of the City.																														
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="background-color: #003366; color: white;">2016</th> <th style="background-color: #003366; color: white;">2017</th> <th style="background-color: #003366; color: white;">2018</th> <th style="background-color: #003366; color: white;">2019</th> <th style="background-color: #003366; color: white;">2020</th> </tr> </thead> <tbody> <tr> <td>Single Family</td> <td style="text-align: center;">57</td> <td style="text-align: center;">67</td> <td style="text-align: center;">33</td> <td style="text-align: center;">14</td> <td style="text-align: center;">43</td> </tr> <tr> <td>Multi-Family</td> <td style="text-align: center;">N/A</td> <td style="text-align: center;">N/A</td> <td style="text-align: center;">1</td> <td style="text-align: center;">3</td> <td style="text-align: center;">12</td> </tr> <tr> <td>Other</td> <td style="text-align: center;">7</td> <td style="text-align: center;">7</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">11</td> </tr> <tr> <td>Total</td> <td style="text-align: center;">64</td> <td style="text-align: center;">74</td> <td style="text-align: center;">36</td> <td style="text-align: center;">20</td> <td style="text-align: center;">66</td> </tr> </tbody> </table>		2016	2017	2018	2019	2020	Single Family	57	67	33	14	43	Multi-Family	N/A	N/A	1	3	12	Other	7	7	2	3	11	Total	64	74	36	20	66
	2016	2017	2018	2019	2020																										
Single Family	57	67	33	14	43																										
Multi-Family	N/A	N/A	1	3	12																										
Other	7	7	2	3	11																										
Total	64	74	36	20	66																										

Criterion	Response
Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.	<ul style="list-style-type: none"> • Special Flood Hazard Areas: There have been 105 permits issued in the floodplain during between 2016-2020. • Landslide: 0 • High Liquefaction Areas: 0 • Wildfire Risk Areas: 0
Describe the level of buildout in the jurisdiction, based on your jurisdiction’s buildable lands inventory. If no such inventory exists, provide a qualitative description.	Garden City is predominantly infill development

4.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity-building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 4-3.
- Development and permitting capabilities are presented in Table 4-4.
- An assessment of fiscal capabilities is presented in Table 4-5.
- An assessment of administrative and technical capabilities is presented in Table 4-6.
- An assessment of education and outreach capabilities is presented in Table 4-7.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 4-8.
- Classifications under various community mitigation programs are presented in Table 4-9.

Table 4-3. Planning and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity ?
Codes, Ordinances, & Requirements				
Building Code	Yes	Yes	Yes	No
<i>Comment:</i> Title 7 of Garden City Code currently adopts the 2018 International Building Code and International Residential Code. This is updated on a three year cycle following the State of Idaho’s requirements . North Ada County Fire and Rescue District is responsible for implementing the fire code, which is also required to be updated on a three year cycle following the State of Idaho’s requirements.				
Zoning Code	Yes	No	Yes	Yes
<i>Comment:</i> Title 8 of Garden City Code. Title 8 is reviewed on a biannual basis.				
Subdivisions	Yes	No	Yes	No
<i>Comment:</i> Title 8-5 of Garden City Code. Title 8 is reviewed on a biannual basis.				
Stormwater Management	Yes	No	No	Yes
<i>Comment:</i> Garden City complies with the requirements as per EPA requirements in NPDES, and Idaho Department of Water Resources (IDWR) requirements				
Post-Disaster Recovery	Yes	No	No	Yes
<i>Comment:</i> Garden City participates in regional planning for mitigation, preparation and recovery through Ada County City Emergency Management & Community Resilience (EMCR)				
Real Estate Disclosure	Yes	No	No	Yes
<i>Comment:</i> This is part of the Floodplain management are required to remain in compliance with FEMA requirements				
Growth Management	Yes	No	No	Yes
<i>Comment:</i> Garden City creates and maintains a Comprehensive Plan to manage growth. Garden City has also adopted the COMPASS CIM projections.				
Site Plan Review	Yes	No	No	Yes
<i>Comment:</i> Garden City conducts a site inspections to ensure compliance with City regulations and codes at the time of redevelopment and through code enforcement actions.				
Environmental Protection	Yes	No	No	Yes
<i>Comment:</i> Title 6 of Garden City Code Last Update 2015				
Flood Damage Prevention	Yes	No	No	Yes
<i>Comment:</i> Titles 7 and 8 of Garden City Code				
Emergency Management	Yes	No	No	Yes
<i>Comment:</i> Police Department				
Climate Change	No	No	No	NA
<i>Comment:</i>				
Other	No	No	No	NA
<i>Comment:</i>				
Planning Documents				
General Plan	Yes	No	Yes	Yes
<i>Is the plan equipped to provide linkage to this mitigation plan?</i> No				
<i>Comment:</i> Garden City creates and maintains a Comprehensive Plan. Amended 2021				
Capital Improvement Plan	Yes	No	No	Yes
<i>How often is the plan updated?</i> Annually				
<i>Comment:</i> Garden City has a Capital Improvement Plan that ensures infrastructure is being maintained and replaced to maintain optimal performance. The Garden City Capital Improvements List covers water and sewer infrastructure as well as parks and pathways. This plan is updated on an annual basis.				
Disaster Debris Management Plan	Yes	Yes	No	No
<i>Comment:</i> Work with EMCR				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity ?
Floodplain or Watershed Plan <i>Comment:</i> The Ada County All Hazards Mitigation Plan-update is the floodplain management plan of record for all communities within the planning area that participate in the CRS program.	Yes	Yes	No	Yes
Stormwater Plan <i>Comment:</i> Garden City complies with the requirements as per EPA requirements in NPDES	Yes	Yes	No	No
Urban Water Management Plan <i>Comment:</i>	No	Yes	No	No
Habitat Conservation Plan <i>Comment:</i> Under Title 36 of the Idaho State Statues Garden City defers to Idaho Fish and Game to ensure wildlife preservations and wetland preservation areas- BREN, Boise River Enhancement Network has adopted the Boise River Enhancement Plan.	No	Yes	Yes	Yes
Economic Development Plan <i>Comment:</i> Garden City has established a Comprehensive Plan, Capital Improvement, and is also incorporated in the Boise Valley Economic Plan	Yes	Yes	No	Yes
Shoreline Management Plan <i>Comment:</i>	No	No	No	NA
Community Wildfire Protection Plan <i>Comment:</i> The 2017 Ada County Multi-hazard Mitigation Plan is being developed to be a qualifying CWPP for the Ada County planning area	No	Yes	No	Yes
Forest Management Plan <i>Comment:</i>	No	No	No	NA
Climate Action Plan <i>Comment:</i>	No	No	No	NA
Comprehensive Emergency Management Plan <i>Comment:</i> Work with EMCR	Yes	No	No	Yes
Threat & Hazard Identification & Risk Assessment (THIRA) <i>Comment:</i> Ada County Multi-Hazard Mitigation Plan, Ada County THIRA 2015	Yes	No	No	Yes
Post-Disaster Recovery Plan <i>Comment:</i>	No	No	No	Yes
Continuity of Operations Plan <i>Comment:</i> Work with EMCR	Yes	No	No	Yes
Public Health Plan <i>Comment:</i> Central District Health Department Emergency Operations Plan, 2013	No	Yes	No	No
Other <i>Comment:</i> Ada County Flood Response Plan. Adopted: January, 2006 Ada County Mass Casualty Incident Plan. Adopted: 12/16/2010 Ada County HAZMAT Response Plan. Adopted: April 2011 Ada County Wildfire Response Plan. Adopted: May 2010	Yes	No	No	Yes

Table 4-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? <i>If no, who does? If yes, which department?</i> Development Services	Yes
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory?	No

Table 4-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	No
User Fees for Water, Sewer, Gas or Electric Service <i>If yes, specify:</i> Monthly Water/sewer base rate	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	No
Development Impact Fees for Homebuyers or Developers	No

Table 4-6. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices <i>If Yes, Department /Position:</i> Development Services/Garden City/ Planning Staff/ City Engineer	Yes
Engineers or professionals trained in building or infrastructure construction practices <i>If Yes, Department /Position:</i> Public Works/Garden City/ Water, Sewer, and Engineering Staff	Yes
Planners or engineers with an understanding of natural hazards <i>If Yes, Department /Position:</i> Public Works and Development Services/Garden City/ Staff	Yes
Staff with training in benefit/cost analysis <i>If Yes, Department /Position:</i>	No
Surveyors <i>If Yes, Department /Position:</i> Public Works/Garden City/Engineer	Yes
Personnel skilled or trained in GIS applications <i>If Yes, Department /Position:</i>	No
Scientist familiar with natural hazards in local area <i>If Yes, Department /Position:</i>	No
Emergency manager <i>If Yes, Department /Position:</i> Ada County/Director of EMCR	Yes
Grant writers <i>If Yes, Department /Position:</i>	No

Table 4-7. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Mayor
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? <i>If yes, briefly describe:</i> gardencityidaho.org	Yes
Do you use social media for hazard mitigation education and outreach? <i>If yes, briefly describe:</i> EMCR website and floodplain page	Yes
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe:</i>	No

Criterion	Response
Do you have any other programs in place that could be used to communicate hazard-related information? <i>If yes, briefly describe:</i> Social Media, emergency broadcasting, geo Notify	Yes
Do you have any established warning systems for hazard events? <i>If yes, briefly describe:</i> Code Red/ISAWS – residents may sign up to receive emergency notifications and critical community alerts. Both systems are IPAWS enabled and may additionally access that integrated system for public warnings.	Yes

Table 4-8. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Development Services
Who is your floodplain administrator? (department/position)	Development Services Director
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	2020
Does your floodplain management program meet or exceed minimum requirements? <i>If exceeds, in what ways?</i> Adopted higher regulatory standards and improving CRS classification	Exceed
When was the most recent Community Assistance Visit or Community Assistance Contact?	2018 visit/ annual contact via audit
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <i>If so, state what they are.</i>	No
Are any RiskMAP projects currently underway in your jurisdiction? <i>If so, state what they are.</i>	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <i>If no, state why.</i> Flooding will not adhere to a model. There will be debris, etc. Irrigation structures are not included in model.	No
Does your floodplain management staff need any assistance or training to support its floodplain management program? <i>If so, what type of assistance/training is needed?</i> Ongoing	Yes
Does your jurisdiction participate in the Community Rating System (CRS)? <i>If yes, is your jurisdiction interested in improving its CRS Classification?</i> Yes <i>If no, is your jurisdiction interested in joining the CRS program?</i>	Yes
How many flood insurance policies are in force in your jurisdiction?^a <i>What is the insurance in force?</i> \$148,653,700 <i>What is the premium in force?</i> \$357,118	485
How many total loss claims have been filed in your jurisdiction?^a <i>What were the total payments for losses?</i> \$44,557	18

a. According to FEMA statistics as of March 31, 2022

Table 4-9. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	No	1600129620	N/A
DUNS #	Yes	169195369	N/A
Community Rating System	Yes	8	2013
Building Code Effectiveness Grading Schedule	No	10 (not participating)	N/A
Public Protection	Yes	3/8/9 (NACFR)	N/A
Storm Ready	Yes	Blue	N/A
Firewise	No	N/A	N/A

4.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as general planning and capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

4.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Comprehensive Plan**—Goal 5: Focus on the River, Goal 7: Connect the City; Goal 8: Maintain a Safe City; Goal 9: Develop a Sustainable City; Goal 10: Plan for the Future Goal 11: Serve the City and the future Land Use Map integrate the goals and recommendation of the Multi-Hazard Mitigation Plan.
- **Comprehensive Plan**—Parks and Waterway Plan and Multi-Hazard Mitigation Plan.
- **Master Parks and Pathways Plan**—The Master Parks and Waterways Plan seeks to preserve floodplain as a high priority for park land acquisition. Utilizing parks for drainage is also addressed in the plan.

4.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Zoning Code**—The City is conducting a comprehensive update to its zoning code. Additional mitigation and abatement measures may be considered for incorporation into the code.
- **Capital Improvement Projects**—Capital improvement project proposals may take into consideration hazard mitigation potential as a means of evaluating project prioritization.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

4.6 RISK ASSESSMENT

4.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 4-10 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 4-10. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
COVID-19 Pandemic	DR-4534	January 20, 2020, and continuing	\$7,223,399 noted for State of Idaho. This caused medical illnesses, loss of life, economic impacts due to loss of work.
Weather- Heat	N/A	Summer 2021	18 days of over 100 degrees reaching to 107 on July 6, 2021.
Weather- Rain	N/A	August 1, 2021	Heavy thunderstorm rain
Weather- Heat	N/A	Summer 2020	11 days of over 100 degrees reaching to 105 on July 30, 2020.
Earthquake	N/A	March 31, 2020	6.5 magnitude near Stanley, Idaho Personal property damages.
Weather- Heat	N/A	Summer 2018	11 days of over 100 degrees reaching to 110 on August 10, 2018.
Weather- Heat		Summer 2017	8 days of over 100 degrees.
Flooding	DR-4342	March 29-June 15, 2017	\$3,341,756 noted for all areas affected. Garden City specifically had flooding resulting in some minor damages to the private property. There were scouring of greenbelt paths, removal of a bridge, and considerable resources to monitoring, emergency prevention (sandbagging, etc.)
Weather- Snow	N/A	December 2016- March 2017	Local emergency declarations. 39" of snow Regionally, millions in claims related to structural damages.
Weather- Thunderstorm	N/A	August 22, 2013	
Weather- Thunderstorm	N/A	August 6, 2012	
Flood	N/A	May 8, 2012	\$540,000 (including ACHD and Ada County)
Water Main Break at Remington Street	N/A	April 1, 2012	\$500,000
Weather- Wind	N/A	March 29, 2009	\$33,000
Weather- Hail	N/A	August 6, 2009	
Weather- Hail	N/A	May 20, 2008	
Weather- Thunderstorm	N/A	September 4, 2007	
Weather- Thunderstorm	N/A	June 29, 2006	
Weather- Hail	N/A	June 13, 2006	
Weather- Thunderstorm	N/A	May 19, 2004	
Weather- Thunderstorm	N/A	August 31, 2004	
Weather- Thunderstorm	N/A	August 21, 2004	
Weather- Hail	N/A	June 29, 2004	
Weather- Hail	N/A	May 18, 2004	
Weather- Thunderstorm	N/A	January 30, 2004	
Weather- Thunderstorm	N/A	May 30, 2003	

Type of Event	FEMA Disaster #	Date	Damage Assessment
Weather- Heat	N/A	Summer 2003	20 days of over 100 degrees
Weather- Thunderstorm	N/A	July 26, 2002	
Weather- Thunderstorm	N/A	July 22, 2002	
Weather- Thunderstorm	N/A	July 14, 2002	
Weather- Thunderstorm	N/A	February 7, 2002	
Weather- Hail	N/A	May 16, 2000	
	N/A	September 1998	\$38,000
Weather- Storm	N/A	April 1998	\$20,000
Flood	N/A	September 1997	\$57,000
Flood	N/A	March 7, 1997	\$50,000,000
Flood	N/A	January 1997	\$65,000,000
Weather-Lightning	N/A	July 1995	\$5,000
Weather-Storm	N/A	April 27, 1995	\$50,000
Weather-Snow	N/A	November 1992	\$9,800.00
Weather-Wind	N/A	October 1992	\$6,250.00
Flood	N/A	August 1992	\$4,545
Drought	N/A	1987-1992	\$500,000,000
Weather-Storm	N/A	January 1988	\$8,700
Weather-Wind	N/A	July 1987	\$10,000
Flooding	N/A	February 1986	\$20,000
Weather- Snow	N/A	Winter 1985-1986	39.5" of snow
Earthquake	N/A	October 1983	\$4,000,000
Flood	N/A	June 1983	\$147,000
Weather- Snow	N/A	Winter 1983-1984	37.4" of snow
Weather- Wind	N/A	June 1981	\$50,000
Weather-Wind	N/A	March 1981	\$36,000
Flood	N/A	January 1979	\$50,000
Weather- Rain Flooding	DR-186	December 31, 1964	
Flood	DR-120	February 14, 1963	
Flood	DR-116	June 26, 1961	
Flood	DR-76	May 27, 1957	
Flood	DR-55	April 21, 1956	
Weather- Snow	N/A	Winter 1948-1949	45.4" of snow
Weather- Snow	N/A	Winter 1929-1930	48.8" of snow
Weather- Snow	N/A	Winter 1916-1917	50" of snow

4.6.2 Hazard Risk Ranking

Table 4-11 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and the economy. Mitigation actions target hazards with high and medium rankings.

Table 4-11. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	Flood	48	High
2	Extreme Weather	33	High
3	Dam/Canal Failure	18	Medium
4	Earthquake	16	Medium
5	Wildfire	12	Low
6	Drought	9	Low
7	Volcano	6	Low
8	Landslide	3	Low

4.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for this jurisdiction. Available jurisdiction-specific risk maps of the hazards are provided at the end of this annex.

Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: 1
- Number of FEMA-identified Severe-Repetitive-Loss Properties: N/A
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: N/A

Other Noted Vulnerabilities

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Flood—With an estimated 74% of Garden City located in the 100-year floodplain, flooding from the Lower Boise River is the city’s highest risk because of the probability of anticipated flooding. Many structures were constructed before being designated in the floodplain and are lower than the anticipated base flood elevation. Aging and compact water and sewer infrastructure could increase water or sewer failure or contamination during flooding. This hazard forms safety and health concerns during and after the flood. There may be a loss of water, sewer, electrical, or gas services. Garden City has vital evacuation routes through the city with a small police department. The police department will have to manage the city’s evacuation and much of the surrounding municipalities’ evacuation moving through Garden City. Being a small city with limited resources may result in a prolonged recovery period, especially for the vulnerable populations east of Glenwood Street.
- Flood—Settlers Canal is at a higher elevation than the city. If the canal is not adequately maintained, it could pose a flood threat. This threat is not identified in the FEMA Special Flood Hazard Area (SFHA).
- Flooding—The ITD system through Garden City, for the most part, does not have a drainage system. The ACHD drainage system is undersized. ACHD and ITD roadway drainage could cause flooding in Garden City if the drainage system is lacking, undersized, or not maintained. Since 2002 there have been 7 flash floods in Ada County, with an identified \$10,000 of damages. The impervious nature of urbanization

exacerbates this risk. It is anticipated that the one repetitive loss of property in Garden City is due to inadequate street drainage.

- **Air Quality, Wildfire**—While the direct risk of wildfires is low, the air quality associated with the wildfires in other areas of Idaho and nearby states creates an air quality concerns for Garden City. From 2017-2021 there have been 199 days of impacted air quality of moderate/yellow category (AQI 51+) or above due to wildfires.
- **Air Quality, Inversion**—The air quality associated with the inversion is a vulnerability for Garden City. The inversion is generally during the winter months when low cloud formations and fog create dense air and traps air pollutants on the valley floor. From 2017-2021 there have been 234 days of impacted air quality of moderate/yellow category (AQI 51+) or above due to the inversion.
- **Weather, Snow**—There is a correlation between the heavy snow years and the flood years; there is also a direct vulnerability associated with each snow event. There are increased accidents and increased strain on the utility systems used to heat. In heavy snow years, the region has inadequate snow removal capabilities that limit access to goods, services, employment, and medical or emergency services.
- **Weather, Heat**—7 of the top 10 hottest summers in the Boise-wide area have been in the last 20 years (up to and including 2021). High heat can affect the air quality, and ancillary conditions result in health concerns. The heat can reduce outdoor activities resulting in economic impacts on private industries. Over strain on the utilities, particularly electricity and water, during these heat events is a vulnerability. Over-taxation of the electrical system can cause failure. Over-taxation on water systems could result in adverse effects on potable water.
- **All Hazards**—Access to power is imperative in weather events for life safety and needed in all hazardous events. There is an increased need for electrical resiliency. Recent growth trends have resulted in more people utilizing the electrical system. Additionally, there may be an increased need in addition to the growing population. For example, with the cost of gasoline prices increasing and the availability of electric cars, it is anticipated that there may be a shift in energy sources for vehicles. From May 4, 2017, to April 29, 2022, in Garden City, there have been 1,386 electrical power outages resulting in 703,490.4 customer hours of outages (the number of customers affected by each outage X the hours of each outage). An estimated 43% of the outages were identified as events related to conflicts from infrastructure being above ground. The events include outages related to weather events such as lightning or that cause ice loading or wind/ vegetation damage, animals or other foreign objects like balloons or kites, vandalism, and vehicular collisions. Events that are not considered to be due to the system being above ground might include planned maintenance, operator error, underground facility damage, corrosion, contamination, mechanical fail, improper installation, hardware fail, or unknown causes. Downed power lines increase the risk of electrocution.
- **All Hazards**—The evacuation routes are limited due to infrastructure and geography. Many of the roadways, especially the eastern portion of the city where there is an area of persistent poverty, are not designed to facilitate movement except for those in automobiles. Not all residents have access to personal vehicles. Moreover, Chinden, the principal evacuation route, is inadequate for non-vehicular mobility purposes. Chinden does not accommodate bike lanes, has few and unsafe crossings, irregular sidewalks, and uncontrolled access points. Additionally, many residents or businesses utilize Boise in their addressing. This could be confusing during an emergency response.

Mitigation actions addressing these issues were prioritized for consideration in the action plan in this annex.

4.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 4-12 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 4-12. Status of Previous Plan Actions

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>Action GC-1—Green Infrastructure Flood Mitigation—Garden City needs a plan that identify strategic locations for alternate flood mitigation efforts, with an emphasis on green infrastructure to reduce floodplain and anticipated Base Flood Elevations. An example of such an effort may be identifying a location for an engineered parkland that is utilized to provide additional floodplain capacity and groundwater recharge.</p> <p><i>Comment:</i> In Process. Garden City has entered into an agreement with USACE for a GI study</p>			✓	GC-7
<p>Action GC-2—Levees Analysis Levee Analysis—There are a number of unaccredited levees in Garden City. Garden City needs an inventory of levees to determine condition and viability of the levees in Garden City and their hydraulic significance. If any of the levees could be hydrologically significant; include a cost estimate and a cost benefit analysis of accrediting or provisionally accrediting each levee, and the sustainability of required maintenance.</p> <p><i>Comment:</i> In Process. Garden City has entered into an agreement with USACE for a GI study</p>			✓	GC8
<p>Action GC-3—Water and Sewer Pipe replacement</p> <p><i>Comment:</i> Public Works continues with sewer and water pipe replacements.</p>			✓	GC-9
<p>Action GC-4—Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include but are not limited to: enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.</p> <p><i>Comment:</i> Ongoing. The City adopted a FEMA approved flood hazard ordinance with higher regulatory standards and revised special flood hazard area maps (SFHA) June of 2020. The city continues to provide public assistance and information on its website, in the Garden City Library, and on requested basis through the Development Services Department. The city intends on continuing to adopt any necessary amendments to the flood hazard code, updated SFHA maps, and provide assistance.</p>			✓	GC-4
<p>Action GC-5—Continue to maintain/enhance the City’s classification under the Community Rating System (CRS)</p> <p><i>Comment:</i> Ongoing. The city had a five-year cycle visit March of 2022. The materials provided at the cycle visit include additional activities the code adopted in 2020 includes enhanced higher regulatory standards. Following, the city requested a reduction in the classification during this visit. The results have not been received at this time. Regardless if there is a reduction in the classification the city will endeavor to maintain its classification under the CRS.</p>			✓	GC-10
<p>Action GC-6—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with properties with exposure to repetitive losses as a priority.</p>			✓	GC-1
<p>Action GC-7—Integrate Multi-Hazard Mitigation Plan into the Garden City Comprehensive Plan.</p> <p><i>Comment:</i> Adopted by reference in the Comprehensive Plan on July 22, 2019. This will be updated to carry over.</p>	✓		✓	GC-2
<p>Action GC-8—Establish emergency preparedness inventory with inspection and replacement plan</p> <p><i>Comment:</i> Ongoing. Equipment is inventoried. The backup generators have monthly testing and inspection. Further replacement plans will be needed as the equipment ages.</p>			✓	GC-11

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Action GC-9 —Maintain Capital Improvement Plan for capital facilities/infrastructure within the City. <i>Comment: Ongoing. The City maintains a CIP for capital infrastructure within the City. This plan is updated annually.</i>			✓	GC-12
Action GC-10 —Consider appropriate higher regulatory standards that prevent or reduce risk to the built environment from the known hazards of concern <i>Comment: Garden City has adopted higher regulatory standards through the flood hazard ordinance in June of 2020.</i>	✓			
Action GC-11 —Support County-wide initiatives <i>Comment: Ongoing.</i>			✓	GC-13
Action GC-12 —Continuing of Operations Plan <i>Comment: Ongoing.</i>			✓	GC-14
Action GC-13 —EOP Emergency Operations Plan <i>Comment: Adopted RES1013-16 on June 27, 2016. Annual Reviews are required.</i>			✓	GC-15
Action GC-14 —Recovery Plan <i>Comment: A recovery plan is likely largely based on the funding that is available after a disaster. Funding often is very specific. The city intends on maintaining a fund balance.</i>		✓		
Action GC-15 —Garden City Parks security camera installation <i>Comment: The parks security cameras have been installed. Additional cameras will be installed as funding allows. There are trees and vegetation that are removed along the banks of the Boise River. Additional cameras may be appropriate along the river.</i>			✓	GC-16
Action GC-16 —Streetlight replacement/conversion to alternative energy streetlights <i>Comment: Ongoing.</i>			✓	GC-17
Action GC-17 —Acquisition of vulnerable property for use as parks. <i>Comment: The city has been in contact with Ada County requesting that Lady Bird Park be relocated to be adjacent to the river so that it can be constructed to provide flood conveyance and potentially naturally functioning open space.</i>			✓	GC-7
Action GC-18 —Purchase of stand-by generator for City Hall and Operations Center			✓	GC-6
Action GC-19 —Obtain portable generators for use in Ada County during power outages and other emergency situations. <i>Comment: There is one portable generator for this use.</i>			✓	GC-6
Action GC-20 —Whenever possible, coordinate with local experts and employ natural environmental processes in mitigation activities that increase ecosystem resilience and reduce the impacts of flooding on the built environment. <i>Comment: Ongoing. Garden City has developed partnerships with Boise River Enhancement Network (BREN) to identify native and appropriate plantings. This list is made available to the public. The City Code requires the use of native and appropriate plantings within 25' of the greenbelt.</i>			✓	GC-18

4.8 HAZARD MITIGATION ACTION PLAN

Table 4-13 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 4-14 identifies the priority for each action. Table 4-15 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 4-13. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
<p>Action GC-1—Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.</p> <p><u>Hazards Mitigated:</u> Flood</p>						
Existing	1, 3, 8, 10	Planning	USACE, Public Works, EMCR	High	HMGP, BRIC, FMA	Ongoing
<p>Action GC-2—Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community as drafted or amended.</p> <p><u>Hazards Mitigated:</u> Flood, Extreme Weather, Dam/Canal Failure, Earthquake, Wildfire, Drought, Landslide</p>						
New & Existing	1, 2, 4, 5, 6, 8, 9, 10	Planning	All City Departments, Planning Partners	Low	Local	Ongoing
<p>Action GC-3—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.</p> <p><u>Hazards Mitigated:</u> Flood, Extreme Weather, Dam/Canal Failure, Earthquake, Wildfire, Drought, Volcano, Landslide</p>						
New & Existing	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	All City Departments	All Planning Partners	Low	Local	Short-term Ongoing
<p>Action GC-4—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements:</p> <ul style="list-style-type: none"> • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts. <p><u>Hazards Mitigated:</u> Flood</p>						
New & Existing	1, 4, 5, 6, 8	Development Services	EMCR, FCD10, Environmental Division	Low	Local	Short-term Ongoing
<p>Action GC-5— Coordinate with community stakeholders in both the public and private sectors to identify and pursue adaptive capacity strategies that could improve community resilience in relation to severe or changing weather conditions.</p> <p><u>Hazards Mitigated:</u> Flood, Extreme Weather, Dam/Canal Failure, Earthquake, Wildfire, Drought, Landslide</p>						
New & Existing	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	All Departments	Planning Partners, BSU, NOAA	Low	HMGP, Local	Short-term Ongoing
<p>Action GC-6—Purchase generators and backup power capabilities for critical facilities and infrastructure that lack adequate backup power including:</p> <ul style="list-style-type: none"> • City Hall • Operations Center • Obtain portable generators • Obtain a fuel truck that can fuel the generators at the police department, public works, wells, lift stations, and city hall. <p><u>Hazards Mitigated:</u> Flood, Extreme Weather, Dam/Canal Failure, Earthquake, Wildfire, Landslide</p>						
New & Existing	1, 9, 10	Public Works	EMCR, Public Works, Private, Ada County	Medium	HMGP, BRIC, Local	Short-term
<p>Action GC-7— Green Infrastructure Flood Mitigation—Garden City needs a plan that identify strategic locations for alternate flood mitigation efforts, with an emphasis on green infrastructure to reduce floodplain and anticipated Base Flood Elevations. An example of such an effort may be identifying a location for an engineered parkland that is utilized to provide additional floodplain capacity and groundwater recharge.</p> <p><u>Hazards Mitigated:</u> Flood</p>						
New & Existing	1, 2, 3, 4, 6, 9	Development Services	Public Works, USACE, IDWR	High	HMGP, BRIC, FMA, USACE	Long-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action GC-8 — Levees Analysis—There are a number of unaccredited levees in Garden City. Garden City needs an inventory of levees to determine condition and viability of the levees in Garden City and their hydraulic significance. If any of the levees could be hydrologically significant; include a cost estimate and a cost benefit analysis of accrediting or provisionally accrediting each levee, and the sustainability of required maintenance.						
<u>Hazards Mitigated:</u> Flood						
New & Existing	1, 2, 3, 4, 6, 9, 10	Development Services	USACE, FEMA	High	FMA, USACE	Long-term
Action GC-9 — Water and Sewer Pipe replacement						
<u>Hazards Mitigated:</u> Flood, Extreme Weather, Dam/Canal Failure, Earthquake, Wildfire, Drought, Landslide						
New & Existing	1, 3, 4, 6, 9, 10	Public Works		High	HMGP, BRIC, FMA, Local, Urban Renewal	Long-term Ongoing
Action GC-10 — Continue to maintain/enhance the City's classification under the Community Rating System (CRS)						
<u>Hazards Mitigated:</u> Flood						
New & Existing	8, 9	Development Services	FEMA, FCD10, EMCR, ACHD	Low	Local	Ongoing
Action GC-11 — Maintain emergency preparedness inventory inspections and establish a replacement plan.						
<u>Hazards Mitigated:</u> Flood, Extreme Weather, Dam/Canal Failure, Earthquake, Wildfire, Drought, Volcano, Landslide						
New & Existing	1, 9, 10	Public Works	Police Department	Low	Local	Ongoing
Action GC-12 — Maintain Capital Improvement Plan for capital facilities/infrastructure within the city.						
<u>Hazards Mitigated:</u> Flood, Extreme Weather, Dam/Canal Failure, Earthquake, Wildfire, Drought, Landslide						
New & Existing	1, 3, 6, 7, 8, 9, 10	Treasurer's Office	Public Works, Police, Development Services	Low	Local	Ongoing
Action GC-13 — Support County-wide initiatives.						
<u>Hazards Mitigated:</u> Flood, Extreme Weather, Dam/Canal Failure, Earthquake, Wildfire, Drought, Volcano, Landslide						
New & Existing	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	All City Departments	Planning Partners	Low	Local	Ongoing
Action GC-14 — Continuing of Operations Plan						
<u>Hazards Mitigated:</u> Flood, Extreme Weather, Dam/Canal Failure, Earthquake, Wildfire, Drought, Volcano, Landslide						
Existing	1, 9, 10	Mayor's Office	All departments, Planning Partners	Low	Local	Short-term Ongoing
Action GC-15 — Annually review the EOP Emergency Operations Plan.						
<u>Hazards Mitigated:</u> Flood, Extreme Weather, Dam/Canal Failure, Earthquake, Wildfire, Drought, Volcano, Landslide						
Existing	1, 7, 8, 9, 10	Police Department	Public Works, Mayor's Office, Treasure's Office, Development Services, Planning Partners	Low	Local, HMGP	Ongoing
Action GC-16 — Garden City parks and river security camera installation.						
<u>Hazards Mitigated:</u> Flood, Extreme Weather						
New & Existing	1, 3, 10	Public Works	Police Department, Development Services, IDL, IDWR, USACE	Medium	Local	Short-term Ongoing
Action GC-17 — Streetlight replacement/conversion to alternative energy streetlights.						
<u>Hazards Mitigated:</u> Extreme Weather						
New & Existing	1, 3, 4, 7, 9	Public Works	Idaho Power, ACHD	High	HMGP, BRIC, Urban Renewal	Long-term Ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action GC-18 —Coordinate with stakeholders, local experts to establish a plan and policies for wetland, habitat, and stream protection and restoration for conveyance, resiliency, and habitat.						
<i>Hazards Mitigated:</i> Flood, Extreme Weather, Dam/Canal Failure, Wildfire, Drought, Landslide						
New & Existing	1, 2, 4, 6, 9, 10	Development Services	ACHD, IDWR, BREN, USACE, US Fish and Wildlife, BSU	Medium	HMGP	Ongoing
Action GC-19 —Develop a roadway drainage plan that includes elevating the street above the 100-year floodplain for Chinden Boulevard, a major evacuation route for the city and valley.						
<i>Hazards Mitigated:</i> Flood, Dam/Canal Failure, Extreme Weather						
New & Existing	1, 2, 3, 4, 5, 6, 7, 9, 10	ITD	Garden City, ACHD	High	BRIC, ITD	Long-term
Action GC-20 —Develop a system drainage plan for all of city to address undersized drainage for street network.						
<i>Hazards Mitigated:</i> Flood, Dam/Canal Failure, Weather						
New & Existing	1, 2, 3, 4, 5, 6, 7, 9, 10	ACHD	ITD, ACHD	High	BRIC, ACHD	Long-term
Action GC-21 —Remedy the repetitive loss property.						
<i>Hazards Mitigated:</i> Flood						
Existing	3, 9	Development Services	ACHD	High	HMGP, BRIC, FMA	Long-term
Action GC-22 —Placement of free Wi-Fi in public locations such as parks to provide access to internet and emergency messaging.						
<i>Hazards Mitigated:</i> Flood, Extreme Weather, Dam/Canal Failure, Earthquake, Wildfire, Drought, Volcano, Landslide						
New & Existing	7, 8, 9	Library		Medium	BRIC	Short-term
Action GC-23 —Undergrounding of powerlines to make the electrical grid more resilient by minimizing damages from weather events. This assists also in the allowance of street trees which then reduces the urban stormwater runoff, can be cooling in extreme weather, and provide assistance for better air quality. The undergrounding of utilities should be strategically targeted to lines that include critical facilities, are directly adjacent to vehicular travel ways, or include a number of tall adjacent trees.						
<i>Hazards Mitigated:</i> Extreme Weather, Wildfire						
New & Existing	1, 3, 4, 9, 10	Development Services	Idaho Power, ACHD, ITD	High	HMGP, BRIC, FMA	Long-term
Action GC-24 — Improve open space preservation practices that target floodplain capacity and will ensure optimal points under the CRS 420 activity.						
<i>Hazards Mitigated:</i> Flood						
New & Existing	9	Development Services	Public Works, River Club Golf Course	Low	Local	Short-term Ongoing
Action GC-25 —Obtain and maintain 90 days of chemicals for potable water in case of a well outage						
<i>Hazards Mitigated:</i> Flood, Extreme Weather, Dam/Canal Failure, Earthquake, Wildfire, Drought, Landslide						
New & Existing	1, 3, 4, 9, 10	Public Works		Medium	BRIC	Short-term Ongoing
Action GC-26 —Implement IT technologies that facilitate the ability to work remotely.						
<i>Hazards Mitigated:</i> Flood, Extreme Weather, Dam/Canal Failure, Earthquake, Wildfire, Drought, Volcano, Landslide						
New & Existing	1, 7, 10	IT	All departments	Medium-High	HMGP, BRIC	Short-term Ongoing
Action GC-27 — Implement IT technologies that ensure access to the system in case of loss of electricity or a server.						
<i>Hazards Mitigated:</i> Flood, Extreme Weather, Dam/Canal Failure, Earthquake, Wildfire, Drought, Volcano, Landslide						
New & Existing	1, 7, 10	IT	All departments	Medium-High	HMGP, BRIC	Short-term Ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action GC-28 — Work with stakeholders to establish a regional plan for public outreach and education that can be utilized for CRS credit for the 330 Program for Public Information PPI activity. The outreach must include information related to hazard risks and critical information dissemination. Improve open space preservation practices that target floodplain capacity and will ensure optimal points under the CRS 420 activity.						
<i>Hazards Mitigated:</i> Flood						
New & Existing	1, 4, 7, 8, 9	Development Services		Medium	Local	Short-term Ongoing
Action GC-29 — Work with the Post Office to encourage the use of a Garden City specific address within Garden City to better inform residents' knowledge of hazards and emergency response activities in their city.						
<i>Hazards Mitigated:</i> Flood, Extreme Weather, Dam/Canal Failure, Earthquake, Wildfire, Drought, Volcano, Landslide						
New & Existing	1, 6, 9	Development Services		Low	Local	Short-term Ongoing

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date
 Acronyms used here are defined at the beginning of this volume.

Table 4-14. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	4	High	High	Yes	Yes	No	Low	High
2	8	Medium	Low	Yes	No	Yes	High	Low
3	10	Medium	Low	Yes	No	Yes	High	Low
4	5	Medium	Low	Yes	No	Yes	High	Low
5	7	Medium	Low	Yes	Yes	Yes	High	Medium
6	3	High	Medium	Yes	Yes	No	Medium	High
7	6	Medium	High	No	Yes	No	Low	Medium
8	7	High	High	Yes	Yes	No	Medium	High
9	6	High	High	Yes	Yes	No	Medium	High
10	10	Low	Low	Yes	No	Yes	High	Low
11	3	High	Low	Yes	No	Yes	High	Low
12	7	Low	Low	Yes	No	Yes	High	Low
13	10	Medium	Low	Yes	No	Yes	High	Low
14	3	High	Low	Yes	No	Yes	High	Low
15	5	High	Low	Yes	Yes	Yes	High	Low
16	3	Low	Medium	No	No	No	Medium	Low
17	5	Low	High	No	Yes	No	Low	Medium
18	6	Medium	Medium	Yes	Yes	No	Medium	Medium
19	9	High	High	Yes	Yes	No	Low	High
20	9	High	High	Yes	Yes	No	Low	High
21	2	High	High	Yes	Yes	No	Low	High
22	3	High	Medium	Yes	Yes	No	Medium	High
23	5	High	High	Yes	Yes	No	Low	High

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
24	1	Low	Low	Yes	No	Yes	High	Low
25	5	High	Medium	Yes	Yes	Maybe	High	Medium
26	3	High	Medium	Yes	Yes	Maybe	Medium	Medium
27	3	High	Medium	Yes	Yes	Maybe	Medium	Medium
28	5	Medium	Medium	Yes	No	Maybe	Medium	Low
29	3	Medium	Low	Yes	No	Yes	High	Low

a. See the introduction to this volume for explanation of priorities.

Table 4-15. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building ^b
High-Risk Hazards								
Flood	GC-2, 3, 4, 10, 12, 13, 18	GC-1, 4, 11, 13, 21	GC-2, 4, 10, 13, 18, 29	GC-7, 13, 18	GC-2, 6, 13, 14, 15, 25, 26, 27, 29	GC-7, 8, 9, 13, 19, 20, 23	GC-4, 5, 7, 13	GC-2, 3, 4, 10, 13, 14, 15, 16, 24, 28
Extreme Weather	GC-2, 3, 5, 12, 13	GC-1, 5, 11, 13	GC-2, 5, 3, 29	GC-5, 13	GC-2, 5, 6, 13, 14, 15, 25, 26, 27, 29	GC-5, 9, 13, 19, 20, 23	GC-5, 13, 17, 23	GC-2, 3, 13, 14, 15
Medium-Risk Hazards								
Dam/Canal Failure	GC-2, 3, 12, 13	GC-1, 11, 13	GC-2, 13, 29	GC-13	GC-2, 6, 13, 14, 15, 25, 26, 27, 29	GC-9, 13, 19, 20	GC-5, 13	GC-2, 3, 5, 13, 14, 15
Earthquake	GC-2, 3, 12, 13	GC-1, 11, 13	GC-2, 13, 29	GC-13	GC-2, 6, 13, 14, 15, 25, 26, 27, 29	GC-9, 13	GC-5, 13	GC-2, 3, 13, 14, 15
Low-Risk Hazards								
Wildfire	GC-2, 3, 12, 13	GC-1, 11, 13	GC-2, 13, 29	GC-13	GC-2, 6, 13, 14, 15, 25, 26, 27, 29	GC-9, 13, 23	GC-5, 13	GC-2, 3, 13, 14, 15
Drought	GC-2, 3, 12, 13	GC-1, 11, 13	GC-2, 13, 29	GC-13	GC-2, 6, 13, 14, 15, 25, 26, 27, 29	GC-9, 13	GC-5, 13, 17	GC-2, 3, 13, 14, 15
Volcano			GC-29					GC-3, 13, 14, 15
Landslide	GC-2, 3, 12, 13	GC-1, 11, 13	GC-2, 13, 29	GC-13	GC-2, 6, 13, 14, 15, 25, 26, 27, 29	GC-9, 13	GC-5, 13	GC-2, 3, 13, 14, 15

a. See the introduction to this volume for explanation of mitigation types.

b. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

4.9 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

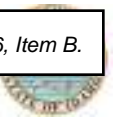
- **2017 Ada County Multi-Hazard Mitigation Plan** – The previous HMP was reviewed to update this annex.
- **Garden City Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **Garden City Flood Damage Prevention Ordinance**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

CITY OF GARDEN CITY

Section 6, Item B.



0 0.6 1.2 Miles



EAGLE

E Hill Rd

N Horseshoe Bend Rd

W Arnold Rd

W Utahna Rd

N Seaman Gulch Rd

N Moore Access Rd

N Cartwright Rd

W Hill Rd

W Joplin Rd

N Garrett St

W Marigold St

N Glenwood St

W McMillan Rd

W Goddard Rd

N Alworth St

Ive Mile Rd

W Ustick Rd

W Pomona Rd

N Alamo Rd

N Fenlon St

E 48th St

E 45th St

E 44th St

E 43rd St

E 42nd St

N Adams St

N Stockton St

N Osage St

W Middlefield Rd

BOISE

N Cole Rd



N Curtis Rd

W Morris Hill Rd

W Franklin Rd

W Kipling Rd

Lucky Peak Dam Failure Inundation Area

Legend

Maximum Pool Inundation Area

Area inundated by dam failure occurring when pool elevation is at the top of the impounding structure.

Study Area

Ada County Boundary

City Boundary

County Boundary

Interstate

Major Roads

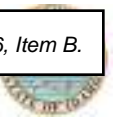
Rail

Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, IDWR

CITY OF GARDEN CITY

Section 6, Item B.



0 0.5 1 Miles



EAGLE

BOISE

Liquefaction Potential

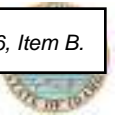
Legend

- Very Low
- Low
- Moderate
- High
- Very High
- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, Idaho Geological Survey

CITY OF GARDEN CITY

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EAGLE

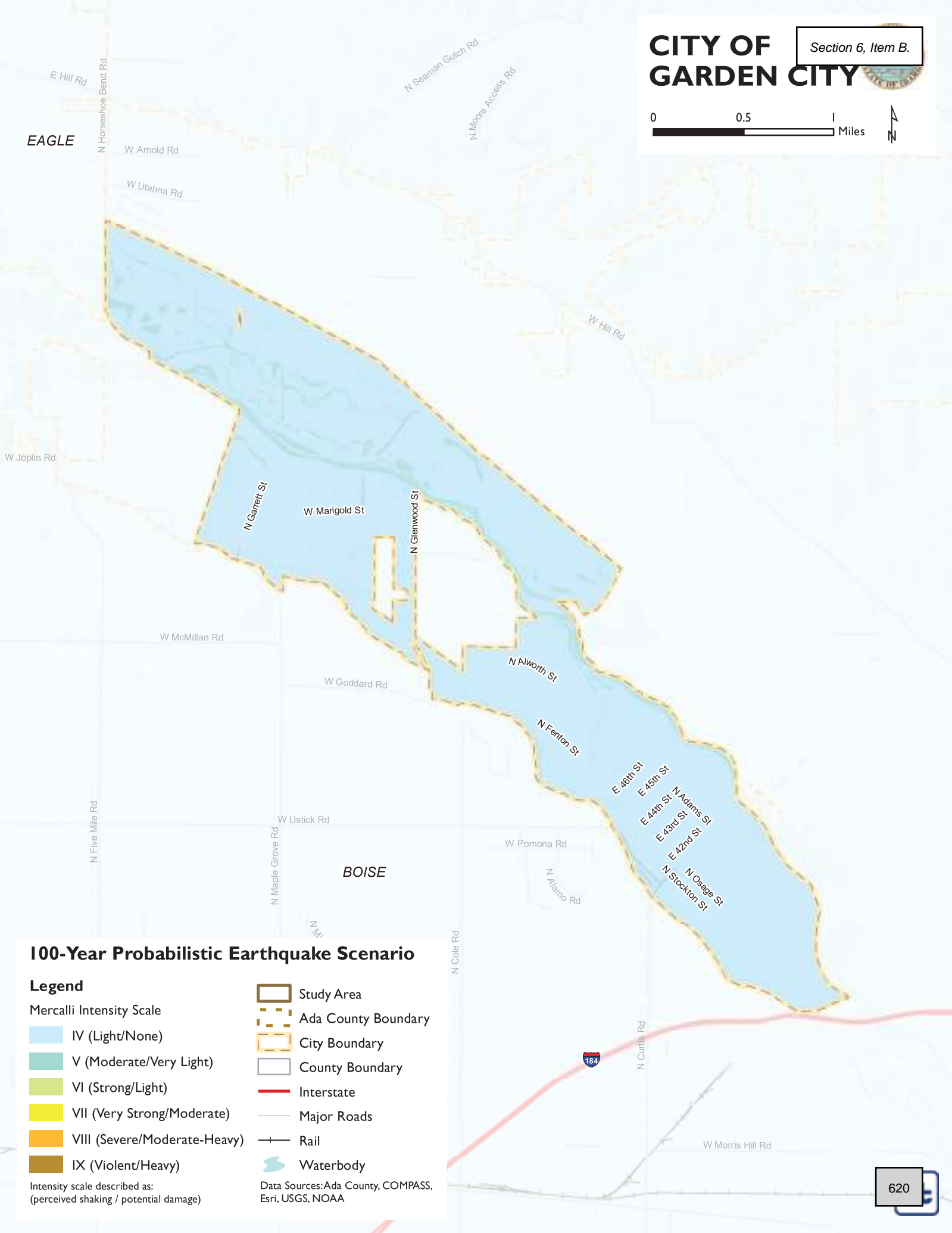
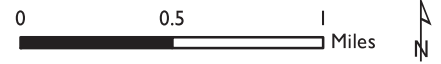
BOISE

NEHRP Soil Classes

Legend

- C (Dense soil/soft rock)
- D (Stiff soil)
- E (Soft clay)
- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, Idaho Geological Survey



100-Year Probabilistic Earthquake Scenario

Legend

Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

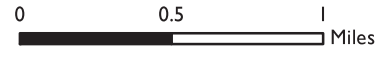
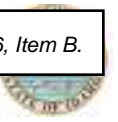
Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

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EAGLE

BOISE

500-Year Probabilistic Earthquake Scenario

Legend

Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

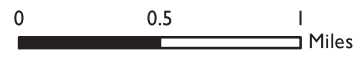
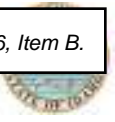
Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

CITY OF GARDEN CITY

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Big Flat-Jake Creek M6.8 Earthquake Scenario

Legend

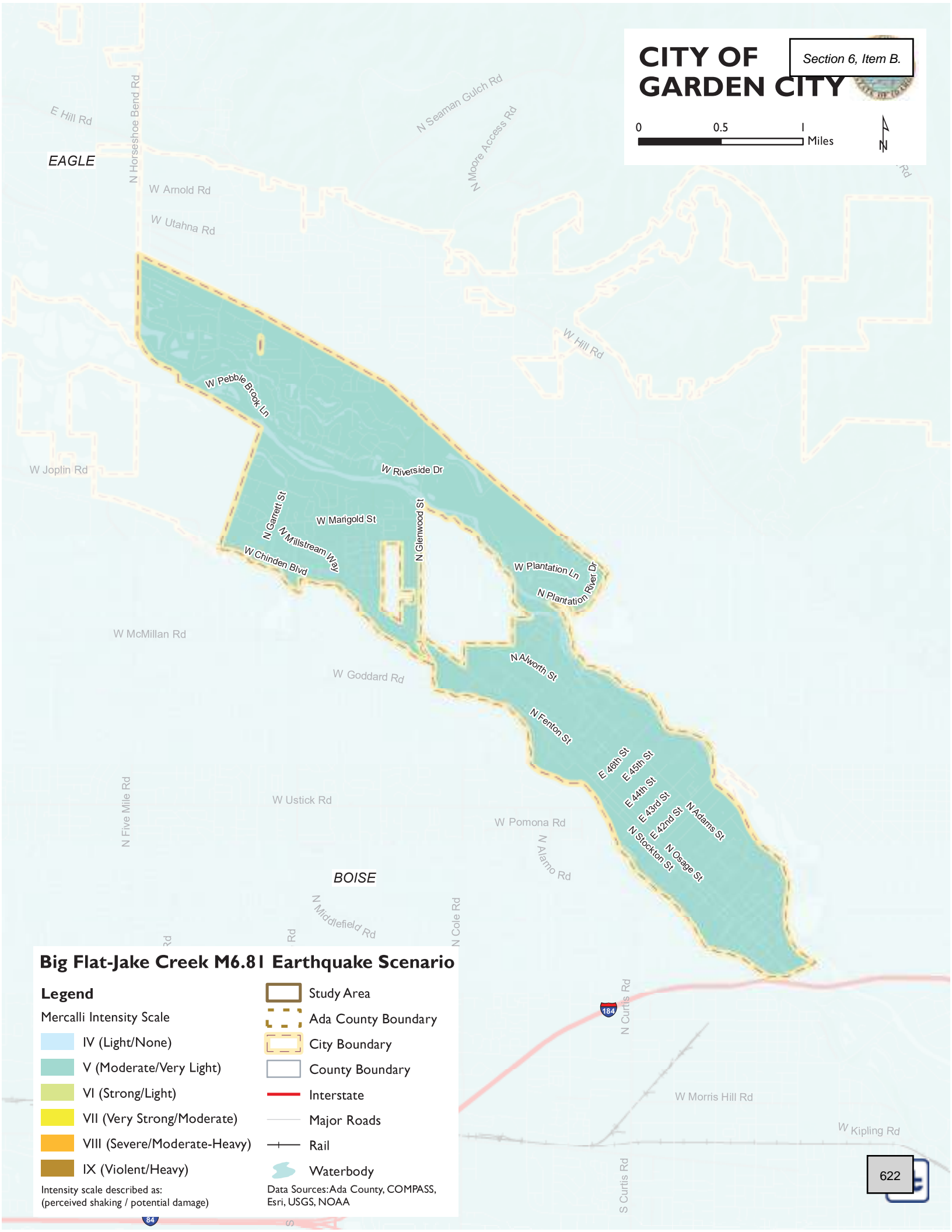
Mercalli Intensity Scale

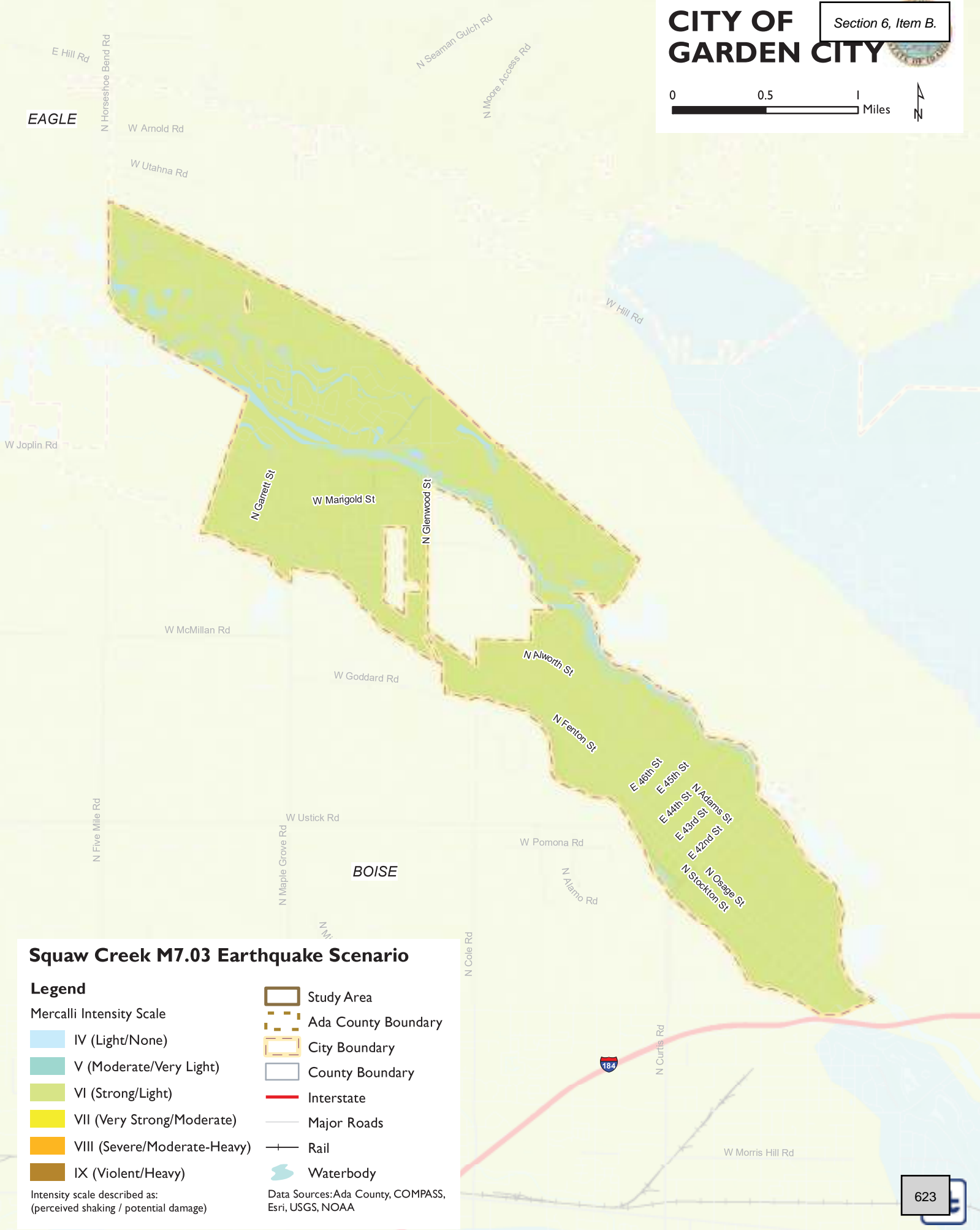
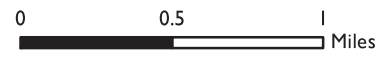
- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- | Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA





Squaw Creek M7.03 Earthquake Scenario

Legend

Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

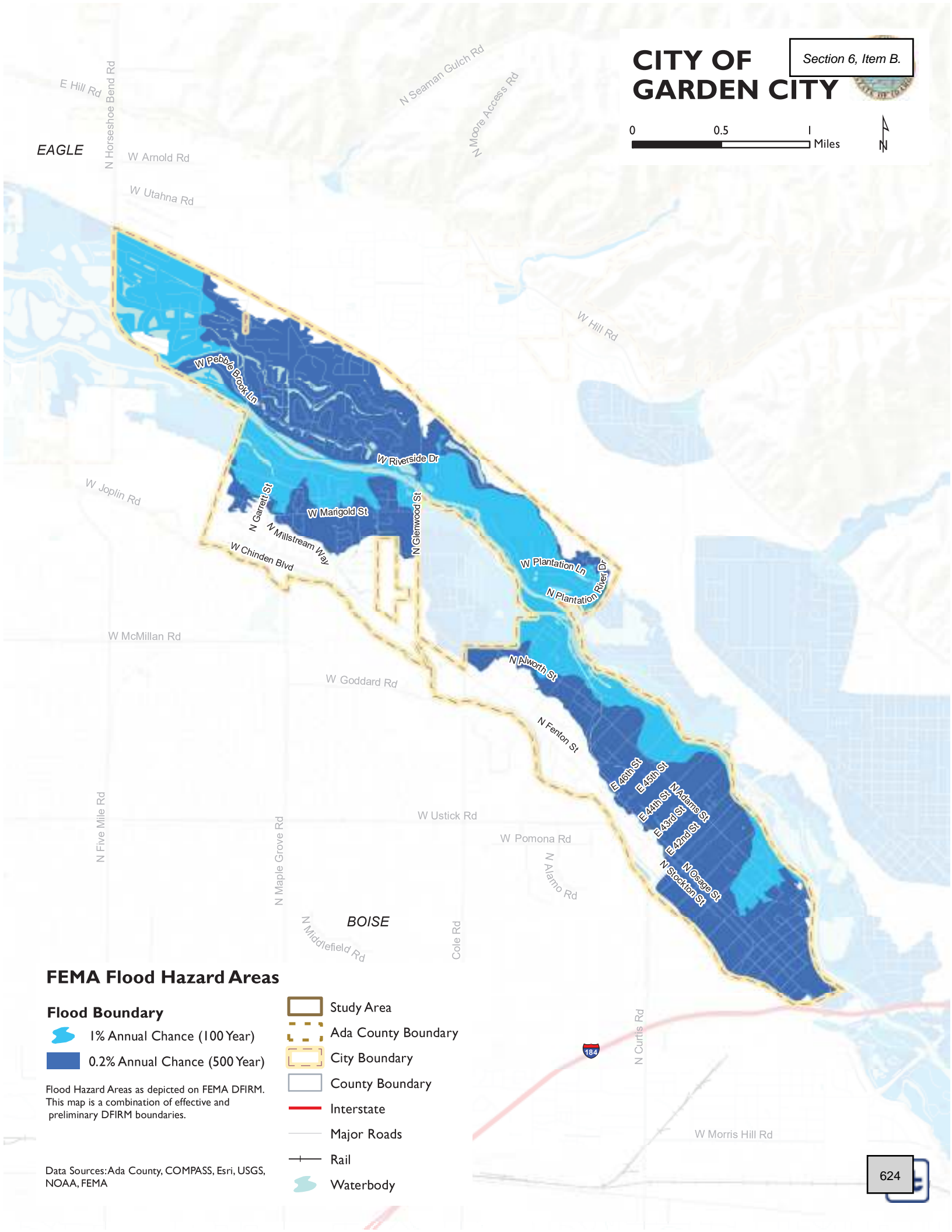
Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA



CITY OF GARDEN CITY

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



FEMA Flood Hazard Areas

Flood Boundary

-  1% Annual Chance (100 Year)
-  0.2% Annual Chance (500 Year)

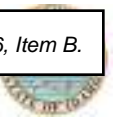
Flood Hazard Areas as depicted on FEMA DFIRM. This map is a combination of effective and preliminary DFIRM boundaries.

-  Study Area
-  Ada County Boundary
-  City Boundary
-  County Boundary
-  Interstate
-  Major Roads
-  Rail
-  Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, FEMA

CITY OF GARDEN CITY

Section 6, Item B.



0 0.5 1 Miles











EAGLE




BOISE

Wildfire Hazard

Legend

-  Study Area
-  Ada County Boundary
-  City Boundary
-  County Boundary
-  Interstate
-  Major Roads
-  Rail
-  Waterbody

Wildfire Base Hazard Rating

-  Low
-  Moderate
-  High

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

5. CITY OF KUNA

5.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Mike Borzick, GIS Manager
 6950 S Ten Mile Rd
 Meridian, ID 83642
 Telephone: 208-287-1726
 e-mail Address: MBorzick@KunaID.gov

Alternate Point of Contact

Brady Barrosa
 6950 S Ten Mile Rd
 Meridian, ID 83642
 Telephone: 208-287-1722
 e-mail Address: Bbarrosa@KunaID.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 5-1.

Table 5-1. Local Hazard Mitigation Planning Team Members	
Name	Title
Mike Borzick	GIS Manager
Doug Hansen	Planning and Zoning Dir
Morgan Treasure	Economic Development Dir
Brady Barrosa	Staff Engineer
Troy Behunin	Planner

5.2 JURISDICTION PROFILE

5.2.1 Location and Features

The City of Kuna’s business district is located approximately 18 miles southwest of Boise and about 8 miles south of Meridian’s business districts and is part of the Boise City-Nampa, Idaho Metropolitan Statistical Area. Kuna is located about 8 miles south of U.S. Interstate 84 and intersects with State Highway 69.

The nearby Morley Nelson Snake River Birds of Prey National Conservation Area holds North America’s densest population of nesting raptors. The Western Heritage Historic Byway, designated as a national as well as a state scenic byway, travels around a number of historic sites in the area.

5.2.2 Climate

Kuna’s climate is semi-arid, with four distinct seasons. Kuna experiences hot and dry summers with highs exceeding 100 °F 5.6 days in a typical year and 90 °F on 46 days. Due to the aridity, summer nights often offer significant and crisp cool-downs. Winters are cold, with a January average of 30.2 °F, and lows falling to 0 °F or

below on around 4 nights per year. Snowfall averages 19 inches, but typically falls in bouts of 3 inches or less. Spring and fall are generally mild, with autumn being a quick transition period whereas spring is quite gradual. Precipitation is usually infrequent and light, and especially more lacking during the summer months.

5.2.3 History

The City of Kuna was incorporated on September 15, 1915. Kuna is located in the Ada County, which was established on December 22, 1864 by the Idaho Territorial Legislature. Kuna originated as a railroad stop with coach transport to Boise but after the branch line was complete, there was no need for a depot at Kuna and the settlement closed down. With the prospects of irrigation water, settlers were attracted to the area again. The principle industry was agricultural and in the early 1900s, over 700 acres were planted with vineyards, apples and prune orchards. Agricultural is still a major local industry today.

5.2.4 Governing Body Format

The City of Kuna is governed by a mayor-city council form of government; with four-elected City Council members and the Mayor. The City consists of seven departments: Finance; Economic Development; Parks; Public Works; Planning & Zoning, Police and City Clerk. The city government structure also includes a planning & zoning commission and design review committee. The City Council is responsible for the adoption of this plan, Planning and Zoning Department is responsible for its implementation.

5.3 CURRENT TRENDS

5.3.1 Population

According to COMPASS the population of the City of Kuna as of April 2022 was 27,480. Since 2017, the population has grown at an average annual rate of 7.9 percent.

5.3.2 Development

Based on data from Compass (Community Planning Association) and Kuna's Comprehensive Plan, Kuna remains one of the fastest growing cities in the Treasure Valley. Kuna's population increased from 15,210 in 2010 to 24,011 in 2020. This represents a 57.9 percent increase in population growth in 10 years. Kuna was a contender for CNN/Money's "Best Place to Live 2005" list. Kuna is transitioning from a rural community to a suburban city, and residential development has outpaced commercial development. Kuna has identified additional commercial areas as a component of the Comprehensive Land Use Plan. The next step is to implement the plan by establishing new zoning districts, rezoning property, and possibly forming an urban renewal district. City actions relating to land use, annexations, zoning, subdivision and design review, redevelopment and capital improvements must be consistent with the Comprehensive Plan. Future growth and development will be managed according to the Comprehensive Land Use Plan and it will be reviewed and amended as necessary.

Identifying previous and future development trends is achieved through a comprehensive review of permitting since completion of the previous plan and in anticipation of future development. Tracking previous and future growth in potential hazard areas provides an overview of increased exposure to a hazard within a community. Table 5-2 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

Table 5-2. Recent and Expected Future Development Trends

Criterion	Response
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan? <i>If yes, give the estimated area annexed and estimated number of parcels or structures.</i>	Yes Approximately 61 parcels containing 2,810.91 acres have been annexed since 2016
Is your jurisdiction expected to annex any areas during the performance period of this plan? <i>If yes, describe land areas and dominant uses.</i>	Yes Areas within the Area of City Impact
<i>If yes, who currently has permitting authority over these areas?</i>	Planning and Zoning
Are any areas targeted for development or major redevelopment in the next five years? <i>If yes, briefly describe, including whether any of the areas are in known hazard risk areas</i>	Yes Facebook (Meta) has a large Server Farm that will be constructing East of town and is sure to bring more industrial to that area.
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?	2016
	2017
	2018
	2019
	2020
Single Family	258
Multi-Family	11
Other	N/A
Total	269
Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.	<ul style="list-style-type: none"> • Special Flood Hazard Areas: 14 • Landslide: 0 • High Liquefaction Areas: 0 • Wildfire Risk Areas: 0
Describe the level of buildout in the jurisdiction, based on your jurisdiction’s buildable lands inventory. If no such inventory exists, provide a qualitative description.	The city doesn’t have an inventory of lands, but from the normal build cycles once a subdivision is constructed the builder generally pulls all the Building Permits for the entire subdivision. Only a couple of the projects have Custom builders that fill slowly.

5.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 5-3.
- Development and permitting capabilities are presented in Table 5-4.
- An assessment of fiscal capabilities is presented in Table 5-5.
- An assessment of administrative and technical capabilities is presented in Table 5-6.
- An assessment of education and outreach capabilities is presented in Table 5-7.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 5-8.
- Classifications under various community mitigation programs are presented in Table 5-9.

Table 5-3. Planning and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, & Requirements				
Building Code	Yes	No	No	No
<i>Comment:</i>	<i>Comment:</i> Title 4, Chapter 1 Kuna Municipal Code (KMC), adopts the 2012 IBC per state mandate. (12/2013)			
Zoning Code	Yes	No	No	No
<i>Comment:</i>	<i>Comment:</i> Title 5, KMC, Adopted 1996			
Subdivisions	Yes	No	No	No
<i>Comment:</i>	<i>Comment:</i> Title 65, KMC, Adopted 1977			
Stormwater Management	No	Yes	Yes	Yes
<i>Comment:</i>	<i>Comment:</i> Ada County Highway Department (ACHD) – 11/11/2015			
Post-Disaster Recovery	No	No	No	Yes
<i>Comment:</i>				
Real Estate Disclosure	No	No	No	No
<i>Comment:</i>				
Growth Management	Yes	No	No	No
<i>Comment:</i>	<i>Comment:</i> Kuna Comprehensive Plan, adopted 2009			
Site Plan Review	Yes	No	No	No
<i>Comment:</i>	<i>Comment:</i> Title 5, Chapter 4, KMC adopted 8/21/2007			
Environmental Protection	No	No	No	Yes
<i>Comment:</i>				
Flood Damage Prevention	Yes	No	No	Yes
<i>Comment:</i>	<i>Comment:</i> Flood Damage Prevention-Title 4, Chapter 5 KMC. Adopted 8/11/2003			
Emergency Management	No	No	No	Yes
<i>Comment:</i>				
Climate Change	No	No	No	No
<i>Comment:</i>				
Planning Documents				
General Plan	Yes	No	Yes	Yes
<i>Is the plan equipped to provide linkage to this mitigation plan?</i>	Yes			
<i>Comment:</i>	<i>Comment:</i> Policy was adopted under objective # 5.1 of Goal 5 or the Natural Resources and Hazardous Areas element of the 2015 Comprehensive Plan for the City of Kuna, adopted by City Council 8/2015			
Capital Improvement Plan	Yes	No	No	No
<i>How often is the plan updated?</i>	Annually			
<i>Comment:</i>	<i>Comment:</i> Enter Comment			
Disaster Debris Management Plan	Yes	Yes	No	Yes
<i>Comment:</i>	<i>Comment:</i> Enter Comment			
Floodplain or Watershed Plan	Yes	No	No	Yes
<i>Comment:</i>	<i>Comment:</i> The 2017 Ada County Multi-Hazard Mitigation Plan will qualify as a flood hazard management plan under CRS criteria upon its completion and adoption.			
Stormwater Plan	Yes	No	Yes	Yes
<i>Comment:</i>	<i>Comment:</i> Kuna City complies with the requirements as per EPA requirements in NPDES, and IDWR requirements. ACHD holds NPDES Permit. City is responsible for Stormwater Pollution Prevention associated with City Projects.			
Urban Water Management Plan	No	No	No	No
<i>Comment:</i>				
Habitat Conservation Plan	No	No	No	Yes
<i>Comment:</i>				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Economic Development Plan <i>Comment:</i>	Yes	No	No	Yes
Shoreline Management Plan <i>Comment:</i>	No	No	No	No
Community Wildfire Protection Plan <i>Comment: The 2017 Ada County Multi-hazard Mitigation plan is being developed as a CWPP for the Ada County planning area.</i>	Yes	No	No	Yes
Forest Management Plan <i>Comment:</i>	No	No	No	No
Climate Action Plan <i>Comment:</i>	No	No	No	No
Comprehensive Emergency Management Plan <i>Comment:</i>	No	No	No	Yes
Threat & Hazard Identification & Risk Assessment (THIRA) <i>Comment: EMCR has developed and maintains a THIRA for the Ada County planning area.</i>	No	Yes	No	Yes
Post-Disaster Recovery Plan <i>Comment:</i>	No	No	No	Yes
Continuity of Operations Plan <i>Comment: City of Kuna Continuity of Operations (COOP), April 10, 2012</i>	Yes	No	No	Yes
Public Health Plan <i>Comment: Comment: Central District Health Department Emergency Operations Plan, 2013</i>	No	Yes	No	Yes

Table 5-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? <i>If no, who does? If yes, which department?</i>	No Development isn't "Permitted" – it does go through an approval process, but no "Permit" is issued.
Does your jurisdiction have the ability to track permits by hazard area?	No
Does your jurisdiction have a buildable lands inventory?	Yes

Table 5-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service <i>If yes, specify: Sewer, Water, Irrigation (Pressure and Gravity)</i>	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes

Table 5-6. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices <i>If Yes, Department /Position:</i> Public Works/Director Public Works/City Engineer Public Works/Staff Engineers Public Works/GIS Manager, Plan Reviewer Planning/Director Planning/Staff	Yes
Engineers or professionals trained in building or infrastructure construction practices <i>If Yes, Department /Position:</i> Public Works/Director Public Works/City Engineer Public Works/Staff Engineers Public Works/GIS Manager, Plan Reviewer	Yes
Planners or engineers with an understanding of natural hazards <i>If Yes, Department /Position:</i> Public Works/Director Public Works/City Engineer Public Works/Staff Engineers Public Works/GIS Manager, Plan Reviewer	Yes
Staff with training in benefit/cost analysis <i>If Yes, Department /Position:</i> Public Works/Director	Yes
Surveyors <i>If Yes, Department /Position:</i> Public Works/GIS Manager – Contract as needed	Yes
Personnel skilled or trained in GIS applications <i>If Yes, Department /Position:</i> Public Works/GIS Manager	Yes
Scientist familiar with natural hazards in local area <i>If Yes, Department /Position:</i> Contract as needed	Yes
Emergency manager <i>If Yes, Department /Position:</i> Ada County	Yes
Grant writers <i>If Yes, Department /Position:</i> City Clerk/Director - Contract as needed	Yes

Table 5-7. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes, Economic Developer
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website?	No
Do you use social media for hazard mitigation education and outreach?	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	No
<i>If yes, briefly describe:</i>	
Do you have any other programs in place that could be used to communicate hazard-related information?	Yes
<i>If yes, briefly describe:</i> Approved COOP	
Do you have any established warning systems for hazard events?	Yes
<i>If yes, briefly describe:</i> Code Red/ISAWS – residents may sign up to receive emergency notifications and critical community alerts. Both systems are IPAWS enabled and may additionally access that integrated system for public warnings.	

Table 5-8. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	GIS Department / Planning & Zoning
Who is your floodplain administrator? (department/position)	Public Works / GIS Manager
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	10/02/2003
Does your floodplain management program meet or exceed minimum requirements? <i>If exceeds, in what ways?</i>	Meet
When was the most recent Community Assistance Visit or Community Assistance Contact?	CAV 11/18/2002 CAC 9/12/1989
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <i>If so, state what they are.</i>	No
Are any RiskMAP projects currently underway in your jurisdiction? <i>If so, state what they are.</i>	Yes We had LiDar flown with the hope STARR was updating our RiskMAP
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <i>If no, state why.</i>	No Mapping is grossly inaccurate
Does your floodplain management staff need any assistance or training to support its floodplain management program? <i>If so, what type of assistance/training is needed?</i>	Yes CFM training
Does your jurisdiction participate in the Community Rating System (CRS)? <i>If yes, is your jurisdiction interested in improving its CRS Classification?</i> <i>If no, is your jurisdiction interested in joining the CRS program?</i>	No Yes
How many flood insurance policies are in force in your jurisdiction? ^a <i>What is the insurance in force?</i> <i>What is the premium in force?</i>	1 \$187,300 \$1,114
How many total loss claims have been filed in your jurisdiction? ^a <i>What were the total payments for losses?</i>	0 \$0

a. According to FEMA statistics as of March 31, 2022

Table 5-9. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	Yes	1600144290	N/A
DUNS #	Yes	126045272	N/A
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	No	10/10	N/A
Public Protection	Yes	3/9	N/A
Storm Ready	Yes	Participant	N/A
Firewise	No	N/A	N/A
Tsunami Ready	No	N/A	N/A

5.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as general planning and capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and

where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

5.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **City of Kuna Continuity of Operations (COOP)**, April 10, 2012
- Policy was adopted under objective # 5.1 of Goal 5 or the Natural Resources and Hazardous Areas element of the 2015 Comprehensive Plan for the City of Kuna

5.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- Future updates to the **City of Kuna's Comprehensive Plan**—the comprehensive plan will continue to use hazard mapping and hazard data in updates of the land use and safety sections.
- Continued **CWPP** integration with the Hazard Mitigation Plan wildfire maps and hazard data.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

5.6 RISK ASSESSMENT

5.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 5-10 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

5.6.2 Hazard Risk Ranking

Table 5-11 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy. Mitigation actions target hazards with high and medium rankings.

Table 5-10. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
COVID-19 Pandemic	DR-4534	January 20, 2020, and continuing	N/A
Flooding	DR-4342	March 29 – June 15, 2017	Public Assistance Countywide: \$4,493,792
Thunderstorm Wind	N/A	10/19/2019	Several large trees, power lines and fences down, and car damage
Thunderstorm Wind	N/A	8/11/2015	Downed trees and power outages
Severe Wind	N/A	3/29/2009	\$33,000 (countywide)
Canal Breach	N/A	6/5/2006	Unknown (40 homes)
Severe Wind	N/A	4/27/1995	\$50,000 (countywide)
Flooding	N/A	6/1983	\$147,000 (countywide)

Table 5-11. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	Extreme Weather	33	High
2	Flood	18	Medium
3	Earthquake	16	Medium
4	Wildfire	12	Low
5	Drought	9	Low
6	Volcano	6	Low
7	Dam/Canal Failure	0	Low
8	Landslide	0	Low

5.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for this jurisdiction. Available jurisdiction-specific risk maps of the hazards are provided at the end of this annex.

Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: 0
- Number of FEMA-identified Severe-Repetitive-Loss Properties: 0
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: N/A

Other Noted Vulnerabilities

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Manmade Canal failures
- Wildfires around Transmission Power Lines

Mitigation actions addressing these issues were prioritized for consideration in the action plan in this annex.

5.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 5-12 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 5-12. Status of Previous Plan Actions

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>Action K-1— Provide redundancy with Conduit and Fiber hard-wired into all critical facilities.</p> <p><i>Comment:</i> Ongoing. Staff is continually budgeting, requesting development to design and build conduit in needed zones to close any holes or complete loops.</p>			✓	K-1
<p>Action K-2—Develop and maintain an inventory of City Critical Facilities</p> <p><i>Comment:</i> Ongoing. This action is complete as of this planning period, but needs to stay in the forefront and can never truly be completed.</p>			✓	K-7
<p>Action K-3—Open Space Preservation in identified high risk hazard area</p> <p><i>Comment:</i> This is being completed with our Comprehensive Plan, it is currently in the last stages of being approved at the City level and should be heading to the County sometime thereafter. In approval process 8/13/20</p>			✓	K-2
<p>Action K-4—Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include but are not limited to: enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.</p> <p><i>Comment:</i> Hiring of our new Staff Engineers. Staff is dedicated and supported by the Public Works Director to get more FEMA training and to ultimately become Floodplain Manager Certified.</p>			✓	K-4
<p>Action K-5—Continue to integrate Multi-Hazard Mitigation Plan into future updates of the Kuna Comprehensive Plan</p> <p><i>Comment:</i> Comprehensive Plan is currently under its last stages of review.</p>			✓	K-2
<p>Action K-6—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with properties with exposure to repetitive losses as a priority.</p> <p><i>Comment:</i> No known properties that have sustained any damage more or less repeated damages</p>			✓	K-10
<p>Action K-7—Consider appropriate higher regulatory standards that prevent or reduce risk to the built environment from the known hazards of concern.</p> <p><i>Comment:</i> In our Comprehensive Plan we have created buffer areas and riparian zone in and along Indian Creek, Mason Creek and several other large canals to push homes and structures back from those water ways for preservation of green space but also to hopefully mitigate any potential damages during a flood type event.</p>	✓			
<p>Action K-8—Support County-wide initiatives identified in Volume 1.</p> <p><i>Comment:</i> Continue this process as the city grows.</p>			✓	K-8
<p>Action K-9—Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Volume 1.</p> <p><i>Comment:</i> We will gladly continue our support of this plan</p>			✓	K-3
<p>Action K-10—Update SCADA links to all critical facilities via Cell service. Many of our sites use radio repeaters to the water tower, if we lose the water tower we lose ALL communication</p> <p><i>Comment:</i> SCADA now runs on Cradle Points – however we need to continue this process as the City grows</p>			✓	K-9

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Action K-11 —Provide fire safety, fire prevention and Firewise education to neighborhoods, schools and community via the internet, social media and direct public outreach.		✓		
<i>Comment: Better suited with the Kuna Rural Fire Department</i>				

5.8 HAZARD MITIGATION ACTION PLAN

Table 5-13 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 5-14 identifies the priority for each action. Table 5-15 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 5-13. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action K-1 —Where appropriate support development lead construction of conduit infrastructure to close any loops or holes in the City of Kuna’s Fiber Infrastructure. Where needed, budget for and construct needed infrastructure.						
<i>Hazards Mitigated:</i> Extreme Weather, Flood, Earthquake, Wildfire, Dam/Canal Failure, Landslide						
Existing	1, 3, 8, 9, 10	City of Kuna	EMCR	High	HMGP, BRIC, FMA, ICC	Short-term
Action K-2 — Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community, including the Kuna Comprehensive Plan						
<i>Hazards Mitigated:</i> Extreme Weather, Flood, Earthquake, Wildfire, Dam/Canal Failure, Landslide						
New & Existing	3, 4, 5, 8, 9	City of Kuna	EMCR	Low	Staff Time, General Funds	Ongoing
Action K-3 —Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
<i>Hazards Mitigated:</i> Extreme Weather, Flood, Earthquake, Wildfire, Drought, Volcano, Dam/Canal Failure, Landslide						
New & Existing	All	City of Kuna	EMCR	Low	Staff Time, General Funds, FEMA Mitigation Grant Funding for 5-year update	Short-term
Action K-4 —Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements:						
<ul style="list-style-type: none"> • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts. 						
<i>Hazards Mitigated:</i> Flood, Dam/Canal Failure						
New & Existing	2, 3, 4, 5, 6, 9	Planning & Zoning	N/A	Low	Staff Time, General Funds	Ongoing
Action K-5 —Identify and pursue strategies to increase adaptive capacity to climate change including but not limited to the following:						
<ul style="list-style-type: none"> • Lack of Irrigation Water • Wildfire • Canal Failures 						
<i>Hazards Mitigated:</i> Extreme Weather, Flood, Drought, Wildfire						
New & Existing	2, 3, 4, 5, 6, 9	City of Kuna	EMCR	Low	Staff Time, General Funds	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action K-6 — Purchase generators for critical facilities and infrastructure that lack adequate backup power, including City Hall and the new Kuna East Operations Center						
<i>Hazards Mitigated:</i> Extreme Weather, Flood, Earthquake, Wildfire, Dam/Canal Failure, Landslide						
New & Existing	All	City of Kuna	EMCR	Low	General Funds, Development	Short Term
Action K-7 — Develop and maintain an inventory of City Critical Facilities						
<i>Hazards Mitigated:</i> Extreme Weather, Flood, Earthquake, Wildfire, Drought, Volcano, Dam/Canal Failure, Landslide						
Existing	All	Public Works	GIS Department	Medium	General Funds	Ongoing
Action K-8 — Support County-wide initiatives identified in Volume 1.						
<i>Hazards Mitigated:</i> Extreme Weather, Flood, Earthquake, Wildfire, Drought, Volcano, Dam/Canal Failure, Landslide						
New & Existing	All	City of Kuna	EMCR	Low	Unknown	Ongoing
Action K-9 — Continually update the SCADA process, look for redundancy with Fiber and Cell usage.						
<i>Hazards Mitigated:</i> Extreme Weather, Flood, Earthquake, Wildfire, Drought, Volcano, Dam/Canal Failure, Landslide						
New & Existing	All	City of Kuna	EMCR	Medium	Budget Process	Short Term
Action K-10 — Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
<i>Hazards Mitigated:</i> Extreme Weather, Flood, Earthquake, Wildfire, Volcano, Dam/Canal Failure, Landslide						
New & Existing	3, 8, 9	City of Kuna		High	HMGP, FMA, BRIC	Short Term

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date

Acronyms used here are defined at the beginning of this volume.

Table 5-14. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	2	High	High	Yes	Yes	No	Medium	High
2	7	Medium	Low	Yes	No	Yes	High	Low
3	3	Low	Low	Yes	No	Yes	High	Low
4	6	Medium	Low	Yes	No	Yes	High	Low
5	7	Medium	Low	Yes	No	Yes	High	Low
6	3	High	Medium	Yes	Yes	No	Medium	High
7	3	High	Low	Yes	No	Yes	High	Low
8	7	Medium	Low	Yes	Yes	No	Medium	Medium
9	7	High	Medium	Yes	Yes	Yes	High	High
10	3	High	High	Yes	Yes	No	Medium	High

a. See the introduction to this volume for explanation of priorities.

Table 5-15. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building ^b
High-Risk Hazards								
Extreme Weather	2, 4, 5	1, 6, 10	8, 9	2, 4, 5	6, 9		5	3, 7, 8
Medium-Risk Hazards								
Flood	2, 5	1, 6, 10	8, 9	2, 4, 5	6, 9		5	3, 7, 8
Earthquake	2	1, 6, 10	8, 9	2	6, 9			3, 7, 8
Low-Risk Hazards								
Wildfire	2, 5	1, 6, 10	8, 9	2, 5	6, 9		5	3, 7, 8
Drought	5	1, 6	8, 9	2, 5	6, 9		5	3, 7, 8
Volcano					6, 9			3, 7, 8
Dam/Canal Failure	2, 4	1, 6, 10	8, 9	2, 4	6, 9			3, 7, 8
Landslide	2,	1			6, 9			3, 7, 8

- a. See the introduction to this volume for explanation of mitigation types.
- b. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

5.9 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

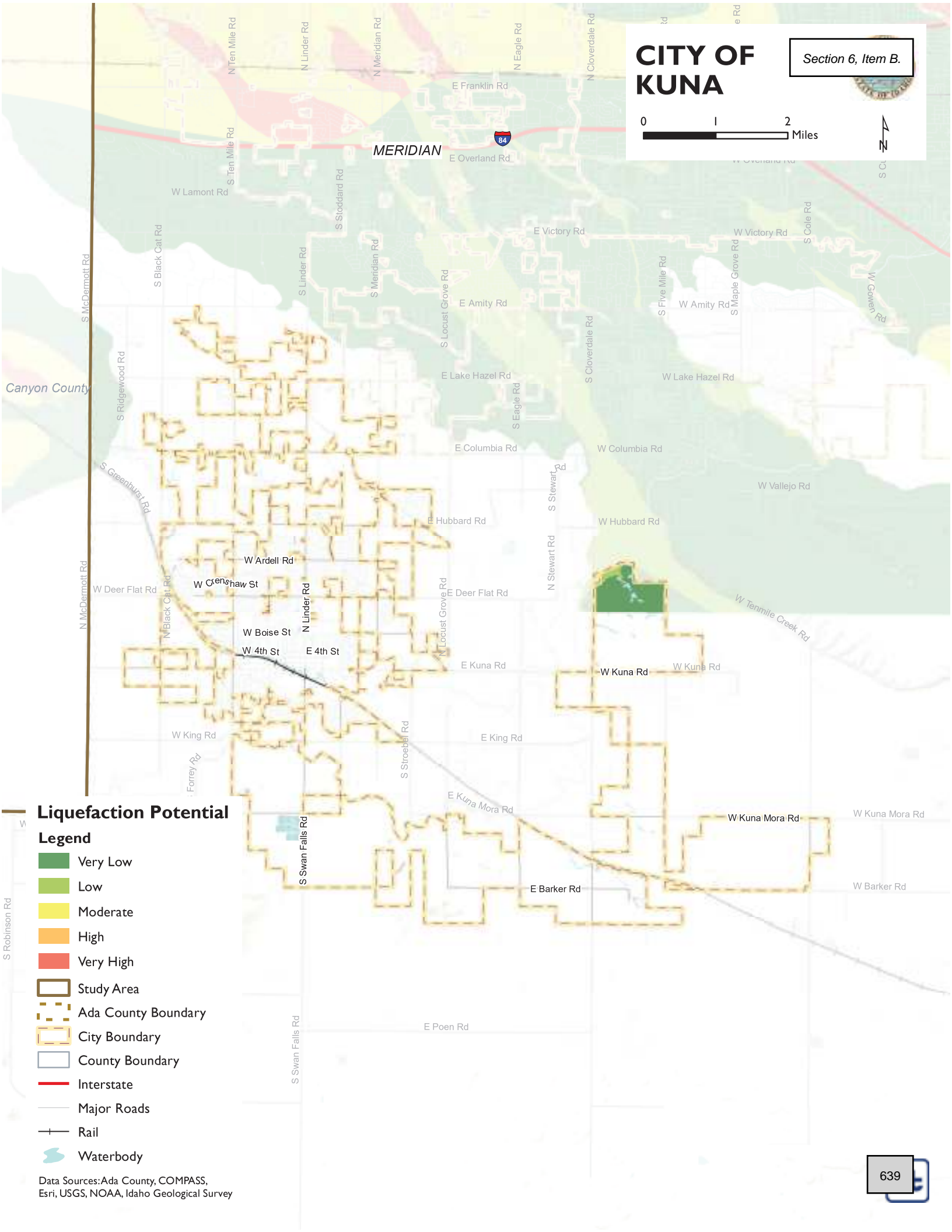
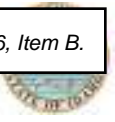
- **2017 Ada County Multi-Hazard Mitigation Plan** – The previous HMP was reviewed to update this annex.
- **Kuna Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

CITY OF KUNA

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Liquefaction Potential

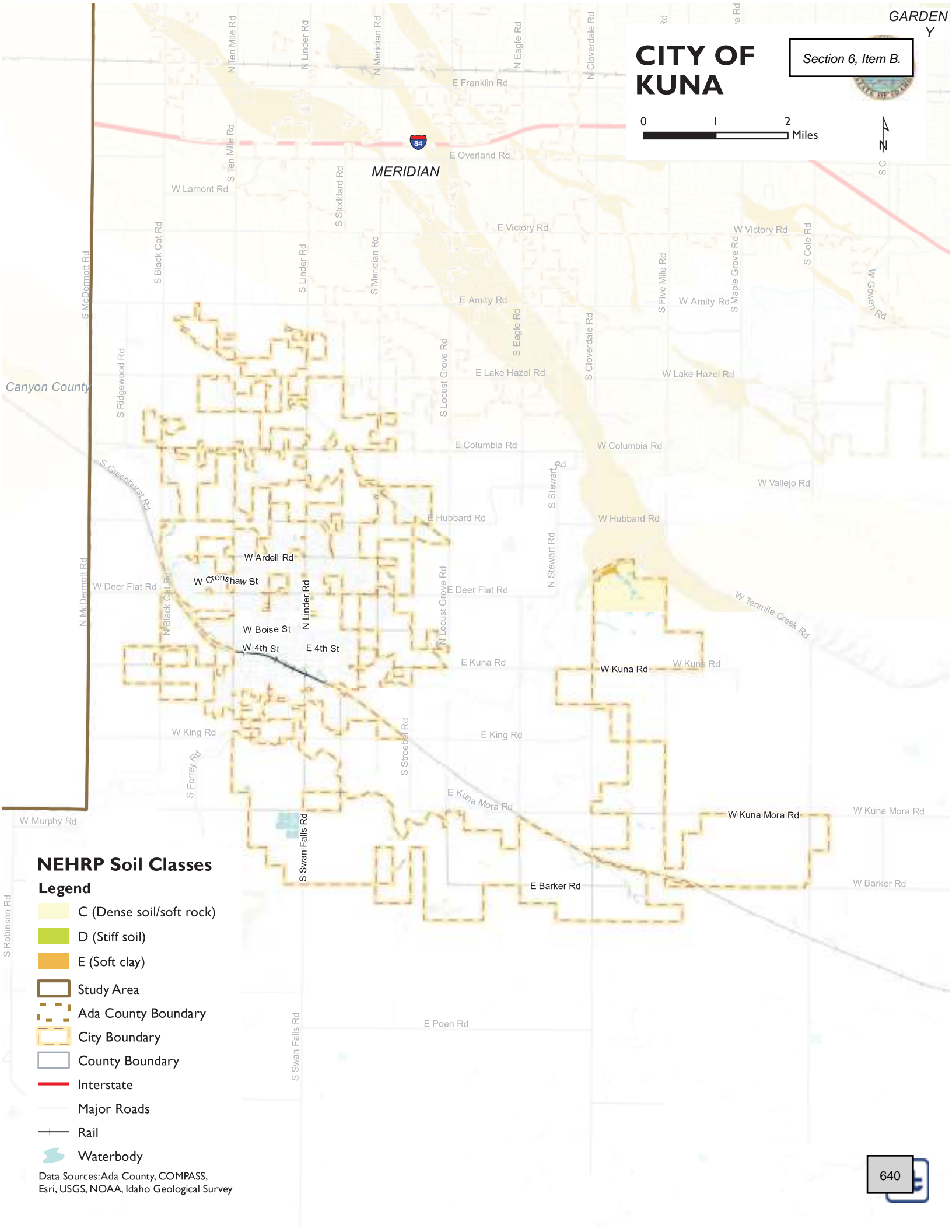
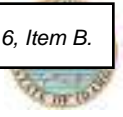
Legend

- Very Low
- Low
- Moderate
- High
- Very High
- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, Idaho Geological Survey







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NEHRP Soil Classes

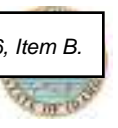
Legend

-  C (Dense soil/soft rock)
-  D (Stiff soil)
-  E (Soft clay)
-  Study Area
-  Ada County Boundary
-  City Boundary
-  County Boundary
-  Interstate
-  Major Roads
-  Rail
-  Waterbody

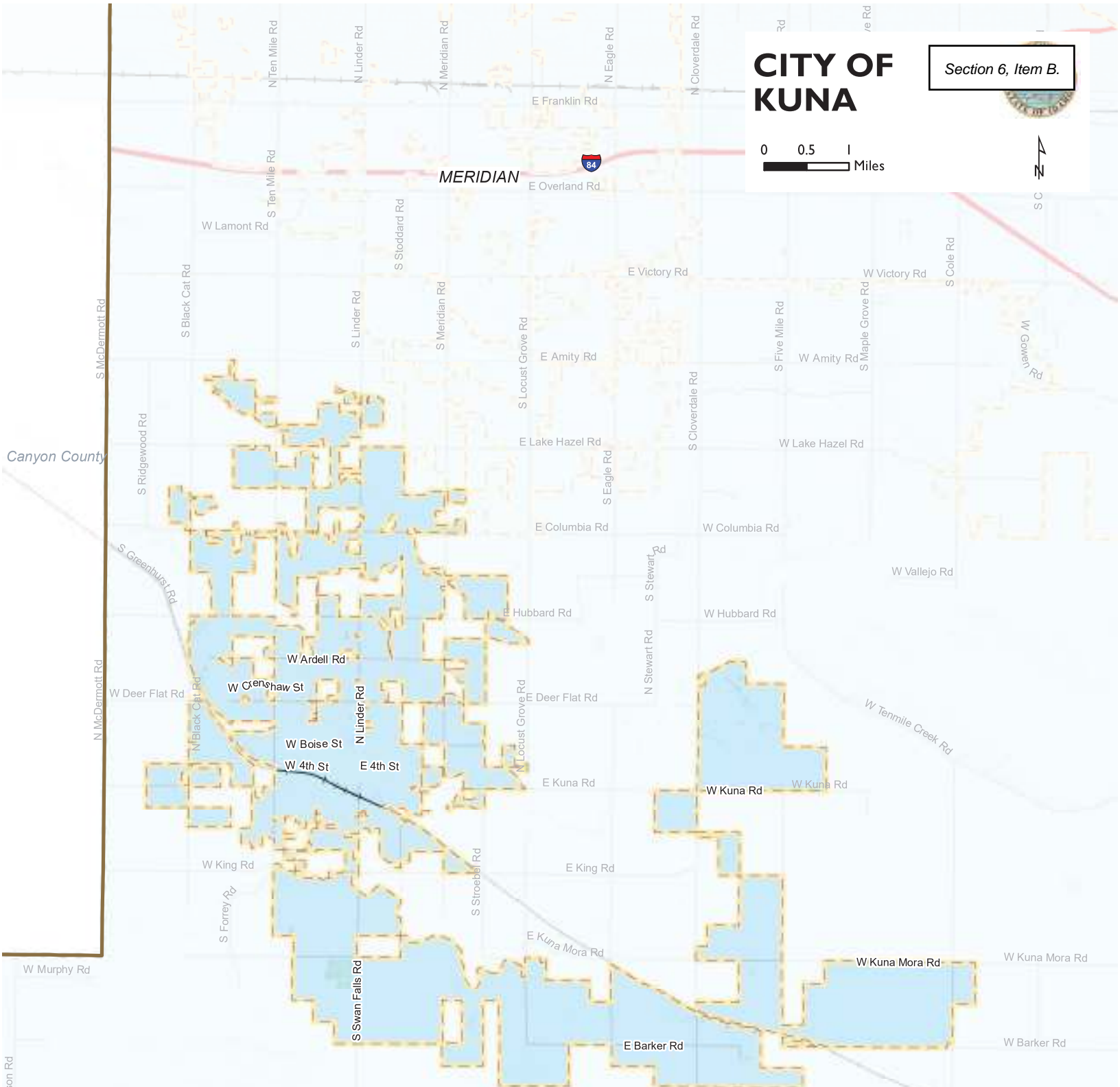
Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, Idaho Geological Survey

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0 0.5 1 Miles



100-Year Probabilistic Earthquake Scenario

Legend

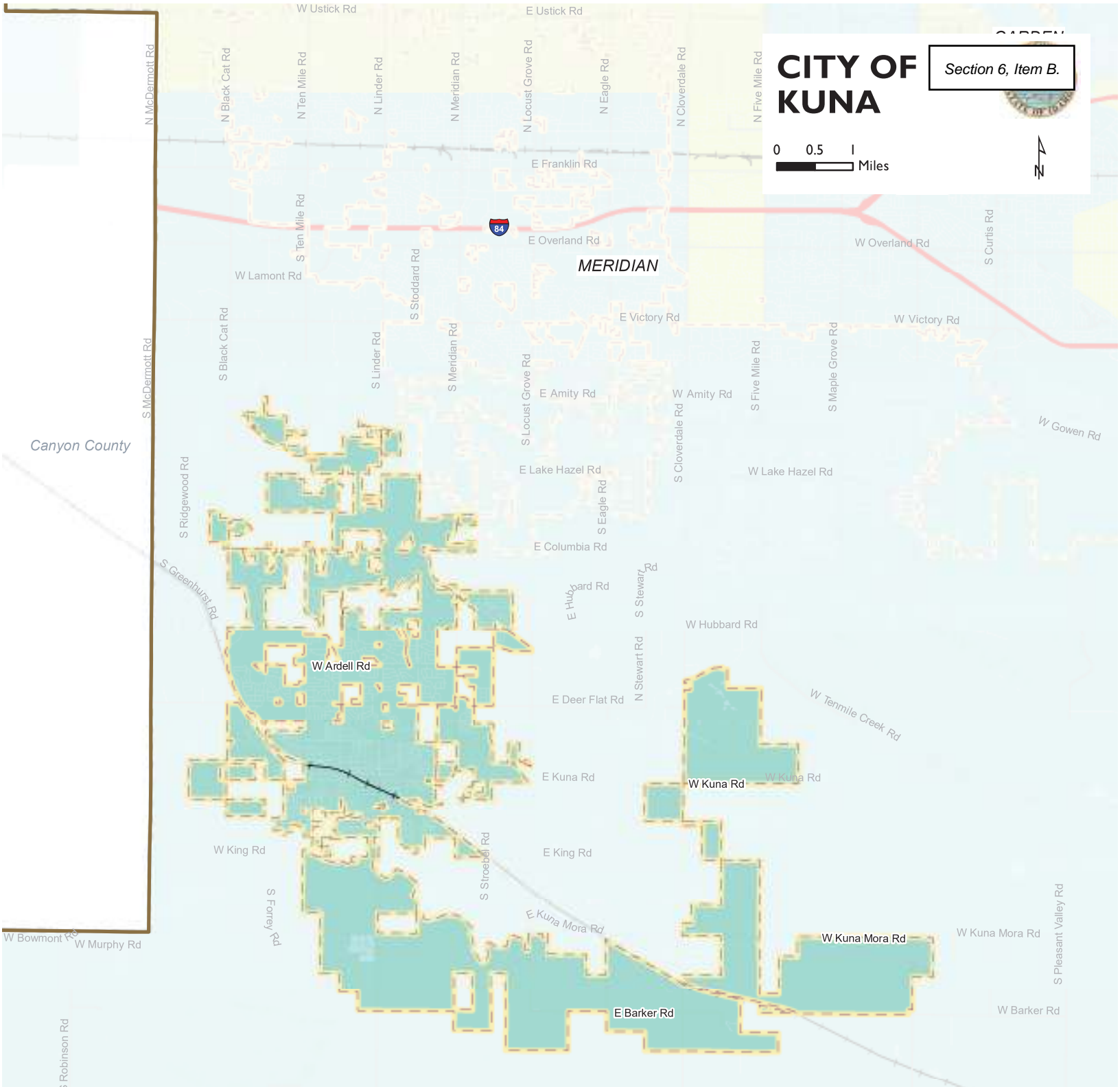
Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA



500-Year Probabilistic Earthquake Scenario

Legend

Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

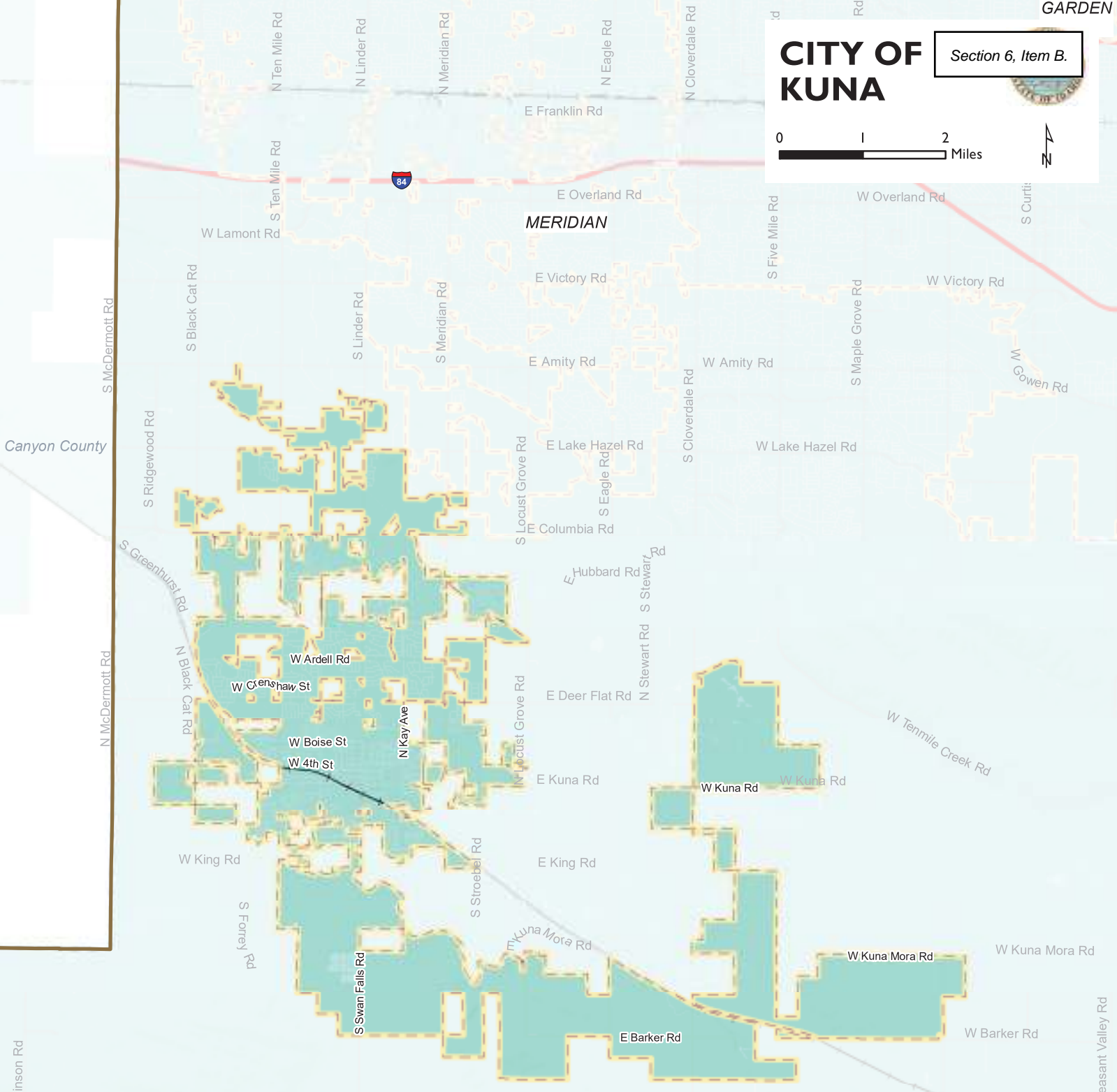
- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Intensity scale described as:
(perceived shaking / potential damage)

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

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Big Flat-Jake Creek M6.81 Earthquake Scenario

Legend

Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

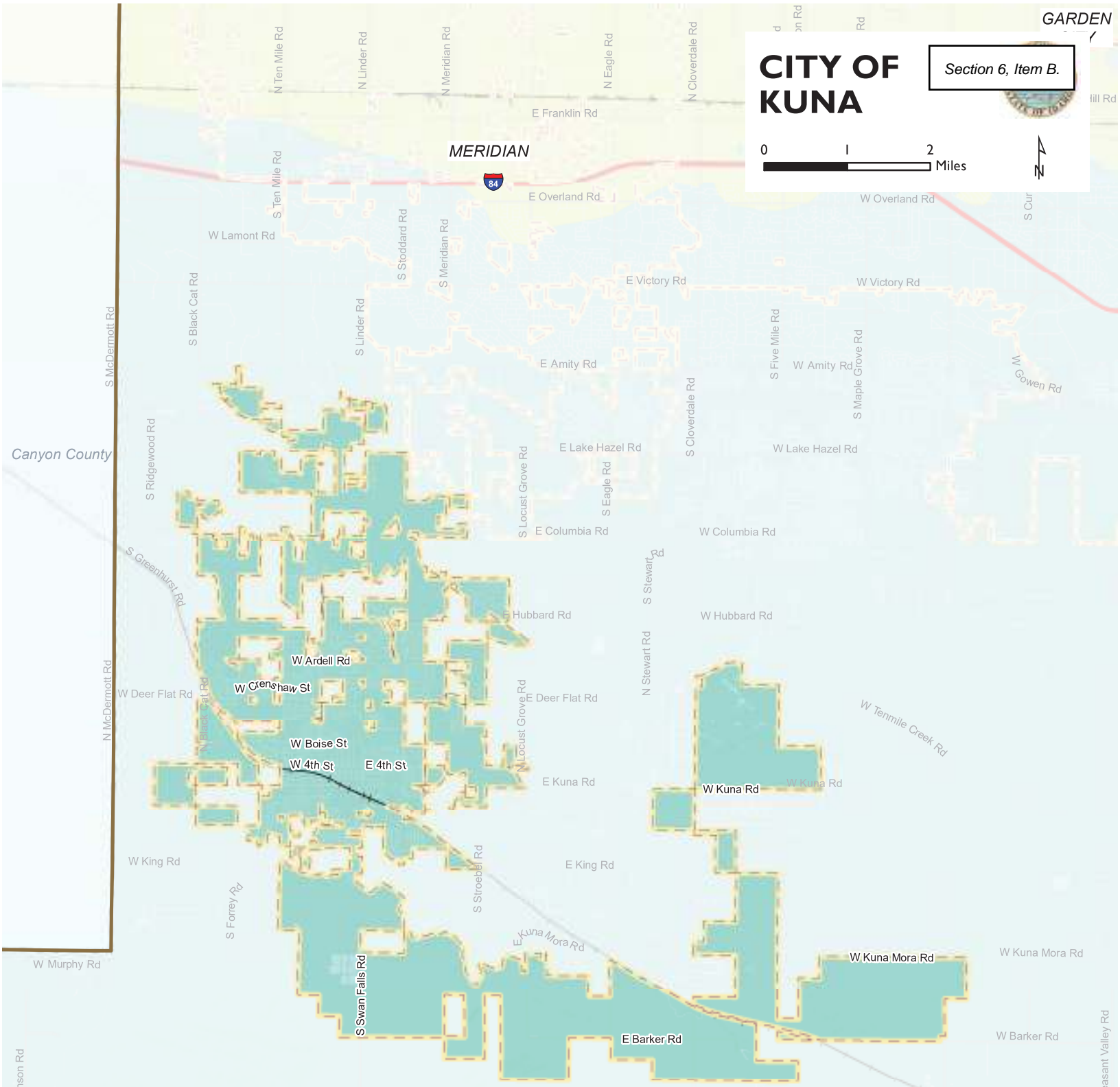
Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

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0 1 2 Miles



Squaw Creek M7.03 Earthquake Scenario

Legend

Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

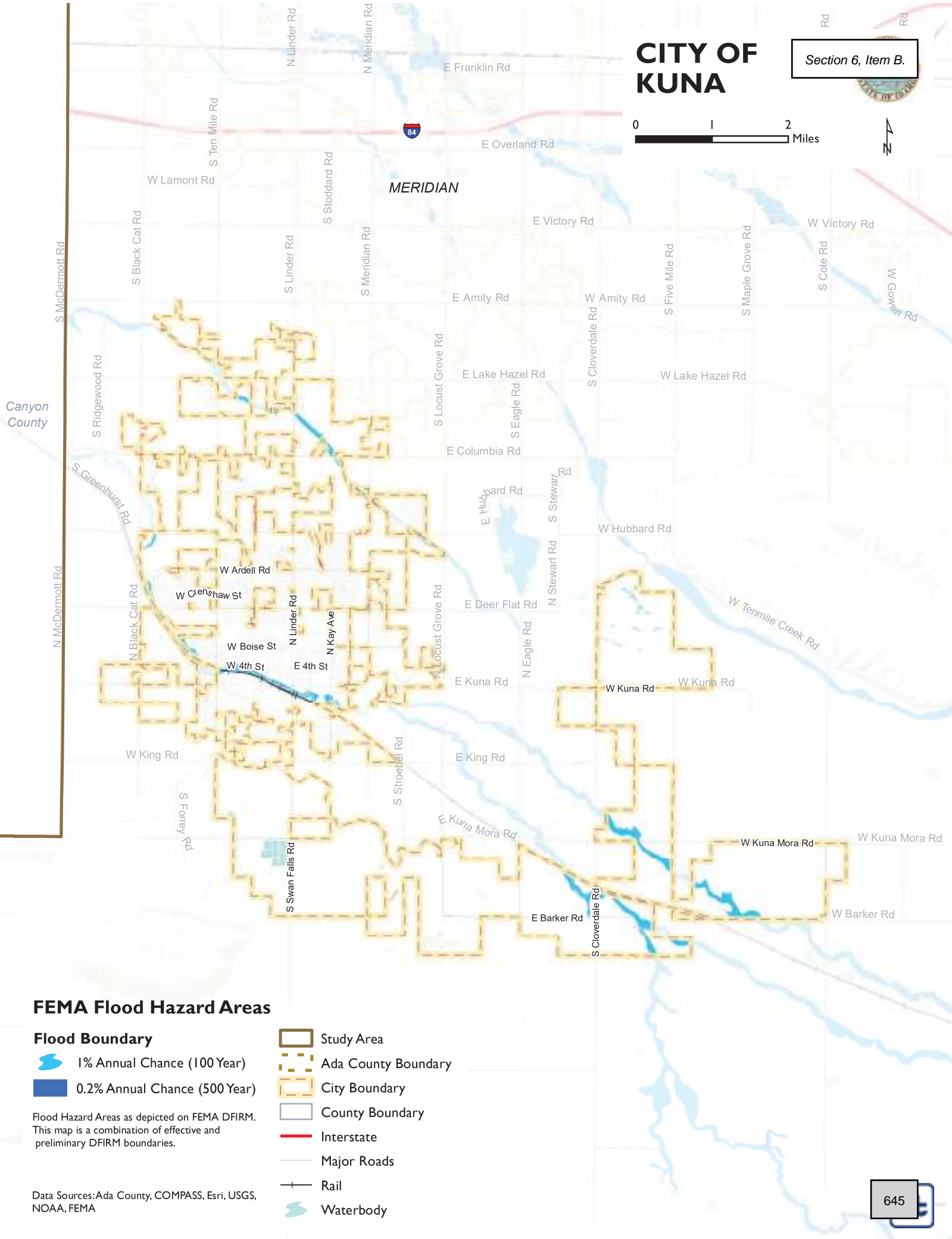
Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA



CITY OF KUNA

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


FEMA Flood Hazard Areas

Flood Boundary

-  1% Annual Chance (100 Year)
-  0.2% Annual Chance (500 Year)

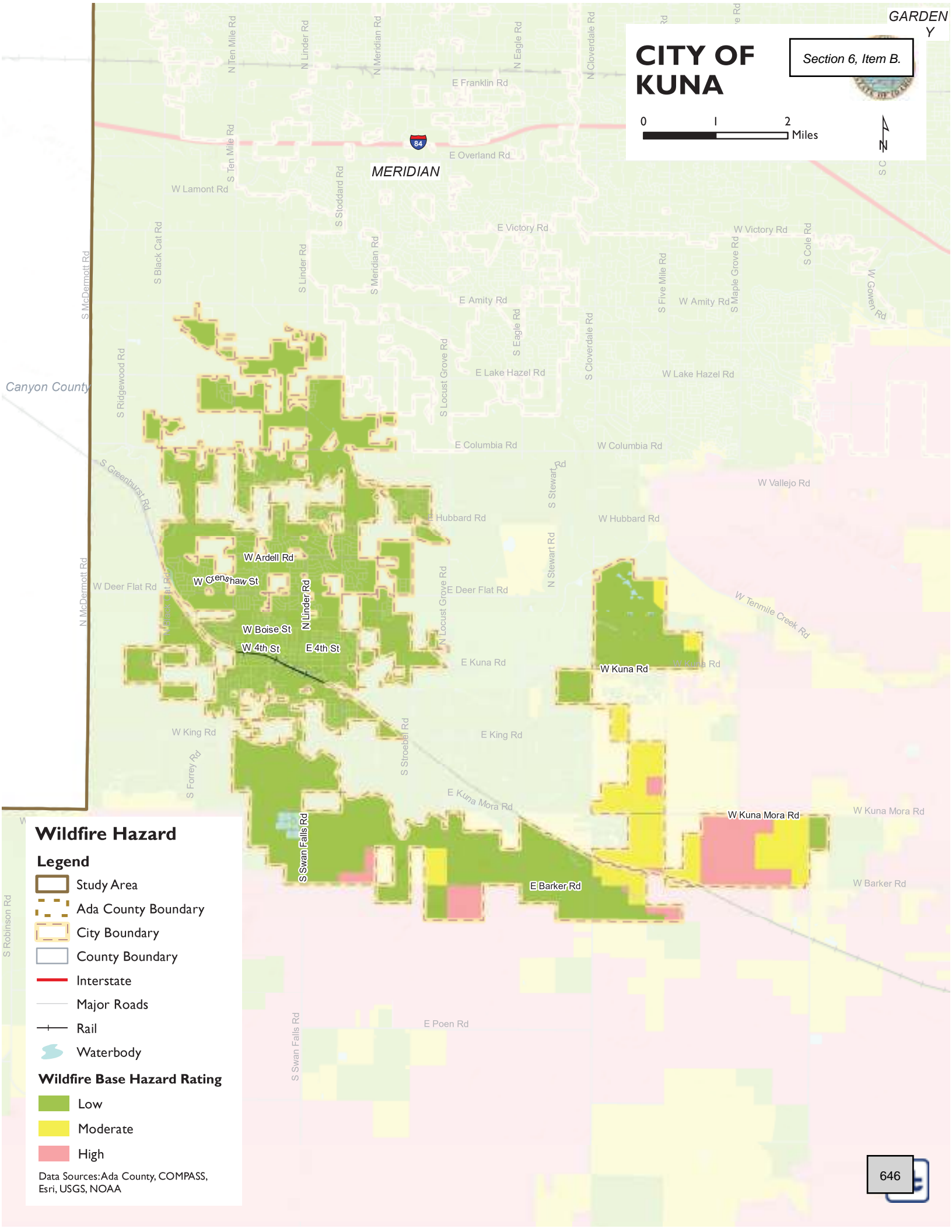
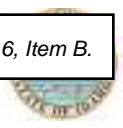
Flood Hazard Areas as depicted on FEMA DFIRM. This map is a combination of effective and preliminary DFIRM boundaries.

-  Study Area
-  Ada County Boundary
-  City Boundary
-  County Boundary
-  Interstate
-  Major Roads
-  Rail
-  Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, FEMA

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MERIDIAN

Wildfire Hazard

Legend

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Wildfire Base Hazard Rating

- Low
- Moderate
- High

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

6. CITY OF MERIDIAN

6.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Jason Korn, Environmental Programs Coordinator
 33 E Broadway Ave
 Meridian, ID 83642
 Telephone: 208-489-0364
 e-mail Address: jkorn@meridiancity.org

Alternate Point of Contact

Joanna Hopson, Business Programs Manager
 33 E Broadway Ave
 Meridian, ID 83702
 Telephone: 208-898-5500
 e-mail Address: jhopson@meridiancity.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 6-1.

Table 6-1. Local Hazard Mitigation Planning Team Members	
Name	Title
Caleb Hood	Planning Division Manager
Joe Bongiorno	Deputy Chief
Jason Korn	Environmental Programs Coordinator
Joanna Hopson	Business Programs Coordinator

6.2 JURISDICTION PROFILE

6.2.1 Location and Features

Meridian is not only geographically located in the center of the Treasure Valley, but it also is the population center of the Treasure Valley; people are evenly distributed in all directions from Meridian. Downtown Meridian is approximately 10 miles from the heart of Boise.

Meridian is favored by a mild, arid climate. July is the hottest month, with the average high temperature of 90° F. January is the coldest month with an average low temperature of 22° F. The normal precipitation pattern in the Meridian area shows a winter high of 1.2 inches of precipitation per month and a very pronounced summer low of about 0.1 inches. Typically, there are 12 inches of annual precipitation.

6.2.2 History

The City of Meridian was incorporated in August 1903. Meridian has transformed from a sagebrush-filled mail drop located on the Oregon Trail in the 1880s, to a small fruit orchard center after the turn of the century through the 1930s, to a dairy-based farming community in the 1940s. Meridian is named for Idaho’s principle meridian

used for the initial survey of the state which coincides with Meridian Road at the center of the City. Its character as a small farming community continued until approximately 1990, when its population was still about 10,000.

6.2.3 Governing Body Format

Meridian uses the Mayor-Council form of local government. In Meridian, the Council, which includes the Mayor, possesses both legislative and executive authority. Departments include: City Clerk, Community Development, Finance, Fire, Human Resources, Legal, Mayor’s Office, Parks & Recreation, Police, and Public Works.

The City Council is responsible for the adoption of this plan, City Departments are responsible for its implementation.

6.3 CURRENT TRENDS

6.3.1 Population

According to COMPASS, the population of the City of Meridian as of April 2022 was 133,470. Since 2017, the population has grown at an average annual rate of 7.2 percent.

6.3.2 Development

As of November 2021, single family housing is the predominant development in Meridian, accounting for 82% of all dwelling units. Additionally, at the end of 2021, Meridian provided 21% of available jobs in Ada County, or 53,035. Meridian seeks to offer a diversity of housing products, create strong and sustainable jobs, improve infrastructure, and support diversified modes of transportation.

Identifying previous and future development trends is achieved through a comprehensive review of permitting since completion of the previous plan and in anticipation of future development. Tracking previous and future growth in potential hazard areas provides an overview of increased exposure to a hazard within a community. Table 6-2 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

Table 6-2. Recent and Expected Future Development Trends

Criterion	Response
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan? <i>If yes, give the estimated area annexed and estimated number of parcels or structures.</i>	Yes
Is your jurisdiction expected to annex any areas during the performance period of this plan? <i>If yes, describe land areas and dominant uses.</i> <i>If yes, who currently has permitting authority over these areas?</i>	Yes Agricultural Ada County
Are any areas targeted for development or major redevelopment in the next five years? <i>If yes, briefly describe, including whether any of the areas are in known hazard risk areas</i>	Yes West Meridian including the Fields Area west of McDermott (north of I-84 south of Chinden. This area includes Tenmile and Fivemile Creek SFHA. South East Meridian south of Amity and generally north of Columbia, between Eagle and Meridian roads. No known hazard risk areas. South West Meridian, south of I-84 west of Tenmile Rd. No know hazard risk areas.

Criterion	Response					
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?	2016	2017	2018	2019	2020	
	Single Family	1368	1428	1812	2109	1867
	Multi-Family	45	86	110	104	111
	Other	66	79	79	110	52
	Total	1569	1692	2171	2273	2076
Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.	<ul style="list-style-type: none"> Special Flood Hazard Areas: 5 new structures since 2016. 1 Mobile Home and 4 Commercial buildings all elevated above BFE. Development on Ninemile, Eightmile and Fivemile Creek floodplains. Landslide: 0 High Liquefaction Areas: 0 Wildfire Risk Areas: 0 					
Describe the level of buildout in the jurisdiction, based on your jurisdiction’s buildable lands inventory. If no such inventory exists, provide a qualitative description.	Total area of Meridian area of annexed is 60.3% with 39.7% not annexed Land use breakdown of area currently annexed compared to area not yet annexed: Residential: 56% annexed / 44% not annexed Mixed Use: 17% annexed / 83% not annexed Employment: 71% annexed / 29% not annexed Civic: 84% annexed / 16 % not annexed					

6.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 6-3.
- Development and permitting capabilities are presented in Table 6-4.
- An assessment of fiscal capabilities is presented in Table 6-5.
- An assessment of administrative and technical capabilities is presented in Table 6-6.
- An assessment of education and outreach capabilities is presented in Table 6-7.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 6-8.
- Classifications under various community mitigation programs are presented in Table 6-9.

Table 6-3. Planning and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, & Requirements				
Building Code <i>Comment: Meridian City Code Title 10, Chapter 1; Adopted 1/12 2020; Ord. #20-1905</i>	Yes	No	Yes	No
Zoning Code <i>Comment: Meridian City Code Title 11, Chapter 2; Adopted 7/8/2008; Ord. #08-1372</i>	Yes	No	No	No
Subdivisions <i>Comment: Meridian City Code Title 11, Chapter 6; Adopted 7/8/2008; Ord. #08-1372</i>	Yes	No	No	No
Stormwater Management <i>Comment: ACHD owns and operates storm drain system on public roadways. City of Meridian Design Standards Section 7, Grading and Drainage Standards.</i>	No	Yes	No	No
Post-Disaster Recovery <i>Comment:</i>	No	No	No	No
Real Estate Disclosure <i>Comment:</i>	No	No	No	No
Growth Management <i>Comment: City of Meridian Comprehensive Plan; Adopted 12/17/2019; Resolution #19-2179</i>	Yes	No	No	No
Site Plan Review <i>Comment: Multiple City Ordinances and Departments.</i>	Yes	No	No	No
Environmental Protection <i>Comment: Multiple City Ordinances and Departments.</i>	Yes	No	No	No
Flood Damage Prevention <i>Comment: Meridian City Code Title 10, Chapter 6; Adopted 5/12/2020; Ord. #20-1879</i>	Yes	No	No	No
Emergency Management <i>Comment: Emergency Management for the City of Meridian is done in partnership with ACCEM. Meridian participates through the EMCR Board as well as representation on TAG (Technical Advisory Group).</i>	Yes	Yes	No	Yes
Climate Change <i>Comment:</i>	No	No	No	No
Planning Documents				
General Plan <i>Is the plan equipped to provide linkage to this mitigation plan? No</i> <i>Comment: City of Meridian Comprehensive Plan; Adopted 12/17/2019; Resolution #19-2179</i>	Yes	No	No	Yes
Capital Improvement Plan <i>How often is the plan updated? Every year, 10-year time frame.</i> <i>Comment: Capital Improvement Plan has been integrated into Comprehensive Financial Plan for FY23-FY32</i>	Yes	No	No	No
Disaster Debris Management Plan <i>Comment: Draft Debris Management Annex awaiting adoption in EOP.</i>	No	Yes	No	Yes
Floodplain or Watershed Plan <i>Comment: The 2022 Ada County Multi-Hazard Mitigation Plan qualifies as a flood hazard management plan under CRS criteria upon its completion and adoption</i>	Yes	No	No	Yes
Stormwater Plan <i>Comment: ACHD owns and operates storm drain system on public roadways and maintains a Stormwater Management Plan. Private Property runoff managed by City of Meridian Design Standards Section 7, Grading and Drainage Standards.</i>	No	Yes	No	No
Urban Water Management Plan <i>Comment:</i>	No	No	No	No
Habitat Conservation Plan <i>Comment:</i>	No	No	No	No

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Economic Development Plan <i>Comment: Meridian has economic development staff and an Urban Renewal Agency, Meridian Development Corp. (MDC). MDC has development plans for various districts including those with flood hazard concerns.</i>	Yes	Yes	No	No
Shoreline Management Plan <i>Comment:</i>	No	No	No	No
Community Wildfire Protection Plan <i>Comment:</i>	No	No	No	No
Forest Management Plan <i>Comment:</i>	No	No	No	No
Climate Action Plan <i>Comment:</i>	Yes	No	No	No
Comprehensive Emergency Management Plan <i>Comment: The City has adopted a Comprehensive Emergency Operations Plan utilizing Emergency Support Functions.</i>	Yes	Yes	No	No
Threat & Hazard Identification & Risk Assessment (THIRA) <i>Comment: Ada County THIRA – September 2018</i>	No	Yes	No	No
Post-Disaster Recovery Plan <i>Comment:</i>	No	No	No	No
Continuity of Operations Plan <i>Comment: Individual Departments have updated COOP plans 2021</i>	Yes	No	No	No
Public Health Plan <i>Comment: Central District Health Department Emergency Operations Plan, 2020. Fire Department does have input on Public Health planning via the ACCESS EMS system.</i>	No	Yes	No	No

Table 6-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? <i>If no, who does? If yes, which department?</i>	Yes Community Development, Building Services
Does your jurisdiction have the ability to track permits by hazard area?	Yes
Does your jurisdiction have a buildable lands inventory?	No

Table 6-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service <i>If yes, specify: Water and sewer utilities</i>	Yes
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes

Table 6-6. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices <i>If Yes, Department /Position:</i> Community Development, Public Works; several positions	Yes
Engineers or professionals trained in building or infrastructure construction practices <i>If Yes, Department /Position:</i> Community Development, Public Works; several positions	Yes
Planners or engineers with an understanding of natural hazards <i>If Yes, Department /Position:</i> Community Development, Public Works; several positions	Yes
Staff with training in benefit/cost analysis <i>If Yes, Department /Position:</i> Community Development, Public Works; several positions	Yes
Surveyors	No
Personnel skilled or trained in GIS applications <i>If Yes, Department /Position:</i> Information Technology, Community Development, Public Works, several positions	Yes
Scientist familiar with natural hazards in local area <i>If Yes, Department /Position:</i> Planning partners available through universities and Idaho Department of Homeland Security	No
Emergency manager <i>If Yes, Department /Position:</i> No dedicated Emergency Manager for the City of Meridian.	No
Grant writers <i>If Yes, Department /Position:</i> Ability to contract for service	Yes

Table 6-7. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes – Mayor’s Office Communications Manager
Do you have personnel skilled or trained in website development?	Yes – Information Technology
Do you have hazard mitigation information available on your website? <i>If yes, briefly describe:</i> Links to Ada County Mitigation websites	Yes
Do you use social media for hazard mitigation education and outreach? <i>If yes, briefly describe:</i> Flood Safety Awareness Week posts	Yes
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe:</i>	No
Do you have any other programs in place that could be used to communicate hazard-related information? <i>If yes, briefly describe:</i> Annual CRS mailings to property owners in floodplain, Social Media and in person outreach events such as Public Works Week.	Yes
Do you have any established warning systems for hazard events? <i>If yes, briefly describe:</i> Code Red – residents may sign up to receive emergency notifications and critical community alerts. Ada County EMCR developed a Joint Information System Plan that delineates the processes with developing a regional joint information system and center for coordinating public information messaging.	Yes

Table 6-8. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Community Development, Public Works
Who is your floodplain administrator? (department/position)	Public Works; City Engineer or Appointee
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	5/12/2020
Does your floodplain management program meet or exceed minimum requirements? <i>If exceeds, in what ways?</i> Several (Low Floor 2' freeboard, Crawlspace 1' freeboard, added buffer of mapped boundaries, etc.)	Exceed
When was the most recent Community Assistance Visit or Community Assistance Contact?	11/6/2017
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed?	No
Are any RiskMAP projects currently underway in your jurisdiction?	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? Many Zone A hazard areas remain on Tenmile Creek and Fivemile Creek that require additional analysis. Many areas are mis-aligned and far from the actual waterway channel.	No
Does your floodplain management staff need any assistance or training to support its floodplain management program? Need ongoing training for CFM certification and cross training backup floodplain management staff	Yes
Does your jurisdiction participate in the Community Rating System (CRS)? <i>If yes, is your jurisdiction interested in improving its CRS Classification?</i> No	Yes
How many flood insurance policies are in force in your jurisdiction? ^a <i>What is the insurance in force?</i> \$32,569,900 <i>What is the premium in force?</i> \$87,637	120
How many total loss claims have been filed in your jurisdiction? ^a <i>What were the total payments for losses?</i> \$-	1

a. According to FEMA statistics as of March 31, 2022

Table 6-9. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	Yes	1600152120	N/A
DUNS #	Yes	028451367	N/A
Community Rating System	Yes	8	7/25/2016
Building Code Effectiveness Grading Schedule	Yes	5	10/19/2020
Public Protection	Yes	ISO Class 3	2020
Storm Ready	Yes	Blue	N/A
Firewise	No	N/A	N/A

6.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as general planning and capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard

mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

6.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **City of Meridian Comprehensive Plan**—The Comprehensive Plan for Meridian currently includes mitigation related policies as they related to the protection of human life and property from flood events. Additionally, the Comprehensive plan addresses the need for natural resource protection and the identification of known hazards within the County.
- **Meridian Flood Damage Prevention Ordinance**—Ordinance integrates with Ada County Multi-Hazard Mitigation Plan goals and objectives.
- **COOP** – The COOP plan for the City of Meridian was completed in 2012 and adopted by City Council.

6.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Comprehensive Plan Existing Conditions Report (ECR)**—Integrate mitigation plan risk assessment into hazardous areas section and reference mitigation actions in specific hazard sections.
- **Comprehensive Financial Plan (CFP)**—Mitigation may be funded, in part, through the City CFP plan and if grant funds are awarded for mitigation they need to be programmed into the CFP.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

6.6 RISK ASSESSMENT

6.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 6-10 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

6.6.2 Hazard Risk Ranking

Table 6-11 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy. Mitigation actions target hazards with high and medium rankings.

Table 6-10. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
Thunderstorm/Microburst	N/A	6/22/2021	Tree broken in half due to thunderstorm outflow winds. Estimated 60MPH wind gusts
Cloudburst Rain Event	N/A	Sept 2013	Unknown
Cloudburst Rain Events	N/A	Aug 2010	Unknown
Wildfires	N/A	Sept 2000	Unknown
Rain & Flooding	N/A	Dec 1964	Unknown

Table 6-11. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	Extreme Weather	33	High
2	Flood	18	Medium
3	Earthquake	16	Medium
4	Drought	9	Low
5	Dam/Canal Failure	6	Low
6	Landslide	6	Low
7	Volcano	6	Low
8	Wildfire	0	Low

6.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for this jurisdiction. Available jurisdiction-specific risk maps of the hazards are provided at the end of this annex.

Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: 0
- Number of FEMA-identified Severe-Repetitive-Loss Properties: 0
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: N/A

Other Noted Vulnerabilities

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Canal failure is a potential vulnerability. Refer to local irrigation districts for vulnerability assessments.

Mitigation actions addressing these issues were prioritized for consideration in the action plan in this annex.

6.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 6-12 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 6-12. Status of Previous Plan Actions

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>Action M-1—Conduct a survey of water, sewer, fire, and police infrastructure including power generation equipment, wastewater treatment plant facilities, communications, and Supervisory Control and Data Acquisition (SCADA) equipment to analyze vulnerability to severe weather and earthquake, then design and execute improvements to mitigate.</p> <p>Comment: Wastewater treatment plant installed new switch for backup generator and has moved above ground power lines underground in 2021. Added new item to address backup power availability at other critical facilities.</p>	✓			
<p>Action M-2—Become a “Firewise Community”</p> <p>Comment: Becoming a Firewise community is still a goal of the Meridian Fire Department as the City expands into more wildfire prone areas.</p>			✓	M-8
<p>Action M-3—Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include but are not limited to: enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.</p> <p>Comment: City of Meridian maintains good standing under the NFIP and continues to enforce flood damage prevention ordinance through floodplain administration program.</p>			✓	M-4
<p>Action M-4—Maintain, and improve where beneficial, participation rating in the Community Rating System (CRS)</p> <p>Comment: City of Meridian currently maintains a CRS Rating of 8 and underwent Cycle Verification in 2020.</p>			✓	M-15
<p>Action M-5—Evaluate surface water protection program, including surface water restoration, stormwater management, capital improvement program integration, and potential regulatory and fee impacts.</p> <p>Comment: The Ada County Highway District operates the storm drain system and maintains a Stormwater Management Plan in the City of Meridian. Potential stream restoration and flood mitigation projects are listed as separate mitigation actions.</p>		✓		
<p>Action M-6—Partner with ACHD to implement a culvert replacement program for approximately 15 crossings of Fivemile, Ninemile, and Tenmile Creeks including design and construction.</p> <p>Comment: Culverts that have yet to be replaced are carried over to new plan.</p>			✓	M-14
<p>Action M-7—Partner with Idaho Transportation Department (ITD) to design and construct culvert improvements on Fivemile Creek at Eagle Rd and the I-84 / Eagle Road Interchange according to recommendations of “Fivemile Creek at Interstate 84—Eagle Road to Wells Street” Hydraulic Report, November 2008.</p> <p>Comment: ITD completed culvert improvements , LOMR effective November 2, 2018</p>	✓			
<p>Action M-8—Assist local irrigation districts with vulnerability assessments on the Ridenbaugh and New York Canal systems in the Meridian Area of Impact.</p> <p>Comment: Project is considered no longer feasible, remove from plan.</p>		✓		
<p>Action M-9—Perform an assessment to determine housing areas that would benefit from foundation elevation projects; and where appropriate, support and assist in grant funding opportunities for retrofitting, purchase or relocation projects.</p> <p>Comment: This action has been re-worded to include all high or medium risk hazard areas.</p>		✓		

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>Action M-10—Integrate Multi-Hazard Mitigation Plan into the City of Meridian's Comprehensive Plan.</p> <p>Comment: <i>The Meridian City Council adopted a new Comprehensive Plan by resolution 19-2179 on December 17th, 2019. Multi-Hazard Mitigation Plan is integrated and referenced in the new comp plan. Sections Livable/Public Safety address hazards and coordination.</i></p>	✓			
<p>Action M-11—Consider appropriate higher regulatory standards that prevent or reduce risk to the built environment from the known hazards of concern.</p> <p>Comment: <i>To date, flood standards are consistent with community needs. Standards higher than the NFIP minimum remain in the new flood damage prevention ordinance effective 6/19/20. Other standards will be evaluated on on-going basis.</i></p>	✓			
<p>Action M-12—Support County-wide initiatives identified in Volume 1.</p> <p>Comment: <i>The city continues to support County-wide initiatives</i></p>			✓	M-19
<p>Action M-13—Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Volume 1.</p> <p>Comment: <i>Meridian continues to support the Ada County Multi-Jurisdictional Hazard Mitigation Plan planning process. Annual progress reporting using BATool.</i></p>			✓	M-3
<p>Action M-14—Provide fire safety, fire prevention and Firewise education to neighborhoods, schools and community via the internet, social media and direct public outreach.</p> <p>Comment: <i>Fire safety and prevention education and outreach program is an ongoing effort of the Meridian Fire Department.</i></p>			✓	M-7
<p>Action M-15—Whenever possible, coordinate with local experts and employ natural environmental processes in mitigation activities that increase ecosystem resilience and reduce the impacts of flooding on the built environment.</p> <p>Comment: <i>Continue to evaluate projects as opportunity arises.</i></p>			✓	M-18

6.8 HAZARD MITIGATION ACTION PLAN

Table 6-13 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 6-14 identifies the priority for each action. Table 6-15 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 613. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
<p>Action M-1—Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.</p> <p>Hazards Mitigated: Wildfire, Extreme Weather, Flood, Earthquake, Dam/Canal Failure, Landslide</p>						
Existing	3, 8, 9	City of Meridian	N/A	High	HMGP, BRIC, FMA	Short-term
<p>Action M-2— Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community, including Flood Damage Prevention Ordinance, Community Risk Assessment and Comprehensive Plan.</p> <p>Hazards Mitigated: Wildfire, Extreme Weather, Flood, Earthquake, Dam/Canal Failure, Landslide, Drought</p>						
New & Existing	2, 5, 6	City of Meridian	Ada County	Low	Staff Time, General Funds	Ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action M-3 —Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
<u>Hazards Mitigated:</u> Wildfire, Extreme Weather, Flood, Earthquake, Dam/Canal Failure, Landslide, Drought, Volcano						
New & Existing	All	City of Meridian	Ada County	Low	Staff Time, General Funds	Short-term
Action M-4 —Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements:						
<ul style="list-style-type: none"> • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts. 						
<u>Hazards Mitigated:</u> Flood						
New & Existing	2, 3, 4, 6, 8, 9	City of Meridian	N/A	Low	Staff Time, General Funds, Enterprise Funds	Ongoing
Action M-5 — Coordinate with community stakeholders in both the public and private sectors to identify and pursue adaptive capacity strategies that could improve community resilience in relation to future climate conditions.						
<u>Hazards Mitigated:</u> Drought, Flood, Extreme Weather, Wildfire						
New & Existing	New & Existing	City of Meridian	N/A	Low	Staff Time, General Funds	Short-term
Action M-6 — Identify and install the most suitable backup power solution for critical facilities and infrastructure that lack adequate backup power. Solutions may vary based on circumstances and could include but are not limited to generators, switches, battery storage, and solar systems.						
<u>Hazards Mitigated:</u> Flood, Extreme Weather, Earthquake						
Existing	1, 3, 10	City of Meridian	N/A	Medium	General Funds, Enterprise Funds, BRIC, HMGP	Long-term
Action M-7 — Provide fire safety, fire prevention and Firewise education to neighborhoods, schools and community via the internet, social media and direct public outreach.						
<u>Hazards Mitigated:</u> Wildfire						
New & Existing	4, 5, 7, 8, 9	City of Meridian	N/A	Low	Staff Time	Ongoing
Action M-8 — Become a “Firewise Community”						
<u>Hazards Mitigated:</u> Wildfire						
New & Existing	4, 5, 7, 8, 9	City of Meridian	N/A	Low	Staff Time	Long-term
Action M-9 — Update the Black’s Creek Reservoir breach analysis and the resulting downstream flood inundation map using the most recent, highest resolution GIS data available. The model suggested for use should be HEC-RAS or an equivalent two-dimensional model that can satisfactorily recognize and address the hydrologic interactions with all natural and constructed geographic features that are located downstream of the facility. The breach analysis will model the reservoir at a full pool condition and will include two (2) scenarios consisting of (1) a non-flood failure (aka “sunny day”), and (2) a flood event failure during the 1% inflow design flood (aka 100-year flood).						
<u>Hazards Mitigated:</u> Flood, Dam/Canal Failure						
New & Existing	2, 6, 7, 8, 9	City of Meridian	N/A	Medium	BRIC, FMA, HMGP	Short-term
Action M-10 — Ensure adequate water supply in drought conditions through purchasing space in new surface water storage projects.						
<u>Hazards Mitigated:</u> Drought, Dam/Canal Failure						
New & Existing	1, 9, 10	City of Meridian	IDWR	High	Enterprise Funds, Federal Grants	Long-term
Action M-11 — Increase community capability for drought resilience by developing a water conservation plan						
<u>Hazards Mitigated:</u> Drought						
New & Existing	1, 2, 5, 6, 8	City of Meridian	N/A	Low	Staff Time, Grants	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
<p>Action M-12— Increase community capability for mitigating landslide risk by developing hillside grading/drainage policies that provide adequate protections in steep topography.</p> <p><u>Hazards Mitigated:</u> Landslide, Flood</p>						
New	2, 4, 5	City of Meridian	N/A	Low	Staff Time	Long-term
<p>Action M-13— Construct Ninemile Creek Flood Mitigation Project as designed to eliminate flood risk to people, property and critical lifelines. The proposed improvements include constructing storm drain infrastructure and pipeline from Story Park to the outlet into the existing Ninemile Creek Channel north of the Union Pacific Railroad tracks. (Coordinates with the Meridian Development Corporations Action MDC-4.)</p> <p><u>Hazards Mitigated:</u> Flood</p>						
Existing	1, 3, 9, 10	City of Meridian	MDC	\$4.5 Million	HMGP, BRIC, MDC, FMA	Short-term
<p>Action M-14— Partner with ACHD to facilitate the replacement of roadway culverts to include design and construction of crossings on Fivemile, Ninemile, Eightmile and Tenmile Creeks. (Coordinates with Ada County Highway District Action ACHD-5)</p> <p><u>Hazards Mitigated:</u> Flood, Extreme Weather</p>						
Existing	1, 3, 9, 10	ACHD	City of Meridian	High	ACHD, General Funds, BRIC, FMA, HMGP	Long-term
<p>Action M-15— Continue to maintain/enhance the City’s classification under the Community Rating System.</p> <p><u>Hazards Mitigated:</u> Flood</p>						
New & Existing	3, 4, 5, 6, 8	City of Meridian	N/A	Low	Staff Time, General Funds, Enterprise Funds	Ongoing
<p>Action M-16— Correct alignment issues on the National Flood Hazard Layer to correctly align with creek channels on Fivemile and Tenmile Creeks to more accurately reflect flood risk.</p> <p><u>Hazards Mitigated:</u> Flood</p>						
New & Existing	2, 9	City of Meridian	FEMA	Low	General Funds, Enterprise Funds, Federal Grants	Long-Term
<p>Action M-17— Conduct detailed hydraulic analysis on remaining FEMA Flood Zone A areas on Fivemile and Tenmile Creeks. Update maps through LOMR to accurately reflect flood risk.</p> <p><u>Hazards Mitigated:</u> Flood</p>						
New & Existing	2, 9	City of Meridian	FEMA	Low	General Funds, Enterprise Funds, Federal Grants	Long-Term
<p>Action M-18— Whenever possible, coordinate with local experts and employ natural environmental processes in mitigation activities that increase ecosystem resilience and reduce the impacts of flooding on the built environment</p> <p><u>Hazards Mitigated:</u> Flood</p>						
New & Existing	2, 5, 9	City of Meridian	N/A	Medium	General Funds, BRIC, FMA, HMGP	Long-Term
<p>Action M-19— Support County-wide initiatives identified in Volume 1.</p> <p><u>Hazards Mitigated:</u> All hazards</p>						
New & Existing	All	City of Meridian	EMCR	Low	Staff Time, General Funds	Short-term

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date
 Acronyms used here are defined at the beginning of this volume.

Table 6-14. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	3	High	High	Yes	Yes	No	Medium	High
2	7	Medium	Low	Yes	No	Yes	High	Low
3	3	Low	Low	Yes	No	Yes	High	Low
4	6	Medium	Low	Yes	No	Yes	High	Low
5	7	Medium	Low	Yes	No	Yes	High	Medium
6	3	High	Medium	Yes	Yes	No	Medium	High
7	5	Low	Low	Yes	No	Yes	Medium	Low
8	5	Low	Low	Yes	No	Yes	Medium	Low
9	5	Medium	Medium	Yes	Yes	No	Medium	High
10	3	High	High	Yes	Yes	No	Medium	Medium
11	5	Medium	Low	Yes	Yes	Yes	Medium	Low
12	3	Medium	Low	Yes	No	Yes	Medium	Low
13	4	High	High	Yes	Yes	No	High	High
14	4	High	High	Yes	Yes	No	Medium	Medium
15	5	Medium	Low	Yes	No	Yes	High	Low
16	2	Medium	Low	Yes	Yes	No	Medium	Medium
17	2	High	Medium	Yes	Yes	No	Medium	Medium
18	3	High	Medium	Yes	Yes	No	Medium	Medium
19	10	Low	Low	Yes	No	Yes	High	Low

a. See the introduction to this volume for explanation of priorities.

Table 6-15. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building ^b
High-Risk Hazards								
Extreme Weather	M-2	M-1	M-5		M-6	M-14	M-5	M-3, 5, 19
Medium-Risk Hazards								
Flood	M-2, 4, 12, 15, 16, 17	M-1	M-4, 5, 9	M-18	M-6	M-13, 14	M-5, 18	M-3, 4, 5, 9, 12, 15, 16, 17, 18, 19
Earthquake	M-2	M-1			M-6			M-3, 19
Low-Risk Hazards								
Drought	M-2, 11		M-5	M-10		M-10	M-5	M-3, 5, 10, 11, 19
Dam/Canal Failure	M-2	M-1	M-9	M-10		M-10		M-3, 9, 10, 19
Landslide	M-2, 12	M-1						M-3, 12, 19
Volcano								M-3, 19
Wildfire	M-2	M-1	M-5, 7, 8				M-5	M-3, 5, 8, 19

a. See the introduction to this volume for explanation of mitigation types.

b. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

6.9 PUBLIC OUTREACH

Table 6-16 lists public outreach activities for this jurisdiction.

Local Outreach Activity	Date	Number of People Involved
Social Media share of Ada County survey posts	12/8/2021	unknown
Meridian Public Works Week – Floodplain Booth HMP information	6/8/2022	unknown

6.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

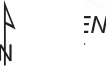
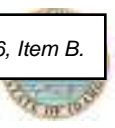
- **2017 Ada County Multi-Hazard Mitigation Plan** – The previous HMP was reviewed to update this annex.
- **City of Meridian Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **City of Meridian Flood Damage Prevention Ordinance**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

CITY OF MERIDIAN

Section 6, Item B.



STAR

W Moon Valley Rd

W Duck Alley Rd

S Artesian Rd
S Trout Rd

W Joplin Rd

N Star Rd

W McMillan Rd

N Linder Rd

N Meridian Rd

N Eagle Rd

W McMillan Rd

W Ustick Rd

W Ustick Rd

N Cloverdale Rd

BOISE

N Five Mile Rd

N Hampton Rd

N Black Cat Rd

N Ten Mile Rd

NW 8th St

NW 4th St

NE 5th St

N Locust Grove Rd

N Eagle Rd

N McDermott Rd

S Ten Mile Rd

W Franklin Rd

N Main St

NE 3rd St

E Franklin Rd

E Franklin Rd

W Franklin Rd

E Watertower St

E Watertower St

S Stoddard Rd

S Meridian Rd

84

E Overland Rd

W Overland Rd

W Lamont Rd

W Victory Rd

W Victory Rd

W Amity Rd

E Amity Rd

S Five Mile Rd

Blacks Creek Dam Failure Inundation Area

Legend

Maximum Pool Inundation Area

Area inundated by dam failure occurring when pool elevation is at the top of the impounding structure.

Study Area

Ada County Boundary

City Boundary

County Boundary

Interstate

Major Roads

Rail

Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, IDWR

KUNA

W Columbia Rd

S Meridian Rd

E Columbia Rd

W Hubbard Rd

S Meridian Rd

N Locust Grove Rd

Hubbard Rd

S Stewart Rd

N Ten Mile Rd

W Ardell Rd

N Linder Rd

E Ardell Rd

N Meridian Rd

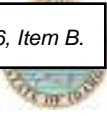
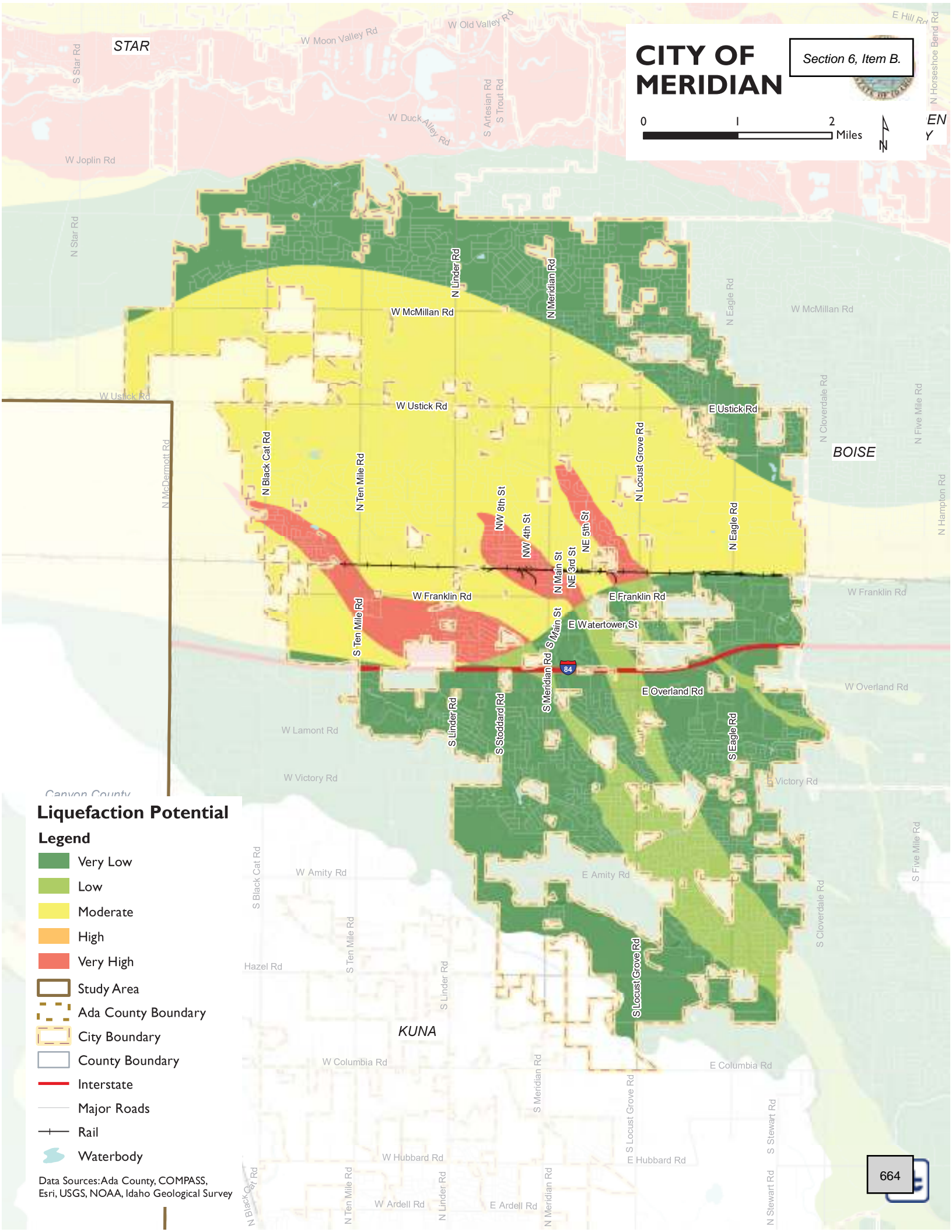
N Locust Grove Rd

N Stewart Rd

S Cloverdale Rd

CITY OF MERIDIAN

Section 6, Item B.

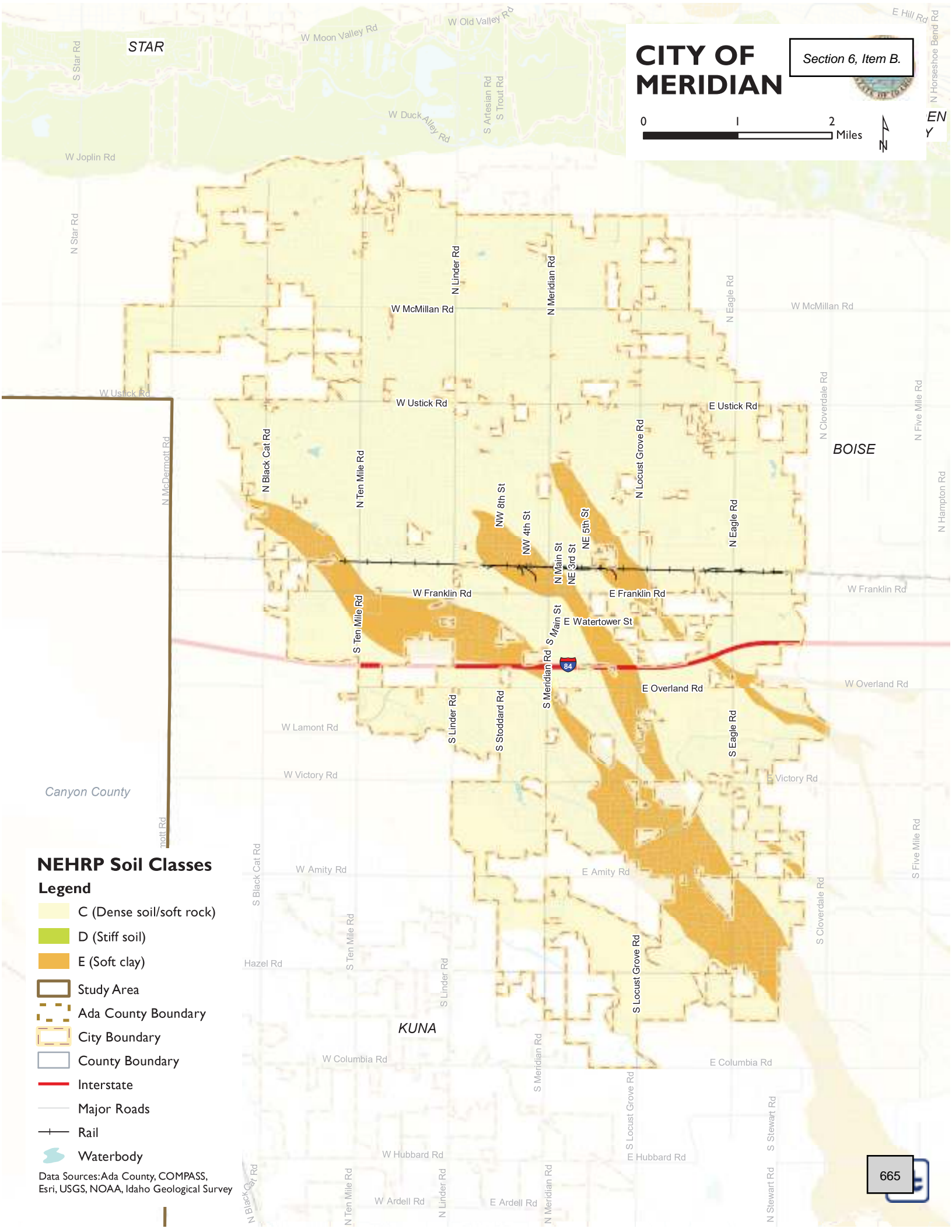
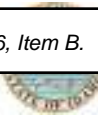
Liquefaction Potential

- Legend**
- Very Low
 - Low
 - Moderate
 - High
 - Very High
 - Study Area
 - Ada County Boundary
 - City Boundary
 - County Boundary
 - Interstate
 - Major Roads
 - Rail
 - Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, Idaho Geological Survey

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NEHRP Soil Classes

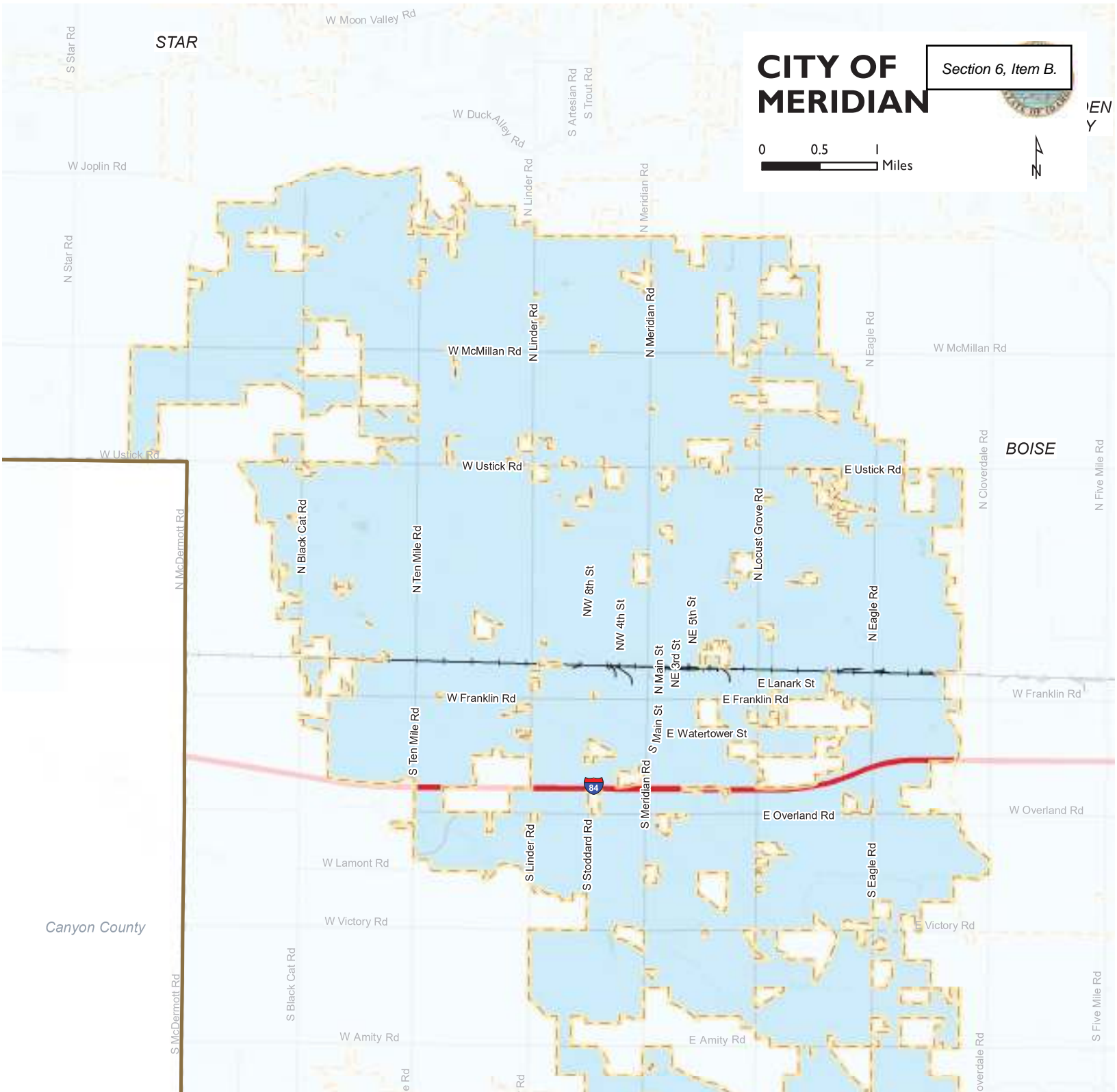
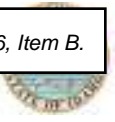
Legend

- C (Dense soil/soft rock)
- D (Stiff soil)
- E (Soft clay)
- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, Idaho Geological Survey

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100-Year Probabilistic Earthquake Scenario

Legend

Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

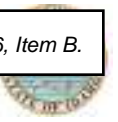
- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Intensity scale described as:
(perceived shaking / potential damage)

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

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0 0.5 1 Miles



GARDEN CITY

500-Year Probabilistic Earthquake Scenario

Legend

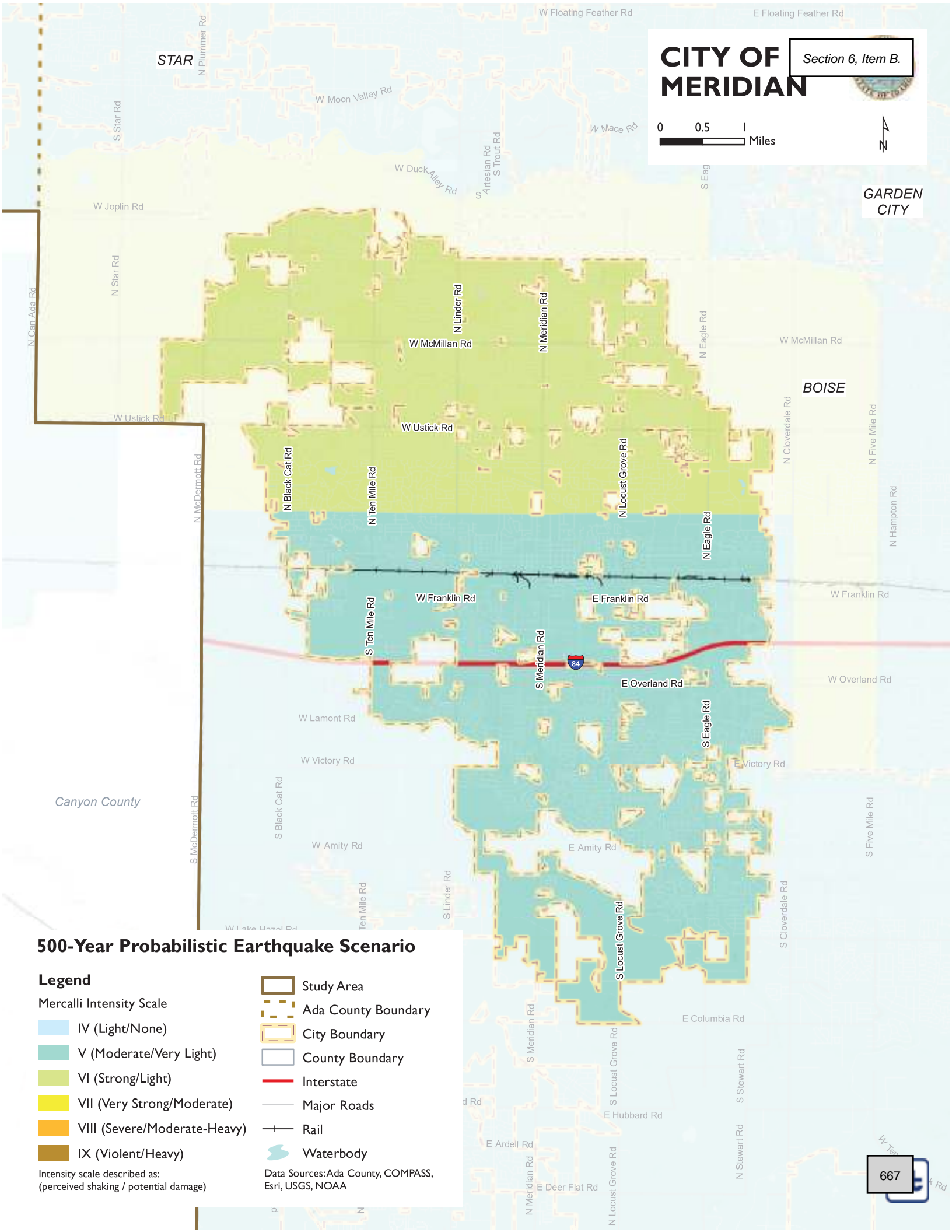
Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

Intensity scale described as:
(perceived shaking / potential damage)

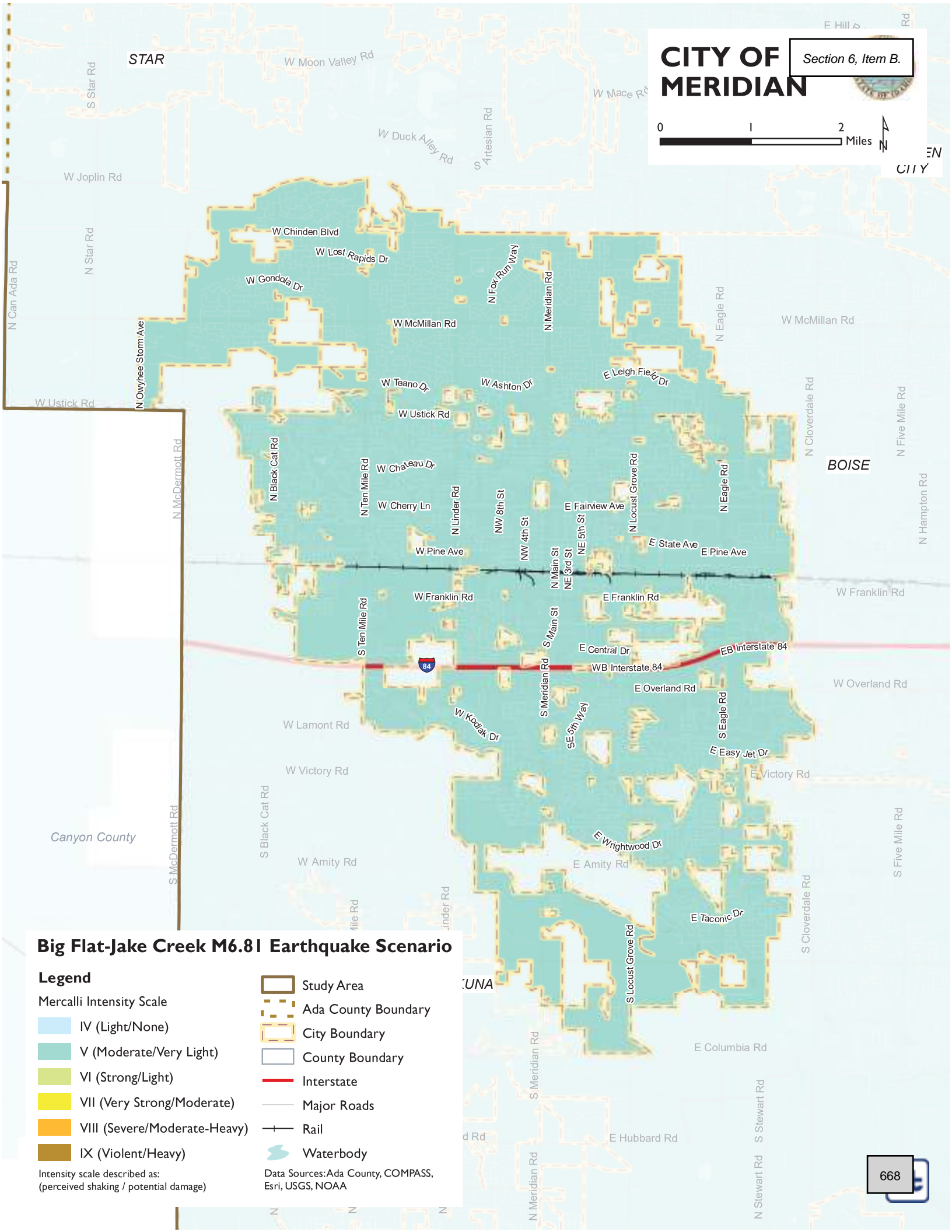
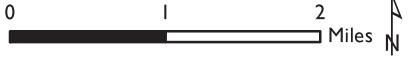
- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA



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Big Flat-Jake Creek M6.81 Earthquake Scenario

Legend

Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

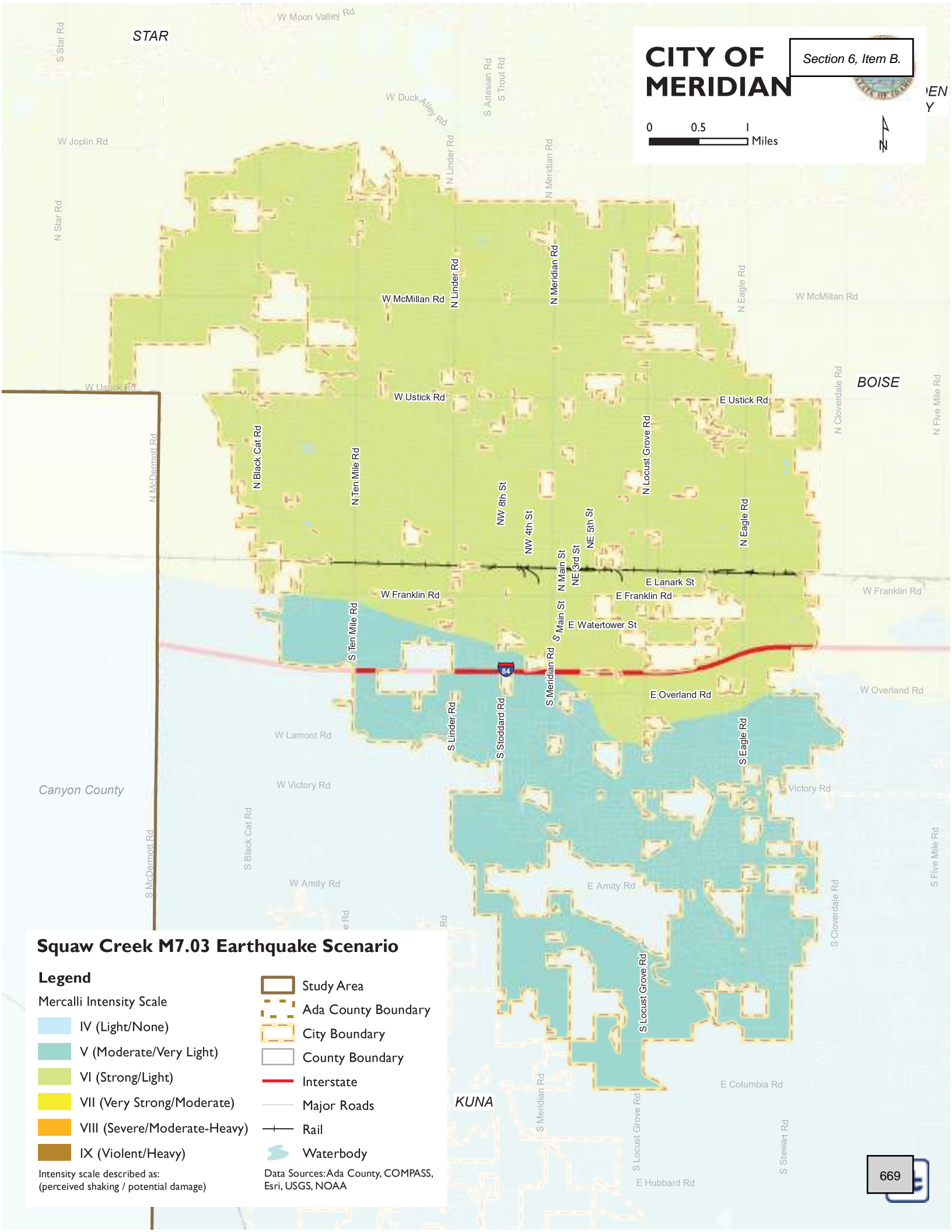
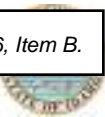
Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

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Squaw Creek M7.03 Earthquake Scenario

Legend

Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

Intensity scale described as:
(perceived shaking / potential damage)

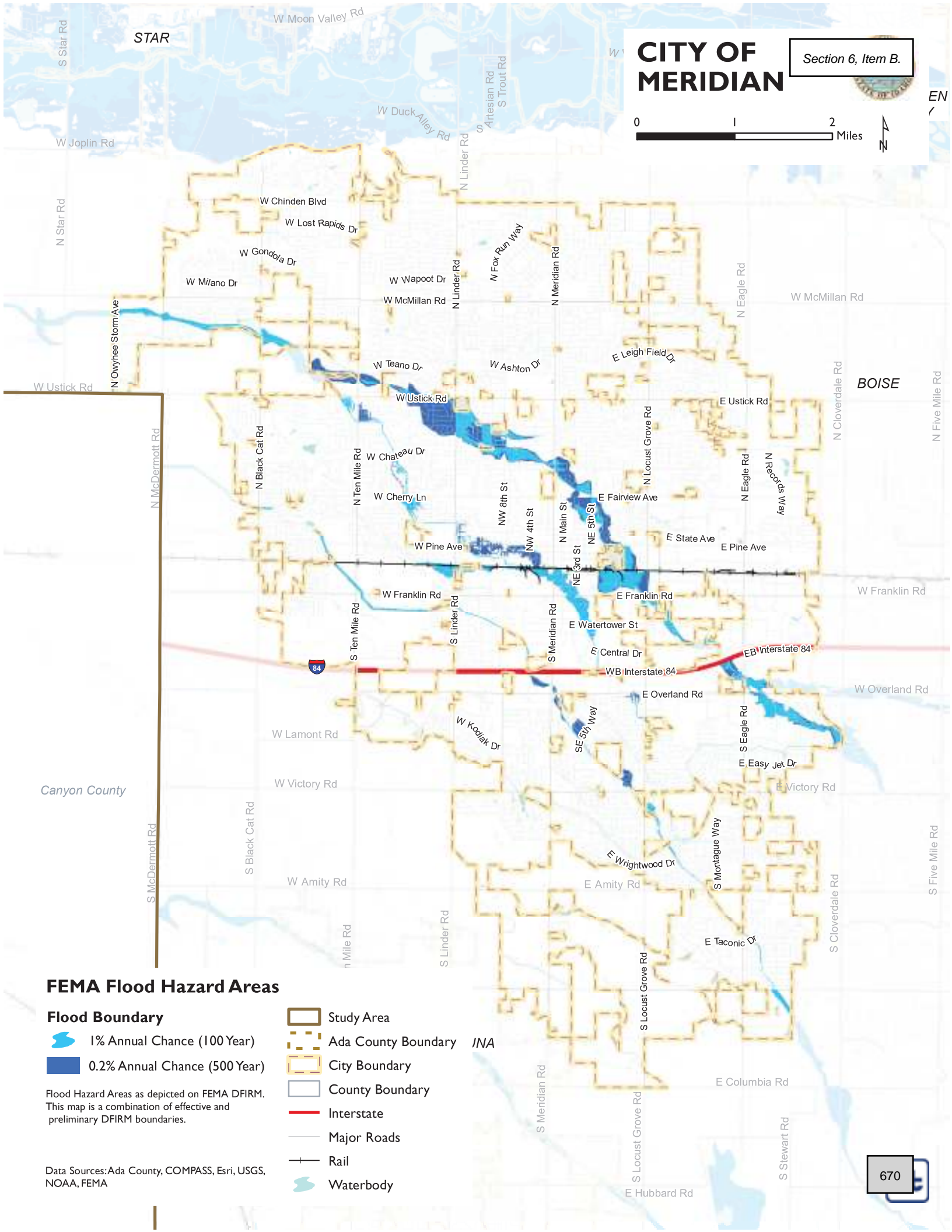
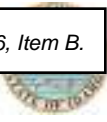
- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

STAR

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FEMA Flood Hazard Areas

Flood Boundary

- 1% Annual Chance (100 Year)
- 0.2% Annual Chance (500 Year)

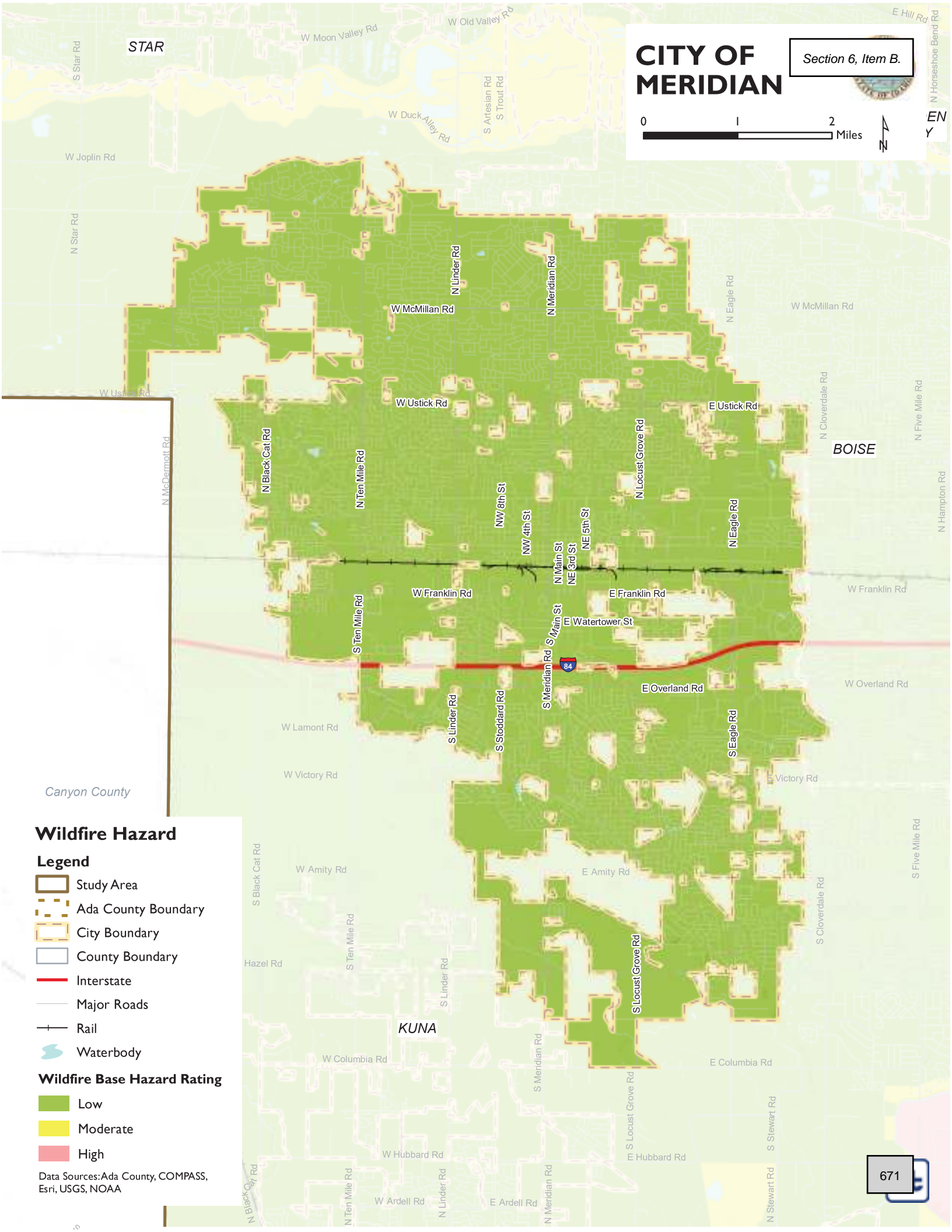
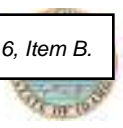
Flood Hazard Areas as depicted on FEMA DFIRM. This map is a combination of effective and preliminary DFIRM boundaries.

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody
- INA

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, FEMA

CITY OF MERIDIAN

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Wildfire Hazard

Legend

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Wildfire Base Hazard Rating

- Low
- Moderate
- High

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

7. CITY OF STAR

7.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Jacob Qualls, City Clerk / Treasurer
 10769 West State Street
 PO Box 130
 Star, ID 83669
 Telephone: 208-908-5452
 e-mail Address: jqalls@staridaho.org

Alternate Point of Contact

Trevor A. Chadwick, Mayor
 10769 West State Street
 PO Box 130
 Star, ID 83669
 Telephone: 208-286-7247
 e-mail Address: tchadwick@staridaho.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 7-1.

Table 7-1. Local Hazard Mitigation Planning Team Members

Name	Title
Jacob Qualls	City Clerk / Treasurer
Trevor Chadwick	Mayor
Shawn Nickel	City Planner
Ryan Field	Assistant City Planner
Bob Little	Buildings & Grounds Maintenance Supervisor
Ryan Morgan	Floodplain Administrator
Dana Partridge	Public Information Officer
Eddie Gomez	Building Permit Technician Lead

7.2 JURISDICTION PROFILE

7.2.1 Location and Features

The City of Star is located on the Boise River 10 miles west of Boise.

The current boundaries generally extend from Highway 20/26 (Chinden), Highway 16, Floating Feather Road, CanAda Road and into Kingsbury within Canyon County, encompassing an area of about 25 square miles.

The City of Star is located approximately 2,467-feet above sea-level and enjoys a mild climate. Star has an annual average precipitation of 11.76-inches. Most of the precipitation occurs between the months of November to May. The average annual snowfall is 9.7-inches, with killing frosts as early as December and as late as February. There

are approximately 212-frost free days in Star from December to March. This allows for a relatively long growing season. Winters in Star, though cold, are generally not severe. Summer days are hot, while nights are relatively cool. The average maximum temperature is 62.9-degrees Fahrenheit and the average minimum temperature is 39.5-degrees Fahrenheit. Northwesterly winds prevail with intermittent southeasterly winds in winter and spring. The climate is favorable for many agricultural pursuits in the area. The current crops in the area vary widely from wheat, oats, corn, beans, mint, hay, pasture, alfalfa and clover seed, to sugar beets, potatoes, and many specialty seed crops.

7.2.2 History

The City of Star was incorporated on December 22, 1905 and dis-incorporated around the 1929 and then reincorporated on December 10, 1997. The first location of the village of Star is approximately one mile to the east of the present City of Star; approximately halfway between the present town of Star and Star Emmett junction. The first schoolhouse was built there in the 1870s on land donated by B.F. Swalley. When the settlers finished building the schoolhouse, they could not decide on a name for the building. One of the men carved out a star and nailed it to the front door; pounding nails all around the edge of the star. This became an important landmark for miles around and was a guide for travelers and miners. When the visitors came to the schoolhouse with the star on the door, they could travel west one mile and find board and lodging for the night. So in time, the town became known as Star. In 1905, Star incorporated and established City limits reaching four miles in all directions. During the early part of the 20th century the town flourished with places growing rapidly and merchants doing good business. The town had a mayor, marshal, constable, and justice of the peace. The jail was a frame building located just east of the Odd fellows Lodge Hall. By the time the new interurban arrived, at least 20 new buildings had been erected.

Rapid growth came with the of the Boise Interurban Railway. Growth continued in 1909 with at least 30 new buildings erected. In the early 1900s, Main Street periodically served as a race track. Horse races were a big event with most everyone and often followed by a baseball game. Impromptu races down Main Street were not limited to specific holidays but could arise from on-the-spot challenges. Other activities included a weekly debating society where issues of the day such as railroads, Sunday laws, and women's rights were discussed. Also, there was a literary society, Star School sporting events, and skating rink. An evening outing for a party of young people included chartering a trolley excursion to Boise and back. Star Trading Days were stock sales held every third Saturday of each month.

7.2.3 Governing Body Format

Star has a strong-mayor form of Municipal Government with four council members. The Council assumes responsibility for the adoption of this plan, and is responsible for its implementation.

7.3 CURRENT TRENDS

7.3.1 Population

According to COMPASS, the population of the City of Star as of April 2022 was 15,230. Since 2017, the population has grown at an average annual rate of 12.8 percent.

7.3.2 Development

- Residential Land Uses—Rural-Urban Interface Issues—Citizens of the Treasure Valley and beyond have been moving to the City of Star and surrounding area. Land, which was part of the Area of City Impact of Star, has been purchased and entitlements have been received for residential development. There are concerns of the farming and the former farming community that they are losing the quaint small rural City. It is recognized that the City of Star is going through a transition, where the rural community is interfacing the urban community.
- Existing Residential Development—Residential land use patterns in the City limits include existing parcels of 1 to 5- acres, single family subdivisions, Planned Unit Development and Master Planned Communities. Housing types include, attached and detached single family dwelling units, patio homes and multi-family dwelling units.
- Civic Land Uses—The Star City hall houses all City offices. The Star Library, which is managed by the Ada County Library District, the Star Water and Sewer District and the Star Fire District Station are located in the Central Business District on Highway 44. The Star Senior Center is located at 102 Main Street.
- Open Spaces—The most important amenity is the Boise River which is located one mile south of Highway 44. It is available for fishing, hiking and viewing of wildlife. Currently, a greenbelt does not exist, but the City has approximately 60-acres along the river for recreation development. Blake Haven Park is located on Star Road across from Star Elementary School. Hunter’s Creek and Pavilion Park are the newest additions to the city’s park system. Pavilion Park has an additional dog park within it called Waggin Tails Dog Park. Some of the new subdivisions have developed open space for their residents, but not all are public facilities. The city is also requiring many of the new developments which abut canals to provide a pathway along these canals and waterways and tie into the city’s pathway system..
- Commercial—Commercial land uses are generally located along Highway 44 and Star Road. A range of professional offices, retail, restaurant and other services are located along these corridors. There are a number of home occupations in Star, but the actual numbers have not been identified.
- Industrial and High Technical Land Uses—Industrial manufacturing or high-tech land uses are currently LIMITED in Star, with the exception of a new development at Highway 44 and Highway 16 in the northwest corner.

Identifying previous and future development trends is achieved through a comprehensive review of permitting since completion of the previous plan and in anticipation of future development. Tracking previous and future growth in potential hazard areas provides an overview of increased exposure to a hazard within a community. Table 7-2 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

Table 7-2. Recent and Expected Future Development Trends

Criterion	Response
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan? <i>If yes, give the estimated area annexed and estimated number of parcels or structures.</i>	Yes
	2,039.38 acres 896 homes 196 apartments 4,075 open lots
Is your jurisdiction expected to annex any areas during the performance period of this plan? <i>If yes, describe land areas and dominant uses.</i> <i>If yes, who currently has permitting authority over these areas?</i>	Yes
	Residential Planning and Building Department

Criterion	Response					
<p>Are any areas targeted for development or major redevelopment in the next five years? <i>If yes, briefly describe, including whether any of the areas are in known hazard risk areas</i></p>	<p style="text-align: right;">Yes</p> <p>Development is planned for 4,500 buildable mixed-use lots encompassing 1,500 acres (approximately 95% residential, 5% commercial, and golf course) in the WUI on the northern boundary of the city.</p>					
<p>How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?</p>	2016	2017	2018	2019	2020	
	Single Family	206	334	269	326	592
	Multi-Family	7	0	0	0	0
	Other	63	73	139	173	109
	Total	276	407	408	499	701
<p>Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.</p>	<ul style="list-style-type: none"> 30-40% of new-construction permits are in the flood hazard area. 					
<p>Describe the level of buildout in the jurisdiction, based on your jurisdiction’s buildable lands inventory. If no such inventory exists, provide a qualitative description.</p>	<p>The city is approximately 90% built-out, but as private property owners continue to request to be annexed into the city limits of Star; the city is expected to continue to grow in the next five years.</p>					

7.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 7-3.
- Development and permitting capabilities are presented in Table 7-4.
- An assessment of fiscal capabilities is presented in Table 7-5.
- An assessment of administrative and technical capabilities is presented in Table 7-6.
- An assessment of education and outreach capabilities is presented in Table 7-7.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 7-8.
- Classifications under various community mitigation programs are presented in Table 7-9.

Table 7-3. Planning and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, & Requirements				
Building Code	Yes	No	Yes	No
<i>Comment:</i> Title 7.1, Star City Code; Local Land Use Planning Act, Idaho Code 67-6508				
Zoning Code	Yes	No	No	Yes
<i>Comment:</i> Title 8, Star City Code; Local Land Use Planning Act, Idaho Code 67-6508				
Subdivisions	Yes	No	No	No
<i>Comment:</i> Title 8.6, Star City Code; Local Land Use Planning Act, Idaho Code 67-6508				
Stormwater Management	Yes	No	Yes	Yes
<i>Comment:</i> Title 8.4, Star City Code: Local Land Use Planning Act, Idaho Code 67-6508				
Post-Disaster Recovery	No	No	No	No
<i>Comment:</i>				
Real Estate Disclosure	No	No	No	No
<i>Comment:</i>				
Growth Management	No	Yes	No	No
<i>Comment:</i> Ada County Comprehensive Plan, adopted 11/26/2007; Ada Co. Zoning ordinance-Title 8, ACC, adopted 12/8/2010				
Site Plan Review	Yes	No	No	No
<i>Comment:</i> Title 8, Chapter 4-ACC adopted: 12/8/2010				
Environmental Protection	Yes	No	No	Yes
<i>Comment:</i> Titles 3, 5, 7, 8, 10, Star City Code; Local Land Use Planning Act, Idaho Code 67-6508				
Flood Damage Prevention	Yes	No	No	Yes
<i>Comment:</i> Title 10, Star City Code; Local Land Use Planning Act, Idaho Code 67-6508				
Emergency Management	No	Yes	No	Yes
<i>Comment:</i> Ada County Emergency Management Plan				
Climate Change	No	No	No	No
<i>Comment:</i>				
Planning Documents				
General Plan	Yes	No	No	Yes
<i>Is the plan equipped to provide linkage to this mitigation plan?</i> Yes				
<i>Comment:</i> Comprehensive Plan, 2008; It was updated in 2020 with additions and changes and it now called “City of Star Comprehensive Plan – Shining Bright Into the Future – 2040 and Beyond” and 2021 and the Plan is being updated as of the creation of this All-Hazard Mitigation Plan once again in 2022. Additionally, there is a South of the River Sub-Area Plan which was adopted in 2021/2022 as a supplement to the Star Comprehensive Plan.				
Capital Improvement Plan	Yes	Yes	Yes	Yes
<i>How often is the plan updated?</i> As required by law for Impact Fee Implementation and as CIP Projects are completed.				
<i>Comment:</i> The city has many capital improvement plans; which include the city’s own Parks. Other plans the City utilizes are the Canyon Highway District 4 Capital Improvement Plan; Ada County Highway District Capital Improvement policies; Idaho Transportation Capital Improvement Plans and Policies; Star Fire Capital Improvement Plans; Star Water & Sewer District Capital Improvement Plans and; Ada County Sheriff’s Office Capital Improvements Plans which are being developed,				
Disaster Debris Management Plan	No	No	No	No
<i>Comment:</i>				

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Floodplain or Watershed Plan <i>Comment:</i> Title 10, Star City Code, 2008 Comprehensive Plan, required under Local Land Use Planning Act, Idaho Code 67-6508. Note: once complete, the Ada County All Hazards Mitigation Plan-update will become the floodplain management plan of record for all communities within the planning area that participate in the CRS program. The City also has updated its Flood Control Code in 2021 – Ordinance 336 (Title 10 of the City of Star Code).	Yes	No	No	Yes
Stormwater Plan <i>Comment:</i> Star City complies with the requirements as per EPA requirements in NPDES, and IDWR requirements. ACHD holds NPDES Permit. City is responsible for Stormwater Pollution Prevention associated with City Projects.	Yes	No	No	Yes
Urban Water Management Plan <i>Comment:</i>	No	No	No	No
Habitat Conservation Plan <i>Comment:</i> Comprehensive Plan – Chapter 9	Yes	No	No	Yes
Economic Development Plan <i>Comment:</i> 2011- Downtown Revitalization Plan	Yes	No	No	Yes
Shoreline Management Plan <i>Comment:</i> Comprehensive Plan – Chapter 9	Yes	No	No	Yes
Community Wildfire Protection Plan <i>Comment:</i> Comprehensive Plan – Chapter 9	No	No	No	Yes
Forest Management Plan <i>Comment:</i>	No	No	No	No
Climate Action Plan <i>Comment:</i> Title 10, Star City Code, 2008 Comprehensive Plan, required under Local Land Use Planning Act, Idaho Code 67-6508. Note: once complete, the Ada County All Hazards Mitigation Plan-update will become the floodplain management plan of record for all communities within the planning area that participate in the CRS program.	Yes	No	No	Yes
Comprehensive Emergency Management Plan <i>Comment:</i>	No	No	No	No
Threat & Hazard Identification & Risk Assessment (THIRA) <i>Comment:</i>	No	No	No	No
Post-Disaster Recovery Plan <i>Comment:</i>	No	No	No	No
Continuity of Operations Plan <i>Comment:</i>	No	No	No	No
Public Health Plan <i>Comment:</i> Central District Health Department Emergency Operations Plan, 2013	No	Yes	No	No

Table 7-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? <i>If no, who does? If yes, which department?</i>	Yes Planning & Zoning Department
Does your jurisdiction have the ability to track permits by hazard area?	We are developing a computer system to help track. Currently we are using local knowledge, city engineer to help identify these areas.
Does your jurisdiction have a buildable lands inventory?	Yes

Table 7-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
<i>If yes, specify:</i>	
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	None
<i>If yes, specify:</i>	

Table 7-6. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices <i>If Yes, Department /Position:</i> Building & Planning Department	Yes
Engineers or professionals trained in building or infrastructure construction practices <i>If Yes, Department /Position:</i> Building & Planning Department	Yes
Planners or engineers with an understanding of natural hazards <i>If Yes, Department /Position:</i> Building & Planning Department	Yes
Staff with training in benefit/cost analysis <i>If Yes, Department /Position:</i> Can contract with County	Yes
Surveyors <i>If Yes, Department /Position:</i> Planning / City Engineer (hired and contracted)	Yes
Personnel skilled or trained in GIS applications <i>If Yes, Department /Position:</i>	No
Scientist familiar with natural hazards in local area <i>If Yes, Department /Position:</i> Can contract with County	Yes
Emergency manager <i>If Yes, Department /Position:</i> Ada County Emergency Management	Yes
Grant writers <i>If Yes, Department /Position:</i> Can contract with County	Yes
Other <i>If Yes, Department /Position:</i>	No

Table 7-7. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? <i>If yes, briefly describe:</i>	No
Do you use social media for hazard mitigation education and outreach? <i>If yes, briefly describe:</i> Facebook, Instagram, Website, Mailchimp, Star Courier	Yes
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe:</i>	No
Do you have any other programs in place that could be used to communicate hazard-related information? <i>If yes, briefly describe:</i> We are developing processes to reverse 911 and communicate with our citizens as needed during an emergency.	No
Do you have any established warning systems for hazard events? <i>If yes, briefly describe:</i> Code Red/ISAWS – residents may sign up to receive emergency notifications and critical community alerts. Both systems are IPAWS enabled and may additionally access that integrated system for public warnings.	Yes

Table 7-8. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Planning
Who is your floodplain administrator? (department/position)	Planning / Engineer / City Clerk
Are any certified floodplain managers on staff in your jurisdiction?	Yes
What is the date that your flood damage prevention ordinance was last amended?	05/04/2021
Does your floodplain management program meet or exceed minimum requirements? <i>If exceeds, in what ways?</i> 2-foot freeboard, more open space than federal requirements, surface utilities are required to be 6" above BFE.	Exceeds
When was the most recent Community Assistance Visit or Community Assistance Contact?	CAV 1/24/2007, CAC 4/10/2008 \Update
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <i>If so, state what they are.</i>	No
Are any RiskMAP projects currently underway in your jurisdiction? <i>If so, state what they are.</i>	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <i>If no, state why.</i>	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? <i>If so, what type of assistance/training is needed?</i> General floodplain management training.	Yes
Does your jurisdiction participate in the Community Rating System (CRS)? <i>If yes, is your jurisdiction interested in improving its CRS Classification?</i> <i>If no, is your jurisdiction interested in joining the CRS program?</i> Yes	No
How many flood insurance policies are in force in your jurisdiction? ^a <i>What is the insurance in force?</i> \$25,245,100 <i>What is the premium in force?</i> \$53,249	80
How many total loss claims have been filed in your jurisdiction? ^a <i>What were the total payments for losses?</i> \$0	0

a. According to FEMA statistics as of March 31, 2022

Table 7-9. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	Yes	1600176870	N/A
DUNS #	Yes	788973753	N/A
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	No	10/10	N/A
Public Protection	Yes	4/9	N/A
Storm Ready	Yes	Blue	N/A
Firewise	No	N/A	N/A
Tsunami Ready	No	N/A	N/A

7.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as general planning and capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

7.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **City of Star Comprehensive Plan**—The 2021 Comprehensive Plan includes mitigation related policies as they relate to the protection of human life and property from natural hazard events.
- **Star City Code**—The city code defines construction regulations for areas of the City within a floodplain.
- **Ada County Comprehensive Plan**—The Comprehensive Plan for Ada County currently includes mitigation related policies as they relate to the protection of human life and property from flood events. Additionally, the Comprehensive plan addresses the need for natural resource protection and the identification of known hazards within the County.
- **Ada County Wildfire Response Plan**—The Wildfire Response Plan for Ada County includes procedures that will mitigate risk to human life and property from a wildfire.

7.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Star City, Star Sewer & Water District, and Star Joint Fire Protection District Joint Emergency Operation Plan (EOP)**—This joint plan has not been developed, but the Multi-Hazard Mitigation Plan hazard and risk data will inform the EOP.

- City of Star Continuity of Operation Plan (COOP)—This plan has not been developed, but the Multi-Hazard Mitigation Plan hazard and risk data will inform the COOP.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

7.6 RISK ASSESSMENT

7.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 7-10 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 7-10. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
COVID-19 Pandemic	DR-4534	1/20/2020 - ongoing	N/A
Flooding	DR-4342	March 29 – June 15, 2017	Public Assistance Countywide: \$4,493,792
Hail	N/A	3/21/2016	One-inch hail
Hail	N/A	5/26/2015	Hail up to 1.5 inches at Floating Feather Road and Pollard Lane
Severe Wind	N/A	3/29/2009	\$33,000 (countywide)
Severe Wind	N/A	4/27/1995	\$50,000 (countywide)
Borah Peak M7.3 Earthquake	N/A	1988	-
Flooding	N/A	6/1983	\$147,000 (countywide)
Hebgen Lake M7.5 Earthquake	N/A	1959	-
Flooding	N/A	1943	Unknown

7.6.2 Hazard Risk Ranking

Table 7-11 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy. Mitigation actions target hazards with high and medium rankings.

Table 7-11. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	Extreme Weather	33	High
2	Dam/Canal Failure	18	Medium
3	Flood	18	Medium
4	Earthquake	16	Medium
5	Landslide	12	Low
6	Wildfire	12	Low
7	Drought	9	Low
8	Volcano	6	Low

7.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for this jurisdiction. Available jurisdiction-specific risk maps of the hazards are provided at the end of this annex.

Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: 0
- Number of FEMA-identified Severe-Repetitive-Loss Properties: 0
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: N/A

Other Noted Vulnerabilities

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- County levee along Boise River in Star area is not functional or maintained.

Mitigation actions addressing these issues were prioritized for consideration in the action plan in this annex.

7.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 7-12 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 7-12. Status of Previous Plan Actions				
Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Action S-1 —Consider participation in the Community Rating System <i>Comment: Still pending consideration.</i>			✓	S-9
Action S-2 —Integrate Multi-Hazard Mitigation Plan into City of Star Comprehensive Plan <i>Comment: Once adopted it will be in the new update of the comprehensive plan adopted by council resolution</i>	✓			
Action S-3 —Consider appropriate higher regulatory standards that prevent or reduce risk to the built environment from the known hazards of concern. <i>Comment: May 4, 2021 – Title 10 of the Star City Code</i>	✓			
Action S-4 —Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with properties with exposure to repetitive losses as a priority. <i>Comment: No properties have been identified yet.</i>			✓	S-1

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>Action S-5—Evaluate riverbank integrity of the Boise River in the areas of interface with buildings and infrastructure. Determine and employ the best methodology to either repair damaged areas or harden other areas that may directly threaten buildings or infrastructure during high flow events.</p> <p><i>Comment: Working with FCD 10 to identify and make improvements.</i></p>			✓	S-10
<p>Action S-6—Develop a Joint Emergency Operation Plan with Star City and Star Joint Fire Protection District: This plan is necessary to establish a single, comprehensive framework for the management of domestic incidents. The City of Star will lead this all-discipline action, but Star Sewer & Water District will aid in planning for all hazards.</p> <p><i>Comment: Need to review and edit the 2014 EOP as needed per AAR's from exercises and real world events.</i></p>			✓	S-7
<p>Action S-7—Develop a Continuity of Operation Plan: This plan will provide specific policies and procedures that will be carried out in the event of an emergency, including localized acts of nature, accidents, and technological or attack-related emergencies. The plan will address how the District will continue to perform essential functions in the event of compromised facilities or leadership, and how the District will return to normal operations.</p> <p><i>Comment: Carry over. Will address when staff time is available.</i></p>			✓	S-8
<p>Action S-8—Support County-wide Initiatives Identified in Volume 1 of the Multi-Hazard Mitigation Plan</p> <p><i>Comment: Ongoing</i></p>			✓	
<p>Action S-9—Actively Participate in the Plan Maintenance Protocols Outlines in Volume 1 of the Multi-Hazard Mitigation Plan</p> <p><i>Comment: Ongoing</i></p>			✓	S-3
<p>Action S-10—Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include but are not limited to; enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.</p> <p><i>Comment: May 5, 2021 – Title 10 of the Star City Code</i></p>			✓	S-4
<p>Action S-11—Provide fire safety, fire prevention and Firewise education to neighborhoods, schools and community via the internet, social media and direct public outreach.</p> <p><i>Comment: Ongoing effort in partnership with Star Joint Fire District.</i></p>			✓	S-11

7.8 HAZARD MITIGATION ACTION PLAN

Table 7-13 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 7-14 identifies the priority for each action. Table 7-15 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 7-13. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
<p>Action S-1—Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.</p> <p><u>Hazards Mitigated:</u> Extreme Weather, Dam/Canal Failure, Flood, Earthquake, Landslide, Wildfire</p>						
Existing	3, 8, 9	Star Building Department	N/A	High	HMGP, BRIC, FMA	Short-term
<p>Action S-2— Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community.</p> <p><u>Hazards Mitigated:</u> Extreme Weather, Dam/Canal Failure, Flood, Earthquake, Landslide, Wildfire, Drought</p>						
New & Existing	2, 5, 6	Planning	N/A	Low	Staff Time, General Funds	Ongoing
<p>Action S-3—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.</p> <p><u>Hazards Mitigated:</u> Extreme Weather, Dam/Canal Failure, Flood, Earthquake, Landslide, Wildfire, Drought, Volcano</p>						
New & Existing	1, 2, 6, 7, 8, 9, 10	City of Star	N/A	Low	Staff Time, General Funds	Short-term
<p>Action S-4—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements:</p> <ul style="list-style-type: none"> • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts. <p><u>Hazards Mitigated:</u> Flood</p>						
New & Existing	1, 2, 4, 5, 6, 8	Planning	N/A	Low	Staff Time, General Funds	Ongoing
<p>Action S-5—Identify and pursue strategies to increase adaptive capacity to climate change.</p> <p><u>Hazards Mitigated:</u> Drought, Flood, Extreme Weather, Wildfire</p>						
New & Existing	2, 3, 4, 6, 9, 10	Public Works	N/A	Low	Staff Time, General Funds	Short-term
<p>Action S-6— Purchase generators for critical facilities and infrastructure that lack adequate backup power.</p> <p><u>Hazards Mitigated:</u> Extreme Weather, Dam/Canal Failure, Flood, Earthquake, Landslide, Wildfire</p>						
Existing	1, 3, 10	Public Works	N/A	High	HMGP, BRIC	Short-term
<p>Action S-7— Develop a Joint Emergency Operation Plan with the City of Star, Star Sewer and Water District, and Star Joint Fire Protection District: This plan is necessary to establish a single, comprehensive framework for the management of domestic incidents. The City of Star will lead this all-discipline action, but Star Sewer and Water District and Star Joint Fire Protection District will aid in planning for all hazards. (Coordinates with Star Sewer and Water District Action SSW-4 and Star Joint Fire Protection District SFD-5)</p> <p><u>Hazards Mitigated:</u> Extreme Weather, Dam/Canal Failure, Flood, Earthquake, Landslide, Wildfire, Drought, Volcano</p>						
New & Existing	All	City of Star	SSW District, Star Joint Fire Protection District	Low	City Funds, District Funds, HMGP	Short-term
<p>Action S-8— Develop a Continuity of Operation Plan: This plan will provide specific policies and procedures that will be carried out in the event of an emergency, including localized acts of nature, accidents, and technological or attack-related emergencies.</p> <p><u>Hazards Mitigated:</u> Extreme Weather, Dam/Canal Failure, Flood, Earthquake, Landslide, Wildfire, Drought, Volcano</p>						
New & Existing	All	City of Star	N/A	Medium	City Funds, HMGP	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action S-9 — Consider feasibility of participation in the Community Rating System						
<i>Hazards Mitigated:</i> Flood						
New & Existing	1, 2, 4, 5, 6, 7, 8, 9	City of Star	N/A	Low	General Fund, Surface Water Utility Fund	Short-term
Action S-10 — Evaluate riverbank integrity of the Boise River in the areas of interface with buildings and infrastructure. Determine and employ the best methodology to either repair damaged areas or harden other areas that may directly threaten buildings or infrastructure during high flow events. (Coordinates with Flood Control District #10 Action FCD10-16)						
<i>Hazards Mitigated:</i> Flood, Severe Weather, Dam/Canal Failure						
New & Existing	1, 2, 9, 10	City of Star	FCD#10	Medium	HMGP, FCD #10, City of Star CIP Funding	Long-term
Action S-11 — Increase GIS capacity by providing training for existing staff or hiring staff to support GIS needs.						
<i>Hazards Mitigated:</i> Extreme Weather, Dam/Canal Failure, Flood, Earthquake, Landslide, Wildfire, Drought, Volcano						
New & Existing	1, 2, 7	City of Star	N/A	Medium	City Funds	Short-term
Action S-12 — Provide fire safety, fire prevention and Firewise education to neighborhoods, schools and community via the internet, social media and direct public outreach. (Coordinates with Star Joint Fire Protection District Action SFD-6)						
<i>Hazards Mitigated:</i> Wildfire						
New & Existing	8, 9	City of Star	Star Joint Fire Protection District	Low	City Funds, District Funds	Ongoing

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date
 Acronyms used here are defined at the beginning of this volume.

Table 7-14. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	3	High	High	Yes	Yes	No	Medium	High
2	7	Medium	Low	Yes	No	Yes	High	Low
3	3	Low	Low	Yes	No	Yes	High	Low
4	6	Medium	Low	Yes	No	Yes	High	Low
5	7	Medium	Low	Yes	No	Yes	High	Medium
6	3	High	Medium	Yes	Yes	No	Medium	High
7	10	Low	Low	Yes	Yes	No	High	Medium
8	10	Low	Low	Yes	Yes	No	High	Medium
9	8	Medium	Low	Yes	No	Yes	High	Low
10	4	Medium	Medium	Yes	Yes	No	Medium	Medium
11	3	Low	Low	Yes	No	Yes	High	Low
12	2	Low	Low	Yes	No	Yes	High	Low

a. See the introduction to this volume for explanation of priorities.

Table 7-15. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building ^b
High-Risk Hazards								
Extreme Weather	S-2	S-1			S-6, 7, 8	S-10	S-5	S-2, 3, 5, 7, 8, 10, 11
Medium-Risk Hazards								
Dam/Canal Failure	S-2	S-1			S-6, 7, 8	S-10		S-2, 3, 7, 8, 10, 11
Flood	S-2, 4, 9	S-1, 9	S-4		S-6, 7, 8	S-10	S-5	S-2, 3, 4, 5, 7, 8, 9, 10, 11
Earthquake	S-2	S-1			S-6, 7, 8			S-2, 3, 7, 8, 11
Low-Risk Hazards								
Landslide	S-2	S-1			S-6, 7, 8		S-5	S-2, 3, 5, 7, 8, 11
Wildfire	S-2	S-1	S-12		S-6, 7, 8			S-2, 3, 7, 8, 11
Drought	S-2				S-7, 8		S-5	S-2, 3, 5, 7, 8, 11
Volcano					S-7, 8			S-3, 7, 8, 11

- a. See the introduction to this volume for explanation of mitigation types.
- b. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

7.9 PUBLIC OUTREACH

Table 7-16 lists public outreach activities for this jurisdiction.

Table 7-16. Local Public Outreach

Local Outreach Activity	Date	Number of People Involved
South of the River Plan community involvement	April, 2021	200+ at one event
Continually of adoption of ordinances and annexations	ongoing	500+
New updates to the Comprehensive Plan - mailing to 6,443 households & commercial businesses (2.9 factor)	June 2022 - planned	approximately 18,000 people reach
Monthly newsletter to all rooftops and PO boxes within zip code utilizing Star Courier and email blasts, social media interactions	Ongoing	1800 email addresses

7.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **2017 Ada County Multi-Hazard Mitigation Plan** – The previous HMP was reviewed to update this annex.
- **City of Star Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.

- **City of Star Flood Damage Prevention Ordinance**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.

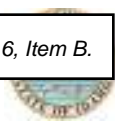
The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

W Chaparral Rd

CITY OF STAR

Section 6, Item B.



0 0.75 1.5 Miles



Canyon County

EAGLE

W Lanktree Gulch Rd

N Hartley Rd

W Beacon Light Rd

W Floating Feather Rd

N Lanewood Rd

W Gambrell St

N Star Rd

W State St

S Star Rd

W Main St

W Moon Valley Rd

W Duck Alley Rd

W Joplin Rd

N Cain Ada Rd

N Star Rd

MERIDIAN

W McMillan Rd

N McDermott Rd

N Black Cat Rd

N Ten Mile Rd

W Ustick Rd

Lucky Peak Dam Failure Inundation Area

Legend

Maximum Pool Inundation Area

Area inundated by dam failure occurring when pool elevation is at the top of the impounding structure.

Study Area

Ada County Boundary

City Boundary

County Boundary

Interstate

Major Roads

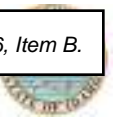
Rail

Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, IDWR

CITY OF STAR

Section 6, Item B.



0 0.7 1.4 Miles



Canyon County

EAGLE

W Beacon Light Rd

N Hartley Rd

W Floating Feather Rd

W Floating Feather Rd

W Gambrell St

N Star Rd

W State St

S Star Rd
W Main St

W Moon Valley Rd

W Joplin Rd

MERIDIAN

N Can-Ada Rd

N Star Rd

W McMillan Rd

N McDermott Rd

N Black Cat Rd

N Ten Mile Rd

W Ustick Rd

Liquefaction Potential

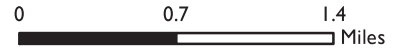
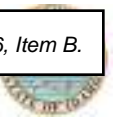
Legend

- Very Low
- Low
- Moderate
- High
- Very High
- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, Idaho Geological Survey

CITY OF STAR

Section 6, Item B.



Canyon County

EAGLE

W Lanktree Gulch Rd

N Hartley Rd

W Beacon Light Rd

W Floating Feather Rd

W Floating Feather Rd

W Gambrell St

N Star Rd

W State St

S Star Rd

S Wain St

W Moon Valley Rd

W Joplin Rd

MERIDIAN

N Cam Ada Rd

N Star Rd

W McMillan Rd

N McDermott Rd

N Black Cat Rd

N Ten Mile Rd

W Ustick Rd

NEHRP Soil Classes

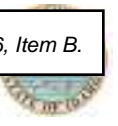
Legend

- C (Dense soil/soft rock)
- D (Stiff soil)
- E (Soft clay)
- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, Idaho Geological Survey

CITY OF STAR

Section 6, Item B.



Canyon County

EAGLE

W Lanktree Gulch Rd

W Beacon Light Rd

N Hartley Rd

W Floating Feather Rd

W Floating Feather Rd

W Gambrell St

N Star Rd

W State St

S Star Rd

W Main St

W Moon Valley Rd

W Joplin Rd

N Star Rd

W McMillan Rd

N McDermott Rd

N Black Cat Rd

N Ten Mile Rd

W Ustick Rd

100-Year Probabilistic Earthquake Scenario

Legend

Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

Intensity scale described as:
(perceived shaking / potential damage)

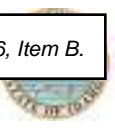
- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

MERIDIAN

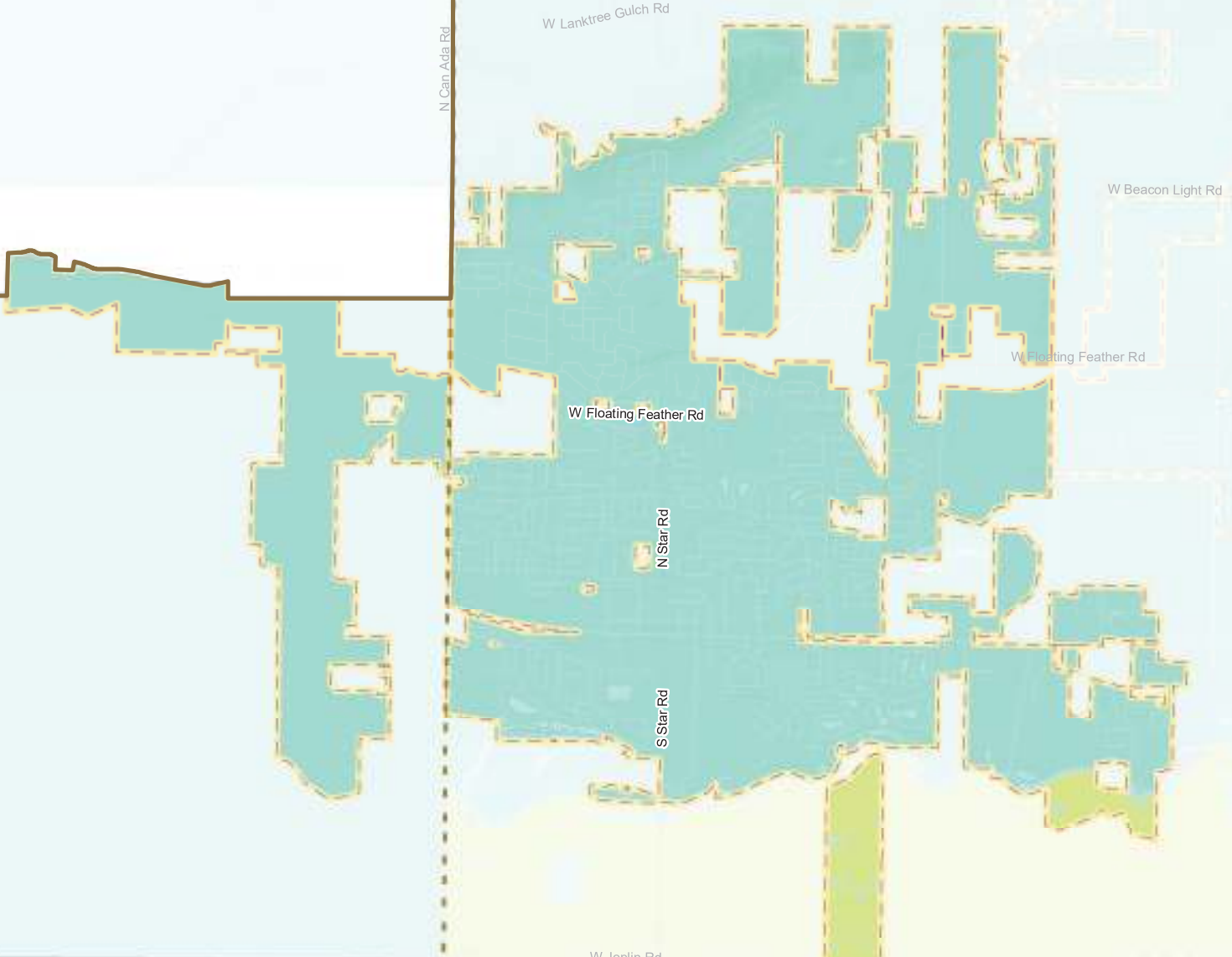
CITY OF STAR

Section 6, Item B.



Canyon County

EAGLE



500-Year Probabilistic Earthquake Scenario

Legend

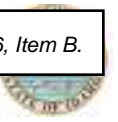
Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- + Rail
- Waterbody

Intensity scale described as:
(perceived shaking / potential damage)

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA



0 0.5 1 Miles



Canyon County

EAGLE

N Can. Ada Rd

W Lanktree Gulch Rd

N Hartley Rd

W Beacon Light Rd

W Floating Feather Rd

W Floating Feather Rd

N Star Rd

S Star Rd

W Joplin Rd

Big Flat-Jake Creek M6.8I Earthquake Scenario

Legend

Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

N Star Rd

N McDermott Rd

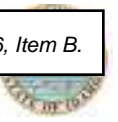
MERIDIAN

N Black Cat Rd

W McMillan Rd

CITY OF STAR

Section 6, Item B.



Canyon County

EAGLE

W Lanktree Gulch Rd

N Hartley Rd

W Beacon Light Rd

W Floating Feather Rd

W Floating Feather Rd

W Gambrell St

N Star Rd

W State St

S Star Rd

Main St

W Moon Valley Rd

W Joplin Rd

N Star Rd

MERIDIAN

W McMillan Rd

N Black Cat Rd

N Ten Mile Rd

N McDermott Rd

Squaw Creek M7.03 Earthquake Scenario

Legend

Mercalli Intensity Scale

- IV (Light/None)
- V (Moderate/Very Light)
- VI (Strong/Light)
- VII (Very Strong/Moderate)
- VIII (Severe/Moderate-Heavy)
- IX (Violent/Heavy)

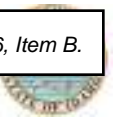
Intensity scale described as:
(perceived shaking / potential damage)

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- + Rail
- Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

CITY OF STAR

Section 6, Item B.



0 0.5 1 Miles



Canyon County

W Lanktree Gulch Rd

N Can. Ada Rd

EAGLE

W Beacon Light Rd

W Floating Feather Rd

W Floating Feather Rd

N Star Rd

S Star Rd

W Joplin Rd

N Star Rd

N McDermott Rd



N Black Cat Rd

MERIDIAN









W McMillan Rd

FEMA Flood Hazard Areas

Flood Boundary

-  1% Annual Chance (100 Year)
-  0.2% Annual Chance (500 Year)

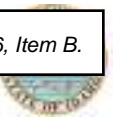
Flood Hazard Areas as depicted on FEMA DFIRM. This map is a combination of effective and preliminary DFIRM boundaries.

-  Study Area
-  Ada County Boundary
-  City Boundary
-  County Boundary
-  Interstate
-  Major Roads
-  Rail
-  Waterbody

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA, FEMA

CITY OF STAR

Section 6, Item B.

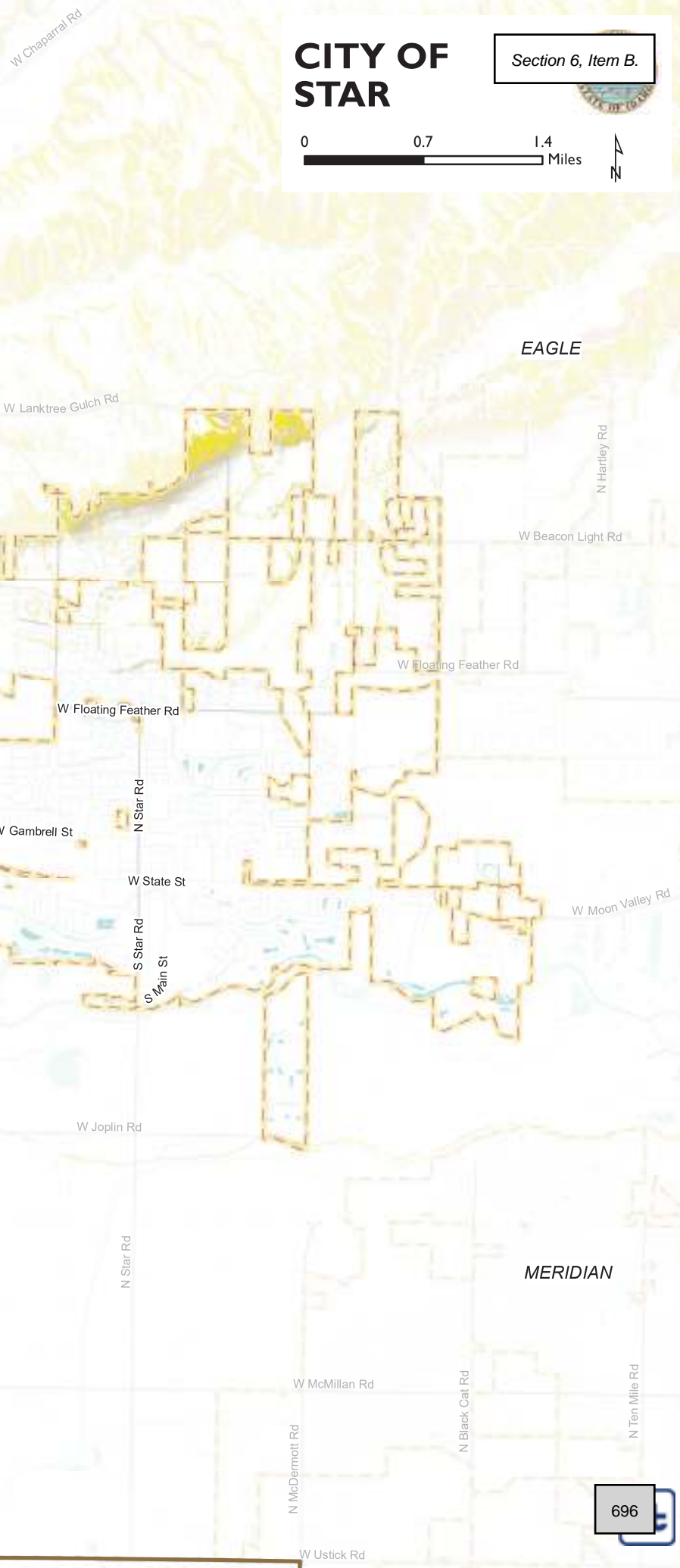


0 0.7 1.4 Miles



Canyon County

EAGLE



Landslide Hazard

Legend

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

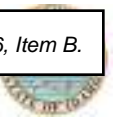
Slope

- 15 – 30%
- Greater than 30%

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

CITY OF STAR

Section 6, Item B.



0 0.7 1.4 Miles



Canyon County

EAGLE

W Lanktree Gulch Rd

N Hartley Rd

W Beacon Light Rd

W Floating Feather Rd

W Floating Feather Rd

W Gambrell St

N Star Rd

W State St

S Star Rd

S Wain St

W Moon Valley Rd

W Joplin Rd

MERIDIAN

N Star Rd

W McMillan Rd

N McDermott Rd

N Black Cat Rd

N Ten Mile Rd

W Ustick Rd

N Cam Ada Rd

Wildfire Hazard

Legend

- Study Area
- Ada County Boundary
- City Boundary
- County Boundary
- Interstate
- Major Roads
- Rail
- Waterbody

Wildfire Base Hazard Rating

- Low
- Moderate
- High

Data Sources: Ada County, COMPASS, Esri, USGS, NOAA

8. ADA COUNTY HIGHWAY DISTRICT

8.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Lloyd Carnegie, Maintenance Manager
 3775 Adams Street
 Garden City, ID 83714
 Telephone: 208-387-6319
 e-mail Address: lcarnegie@achdidaho.org

Alternate Point of Contact

Dale Kuperus, District Engineer
 3775 Adams Street
 Garden City, ID 83714
 Telephone: 208-387-6222
 e-mail Address: dkuperus@achdidaho.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 8-1.

Table 8-1. Local Hazard Mitigation Planning Team Members

Name	Title
Tom Ferch	Transportation Funding Coordinator
Lloyd Carnegie	Maintenance Manager
Dale Kuperus	District Engineer

8.2 JURISDICTION PROFILE

8.2.1 Overview

The Ada County Highway District (ACHD) owns and maintains 5,274 lane miles of roads and streets and approximately 826 bridges in Ada County with an estimated non-depreciated value of \$2.125 billion. ACHD was established by referendum on May 25, 1971 and commenced operations on January 1, 1972. It is a separate unit of local government responsible for all roads, bridges, streets, alleys and public rights-of-way in Ada County, except for those designated as part of the state or federal Highway system. ACHD has approximately 383 employees. Funding comes from various sources including property taxes, State Highway Users Funds, Development Impact Fees, cost sharing payments, Ada County Registration Fees, State Sales Tax and other miscellaneous sources. ACHD is governed by a five-member Commission.

The ACHD Commission assumes responsibility for the adoption of this plan; The ACHD Director will oversee its implementation.

8.2.2 Service Area

The district serves a population of 518,300 as of 2021. Its service area covers an area of 1,060 square miles, which has a total value of \$68,519,741,700.

8.2.3 Assets

Table 8-2 summarizes the assets of the District and their value.

Table 8-2. Special Purpose District Assets	
Asset	Value
Property	
227 acres of land	\$30,776,000
Equipment	
(1) Forklift	\$140,000
(4) Graders	\$1,800,000
(5) Backhoe / Excavators	\$800,000
(6) Platform / Bucket Trucks	\$1,150,000
(1) Crane Truck	\$350,000
(2) Heavy Duty Tractors	\$300,000
(6) Dump Trucks – 5 yard	\$1,440,000
(46) Heavy Duty TA Dump Trucks – 12 Yard	\$11,270,000
(7) Heavy Duty Vacuum Trucks	\$3,710,000
(11) Mechanical Sweepers	\$4,015,000
(23) Vacuum Sweepers	\$8,395,000
(7) Track Excavators	\$1,075,000
(1) Dozer	\$500,000
(7) Wheel Loaders	\$2,450,000
(14) Rollers	\$1,750,000
(3) Skid Steers	\$240,000
(4) Forklifts	\$500,000
(17) Air Compressors	\$510,000
(6) Arrow Board Trailers	\$36,000
(4) Flood Light Trailers	\$120,000
(5) Message Board Trailers	\$100,000
(9) Large Equipment Trailers	\$315,000
(1) Low Boy Trailer	\$50,000
(6) Pup Trailers	\$390,000
(1) Trash Compactor	\$80,000
Total:	\$41,486,000
Critical Facilities	
Traffic Signal Junction Building	\$19,000
A-5 Kit Mobile Office/Utility Retreat	\$70,000
A-10 Communication Tower	\$15,000
A-10 Traffic Operations Building	\$761,000
A-11 Carpentry Shop	\$16,000
A-12 Shop 3	\$38,000
A-13 Shop 4	\$205,000
A-14 Shop 2	\$565,000
A-15 Salt Shed	\$21,000
A-21 Salt/Sand Shed	\$300,000
A-8 Shop 1	\$380,000
A-9 Fleet Services	\$35,000

Asset	Value
A-7 Maintenance Office	\$380,000
Pump/Shed/Well	\$5,000
A-1 Office Space	\$2,630,000
A-16 Warehouse	\$123,000
A-2 Administration Building	\$2,020,000
Cooling Tower	\$84,897
Hazardous Material Storage	\$23,000
C-1 Office and Shop	\$870,000
C-2 Drainage Shed	\$300,000
C-3 Tire Shop	\$242,000
C-4 Carpenter Shop & Parking Bays	\$346,000
C-5 Decant Station	\$18,000
C-6 Wash Bay	\$112,000
C-7 Salt Storage Shed	\$17,000
Communication Tower	\$15,000
Salt/Sand Shed	\$687,264
Shop	\$49,000
Office Building	\$534,000
Dwelling 5513	\$270,000
Storage Shed with Pump	\$55,000
Total:	\$11,206,161

8.3 CURRENT TRENDS

According to COMPASS, Ada County experienced an annual population increase of 3.1% between 2011 and 2021. That trend is expected to increase as economic growth continues.

8.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 8-3.
- An assessment of fiscal capabilities is presented in Table 8-4.
- An assessment of administrative and technical capabilities is presented in Table 8-5.
- An assessment of education and outreach capabilities is presented in Table 8-6.
- Classifications under various community mitigation programs are presented in Table 8-7.

Table 8-3. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
ACHD Capital Improvement Plan	August 19, 2020	N/A
Resolution 812 – ACHD Standard Operating Plan for Right-of-Way Spill, Container, and Debris Response	February 1, 2021	N/A
Sections 7000, 7100, and 7200 of the ACHD Policy Manual pertaining to Land Development Requirements	December 16, 2020	N/A
Sections 8000, 8200, and 8300 of the ACHD Policy Manual pertaining to Stormwater Management and Discharge Requirements	December 16, 2020	N/A
ACHD Integrated Five Year Work Plan	January 26, 2022	N/A

Table 8-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	Yes

If yes, specify: Vehicle Registration Fees, Special Impact Fees, Gas Tax, Sales Tax, Highway User Fund Fees

Table 8-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices <i>If Yes, Department /Position:</i> Development Services, Capital Projects, and Planning Departments	Yes
Engineers or professionals trained in building or infrastructure construction practices <i>If Yes, Department /Position:</i> Engineering, Maintenance, and Capital Projects Departments	Yes
Planners or engineers with an understanding of natural hazards <i>If Yes, Department /Position:</i> Engineering and Maintenance Departments	Yes
Staff with training in benefit/cost analysis <i>If Yes, Department /Position:</i> Accounting and Capital Projects	Yes
Surveyors <i>If Yes, Department /Position:</i> Engineering Department	Yes
Personnel skilled or trained in GIS applications <i>If Yes, Department /Position:</i> GIS Department	Yes
Scientist familiar with natural hazards in local area	No
Emergency manager	No
Grant writers <i>If Yes, Department /Position:</i> Planning Department	Yes

Table 8-6. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website?	No
Do you use social media for hazard mitigation education and outreach?	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	No
Do you have any other programs in place that could be used to communicate hazard-related information?	Yes
<i>If yes, briefly describe:</i> Facebook, Instagram, Twitter, ACHD Website, Media Releases	
Do you have any established warning systems for hazard events?	Yes
<i>If yes, briefly describe:</i> Code Red/ISAWS – residents may sign up to receive emergency notifications and critical community alerts. Both systems are IPAWS enabled and may additionally access that integrated system for public warnings.	

Table 8-7. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	Yes	16001	N/A
DUNS#	Yes	099312712	N/A
Community Rating System	N/A	N/A	N/A
Building Code Effectiveness Grading Schedule	N/A	N/A	N/A
Public Protection	N/A	N/A	N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

8.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

8.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **ACHD Integrated Five Year Work Plan** - Sets forth the strategies, projects (roads, intersections, and bridges), and priorities which ACHD will pursue over the next five years.
- **ACHD Capital Improvement Plan (CIP)** - A long-range transportation plan (20 years) identifying existing transportation facilities and any existing deficiencies, identifying future network deficiencies, and identifying capacity expansion projects on arterial roads and intersections of arterial roads that are eligible for impact fees.

8.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- ACHD Strategic Plan** - The first focus area (Looking Ahead) establishes a planning framework for ACHD. This framework includes a discussion of common values that ACHD shares with its partner agencies, a description of context and demographics for Ada County, and goals and objectives. The second focus area (Moving Forward) concentrates on asset management and resource allocation. The Plan also contains action items and policy guidance that will help ACHD staff implement Commission directives. The goals, objectives, and action items in the Hazard Mitigation Plan may be used to inform the strategic plan.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

8.6 RISK ASSESSMENT

8.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 8-8 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 8-8. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
Flood	DR-4534	March 2017	Flooding of Boise River in Boise, Eagle Island and Garden City
Landslide	N/A	February 2016	Alto Via Court Closed by Commission
Flood	N/A	April 2014	Flooding of Dry Creek
Flood	N/A	May 2012	\$40,145 Flooding of Little Pioneer Irrigation Ditch
Flood	N/A	December 2009	Flooding of Boise River in Boise
Wildfire	N/A	August 2008	Oregon Trail Fire in SE Boise
Flood	N/A	April 2006	Flooding of Dry Creek
Flood	N/A	September 1997	Flooding of Crane Creek and Hulls Gulch
Flood	N/A	May 1993	Flooding of Boise River in Eagle
Flood	N/A	February 1986	Flooding of Cottonwood Creek
Flood	N/A	June 1983	Flooding in Boise, Garden City, and Eagle Island
Flood	N/A	January 1979	Flooding and erosion of Crane Creek, Polecat Gulch, Stewart Gulch, Cottonwood Creek, and Three Mile, Five Mile, Eight Mile, and Ten Mile Creeks

8.6.2 Hazard Risk Ranking

Table 8-9 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and district operations. Mitigation actions target hazards with high and medium rankings.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Flood	45	High
2	Earthquake	36	High
3	Severe Weather	33	High
4	Landslide	16	Medium
5	Dam/Canal Failure	15	Medium
6	Drought	9	Low
7	Wildfire	0	Low
8	Volcano	0	Low

8.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- The ACHD Adams Yard and Headquarters are both in close proximity, although out of the floodplain, to the Boise River. A significant flood event (greater than the 100 year event) or a dam inundation event could compromise these facilities.
- Both of ACHD’s maintenance facilities are south of the Boise River. Without substantial prior notice, ACHD would not be able to stage equipment and vehicles accordingly.

Mitigation actions addressing these issues were prioritized for consideration in the action plan in this annex.

8.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 8-10 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
ACHD-1—Pintail/Drake/Widgeon Flooding <i>Comment: Ongoing capability. Ongoing flooding problem for 10+ years. Vector truck must pump during routine storms. Storm drain under capacity, two 18” pipes converge and leave as one 18”. ACHD is initiating topographic surveys to look at solutions.</i>			•	ACHD-5
ACHD-2—Meridian Culvert Replacements <i>Comment: Ongoing capability. Still needing replacement: Nine Mile Creek at: E. Watertower Lane, E. Franklin Road, W. Ustick Road. Ten Mile Creek at: Locust Grove Road. Eight Mile Creek at: Overland Road. Five Mile Creek at: S. Topaz Avenue, S. Rackham Way, S. Eagle Road, S. Wells Street.</i>			•	ACHD-6

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
ACHD-3 —Snowflake and Crocus Pipe Realignment <i>Comment: No progress. Need to realign storm drain from the back yards to the street and increase the pipe size to reduce restrictions. Ongoing problem for ACHD Drainage Crew. Vactor truck must pump during routine storms.</i>			•	ACHD-7
ACHD-4 —Create a Storm Water Utility <i>Comment: No progress.</i>			•	ACHD-8
ACHD-5 —Remove sediment from all public street storm water ponds <i>Comment: Ongoing capability for approximately 1,324 ponds.</i>			•	ACHD-9
ACHD-6 —Support county-wide initiatives identified in Volume 1. <i>Comment: Ongoing capability.</i>			•	ACHD-2
ACHD-7 —Continue to support the implementation, monitoring, maintenance, and updating of the Plan as defined in Volume 1. <i>Comment: Ongoing capability.</i>			•	ACHD-3
ACHD-8 —Survey Boise River bridge structures and compare to 100 year flood water surface elevation. <i>Comment: No progress.</i>			•	ACHD-10
ACHD-9 —Eckert Road Bridges #2147 and #2148 replacement over the Boise River. <i>Comment: Ongoing capability.</i>			•	ACHD-11
ACHD-10 —Fairview Avenue Bridges #2196 and #2197 replacement over the Boise River. <i>Comment: In progress.</i>			•	ACHD-12
ACHD-11 —Linder Road Bridges #1078, #2035, and #2036 replacement over the Boise River. <i>Comment: No progress.</i>			•	ACHD-13
ACHD-12 —Relocate ACHD Traffic Management Center to a new location (to be decided) outside of floodplain. <i>Comment: In progress.</i>			•	ACHD-14
ACHD-13 —Gowen Road Bridge #2173 over the New York Canal. <i>Comment: Completed</i>	•			
ACHD-14 —Develop and implement more Green Stormwater Infrastructure standards to stabilize slopes and drainage facilities and prevent erosion. <i>Comment: Ongoing capability.</i>			•	ACHD-15
Actions added and completed during the previous plan maintenance period				
ACHD-15 —Capitol Boulevard Bridge #2202 Scour Repair - Post 2017 Flood Add Rip Rap against 2 bridge piers <i>Comment: Completed</i>	•			
ACHD-16 —Fairview Avenue Bridge #2197 Scour Repair- Post 2017 Flood Add Rip Rap against 2 bridge piers <i>Comment: Completed</i>	•			
ACHD-17 —East Park Center Bridge #2208 Scour Repair - Post 2017 Flood Add Rip Rap against easterly riverbank <i>Comment: Completed</i>	•			
ACHD-18 —Linder Rd Bridge #2036 over North Channel of Boise River: Scour Repair Add Rip Rap around pier #3 <i>Comment: Completed</i>	•			

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
ACHD-19 —Swan Falls Bridge #2094 over Indian Creek: Scour Repair Add Rip Rap around all piers <i>Comment: Completed</i>	•			
ACHD-20 —Americana Blvd Bridge #2200 over the Boise River: Scour Repair Add Rip Rap around pier #1 <i>Comment: Completed</i>	•			
ACHD-21 —Star Road Bridge #2030 over the Boise River: Scour Repair Add Rip Rap around piers #2 and #3, and south abutment. <i>Comment: Completed</i>	•			

8.8 HAZARD MITIGATION ACTION PLAN

Table 8-11 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 8-12 identifies the priority for each action. Table 8-13 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 8-11. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action ACHD-1—Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas. <i>Hazards Mitigated:</i> Flood, Severe Weather						
Existing	1, 2, 3, 9, 10	ACHD		High	HMGP, BRIC, FMA	Short-term
Action ACHD-2— Support county-wide initiatives identified in Volume 1. <i>Hazards Mitigated:</i> All hazards						
New & Existing	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	ACHD		Low	ACHD Funds, Staff Time	Short Term
Action ACHD-3—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan. <i>Hazards Mitigated:</i> All hazards						
New & Existing	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	ACHD		Low	ACHD Funds, Staff Time	Short Term
Action ACHD-4— Prevent Pintail/Drake/Widgeon flooding by tree removal or annual root pruning to clear roots growing into the lines. <i>Hazards Mitigated:</i> Flood, Severe Weather						
Existing	2, 3, 9	ACHD	Drainage District 4	Low	ACHD Funds	Short-term
Action ACHD-5— Partner with the City of Meridian to facilitate the replacement of roadway culverts to include design and construction of crossings on Fivemile, Ninemile, Eightmile and Tenmile Creeks. (Coordinates with City of Meridian Action M-14) <i>Hazards Mitigated:</i> Flood, Severe Weather						
Existing	1, 2, 3, 4, 9, 10	ACHD	City of Meridian	High	ACHD Funds, City of Meridian Funds, HMGP, BRIC, FMA	Long-term
Action ACHD-6— Snowflake and Crocus Pipe Realignment <i>Hazards Mitigated:</i> Flood, Severe Weather						
Existing	2, 3, 9	ACHD		Low	ACHD Funds	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action ACHD-7— Create a Storm Water Utility						
<u>Hazards Mitigated:</u> Flood, Severe Weather, Drought						
New & Existing	1, 2, 3, 4, 5, 6, 9, 10	ACHD	Boise, Meridian, Star, Eagle, Garden City, Kuna, Ada County, and Drainage Districts	High	ACHD Funds, City and County Funds, HMGP, BRIC, FMA	Long-term
Action ACHD-8— Remove sediment from all public street storm water ponds						
<u>Hazards Mitigated:</u> Flood, Severe Weather						
New & Existing	1, 2, 3, 9, 10	ACHD		Medium	ACHD Funds	Short-term
Action ACHD-9— Survey Boise River bridge structures and compare to 100 year flood water surface elevation.						
<u>Hazards Mitigated:</u> Flood, Severe Weather, Dam/Canal Failure						
Existing	2, 3, 10	ACHD		Low	ACHD Funds	Short-term
Action ACHD-10— Eckert Road Bridges #2147 and #2148 replacement over the Boise River.						
<u>Hazards Mitigated:</u> Flood, Severe Weather, Dam/Canal Failure						
Existing	1, 2, 3, 10	ACHD		Medium	ACHD Funds, HMGP, BRIC, FMA	Long-term
Action ACHD-11— Fairview Avenue Bridges #2196 and #2197 replacement over the Boise River.						
<u>Hazards Mitigated:</u> Flood, Severe Weather, Dam/Canal Failure						
Existing	1, 2, 3, 10	ACHD		Medium	ACHD Funds, HMGP, BRIC, FMA	Long-term
Action ACHD-12— Linder Road Bridges #1078, #2035, and #2036 replacement over the Boise River.						
<u>Hazards Mitigated:</u> Flood, Severe Weather, Dam/Canal Failure						
Existing	1, 2, 3, 10	ACHD		Medium	ACHD Funds, HMGP, BRIC, FMA	Long-term
Action ACHD-13— Relocate ACHD Traffic Management Center to a new location (to be decided) outside of floodplain.						
<u>Hazards Mitigated:</u> Flood, Severe Weather, Dam/Canal Failure						
New & Existing	1, 2, 3, 10	ACHD		Medium	ACHD Funds	Short-term
Action ACHD-14— Develop and implement more Green Stormwater Infrastructure standards to stabilize slopes and drainage facilities and prevent erosion.						
<u>Hazards Mitigated:</u> Flood, Landslide, Dam/Canal Failure						
New & Existing	1, 2, 3, 7, 8, 10	ACHD		Low	ACHD Funds	Long-term

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date

Acronyms used here are defined at the beginning of this volume.

Table 8-12. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	5	High	High	Yes	Yes	No	Medium	High
2	10	Low	Low	Yes	No	Yes	High	Low
3	10	High	Medium	Yes	Yes	No	Medium	High
4	3	Medium	Low	Yes	Yes	Yes	Medium	Medium
5	6	High	High	Yes	Yes	No	Low	High

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
6	3	Medium	Low	Yes	Yes	Yes	Medium	Medium
7	8	Low	High	No	Yes	No	Low	Medium
8	5	High	Medium	Yes	No	No	High	Low
9	3	Medium	Low	Yes	Yes	Yes	Medium	Medium
10	4	High	Medium	Yes	Yes	No	Low	High
11	4	High	Medium	Yes	Yes	No	Low	High
12	4	High	High	Yes	Yes	No	Low	High
13	4	High	Low	Yes	Yes	Yes	Medium	High
14	6	Low	Low	Yes	No	Yes	High	Medium

a. See the introduction to this volume for explanation of priorities.

Table 8-13. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building ^b
High-Risk Hazards								
Flood	ACHD-14	ACHD-1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14	ACHD-2	ACHD-1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14		ACHD-5, 10, 11, 12, 13	ACHD-1, 5, 9	ACHD-2, 3, 7, 9, 14
Earthquake			ACHD-2					ACHD-2, 3
Severe Weather		ACHD-1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	ACHD-2	ACHD-1, 4, 5, 6, 7, 8, 9, 10, 11, 12		ACHD-5, 10, 11, 12, 13	ACHD-1, 5, 9	ACHD-2, 3, 7, 9
Medium-Risk Hazards								
Landslide	ACHD-14	ACHD-14	ACHD-2	ACHD-14				ACHD-2, 3
Dam/Canal Failure	ACHD-14	ACHD-9, 10, 11, 12, 13, 14	ACHD-2	ACHD-9, 10, 11, 12		ACHD-10, 11, 12, 13	ACHD-1, 5, 9, 10, 11, 12	ACHD-2, 3, 9
Low-Risk Hazards								
Drought		ACHD-7	ACHD-2	ACHD-7				ACHD-2, 3
Wildfire			ACHD-2					ACHD-2, 3
Volcano			ACHD-2					ACHD-2, 3

a. See the introduction to this volume for explanation of mitigation types.

b. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

8.9 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **2017 Ada County Multi-Hazard Mitigation Plan** – The previous HMP was reviewed to update this annex.
- **ACHD Integrated Five Year Work Plan**—The work plan was used in the capability assessment and action plan development.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

9. EAGLE FIRE PROTECTION DISTRICT

9.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Tyler Lewis, Fire Chief
1119 E. State St. Suite 240
Eagle, Idaho 83616
Telephone: 208-939-6463
e-mail Address: tlewis@eaglefire.org

Alternate Point of Contact

Theron Hudson, Deputy Chief
1119 E. State St. Suite 240
Eagle, Idaho 83616
Telephone: 208-939-6463
e-mail Address: thudson@eaglefire.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 9-1.

Table 9-1. Local Hazard Mitigation Planning Team Members

Name	Title
Tyler Lewis	Fire Chief
Jamie Vincent	Deputy Chief / Logistics
Scott Buck	Deputy Chief/Fire Marshal
Theron Hudson	Deputy Chief Operations

9.2 JURISDICTION PROFILE

9.2.1 Overview

Eagle Fire Protection District (EFD) provides fire suppression, EMS, hazardous materials mitigation, and rescue services. The District is a mix of urban, rural, interface and wildland areas. The department employs 50 Career personnel who respond to approximately 1500 + calls for service per year. The Eagle Fire Protection District is located in the North East corner of Ada County , South East corner of Gem County and the South West Corner of Boise County. The District provides service to the City of Eagle and unincorporated areas of Ada, Boise, and Gem Counties. The District is bordered by Boise to the South and East, Garden City to the South East, and the Star Joint Fire Protection District to the west.

A three-member Board of Commissioners governs this District and will assume the responsibility for the adoption and implementation of this plan.

The District participates in the Public Protection Class Rating System and currently has a rating of #3.

9.2.2 Service Area

The district serves a population of 35,000 as of 2020. Its service area covers an area of approximately 92 square miles which has a total value of \$9,478,723,925.00.

9.2.3 Assets

Table 9-2 summarizes the assets of the District and their value.

Asset	Value
Property	
8.25 acres of land	\$2,816,000.00
Equipment	
3 Type 1 Engines	\$1,750,000.00
1 85' Quint Platform	\$ 900,000.00
1 Heavy Rescue	\$ 760,000.00
1 Water Tender	\$ 350,000.00
4 Type 6 Engines	\$ 360,000.00
8 Command Vehicles	\$ 400,000.00
1 Water Rescue Unit	\$ 100,000.00
1 Dozer D6T with Trailer	\$ 370,000.00
Total:	\$4,990,000.00
Critical Facilities	
EFD Station # 1	\$2,500,000.00
EFD Station # 2	\$ 1,500,000.00
EFD Station # 3	\$1,500,000.00
EFD Admin.	\$1,000,000.00
Total:	\$6,500,000.00

9.3 CURRENT TRENDS

The Eagle Fire Protection District has experienced an average 4.9% annual growth over the last five years. With a 65.1% growth rate since the 2010 census. The District’s call volume has averaged 1,500 calls per year during this same time period. The District anticipates an increase in new home construction starts in the future. However, we predict calls for service will increase reaching approximately 3,000 per year by 2021. From Jan. 1, 2021 to July 20, 2021 the district has had 1,582 calls for service and anticipates reaching 3000 calls for service by year’s end.

9.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 9-3.
- An assessment of fiscal capabilities is presented in Table 9-4.
- An assessment of administrative and technical capabilities is presented in Table 9-5.
- An assessment of education and outreach capabilities is presented in Table 9-6.
- Classifications under various community mitigation programs are presented in Table 9-7.

Table 9-3. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
Ada County Flood Response Plan	December 2018	N/A
Ada County Wildfire Response Plan	August 2018	N/A
2018 International Fire Code	January 2021	Enforce the 2018 as Adopted and amended by the State of Idaho

Table 9-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	No
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	No

Table 9-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices	No
Engineers or professionals trained in building or infrastructure construction practices	No
Planners or engineers with an understanding of natural hazards	No
Staff with training in benefit/cost analysis	No
Surveyors	No
Personnel skilled or trained in GIS applications	No
Scientist familiar with natural hazards in local area	No
Emergency manager	No
Grant writers	No
Other	No

Table 9-6. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	No
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? <i>If yes, briefly describe:</i> Links on website to Firewise, National Fire Protection Association, Ada Fire Adapted Communities	Yes
Do you use social media for hazard mitigation education and outreach? <i>If yes, briefly describe:</i> We use Facebook and Twitter; these sites are linked back to our web page.	Yes
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	No
Do you have any other programs in place that could be used to communicate hazard-related information?	No
Do you have any established warning systems for hazard events? <i>If yes, briefly describe:</i> Code Red and/ISAWS- Residents may sign up to receive emergency notifications and critical community alerts. Both systems are IPAWS enabled and may additionally access that integrated system for public warnings.	Yes

Table 9-7. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	No	N/A	N/A
DUNS#	Yes	028591592	February 2021
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	No	N/A	N/A
Public Protection	Yes	3/8	10/6/2016
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

9.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

9.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Ada County Wildfire Response Plan**— To provide for the life safety of for responders and the populace. Minimize damage to valued resources and the environment from the adverse effects of Wildfire. Develop community awareness and understanding of the wildfire hazard.
- **Ada County Flood Response Plan**— To prevent injury and loss of life due to flooding and flood related causes. Develop Community awareness and understanding of the flood hazard.

9.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- All future updates to plans and programs as identified in the “Existing Integration” section above may reference hazard mapping and data in this hazard mitigation plan.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

9.6 RISK ASSESSMENT

9.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 9-8 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 9-8. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
Wildfire	NA	10/06/2021	\$30,000.00
Wildfire	NA	7/30/2020	\$30,000.00
Pandemic	DR-4534	1/20/2020	\$1,133,757.74
Flooding	DR-4342	3/29-6/15/2017	Countywide: \$4,493,792
Record Snow Fall	NA	2/9/2017	\$ 10,000.00
Wildland Fire	N/A	5/2/2015	Fire southeast of Avimor above the WWTP
Flood	N/A	2/14/2014	Flooded areas around homes and threatened Beacon Light Road
Wildland Fire	N/A	7/20/2014	North of Spring Valley Ranch threatened wildlife habitat, multiple agency responded
Severe Weather	N/A	9/5/2013	Severe weather storm hit the area. Cause a tree to blow down on an occupied vehicle and two homes being struck by lightning depleting resources
Wildland Fire	N/A	9/5/2013	Wild fire threatening the Jasmine Mine.
Wildland Fire	N/A	8/15/2013	Fire on Spring Creek Road threatened numerous home and power transmission lines, multiple agencies responded
Wildland Fire	N/A	7/16/2013	Numerous homes threatened by wind driven fire, was resource intensive, depleted resources. Multiple agencies responded
Wildland Fire	N/A	7/4/2013	Foothills North of Eagle threatened numerous homes, multiple agencies responded.
Wildland Fire	N/A	8/24/2012	Fire West of Willow Creek road threatening several homes.
Wildland Fire	N/A	7/22/2012	Fire East of Willow Creek road threatening power lines.
Flood	N/A	5/4/2012	Flood threatened numerous home Eagle Island and west of Linder Rd. multiple agency response or several days

9.6.2 Hazard Risk Ranking

Table 9-9 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and district operations. Mitigation actions target hazards with high and medium rankings.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Flood	54	High
2	Wildfire	36	High
3	Extreme Weather	33	High
4	Earthquake	32	High
5	Dam Failure	18	Medium
6	Landslide	12	Low
7	Drought	6	Low
8	Volcano	6	Low

9.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. No additional jurisdiction-specific issues were identified.

9.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 9-10 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Action EFD-01 —Continue to provide fire safety, fire prevention and Firewise education to neighborhoods, schools and community via web pages, signage and outreach. <i>Comment: Ongoing. The fire department continually uses Twitter, Facebook, and our web page to post educational messages regarding all hazards.</i>			•	EFD-4
Action EFD-02 —Reduce the determined vegetation which can fuel a rapid spreading wildland fire through the means of mechanical mowing of invasive grass and brush in the wildland urban interface <i>Comment: Ongoing. Reduction of fuels within Avimor PC. The planting of the Forage Kochia was completed site being monitored for new plant growth.</i>			•	EFD-5
Action EFD-03 —Partnering with adjoining jurisdictions in purchasing specialized equipment to reduce and eliminate invasive grasses through the means of applying herbicides and replanting of fire resistant native plant species in the wildland urban interface. <i>Comment: Purchased the broadcast spreader and drag chains for replanting grasses in 2018</i>	✓			

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Action EFD-04 —Partnering with adjoining jurisdictions to rehabilitate areas impacted by wildfire for wildlife while sustaining access to recreational trails and to prevent erosion <i>Comment: Ongoing. Continue to work with partner agency's on this project.</i>			•	EFD-6
Action EFD-05 —Partner with Federal agencies to install electronic flow monitoring stations on the North Channel of the Boise River Eagle Rd. Bridge and Dry Creek Dry Creek drainage at Eagle Rd. Bridge. <i>Comment: Remove. USGS can provided rapid deployment gauges.</i>		•		
Action EFD-06 —Host a community wide open house to increase public awareness of all hazards within the Eagle Fire Protection district and response capabilities of the jurisdiction. <i>Comment: Ongoing. Annually every October the Eagle Fire Department holds an open house. This is done to increase the public's awareness of the hazards in the fire district and what our response capabilities are. Last October we had approximately 600 + people attend our open house.</i>			•	EFD-7
Action EFD-07 —Partner with appropriate local authorities to establish right-of-way and construct a roadway that will allow access on to State Hwy 44 from Plaza Dr. to enhance the response capabilities for the Eagle Fire Dept. and Ada County Sheriff's Dept. <i>Comment: Completed in 2021</i>	✓			
Action EFD-08 —Support County wide initiatives identified in Volume 1 <i>Comment: Ongoing.</i>			•	EFD-3
Action EFD-09 —Continue to support the implementation, monitoring, maintenance, and updating of the plan, as defined in Volume 1 <i>Comment: Ongoing.</i>			•	EFD-2
Action EFD-10 —Meet and coordinate with private organizations, state, federal and other local agencies to develop, conduct and maintain wildfire mitigation projects. <i>Comment: Ongoing.</i>			•	EFD-8

9.8 HAZARD MITIGATION ACTION PLAN

Table 9-11 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 9-12 identifies the priority for each action. Table 9-13 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 9-11. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action EFD-1 —Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
<u>Hazards Mitigated:</u> Flood, Wildfire, Earthquake, Extreme Weather, Dam/Canal Failure, Landslide						
Existing	1, 3, 10	Eagle Fire		High	HMGP, BRIC, FMA	Short-term
Action EFD-2 —Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
<u>Hazards Mitigated:</u> All hazards						
New & Existing	All	Eagle Fire	EMCR	Low	Staff Time, General Funds	Short-term
Action EFD-3 — Support County-wide initiatives identified in Volume 1						
<u>Hazards Mitigated:</u> All hazards						
New & Existing	All	Eagle Fire	EMCR	Low	Staff Time, General Funds	Short-term
Action EFD-4 —Continue to provide fire safety, fire prevention and Firewise education to neighborhoods, schools and community via web pages, signage and outreach.						
<u>Hazards Mitigated:</u> Wildfire						
New & Existing	8, 9	Eagle Fire		Low	District Funds	Short-term
Action EFD-5 —Reduce the determined vegetation which can fuel a rapid spreading wildland fire through the means of mechanical mowing of invasive grass and brush in the wildland urban interface						
<u>Hazards Mitigated:</u> Wildfire						
New & Existing	2, 8, 9	Eagle Fire		Medium	BRIC, District Funds	Ongoing
Action EFD-6 —Partnering with adjoining jurisdictions to rehabilitate areas impacted by wildfire for wildlife while sustaining access to recreational trails and to prevent erosion.						
<u>Hazards Mitigated:</u> Wildfire, Landslide						
New & Existing	2, 8, 9	Eagle Fire	RCD	Medium	BRIC, District Funds	Long-term
Action EFD-7 —Host a community wide open house to increase public awareness of all hazards within the Eagle Fire Protection district and response capabilities of the jurisdiction.						
<u>Hazards Mitigated:</u> Wildfire, Flood, Earthquake, Dam/Canal Failure, Severe Weather, Landslide, Drought, Volcano						
New & Existing	All	Eagle Fire	EMCR	Low	District Funds	Short-term
Action EFD-8 — Develop a Joint Emergency Operation Plan with Eagle City, Eagle Sewer District, and Eagle Fire Protection District: This plan is necessary to establish a single, comprehensive framework for the management of domestic incidents. The City of Eagle will lead this all-discipline action, but Eagle Sewer District and Eagle Fire District will aid in planning for all hazards. (Coordinates with City of Eagle Action E- and Eagle Sewer District Action ESD-7)						
<u>Hazards Mitigated:</u> All hazards						
New & Existing	All	City of Eagle	Eagle Sewer District, Eagle Fire District	Medium	City Funds, District Funds, HMGP	Short-term
Action EFD-9 — Meet and coordinate with private organizations, state, federal and other local agencies to develop, conduct and maintain wildfire mitigation projects.						
<u>Hazards Mitigated:</u> Wildfire						
New & Existing	1, 6, 9, 10	Eagle Fire	Boise Fire, Private Organizations, Federal, ACCEM	Low	BRIC, District Funds, Private	Ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action EFD-10 — In partnership with Eagle Fire Protection District, Middleton Rural Fire District, and Star Fire Protection District, continue to support wildfire mitigation projects such as those sponsored by the Healthy Hills Initiative within the Eagle city limits or urban growth area. (Coordinates with Star Joint Fire Protection District Action SFD-6, City of Eagle Action E-7)						
<i>Hazards Mitigated:</i> Wildfire						
New & Existing	2, 4, 5, 6, 7, 8, 9	City of Eagle	Eagle Fire Protection, Middleton Rural Fire District, Star Fire Protection District	Low	Staff Time HMGP, BRIC	Ongoing
Action EFD-11 — Establish Strategic Planning process for foothills. (Coordinates with City of Boise Action B-23, North Ada County Fire & Rescue District Action NACFR-12)						
<i>Hazards Mitigated:</i> Wildfire						
Existing	2, 3, 4, 5, 6, 9	Boise Fire Department	Eagle Fire Protection, NACFR	Medium	Rural Fire Assistance Grant, National Fire Plan	Long-term/Ongoing

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date
 Acronyms used here are defined at the beginning of this volume.

Table 9-12. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	3	High	High	Yes	Yes	No	Medium	High
2	10	Low	Low	Yes	No	Yes	High	Low
3	10	High	Medium	Yes	Yes	No	Medium	High
4	2	Medium	Low	Yes	Yes	Yes	High	Low
5	3	High	Medium	Yes	Yes	No	Medium	Medium
6	3	Medium	Medium	Yes	Yes	No	Low	Low
7	10	High	Low	Yes	Yes	Yes	High	Low
8	10	Low	Low	Yes	Yes	Yes	High	Medium
9	4	High	Low	Yes	Yes	No	High	Low
10	7	Medium	Low	Yes	Yes	No	Medium	Medium
11	6	Medium	Medium	Yes	Yes	Yes	High	High

a. See the introduction to this volume for explanation of priorities.

Table 9-13. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building ^b
High-Risk Hazards								
Flood	EFD-2, 3	EFD-1, 3	EFD-2, 7	EFD-3, 10				EFD-2, 3, 8
Wildfire	EFD-2, 3, 11	EFD-1, 3, 6	EFD- 4, 7, 9	EFD 3, 5, 6, 11	EFD-3, 7			EFD-2, 3, 6, 8, 9, 10, 11
Extreme Weather	EFD-2, 3	EFD-1, 3	EFD-7		EFD-3			EFD-2, 3, 8
Earthquake	EFD-2, 3	EFD-1, 3	EFD-7					EFD-2, 3, 8
Medium-Risk Hazards								
Dam Failure	EFD-2, 3	EFD-1, 3	EFD-7					EFD-2, 3, 8
Low-Risk Hazards								
Landslide	EFD-2	EFD-1	EFD-7	EFD 6				EFD-2, 3, 6, 8
Drought	EFD-2		EFD-7					EFD-2, 3, 8
Volcano	EFD-2		EFD-7					EFD-2, 3, 8

- a. See the introduction to this volume for explanation of mitigation types.
- b. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

9.9 PUBLIC OUTREACH

Table 9-14 lists public outreach activities for this jurisdiction.

Table 9-14. Local Public Outreach

Local Outreach Activity	Date	Number of People Involved
Posted outreach material to Facebook	8/24/2021	3,722
Posted outreach material to Twitter	8/24/2021	2,476
Posted link to Ada County Multi-Hazard Mitigation Plan: Public Involvement on EFD Website	8/24/2021	N/A

9.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed for this annex.

- **Idaho Code 41-253 Adoption of the International Fire Code, IDAPA 18.01.50**—Adoption of the International Fire Code. The Idaho Surveying & Rating Bureau Protection Class Evaluation. Reviewed during the capability assessment.
- **Ada County Wildfire Response Plan**—Reviewed to assess capability and integration.
- **Ada County Flood Response Plan**—Reviewed to assess capability and integration.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

10. EAGLE SEWER DISTRICT

10.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Neil Jenkins, General Manager
 44 N. Palmetto Ave
 Eagle, ID 83616
 Telephone: 208-939-0132
 e-mail Address: njenkins@eaglesewer.org

Alternate Point of Contact

Chris Kossow, Operations Manager
 100 S. Urban Gate Ave
 Eagle, ID 83616
 Telephone: 208-939-0781
 e-mail Address: ckossow@eaglesewer.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 10-1.

Table 10-1. Local Hazard Mitigation Planning Team Members

Name	Title
Erv Ballou	Board Chairman
Terry Loftus	Board Member
Neil Jenkins	General Manager
Laura Markham	Administrative Manager
Chris Kossow	Operations Manager

10.2 JURISDICTION PROFILE

10.2.1 Overview

The Eagle Sewer District (District) receives its operating authority from Idaho State Code, Title 42, Chapter 32, Sections 43-3201 to 42-3238. The District was created on December 30, 1963 in response to a need for central sewer service and currently provides service for an area that generally coincides with the City of Eagle’s impact area. A five-member elected Board of Directors governs the District. The District’s current service area is bounded by Highway 16 on the West, the foothills (Spring Valley development) nearly to the Gem County line north of Homer Road on the North, Highway 26 on the South and Highway 55 and Old Horseshoe Bend Road on the East. This service area essentially mirrors the City of Eagle’s impact area.

Eagle Sewer District currently treats wastewater in lagoons and then pumps the treated effluent to the City of Boise’s West Boise Water Renewal Facility for further treatment and discharge to the Boise River. For this treatment, the Eagle Sewer District now purchases capacity in the West Boise Water Renewal Facility and pays monthly charges that are based on the amount of flow, organic load, solids load and ammonia load.

Sewer lift stations serve as a central point of collection for gravity sewer lines. The raw sewage is conveyed by gravity to these collection points and the lift stations pressurize and lift the sewage either into other gravity collection lines or push the flow directly to the wastewater treatment plant. The District currently owns thirteen lift stations located on Stillwater, Crestpoint, Eastside, Mace Lift, Lakemoor, Creighton Woods, Ashbury, Fred Meyer, Old Valley, Palmer Lift, Moon Valley, Estrada Village, and Element Skye. Additional lift stations are in the process of planning and design.

The Eagle Sewer District operates almost exclusively on user fees. A small amount is also levied on property taxes to pay for the District’s operation and maintenance costs and the property and administrative liability insurance.

The Eagle Sewer District Board assumes responsibility for the adoption of this plan; Eagle Sewer District staff will oversee its implementation.

10.2.2 Service Area

The district serves a population of 27,500 as of 2021. Its service area covers an area of 44 square miles, which has a total market value (including occupancy rolls) of \$6,428,579,713.

10.2.3 Assets

Table 10-2 summarizes the assets of the District and their value.

Asset	Value
Property	
103.25 acres of land	\$8,500,000
Equipment	
Approximately 189 miles of pipe throughout the District	\$99,792,000
Generators for critical lift stations (12)	\$600,000
Emergency Trailer- Mounted Generator	\$50,000
Effluent Transmission Line	\$11,000,000
Emergency Trailer-Mounted Pump	\$75,000
Operations and Maintenance Equipment and Vehicles	\$900,000
Total:	\$120,917,000
Critical Facilities	
District Administration Office	\$900,000
Wastewater Treatment Facility	\$15,000,000
Blower Building	\$2,000,000
Operations Building	\$2,000,000
Stillwater Lift Station	\$500,000
Eastside Lift Station	\$350,000
Fred Meyer Lift Station	\$500,000
Mace Lift Station	\$2,000,000
Old Valley Lift Station	\$7,000,000
Ashbury Lift Station	\$350,000
Lakemoor Lift Station	\$500,000

Asset	Value
Palmer Lift Station	\$5,000,000
Crestpoint Lift Station	\$550,000
Creighton Woods Lift Station	\$550,000
Moon Valley Lift Station	\$500,000
Estrada Village Lift Station	\$500,000
Element Skye Lift Station	\$575,000
Total:	\$38,775,000

10.3 CURRENT TRENDS

Population trends used to estimate future population of the Eagle Sewer District service area can be approximated by utilizing existing population studies completed for the City of Eagle. From 1990 to 2007, the City of Eagle experienced a six-fold increase in population, but from 2008 to 2013 the local residential housing market experienced a significant downturn. In recent years, the housing market has increased significantly and the District has noted an increase in the number of new customers. According to COMPASS, the population of the City of Eagle as of April 2021 was 34,470. Since 2011, the population has grown at an average annual rate of 4.2 percent.

10.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 10-3.
- An assessment of fiscal capabilities is presented in Table 10-4.
- An assessment of administrative and technical capabilities is presented in Table 10-5.
- An assessment of education and outreach capabilities is presented in Table 10-6.
- Classifications under various community mitigation programs are presented in Table 10-7.

Table 10-3. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
Clean Water Act	1972	
Endangered Species Act	1973	
Idaho Department of Environmental Quality	N/A	
U.S. Environmental Protection Agency	N/A	
Idaho Administrative Code	N/A	
Idaho Administrative Procedure Act	N/A	
Wastewater Treatment and Facilities Plan	2016	A facilities plan update is planned for 2023.
Collection System Master Plan	2016	A master plan update is planned for 2023.
Capital Improvement Program	Updated annually	
Idaho Statewide Implementation Plan	N/A	
All other applicable laws, ordinances, codes and policies enforced by federal, state and local authorities with a sphere of influence over the District's service area.	N/A	

Table 10-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service <i>If yes, specify:</i> Sewer fees	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	Yes
<i>If yes, specify:</i> LID, CID	

Table 10-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices <i>If Yes, Department /Position:</i> Contract engineer	Yes
Engineers or professionals trained in building or infrastructure construction practices <i>If Yes, Department /Position:</i> Contract engineer	Yes
Planners or engineers with an understanding of natural hazards <i>If Yes, Department /Position:</i> Contract engineer	Yes
Staff with training in benefit/cost analysis <i>If Yes, Department /Position:</i> Contract engineer	Yes
Surveyors <i>If Yes, Department /Position:</i> Contract surveyors	Yes

Staff/Personnel Resource	Available?
Personnel skilled or trained in GIS applications <i>If Yes, Department /Position:</i> Eagle Sewer Staff	Yes
Scientist familiar with natural hazards in local area <i>If Yes, Department /Position:</i> Contract scientist	Yes
Emergency manager <i>If Yes, Department /Position:</i> Ada County Emergency Management & Community Resilience (EMCR)	Yes
Grant writers <i>If Yes, Department /Position:</i> Ability to contract for service	Yes

Table 10-6. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? <i>If yes, briefly describe:</i>	No
Do you use social media for hazard mitigation education and outreach? <i>If yes, briefly describe:</i>	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe:</i> Eagle Sewer District Board	Yes
Do you have any other programs in place that could be used to communicate hazard-related information? <i>If yes, briefly describe:</i>	No
Do you have any established warning systems for hazard events? <i>If yes, briefly describe:</i> Code Red/ISAWS – residents may sign up to receive emergency notifications and critical community alerts. Both systems are IPAWS enabled and may additionally access that integrated system for public warnings.	Yes

Table 10-7. Community Classifications

	Participating	Classification	Date Classified
FIPS Code	N/A	N/A	N/A
DUNS#	Yes	036695878	N/A
Community Rating System	N/A	N/A	N/A
Building Code Effectiveness Grading Schedule	N/A	N/A	N/A
Public Protection	N/A	N/A	N/A
Storm Ready	Yes	Participant	N/A
Firewise	No	No	N/A

10.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

10.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **City of Eagle Comprehensive Plan**—The 2017 Eagle Comprehensive Plan includes mitigation related policies as they relate to the protection of human life and property from flood events.
- **Ada County Wildfire Response Plan**—The Wildfire Response Plan for Ada County includes procedures that will mitigate risk to human life and property from a wildfire.

10.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Eagle City, Eagle Sewer District, and Eagle Fire District Joint Emergency Operation Plan (EOP)**—This joint plan has not yet been developed but will consider the natural and human-caused hazards in this HMP when developing strategies for emergency operations.
- **Eagle Sewer District Continuity of Operation Plan (COOP)**—This plan has not yet been developed but will consider the natural and human-caused hazards in this HMP when developing strategies for the COOP.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

10.6 RISK ASSESSMENT

10.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 10-8 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

10.6.2 Hazard Risk Ranking

Table 10-9 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and district operations. Mitigation actions target hazards with high and medium rankings. The risk ranking score corresponds to that of the City of Eagle.

Table 10-8. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
COVID-19 Pandemic	DR-4534	January 20, 2020 and continuing	\$25,000+ Lost productivity from employees out sick or getting tested.
Flooding	DR-4342	March 29 – June 15, 2017	\$50,000 Groundwater dewatering during construction project.
Wildfire (foothills)	N/A	7/28/2010	-
Flooding	N/A	6/2-4/1998	-
Flooding	N/A	5/15-28/1998	-
Flooding	N/A	9/11/1997	-
Flooding	DR-1154	1/11/1997	-
Severe Weather	N/A	12/1/1994	-
Flash Flooding	N/A	6/25/1992	-
Drought	N/A	3/1/1992	-
Flooding	N/A	1/12/1991	-
Severe Weather	N/A	2/4/1989	-
Severe Weather	N/A	12/19/1988	-
Drought	N/A	10/31/1988	-
Flooding	N/A	2/1986	-
Flooding	N/A	6/10/1983	-

Table 10-9. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	Extreme Weather	33	High
2	Flood	24	Medium
3	Wildfire	22	Medium
4	Dam/Canal Failure	18	Medium
5	Earthquake	16	Medium
6	Landslide	12	Low
7	Drought	9	Low
8	Volcano	6	Low

10.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Lagoon berm integrity may be compromised in the event of a flood. This could include a pit capture event in the borrow pond(s) adjacent to the lagoons.
- Access to Mace Lift Station and Old Valley Lift Station may be limited in the event of a flood
- Nearly half of the service area is served by a pipeline 0.5 miles long located in the floodway near the WWTP. Another 0.5 miles of the same pipeline is in the floodplain. This line is especially vulnerable to being washed away or overwhelmed in a flooding event.

- Severe weather/climate change – high temperatures affect blower building equipment electronics, specifically in the blower equipment that was designed based on building codes at the time of construction. Recent weather has been hotter than design criteria which puts these systems at risk.
- Portions of the collection system are at elevations and locations close to the Boise River. In the 100-year flood, or higher, parts of the system are submerged, and floodwaters enter the collection system overwhelming the pump stations and compromising the critical pumping and treatment facilities. Severe weather/drought/climate change - brownouts/blackouts might cause interruption of electricity to the WWTP stopping treatment and resulting in uncontrolled sewer overflows to the Boise River and on streets.
- Lift stations, WWTP, manholes, pipelines, etc. are vulnerable to earthquakes that could break or separate pipelines, interrupt power supplies, and damage building housing process equipment.
- Sewer infrastructure on the bench and in Spring Valley is vulnerable to landslides based on its location in and near hillsides and slopes.
- The Spring Valley WWTP is vulnerable to wildfire because of its location in the foothills. Even if the WWTP itself was not impacted, smoke and access could inhibit operation of this critical infrastructure. Wildfire could also reduce lift station function.

Mitigation actions addressing these issues were prioritized for consideration in the action plan in this annex.

10.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 10-10 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>ESD-1—Lagoon Berm Evaluation and Stabilization: High flow velocities during flooding events could potentially cause erosion at the toe of the lagoon berms and, although unlikely, possibly cause structural failure. Perform hydraulic modeling of the river channel and estimate potential for erosion of the lagoon berm. If deemed necessary, the placement of rip-rap and/or other measures would be pursued to reduce lagoon dike erosion.</p> <p><i>Comment: Project completed in 2021 to armor the lagoons and place rip-rap to direct river away from the lagoons.</i></p>	✓			
<p>ESD-2—Raise Portions of the Wastewater Treatment Plant, Mace Lift Station, and Old Valley Lift Station access roads: Portions of the road leading to these facilities are below the 100-year and 500-year flood elevations. To ensure that District staff can access wastewater treatment and operation facilities during a flooding event, low sections of access roads should be raised.</p> <p><i>Comment: In progress. The WWTP road was raised in 2021. The Mace and Old Valley lift station access roads still need to be raised.</i></p>			A.	ESD-5
<p>ESD-3—Control Building and Outbuilding Berm Option: To protect the Operations and several outbuilding at the wastewater treatment site against possible flooding, a small berm might be constructed around the perimeter of this area.</p> <p><i>Comment: Project completed in 2021.</i></p>	✓			

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>ESD-4—Develop a Joint Emergency Operation Plan with Eagle City and Eagle Fire District: This plan is necessary to establish a single, comprehensive framework for the management of domestic incidents. The City of Eagle will lead this all-discipline action, but Eagle Sewer District will aid in planning for all hazards.</p> <p><i>Comment:</i> No progress. A plan was developed several years ago, however this plan has not been updated since original creation.</p>			B.	ESD-7
<p>ESD-5—Develop a Continuity of Operation Plan: This plan will provide specific policies and procedures that will be carried out in the event of an emergency, including localized acts of nature, accidents, and technological or attack-related emergencies. The plan will address how the District will continue to perform essential functions in the event of compromised facilities or leadership, and how the District will return to normal operations.</p> <p><i>Comment:</i> Ongoing. There is a plan, however it needs updated.</p>			C.	ESD-8
<p>ESD-6—Support County-wide Initiatives Identified in Volume 1 of the Multi-Hazard Mitigation Plan</p> <p><i>Comment:</i> Ongoing. Continued support and communication.</p>			D.	ESD-9
<p>ESD-7—Actively Participate in the Plan Maintenance Protocols Outlined in Volume 1 of the Multi-Hazard Mitigation Plan</p> <p><i>Comment:</i> Ongoing. Continued communication and work with the other agencies.</p>			E.	ESD-2

10.8 HAZARD MITIGATION ACTION PLAN

Table 10-11 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 10-12 identifies the priority for each action. Table 10-13 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 10-11. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
<p>Action ESD-1—Support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in medium-risk hazard areas.</p> <p><i>Hazards Mitigated:</i> Flood, Severe Weather, Dam/Canal Failure</p>						
Existing	1,3,10	Eagle Sewer District	N/A	High	HMGP, BRIC, FMA	Short-term
<p>Action ESD-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.</p> <p><i>Hazards Mitigated:</i> All Hazards</p>						
New and Existing	All	Eagle Sewer District	Ada County	Low	District Funds, HMGP	Short-term
<p>Action ESD-3—Purchase generators for critical facilities and infrastructure that lack adequate backup power. This may include solar generation capacity and battery systems for pumping and treatment facilities.</p> <p><i>Hazards Mitigated:</i> Flood, Severe Weather, Wildfire, Dam/Canal Failure, Earthquake</p>						
New and Existing	1,3,10	Eagle Sewer District	N/A	Medium	District Funds, HMGP, BRIC, FMA	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action ESD-4 — Relocate the collection system pipeline that serves nearly half the service area and is located in the floodway/floodplain to outside these hazard zones.						
<i>Hazards Mitigated:</i> Flood, Severe Weather, Dam/Canal Failure						
Existing	1,2,10	Eagle Sewer District	N/A	High	District Funds, HMGP, BRIC, FMA	Short-Term
Action ESD-5 —Raise Portions of the Mace Lift Station and Old valley Lift Station access roads: Portions of the road leading to these facilities are below the 100-year and 500-year flood elevations. To ensure that District staff can access facilities during a flooding event, low sections of access roads should be raised.						
<i>Hazards Mitigated:</i> Flood, Severe Weather, Dam/Canal Failure						
Existing	1, 10	Eagle Sewer District	N/A	Low	District Funds, HMGP, FMA	Short-term
Action ESD-6 —Protect critical electronics in WWTP blowers susceptible to higher than design temperatures by air conditioning the blower room. Also protect lift station pumping system controls by air conditioning control rooms.						
<i>Hazards Mitigated:</i> Severe Weather						
Existing	1,10	Eagle Sewer District	N/A	Low	District Funds, HMGP, BRIC	Short-term
Action ESD-7 — Develop a Joint Emergency Operation Plan with Eagle City, Eagle Sewer District, and Eagle Fire Protection District: This plan is necessary to establish a single, comprehensive framework for the management of domestic incidents. The City of Eagle will lead this all-discipline action, but Eagle Sewer District and Eagle Fire District will aid in planning for all hazards. (Coordinates with City of Eagle Action E-9 and Eagle Fire Protection District EFD-8)						
<i>Hazards Mitigated:</i> All Hazards						
New and Existing	All	City of Eagle	Eagle Sewer District, Eagle Fire District	Medium	City Funds, District Funds, HMGP	Short-term
Action ESD-8 —Update the Continuity of Operations Plan: This plan will provide specific policies and procedures that will be carried out in the event of an emergency, including localized acts of nature, accidents, and technological or attack-related emergencies. The plan will address how the District will continue to perform essential functions in the event of compromised facilities or leadership, and how the District will return to normal operations.						
<i>Hazards Mitigated:</i> All Hazards						
New and Existing	All	Eagle Sewer District	N/A	Medium	District Funds, HMGP	Short-term
Action ESD-9 —Support County-wide Initiatives Identified in Volume 1 of the Multi-Hazard Mitigation Plan						
<i>Hazards Mitigated:</i> All Hazards						
New and Existing	All	Eagle Sewer District	N/A	Medium	District Funds, HMGP, BRIC, FMA	Short-term
Action ESD-10 —Convert the borrow pit ponds between the Boise River and the wastewater lagoons into wetlands. This action will reduce the risk of pit capture in a flood or dam failure event. The wetlands will also create habitat for wildlife and native black cottonwood. The removal of the heat-collecting ponds and addition of a wetland will mitigate temperature effects in the river improving habitat for aquatic species.						
<i>Hazards Mitigated:</i> Flood, Dam/Canal Failure, Severe Weather						
New and Existing	1,3,10	Eagle Sewer District	Army Corps, City of Boise	Medium	District Funds, HMGP, FMA	Short-term

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date
 Acronyms used here are defined at the beginning of this volume.

Table 10-12. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
ESD-1	3	High	High	Yes	Yes	No	Medium	High
ESD-2	10	Low	Low	Yes	No	Yes	High	Low
ESD-3	3	High	Medium	Yes	Yes	No	Medium	High
ESD-4	3	Medium	Medium	Yes	Yes	No	Medium	Medium
ESD-5	2	Medium	Medium	Yes	Yes	No	Medium	Medium
ESD-6	2	Medium	Medium	Yes	Yes	No	Medium	Medium
ESD-7	10	Low	Low	Yes	Yes	Yes	High	Medium
ESD-8	10	Low	Low	Yes	Yes	Yes	High	Medium
ESD-9	10	Low	Low	Yes	No	Yes	High	Low
ESD-10	3	Medium	Medium	Yes	Yes	No	Medium	Medium

a. See the introduction to this volume for explanation of priorities.

Table 10-13. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building ^b
High-Risk Hazards								
Extreme Weather		ESD-1, 4, 5, 6	ESD-2	ESD-10	ESD-3	ESD-10	ESD-10	ESD-2, 7, 8, 9
Medium-Risk Hazards								
Flood		ESD-1, 4, 5	ESD-2	ESD-10	ESD-3	ESD-10	ESD-10	ESD-2, 7, 8, 9
Wildfire			ESD-2		ESD-3			ESD-2, 7, 8, 9
Dam/Canal Failure		ESD-1, 4, 5	ESD-2	ESD-10	ESD-3	ESD-10	ESD-10	ESD-2, 7, 8, 9
Earthquake			ESD-2		ESD-3			ESD-2, 7, 8, 9
Low-Risk Hazards								
Landslide			ESD-2					ESD-2, 7, 8, 9
Drought			ESD-2					ESD-2, 7, 8, 9
Volcano			ESD-2					ESD-2, 7, 8, 9

a. See the introduction to this volume for explanation of mitigation types.

b. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

10.9 PUBLIC OUTREACH

Table 10-14 lists public outreach activities for this jurisdiction.

Table 10-14. Local Public Outreach

Local Outreach Activity	Date	Number of People Involved
Eagle Sewer District Board Meeting	Monthly	Varies
Eagle Sewer District Website and Comment Box	Ongoing	Varies

10.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **Eagle Sewer District Wastewater Treatment and Collection Systems Plan, 2016**—Used in the capabilities assessment and action plan. Describes District assets and critical infrastructure.
- **Eagle Sewer District Annual Audit, 2021**—Used in the capabilities assessment. Provides information on District assets.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

10.11 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

As the climate in this part of Idaho continues to change with warmer winters and hotter summers, additional planning is necessary to protect critical infrastructure.

11. EAGLE URBAN RENEWAL AGENCY

11.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Ashley Squyres, Administrator
 Mailing Address: 104 East Fairview Ave, #239
 Meridian, ID 83642
 Telephone: 208-830-7786
 e-mail: meridiandevelopmentcorp@gmail.com

Alternate Point of Contact

Michael Williams, CFM, Floodplain Administrator/Planner III
 660 East Civic Lane
 Eagle, Idaho 83616
 Telephone: 208-489-8774
 e-mail Address: mwilliams@cityofeagle.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 11-1.

Table 11-1. Local Hazard Mitigation Planning Team Members

Name	Title
Ashley Squyres	Administrator
Michael Williams	Floodplain Administrator/Planner III

11.2 JURISDICTION PROFILE

11.2.1 Overview

The Eagle Urban Renewal Agency (EURA) is an independent public redevelopment agency created in 2006 to promote community and economic development. The Eagle Urban Renewal Agency operates under Idaho Code in accordance with Idaho Urban Renewal Law and the Local Economic Development Act. The Agency’s purpose is to undertake the rehabilitation, conservation, development or redevelopment of areas identified within the Eagle Urban Renewal Plan.

In Eagle, the Eagle Urban Renewal Agency uses redevelopment to address sites within the district boundaries that have deteriorated, are underutilized or vacant and need assistance to become viable again. To accomplish urban renewal, EURA forms partnerships with private entities and uses tax increment financing (TIF), a tool available only to redevelopment agencies, to breathe new life into those areas. As a result, the entire community benefits from the creation of new businesses, jobs and tax revenues.

The mission of the agency is to promote sustainable economic growth, vitality, and community enhancement through collaboration and community investment, and to encourage revitalization and rehabilitation throughout the urban renewal district. To accomplish its mission, the agency works in close partnership with the Mayor, City Council, and a variety of public entities as well as downtown and neighborhood groups.

The agency has nine commissioners made up of one City Council member and eight at-large citizens.

The Eagle Urban Renewal Agency Board assumes responsibility for the adoption of this plan; the city of Eagle will oversee its implementation.

11.2.2 Service Area

The District service area is all located within the City of Eagle city limits. The district takes in about 31 square miles and serves a population of 34,470.

11.2.3 Assets

The District does not own property, equipment, or critical facilities.

11.3 CURRENT TRENDS

At this time, each of our TIF districts are redeveloping and growing.

11.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 11-2.
- An assessment of fiscal capabilities is presented in Table 11-3.
- An assessment of administrative and technical capabilities is presented in Table 11-4.
- An assessment of education and outreach capabilities is presented in Table 11-5.
- Classifications under various community mitigation programs are presented in Table 11-6.

Table 11-2. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
Idaho Urban Renewal Law in Title 50, Chapter 20, Idaho Code		
Local Economic Development Act, Title 50, Chapter 29, Idaho Code		
City of Eagle Comprehensive Plan: Economic Development Chapter	11/15/2017	

Table 11-3. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes, through TIF financing
Authority to Levy Taxes for Specific Purposes	This is what TIF financing is for - urban renewal
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Available, but the board chooses not to bond.
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Other	No

If yes, specify:

Table 11-4. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices <i>If Yes, Department /Position:</i> Ashley Squyres	Yes
Engineers or professionals trained in building or infrastructure construction practices <i>If Yes, Department /Position:</i> City Engineer available as needed on a contracted basis	Yes
Planners or engineers with an understanding of natural hazards <i>If Yes, Department /Position:</i> Ashley Squyres, Michael Williams	Yes
Staff with training in benefit/cost analysis <i>If Yes, Department /Position:</i> Ashley Squyres	Yes
Surveyors <i>If Yes, Department /Position:</i> Contracted as needed	Yes
Personnel skilled or trained in GIS applications <i>If Yes, Department /Position:</i> City GIS available as needed	No
Scientist familiar with natural hazards in local area <i>If Yes, Department /Position:</i> Contracted as needed	No
Emergency manager <i>If Yes, Department /Position:</i>	No
Grant writers <i>If Yes, Department /Position:</i> Ashley Squyres	Yes
Other <i>If Yes, Department /Position:</i>	No

Table 11-5. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	Yes
Do you have hazard mitigation information available on your website? <i>If yes, briefly describe:</i>	No

Criterion	Response
Do you use social media for hazard mitigation education and outreach? <i>If yes, briefly describe:</i>	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe:</i>	No
Do you have any other programs in place that could be used to communicate hazard-related information? <i>If yes, briefly describe:</i>	No
Do you have any established warning systems for hazard events? <i>If yes, briefly describe:</i>	No

Table 11-6. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	N/A	N/A	N/A
DUNS#	Yes	024950599	N/A
Community Rating System	N/A	N/A	N/A
Building Code Effectiveness Grading Schedule	N/A	N/A	N/A
Public Protection	N/A	N/A	N/A
Storm Ready	N/A	N/A	N/A
Firewise	N/A	N/A	N/A

11.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

11.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **City of Eagle Comprehensive Plan: Economic Development Chapter** —Land planning and land availability analysis in conjunction with hazard mapping in the HMP

11.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **City of Eagle Comprehensive Plan: Economic Development Chapter** —Update land planning and land availability reviews after considering revised hazard mapping in this hazard mitigation plan update.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

11.6 RISK ASSESSMENT

11.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 11-7 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Type of Event	FEMA Disaster #	Date	Damage Assessment
COVID-19 Pandemic	DR-4534	1/20/2020-present	unknown
Flooding	DR-4342	3/29/2017-06/15/2017	Countywide: \$4,493,792
Rain on Snow Flood	N/A	2012	N/A
Wildfire	N/A	07/28/2010	\$7,000,000
Wildland Fire	N/A	07/11/2010	N/A
Wildland Fire	N/A	08/29/2009	N/A
Severe Storm	N/A	01/02/2009	N/A
Wildland Fire	N/A	09/18/2008	N/A
Wildland Fire	N/A	08/08/2006	N/A
Severe Storm	N/A	07/04/2006	N/A
Flood	N/A	6/2006	\$500,000.00
Flood	N/A	6/2006	\$100,000.00

11.6.2 Hazard Risk Ranking

Table 11-8 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and district operations. Mitigation actions target hazards with high and medium rankings.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Extreme Weather	33	High
2	Flood	24	Medium
3	Wildfire	22	Medium
4	Dam/Canal Failure	18	Medium
5	Earthquake	16	Medium
6	Landslide	12	Low
7	Drought	9	Low
8	Volcano	6	Low

11.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Special flood hazard areas exist within the EURA boundaries.

Mitigation actions addressing these issues were prioritized for consideration in the action plan in this annex.

11.7 HAZARD MITIGATION ACTION PLAN

Table 11-9 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 11-10 identifies the priority for each action. Table 11-11 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 11-9. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action EURA-1 —Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
<i>Hazards Mitigated:</i> Extreme Weather, Flood, Wildfire, Dam/Canal Failure, Earthquake, Landslide						
Existing	3, 8, 9	EURA	City of Eagle	High	HMGP, BRIC, FMA	Short-term
Action EURA-2 —Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
<i>Hazards Mitigated:</i> Extreme Weather, Flood, Wildfire, Dam/Canal Failure, Earthquake, Landslide, Drought						
New & Existing	All	EURA		Low	Staff Time, General Funds	Short-term
Action EURA-3 — Support county-wide initiatives identified in Volume 1.						
<i>Hazards Mitigated:</i> Wildfire, Extreme Weather, Flood, Earthquake, Dam/Canal Failure, Landslide, Drought						
Existing	All	EURA		Low	Staff Time, General Funds	Short-term
Action EURA-4 — Integrate Hazard Mitigation Plan hazard mapping into district plan updates, as applicable.						
<i>Hazards Mitigated:</i> Wildfire, Extreme Weather, Flood, Earthquake, Dam/Canal Failure, Landslide						
New & Existing	1, 2, 6	EURA		Low	Staff Time, General Funds	Short-term

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date

Acronyms used here are defined at the beginning of this volume.

Table 11-10. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	3	High	High	Yes	Yes	No	Medium	High
2	3	Low	Low	Yes	No	Yes	High	Low
3	10	Low	Low	Yes	No	Yes	High	Low
4	3	Low	Low	Yes	No	Yes	High	Low

a. See the introduction to this volume for explanation of priorities.

Table 11-11. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building ^b
High-Risk Hazards								
Extreme Weather		EUR-1	EUR-2					EUR-2, 3, 4
Medium-Risk Hazards								
Flood		EUR-1	EUR-2					EUR-2, 3, 4
Wildfire		EUR-1	EUR-2					EUR-2, 3, 4
Dam/Canal Failure		EUR-1	EUR-2					EUR-2, 3, 4
Earthquake		EUR-1	EUR-2					EUR-2, 3, 4
Low-Risk Hazards								
Landslide		EUR-1	EUR-2					EUR-2, 3, 4
Drought			EUR-2					EUR-2, 3
Volcano			EUR-2					EUR-2, 3

- a. See the introduction to this volume for explanation of mitigation types.
- b. Based on current community capacity, this jurisdiction did not identify a need for expansion of administrative and technical capabilities. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

11.8 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **City of Eagle Comprehensive Plan: Economic Development Chapter**—The chapter was reviewed for plan objectives correlating to hazard mitigation, for the capability assessment, and for identifying opportunities for action plan development.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

12. FLOOD CONTROL DISTRICT #10

12.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Mike Dimmick, District Manager
 8941 W. Duck Lake Dr.
 Garden City, ID 83714
 Telephone: 208-861-2766
 e-mail Address: projectmgr@boiseriver.org

Alternate Point of Contact

Ervin Ballou, Assistant Project Manager
 433 E. Rene Pl
 Eagle, ID 83616
 Telephone: 208-412-5104
 e-mail Address: ballou.erv45@gmail.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 12-1.

Table 12-1. Local Hazard Mitigation Planning Team Members

Name	Title
Mike Dimmick	District Manager

12.2 JURISDICTION PROFILE

12.2.1 Overview

Boise River Flood Control District No. 10 is responsible for working to minimize flood damage and to protect and promote the health, safety and general welfare (Idaho Code Section 42-3102). The District was organized on October 13, 1970 through an Order by the Director of the State of Idaho, Department of Water Administration (Idaho Department of Water Resources). The District was formed to “provide control of the Boise River and its tributaries in the affected area to protect life and property, preserve the public health and welfare and conserve and develop natural resources of the State of Idaho” (Order Creating Flood Control District No. 10 of Idaho) as they relate to potential flooding in Ada and Canyon Counties within the District’s boundaries. State law provides the District with statutory authority and responsibility to operate and maintain structural works of improvement for the prevention of floodwater and sediment damages, and to exercise all other powers necessary, convenient or incidental to carry out the provisions of the Flood Control District Act (Idaho Code sections 42-3101—42-3128).

Flood Control District No. 10 has observed continued rapid development along the Boise River within the jurisdictional boundaries. The District believes that land use changes significantly affect flood plain conveyance and storage, affecting individual sites and reaches above and below these sites. Development in the flood plain, combined with lack of channel forming flow events, sediment erosion and deposition, and the growth of gravel bars and associated vegetation, reduces the conveyance capacity of the Boise River, causes channel migration and increasing flooding risk. The District is also concerned that gravel pits developed adjacent to the banks of the river may be captured by the river during high flows, threatening both public and private facilities. The most

pressing issue facing the District in the future, minimizing flood impacts in the face of rapid growth requires river maintenance and protection of unimpeded access to the river, which will allow the District to continue normal maintenance activities, and effective planning for the Rivet corridor.

Historically, the District has had greater latitude to conduct responsibilities under the law and to maintain channel capacity. Flood Control District No. 10’s channel maintenance activities have become progressively more difficult to accomplish due to interpretations of regulations that vary over time and increasing concerns about environmental impacts. These factors combine to increase future flooding risks and damages for the residents within the boundaries of the District and impair the District’s ability to carry out responsibilities under the law.

The District is governed by a Board of three Commissioners, appointed by the Idaho Department of Water Resources. The District employs a staff of two; a District Manager and a part time Assistant District Manager. Revenues are generated through taxation collected on assessments on real property within the District.

The geographical extents of the District generally are along the Boise River and a portion of Dry Creek. Along the Boise River, the District is bounded by Chinden Blvd (State Highway 20-26) on the South, State Street (State Highway -44) on the North. The downstream limit is River Mile 22 (approximately 1- mile upstream of I-84 river bridges in Caldwell, ID), while the upstream limit is River Mile 49 (approximately 1-½ miles upstream of the Glenwood Bridge). In addition to the Boise River, a three mile long reach of Dry Creek, from the confluence with the Boise River upstream to Beacon Light Road in Eagle is included in the District boundaries.

The Boise River Flood Control District #10 Board assumes responsibility for the adoption of this plan; Boise River Flood Control District #10 will oversee its implementation.

12.2.2 Service Area

The district serves an area of 25,000 acres. The general boundary runs along the Boise River from approximately 50th Street in Garden City, Idaho to the single lane steel bridge just upstream of I-84 in Caldwell, Idaho. This covers the Flood Plain area along approximately 35 river miles.

12.2.3 Assets

Table 12-2 summarizes the assets of the District and their value.

Table 12-2. Special Purpose District Assets	
Asset	Value
Property	
0 acres of land	N/A
Equipment	
9’ raft	\$900
Office equipment (computer/iPhone/printer)	\$1,800
Total:	\$2,700
Total:	\$0

12.3 CURRENT TRENDS

Flood Control District No. 10 has observed continued rapid development along the Boise River within the jurisdictional boundaries. The District believes that land use changes significantly affect flood plain conveyance and storage, affecting individual sites and reaches above and below these sites. Development in the flood plain, combined with lack of channel forming flow events, sediment erosion and deposition, and the growth of gravel bars and associated vegetation, has reduced the conveyance capacity of the Boise River and increases flooding risks. The District is also concerned that gravel pits developed adjacent to the banks of the river may be captured by the river during high flows, threatening both public and private facilities. The most pressing issue facing the District in the future, minimizing flood impacts in the face of rapid growth, requires river maintenance and protection of unimpeded District access to the river, which will allow the District to continue normal maintenance activities, and effective planning for the river corridor.

Home sites and businesses along both the Boise River and Dry Creek continue to command a premium in the marketplace. Current population within the District is growing at approximately 15-percent per year. As the economy begins to stabilize, population trends within the District are anticipated to level off to an annualized growth rate of eight to ten percent per year. Real estate values have increased by over 30% causing a considerable increase in Values-at-Risk which in turn affects damage costs and emphasizes the importance of preventive mitigation efforts.

12.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 12-3.
- An assessment of fiscal capabilities is presented in Table 12-4.
- An assessment of administrative and technical capabilities is presented in Table 12-5.
- An assessment of education and outreach capabilities is presented in Table 12-6.
- Classifications under various community mitigation programs are presented in Table 12-7.

Table 12-3. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
State of Idaho, Stream Channel Alteration Permit	2019	Permit No. S82-20069 Permit No. S82-20080 Permit No. S82-20091
US EPA, Clean Water Act, Section 404, Administered by the U.S. Army Corps of Engineers	Created 1972	

Plan, Study or Program	Date of Most Recent Update	Comment
US EPA, Clean Water Act, National Pollutant Discharge Elimination System (NPDES)	Created 1972	
Municipal and County Floodplain Ordinances – <ul style="list-style-type: none"> • Municipal: Boise, Garden City, Eagle, Meridian, Star, Middleton, Nampa, Caldwell • County: Ada and Canyon 	May 12, 2020	City of Boise Ord. 15-20
	June 8, 2020	City of Garden City Ord. 1016-20
	July 23, 2019	City of Eagle Ord. 815
	May 12, 2020	City of Meridian Ord. 20-1879
	May 4, 2021	City of Star Ord. 336
	April 2, 2014	City of Middleton Ord. 531
	April 18, 2011	City of Nampa Ord. 3964
	March 4, 2019	City of Caldwell Ord. 3207
	June 10, 2020	Ada County Ord. 914
	August 30, 2019	Canyon County Ord. 19-038
County Highway Districts—Policy Manuals – <ul style="list-style-type: none"> • Ada County Highway District • Canyon County Highway District #4 	June 25, 2015	Ada County Highway District
	April 27, 2017	Canyon County Highway District #4
County Hazard Mitigation Plans <ul style="list-style-type: none"> • Ada County • Canyon County 	Update in progress	Ada County
	2021	Canyon County
The District Board of Commissioners have passed a number of resolutions dealing with floodplain development, including a no net adverse impact provision. These Resolutions remain in effect with this plan. <ul style="list-style-type: none"> • Resolution 02-2006 – A rise in BFE = Approved Flood Mitigation Plan Required • Resolution 07-2006 – Process for Review of Proposed Projects/Developments 	July 12, 2006	FCD #10
	November 16, 2006	FCD #10

Table 12-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	No
Capital Improvements Project Funding	No
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs – IDWR	Yes
Development Impact Fees for Homebuyers or Developers	No
Other	No

Table 12-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices <i>If Yes, Department /Position:</i> Contract Services	Yes
Engineers or professionals trained in building or infrastructure construction practices	No
Planners or engineers with an understanding of natural hazards <i>If Yes, Department /Position:</i> Contract Services	Yes
Staff with training in benefit/cost analysis	No
Surveyors <i>If Yes, Department /Position:</i> Contract Services	Yes
Personnel skilled or trained in GIS applications <i>If Yes, Department /Position:</i> Contract Services	Yes
Scientist familiar with natural hazards in local area <i>If Yes, Department /Position:</i> Universities	Yes
Emergency manager	No
Grant writers	No
Other	No

Table 12-6. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office? Contract Public Relations person	Yes
Do you have personnel skilled or trained in website development?	Yes, Contract Services
Do you have hazard mitigation information available on your website? <i>If yes, briefly describe:</i> Incident response/Links to other government agencies	Yes
Do you use social media for hazard mitigation education and outreach? <i>If yes, briefly describe:</i> Newspaper ads during maintenance operations/Safety messages.	Yes
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe:</i> 3-member Board of Commissioners	Yes
Do you have any other programs in place that could be used to communicate hazard-related information? Website information and contact listings for response agencies.	Yes
Do you have any established warning systems for hazard events? <i>If yes, briefly describe:</i> Code Red/ISAWS – residents may sign up to receive emergency notifications and critical community alerts. Both systems are IPAWS enabled and may additionally access that integrated system for public warnings.	Yes

Table 12-7. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	No	N/A	N/A
DUNS# (Current in SAM system)	Yes	065072546	July 1, 2021
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	No	N/A	N/A
Public Protection	No	N/A	N/A
Storm Ready	No	N/A	N/A
Firewise	Yes	N/A	N/A

12.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. The resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

12.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Resolution 02-2006** – A rise in BFE = Approved Flood Mitigation Plan Required
- **Resolution 07-2006** – Process for Review of Proposed Projects/Developments

12.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **FCD #10 5 Year Strategic Plan** – Boise River Flood Control District #10 will integrate portions of the Ada County Multi-Hazard Mitigation Plan into their 5 Year Strategic Plan that will be updated in November 2022.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

12.6 RISK ASSESSMENT

12.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 12-8 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 12-8. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
COVID-19 Pandemic	DR-4534	January 2020 and continuing	Flood damage recovery projects were delayed. \$ costs Not Available
Flooding	DR-4342	March 29-June 15, 2017	District minimum costs of \$375K/ Agencies costs Not Available
Laguna Point Pit Capture	N/A	2006	\$500,000
Brookwood Breach/Capture	N/A	2006	\$200,000
Mace Breach	N/A	2006	\$60,000
Eagle Isl. Levee Breach	N/A	1997	\$30,000
Linder Rd. Bridge Blockage	N/A	1996	\$2,000

12.6.2 Hazard Risk Ranking

Table 129 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and district operations. Mitigation actions target hazards with high and medium rankings. The rankings are based on local experiences and understanding of the hazards. Extreme Weather storm surges cause sudden rise in river flows below Lucky Peak Dam, causing high pit capture risk for gravel mines and high localized flooding risk.

Table 12-9. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	Flood	45	High
2	Extreme Weather	33	High
3	Dam/Canal Failure	28	Medium
4	Drought	9	Low
5	Earthquake	6	Low
6	Landslide	6	Low
7	Wildfire	6	Low
8	Volcano	6	Low

12.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Development in the Floodplain, especially close to the riverbanks restricts access for the district to perform routine maintenance and hazard tree removal, increasing risk to high value properties.
- Sediment deposits from flooding events such as experienced in 2017, result in the buildup of gravel bars forcing the Boise River to flow out of bank at 3,000 to 4,000 cubic feet per second (cfs) in some areas of high-density population, causing localized flooding below normal out of bank flows of 7,000 cfs., which historically is the beginning of flood stage.
- When the Boise River channel is occluded by sediment/gravel deposition, the river attacks the banks causing significant erosion in some areas which result in significant loss and higher risk to public and private property.

- The 2017 flood event caused out-of-bank flooding for more than 100 continuous days. This resulted in high saturation of adjacent lands which lasted long after the water receded. Weakened banks and tree roots caused long term (approximately 2 yrs.) of higher-than-normal property damage from bank failure and tree debris in the river channel. Recovery projects and costs were higher than anticipated due to this long-term saturation.
- Tax levy funding for Flood Districts do not cover the cost of large flood mitigation projects. Funding for large flood mitigation projects depends upon grant funding. Grant applications are costly to prepare and if awarded, matching funds can be difficult to acquire, especially for smaller flood districts with limited tax base revenues to cover application costs.

Mitigation actions addressing these issues were prioritized for consideration in the action plan in this annex.

12.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 12-10 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Action FCD10-1 —Support CRS program participation of participating jurisdictions within Ada County that interface with the FCD #10 operational area. <i>Comment:</i> FCD #10 is expanding cooperative efforts to work with stakeholders and an interagency basis. Ongoing action			✓	FCD10-1
Action FCD10-2 —Remove naturally occurring vegetative blockages in the river channels <i>Comment:</i> Annual River Maintenance Work. Ongoing			✓	FCD10-4
Action FCD10-3 —Modify FCD #10 website to include links to flood hazard mitigation and preparedness sites. <i>Comment:</i> Contracted PR person to manage website and public outreach. Ongoing action			✓	FCD10-5
Action FCD10-4 —Develop partnership with local City/County Planning and Zoning staffs to mitigate flood risk <i>Comment:</i> Sponsored interagency conference to build cooperative stakeholder relationships. Conducted interagency outreach to stakeholders for matching funds for flood mitigation grant applications. Ongoing			✓	FCD10-6
Action FCD10-5 —Update FEMA mapping within the district <i>Comment:</i> Working with Army Corps of Engineers and stakeholders FCD #10 secured a grant and developed a 2-D model for scientifically analyzing the river dynamics and using bathometric science-based information for making mitigation management decisions. User training and a Comprehensive Plan for model use is being developed prior to final completion of this project. This 2-D model (Known locally as the 2-D Boise River Management Tool - I.e., 2-D BRMT) is currently being successfully used by engineers and is proving to be the best available data which exceeds 1-D model data. Other products and studies will be available for use by stakeholders in a wide spectrum of riverine management in addition to flood mitigation. Ongoing			✓	FCD10-7
Action FCD10-6 —Remove accumulated sediment from Boise River and Dry Cr. <i>Comment:</i> Annual Maintenance Work to remove woody debris. Secure Grant funding to Develop long term plan for sediment/gravel management. Work in coordination with Cities and Counties to develop a Gravel Management Plan using the 2-D Boise River Management Tool (BRMT) to include a Digital Elevation Model of difference (DoD) map and biomass model. Ongoing			✓	FCD10-8

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Action FCD10-7 —Develop long term plan to manage Boise River at the Head of Eagle Island split. <i>Comment:</i> Using the 2-D model (see #5 above) to perform engineering analysis to provide solutions for reducing flood risk. Ongoing			✓	FCD10-9
Action FCD10-8 —Develop floodplain mitigation techniques to apply vegetative structures in the stream channels. <i>Comment:</i> See #7 above. Expand use of vegetative applications within bank repairs and levee maintenance projects. Ongoing			✓	FCD10-10
Action FCD10-9 —Irrigation Diversion Headgate Flood Mitigation <i>Comment:</i> Cooperate with irrigation companies to remove debris during annual FCD #10 River Maintenance. Ongoing			✓	FCD10-11
Action FCD10-10 —Support County-wide initiatives identified in Volume 1 <i>Comment:</i> Ongoing			✓	FCD10-3
Action FCD10-11 —Continue to support the implementation, monitoring, maintenance and updating of this plan as defined in Volume 1. <i>Comment:</i> Ongoing			✓	FCD10-2
Action FCD10-12 — Meet and coordinate with private organizations, state, federal and other local agencies to develop, conduct and maintain wildfire mitigation projects. <i>Comment:</i> Ongoing			✓	FCD10-12

12.8 HAZARD MITIGATION ACTION PLAN

Table 12-11 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 12-12 identifies the priority for each action. Table 12-13 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 12-11. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action FCD10-1 — Support CRS program participation of participating jurisdictions within Ada County that interface with the FCD #10 operational area. <i>Hazards Mitigated:</i> Flood						
Existing	2, 3, 4, 5, 6, 8, 9, 10	FCD #10	N/A	Low	FCD #10	Ongoing
Action FCD10-2 —Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan. <i>Hazards Mitigated:</i> All hazards						
New & Existing	All	FCD #10	EMCR	Low	Staff Time, General Funds	Short-term
Action FCD10-3 — Support County-wide initiatives identified in Volume 1. <i>Hazards Mitigated:</i> All hazards						
New & Existing	All	FCD #10	EMCR	Low	Staff Time, General Funds	Short-term
Action FCD10-4 — Remove naturally occurring vegetative blockages in the river channels <i>Hazards Mitigated:</i> Flood, Severe Weather						
Existing	2, 8, 9	FCD #10	N/A	Medium	FCD #10	Ongoing
Action FCD10-5 — Modify FCD #10 website to include links to flood hazard mitigation and preparedness sites. <i>Hazards Mitigated:</i> All hazards						
Existing	2, 3, 7, 8, 9, 10	FCD #10	N/A	Low	FCD #10	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action FCD10-6 — Develop partnership with local City/County Planning and Zoning staff to mitigate flood risk						
<u>Hazards Mitigated:</u> Flood, Dam/Canal Failure, Extreme Weather						
New & Existing	1, 2, 4, 5, 6, 8, 9, 10	FCD #10	N/A	Low	FCD #10, Staffs	Ongoing
Action FCD10-7 — Update FEMA mapping within the District						
<u>Hazards Mitigated:</u> Flood, Dam/Canal Failure						
New & Existing	2, 4, 8, 9	FCD #10	N/A	Medium	FCD #10, FEMA (HMGP, BRIC, FMA) & State Grants	Long-term
Action FCD10-8 — Develop a plan to manage accumulated sediment from Boise River and Dry Creek identified high risk sites						
<u>Hazards Mitigated:</u> Flood, Extreme Weather						
New & Existing	1, 2, 8, 9	FCD #10	Cities, Counties, Army Corps of Engineers, Idaho Dept. Of Water Resources, Idaho Dept. Of Lands	High	FCD #10, State and Federal Grants	Long-term
Action FCD10-9 — Develop long term plan to manage Boise River flow impacts at the Head of Eagle Island.						
<u>Hazards Mitigated:</u> Flood, Extreme Weather						
New & Existing	2, 3, 6, 8, 9, 10	FCD #10	Cities/Ada County	High	FCD #10, FEMA (HMGP, BRIC, FMA) & State Grants	Long-term
Action FCD-10 — Scientifically analyze floodplain mitigation techniques to apply vegetative structures in the stream channels.						
<u>Hazards Mitigated:</u> Flood, Dam/Canal Failure, Extreme Weather						
Existing	2, 6, 9	FCD #10	N/A	Medium	FCD #10, State Grants	Long-term
Action FCD-11 — Irrigation Diversion Headgate Flood Mitigation						
<u>Hazards Mitigated:</u> Flood						
Existing	1, 8, 9, 10	FCD #10	N/A	Low	FCD #10, Irrigators	Ongoing
Action FCD10-12 — Meet and coordinate with private organizations, state, federal and other local agencies to develop, conduct and maintain wildfire mitigation and fuel-reduction projects, including prescribed fire (Rx fire), pile-burning and managed fire. Increase capacity to conduct these projects through hiring personnel and expenditures for equipment and biological control methods. (Coordinates with City of Boise Action B-15, North Ada County Fire & Rescue District Action NACFR-15, Whitney Fire Protection District WFD-8)						
<u>Hazards Mitigated:</u> Wildfire						
New & Existing	1, 6, 9, 10	Boise Fire Department	FCD #10, NACFR, Whitney Fire	Low	Local funds	Ongoing
Action FCD10-13 — Incorporate ACHMP into District 5-year Strategic Plan						
<u>Hazards Mitigated:</u> Flood						
Existing	2, 6, 8, 9, 10	FCD #10	N/A	Low	FCD #10	Short-term
Action FCD10-14 — Develop Administrative/Operations Plan to guide Flood District activity growth.						
<u>Hazards Mitigated:</u> Flood						
New & Existing	2, 6, 8, 9, 10	FCD #10	N/A	Low	FCD #10	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action FCD10-15 —Work with Ada County to develop a channel and gravel management plan, leveraging the Boise River Management Tool (2-D BRMT), including a Digital Elevation Model of difference (DoD) map and biomass model in the river along Unincorporated Ada County. (Coordinates with Unincorporated Ada County Action AC-23)						
<u>Hazards Mitigated:</u> Flood						
New & Existing	2, 6, 8, 9, 10	FCD #10	Ada County Development Services	Low	FCD #10, Ada County Development Services	Short-term
Action FCD10-16 — Evaluate riverbank integrity of the Boise River in the areas of interface with buildings and infrastructure. Determine and employ the best methodology to either repair damaged areas or harden other areas that may directly threaten buildings or infrastructure during high flow events. (Coordinates with the City of Star Action S-10)						
<u>Hazards Mitigated:</u> Flood, Extreme Weather, Dam/Canal Failure						
New & Existing	1, 2, 9, 10	FCD #10	City of Star	Medium	HMGP, FCD #10, City of Star CIP Funding	Long-term
Action FCD10-17 —Follow CDC guidelines for COVID avoidance.						
<u>Hazards Mitigated:</u> Public Health						
New	2, 6, 12	FCD #10	N/A	Low	FCD #10	Short-term

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date
 Acronyms used here are defined at the beginning of this volume.

Table 12-12. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	3	Medium	Low	Yes	No	Yes	High	Low
2	10	Low	Low	Yes	No	Yes	High	Low
3	10	Low	Low	Yes	No	Yes	High	Low
4	3	High	Low	Yes	Yes	Yes	High	High
5	6	Low	Low	Yes	No	Yes	High	Low
6	8	Medium	Low	Yes	No	Yes	High	Low
7	4	Medium	Medium	Yes	Yes	No	Medium	Medium
8	4	High	High	Yes	Yes	No	Medium	High
9	6	High	High	Yes	Yes	No	Medium	High
10	3	Medium	Medium	Yes	Yes	No	Low	Low
11	4	Low	Low	Yes	No	Yes	Low	Low
12	4	Medium	Low	Yes	No	Yes	Low	Low
13	5	Medium	Low	Yes	No	Yes	High	Low
14	5	Medium	Low	Yes	No	Yes	High	Low
15	5	Medium	Low	Yes	No	Yes	High	Low
16	4	Medium	Medium	Yes	Yes	No	Medium	Medium
17	2	Medium	Low	Yes	No	Yes	High	Low

a. See the introduction to this volume for explanation of priorities.

Table 12-13. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building ^b
High-Risk Hazards								
Flood	FCD10-1, 2, 3, 4, 6, 8, 9, 10	FCD10-3, 4, 6, 7, 8, 9, 10, 11, 12	FCD10-1, 3, 5, 6, 10, 12	FCD10-4, 8, 9, 10	FCD10-3, 6	FCD10-8, 9, 16		FCD10-3, 6, 7, 12, 13, 14, 15, 16
Extreme Weather	FCD10-2, 4, 8, 9	FCD10-1, 2, 3, 4, 8, 9	FCD10-3, 5, 12	FCD10-4, 8, 9, 10, 12	FCD10-1, 6	FCD10-16		FCD10-3, 6, 12, 16
Medium-Risk Hazards								
Dam/Canal Failure	FCD10-2, 3, 6	FCD10-4, 6, 7, 9	FCD10-3, 5, 6	FCD10-8, 9, 10	FCD10-3, 5, 6	FCD10-16		FCD10-3, 6, 7, 16
Low-Risk Hazards								
Drought	FCD10-2, 3		FCD10-2, 3, 5					FCD10-2, 3
Earthquake	FCD10-2, 3		FCD10-2, 3, 5					FCD10-2, 3
Landslide	FCD10-2, 3		FCD10-2, 3, 5					FCD10-2, 3
Wildfire	FCD10-2, 3		FCD10-2, 3, 5		FCD10-12		FCD10-12	FCD10-2, 3
Volcano								FCD10-2, 3

- a. See the introduction to this volume for explanation of mitigation types.
- b. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

12.9 PUBLIC OUTREACH

Table 12-14 lists public outreach activities for this jurisdiction.

Table 12-14. Local Public Outreach

Local Outreach Activity	Date	Number of People Involved
Website	Developed in 2019	Unknown
Interagency Flood Mitigation Seminar	2018	75

12.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **2017 Ada County Multi-Hazard Mitigation Plan** – The previous HMP was reviewed to update this annex.
- **State of Idaho, Stream Channel Alteration Permit** – Reviewed for the capability assessment.
- **US EPA, Clean Water Act** – Reviewed for the capability assessment.
- **Municipal and County Floodplain Ordinances (Boise, Garden City, Eagle, Meridian, Star, Middleton, Nampa, Caldwell, Ada County, Canyon County)** – Reviewed for the capability assessment.

- **Floodplain Development Resolutions (02-2006, 07-2006)** – Reviewed for the capability assessment.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

12.11 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

Due to the population growth and the explosion of values at risk in the Treasure Valley, Boise River Flood Control District #10 is experiencing a significant growth in the overall flood mitigation workload required to meet the mission requirements found in the Idaho Statutes that created the district in 1970. The district is developing Position Descriptions, Administrative Guidelines, and an Operations Handbook to support the expansion of the Board and Staffing needed to handle the expanded workload going forward. Current Special District Tax levies from residents within the district boundaries do not fully support the costs of performing the Flood Mitigation mission. A change in funding flood districts with this level of growth is required to meet the demands. Grant funding has helped but is not the long-term answer for meeting the Flood District expanding demands.

13. GREATER BOISE AUDITORIUM DISTRICT

13.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Pat Rice, Executive Director
 850 West Front Street
 Boise, ID 38702
 Telephone: 208-489-3650
 e-mail Address: pat_rice@boisecentre.com

Alternate Point of Contact

Brandon Doty, Safety & Security Manager
 850 West Front Street
 Boise, ID 83702
 Telephone: 208-489-3607
 e-mail Address: bdoty@boisecentre.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 13-1.

Table 13-1. Local Hazard Mitigation Planning Team Members

Name	Title
Brandon Doty	Safety & Security Manager
Pat Rice	Executive Director
Cody Lund	Assistant Executive Director
Nick Souba	Director of Operations
Anne Marie Downen	Director of Finance
David Gregori	Facility Manager

13.2 JURISDICTION PROFILE

13.2.1 Overview

The Greater Boise Auditorium District was created by voters within the District’s boundaries on June, 9 1959 to build, operate, maintain, market and manage public auditoriums, exhibit halls, convention centers, sports arenas, and other similar facilities. The District is represented by an elected, five member, Board of Directors. The District boundaries go beyond the City of Boise to include: all of Garden City, portions of the cities of Eagle and Meridian, and includes some unincorporated areas. The purpose of the District is to serve the public need and promote economic growth. In 1990, the Greater Boise Auditorium District completed construction of the Boise Centre on the Grove, (convention center) the District’s first convention facility, known today as Boise Centre. With the expansion and renovations projects completed Boise Centre has the tools necessary to complete for larger convention groups and host multiple meetings and events simultaneously.

The District worked diligently over several years to establish an expansion project, later called Boise Centre East. Completed in August of 2016, the project added 38,250 square feet of space, including an additional ballroom,

meeting rooms, lobbies, and a commercial kitchen. The Boise Centre East expansion brought Boise Centre to a total of 88,250 square feet.

The Greater Boise Auditorium District assumes responsibility for the adoption of this plan; Boise Centre will oversee its implementation.

13.2.2 Service Area

The District service area covers an estimated population of 328,959, based off of U.S. Census data from 2019. Land area served is approximately 180 square miles.

The District’s boundaries are shown in Figure 13-1.

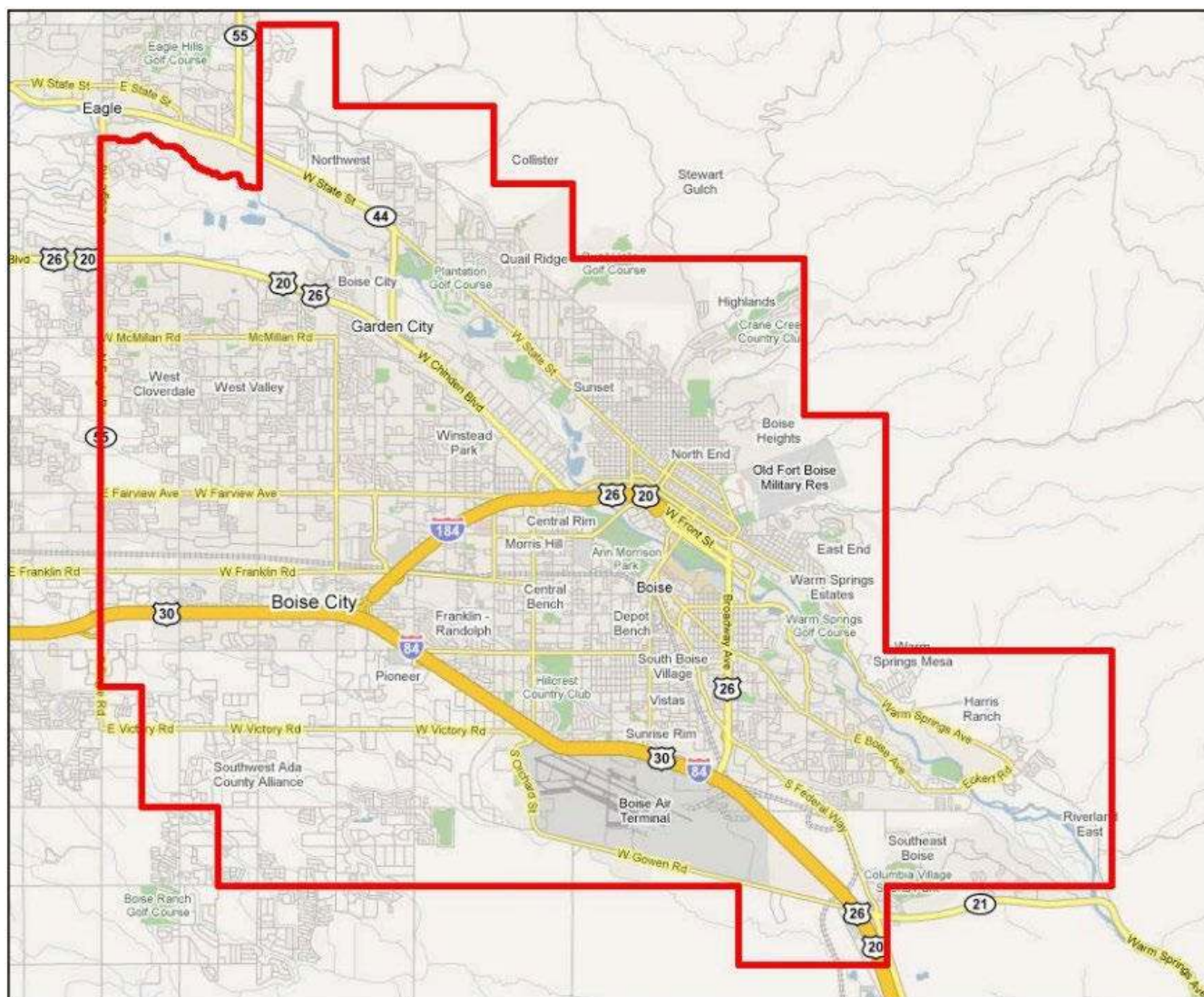


Figure 13-1. Greater Boise Auditorium District boundary

13.2.3 Assets

Table 13-2 summarizes the assets of the District and their value.

Table 13-2. Special Purpose District Assets	
Asset	Value
Property	
5.705 acres of land ^a	\$11,888,250 ^a
Equipment	
Emergency Generator System	\$75,000
Air Cooling Chiller & Plumbing	\$750,000
Geothermal Heating & System	\$100,000
Boiler Heating & System	\$150,000
Kitchen & Food Prep	\$1,800,000
Total:	\$7,350,000
Critical Facilities	
Boise Centre West	\$48,730,500
Boise Centre Sales Office and Warehouse	\$678,760
Boise Centre East	\$13,052,000
Aquatics Facility Cover ^a	\$3,125,000 ^a
Total:	\$62,461,260^a

a. The District purchased 3.73 acres of land in October of 2021 for the addition of an aquatics facility, to be built and operated by Idaho Competitive Aquatics (ICA).

13.3 CURRENT TRENDS

The District foresees continued growth opportunity for the meetings and convention industry.

- The District has no taxing authority on the District population. The main funding source comes from the collection of a hotel room tax from hotels within the District, currently at 5%.
- Both impact and growth studies continue to show glowing results for the District.
- The District purchased 3.73 acres of land in October of 2021 for the addition of an aquatics facility, to be built and operated by Idaho Competitive Aquatics (ICA).
- Boise continues to see an increase in interest as a destination for conventions and meetings.
- Additional hotels recently built in Boise have increased revenue from the tax collected within the District.
- The expansion has allowed Boise Centre to go after a larger market of convention, meeting, and association event business.

13.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 13-3.
- An assessment of fiscal capabilities is presented in Table 13-4.
- An assessment of administrative and technical capabilities is presented in Table 13-5.
- An assessment of education and outreach capabilities is presented in Table 13-6.
- Classifications under various community mitigation programs are presented in Table 13-7.

Table 13-3. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
Emergency Procedures Guide	August 2021	N/A
Idaho State Code Title 67, Chapter 49	June 1959	N/A
Information Technologies Security Policy	November 2021	N/A

Table 13-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	No
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	No
User Fees for Water, Sewer, Gas or Electric Service	No
<i>If yes, specify:</i>	
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	No
Development Impact Fees for Homebuyers or Developers	No
Other	No
<i>If yes, specify:</i>	

Table 13-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices	No
Engineers or professionals trained in building or infrastructure construction practices	No
Planners or engineers with an understanding of natural hazards <i>If Yes, Department /Position:</i> Safety & Security Manager	Yes
Staff with training in benefit/cost analysis <i>If Yes, Department /Position:</i> Director of Finance	Yes
Surveyors	No
Personnel skilled or trained in GIS applications	No
Scientist familiar with natural hazards in local area	No
Emergency manager <i>If Yes, Department /Position:</i> Safety & Security Manager	Yes
Grant writers	No
Information Technology Department <i>If Yes, Department /Position:</i> IT Manager	Yes

Table 13-6. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes – Communications Manager
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website?	No
Do you use social media for hazard mitigation education and outreach?	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	No
Do you have any other programs in place that could be used to communicate hazard-related information? <i>If yes, briefly describe:</i> Safety Committee	Yes
Do you have any established warning systems for hazard events? <i>If yes, briefly describe:</i> Code Red/ISAWS – residents may sign up to receive emergency notifications and critical community alerts. Both systems are IPAWS enabled and may additionally access that integrated system for public warnings.	Yes

Table 13-7. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	No	N/A	N/A
DUNS#	Yes	878208925	1990
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	No	N/A	N/A
Public Protection	No	N/A	N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

13.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

13.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- Capital Facilities Planning – The Boise Centre maintains a disciplined program for making capital investments and managing its capital resources within eligible and allowable uses. This policy applies to assets not held for resale. This policy applies to all construction, capital improvements, equipment purchases, special projects and intangible assets and only applies to the Boise Centre proprietary fund. The government fund uses the current financial resources measurement focus and uses the write off approach. (Capital Expenditures Policy, Boise Centre).
- Emergency Management Planning by Ada County EMCR – Wherever possible, GBAD will partner with Ada County’s Emergency Management and Community Resilience in support of preparedness, prevention, response, recovery, and mitigation activities, such as the Ada County Hazard Mitigation Plan.

13.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- Future updates to GBAD capital facility planning—Capital facility planning may use hazard maps and data from this hazard mitigation plan when prioritizing projects.
- Future updates to GBAD Emergency Operations Plan and Crisis Communication Plan—The EOP and CCP may use data from this hazard mitigation plan to establish priorities in each plan.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

13.6 RISK ASSESSMENT

13.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 13-8 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 13-8. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
Severe Weather	N/A	January 2017	Site inspection and assessment
Earthquake	N/A	March 31, 2020	Site inspection and assessment
Power Outages	N/A	Multiple dates between 2017 and present	Site and equipment inspections
COVID-19 Pandemic	DR-4534	January 20, 2020 and continuing	\$2.992 million in lost hotel lodging taxes to the District and an additional \$9.137 million in lost revenue from canceled event bookings in 2020 and 2021.

13.6.2 Hazard Risk Ranking

Table 13-9 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and district operations. Mitigation actions target hazards with high and medium rankings.

Table 13-9. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	Flood	33	High
2	Earthquake	33	High
3	Extreme Weather	33	High
4	Drought	18	Medium
5	Dam/Canal Failure	18	Medium
6	Wildfire	12	Low
7	Landslide	12	Low
8	Volcano	6	Low

13.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Back up electrical generator and other critical infrastructure are located below grade and are at risk for flooding failure.
- Boise Centre West’s 100 Ballroom ceiling equipment is not adequately secured for seismic activity.
- Water for Boise Centre is supplied by the City of Boise, including fire sprinkler and potable water.

Mitigation actions addressing these issues were prioritized for consideration in the action plan in this annex.

13.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 13-10 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 13-10. Status of Previous Plan Actions

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Initiative #1 —Elevate Critical Equipment From Basement <i>Comment: No Progress. No solution settled on or funded at this time.</i>			•	GBAD-4
Initiative #2 —Flood Proof Critical Equipment In Basement <i>Comment: No Progress. No solution or funding available at the time.</i>			•	GBAD-5
Initiative #3 —Secure Drop Ceiling Light Fixtures To Standard <i>Comment: In Progress. Beginning process of assessing structure and ceiling. Currently evaluating structure and electrical. This project will be planned for 2022, but is subject to change following COVID-19's economic impact on our organization.</i>			•	GBAD-6
Initiative #4 —Water Storage Tank- Clean water in case of contamination to city/public water. <i>Comment: No Progress. No current funds or solution in place. Looking at this for future years to help with resiliency for community disaster relief.</i>			•	GBAD-7
Initiative #5 —Support, Monitor, and Continually Update This Plan <i>Comment: Ongoing Capability. Current review in progress and ongoing. Actively participating in process.</i>			•	GBAD-2
Initiative #6 —Support and Be Actively Involved With Ada County Plan <i>Comment: Ongoing Capability. Current review in progress and ongoing. Actively participating in process.</i>			•	GBAD-8

13.8 HAZARD MITIGATION ACTION PLAN

Table 13-11 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 13-12 identifies the priority for each action. Table 13-13 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 13-11. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action GBAD-1 —Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas. <i>Hazards Mitigated:</i> Flood, Earthquake, Dam/Canal Failure, Severe Weather, Wildfire, Landslide						
Existing	All	District	N/A	High	HMGP, BRIC, FMA	Short-term
Action GBAD-2 —Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan. <i>Hazards Mitigated:</i> All Hazards						
New & Existing	All	District	Ada County EMCR	Low	Staff Time, District Funds	Short-term
Action GBAD-3 —Purchase additional mobile generators for critical facilities and infrastructure that lack adequate backup power, including commercial freezers and ice machines. <i>Hazards Mitigated:</i> Flood, Earthquake, Dam/Canal Failure, Severe Weather, Wildfire, Landslide						
New & Existing	All	District	Ada County EMCR	High	HMGP, BRIC	Short-term
Action GBAD-4 —Elevate critical equipment from basement, including the emergency generator, IT equipment, <i>Hazards Mitigated:</i> Flood						
Existing	1, 3, 10	District	N/A	\$2 Million	District Funds, HMGP, BRIC, FMA	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action GBAD-5 — Flood Proof Critical Equipment In Basement						
<i>Hazards Mitigated:</i> Flood						
Existing	1, 3, 10	District	N/A	\$1 Million	District Funds, HMGP, BRIC, FMA	Short Term
Action GBAD-6 — Retrofit the ballroom drop-ceiling to meet seismic building code, including light fixtures, HVAC, and other equipment in the drop-ceiling.						
<i>Hazards Mitigated:</i> Earthquake						
Existing	1, 3, 10	District	N/A	\$1.5 Million	District Funds, BRIC	Short Term
Action GBAD-7 — Install a 1,500 gallon water storage tank, to sustain non-contaminated source of water and combat effects of drought for 24 hours.						
<i>Hazards Mitigated:</i> Flood, Drought						
Existing	All	District	N/A	High	District Fund, HMGP, BRIC, FMA	Long Term
Action GBAD-8 — Support County-wide initiatives identified in Volume 1						
<i>Hazards Mitigated:</i> All Hazards						
New & Existing	All	District	Ada County EMCR	Low	Staff Time, District Funds	Short-term
Action GBAD-9 — Conduct an emergency backup power monitoring study to determine existing generator load capability and future emergency power load needs.						
<i>Hazards Mitigated:</i> Flood, Severe Weather						
Existing	1, 2, 3, 4, 10	District	N/A	\$20,000	District Funds, BRIC, HMGP	Short-term

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date

Acronyms used here are defined at the beginning of this volume.

Table 13-12. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	10	High	High	Yes	Yes	No	Medium	High
2	10	Low	Low	Yes	No	Yes	High	Low
3	10	High	High	Yes	Yes	No	Medium	High
4	3	High	High	Yes	Yes	No	Medium	High
5	3	High	High	Low	Yes	No	Medium	High
6	3	High	Medium	Yes	Yes	Yes	High	Low
7	10	High	Medium	Yes	Yes	No	Low	High
8	10	Low	Low	Yes	No	Yes	High	Low
9	5	High	Medium	Yes	Yes	Yes	High	Low

a. See the introduction to this volume for explanation of priorities.

Table 13-13. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building ^b
High-Risk Hazards								
Flood		GBAD-1, 4, 5			GBAD-3			GBAD-2, 8, 9
Earthquake		GBAD-1, 6			GBAD-3		GBAD-7	GBAD-2, 8
Extreme Weather		GBAD-1			GBAD-3			GBAD-2, 8, 9
Medium-Risk Hazards								
Dam/Canal Failure		GBAD-1			GBAD-3			GBAD-2, 8
Drought								GBAD-2, 8
Low-Risk Hazards								
Wildfire		GBAD-1			GBAD-3			GBAD-2, 8
Landslide		GBAD-1			GBAD-3			GBAD-2, 8
Volcano								GBAD-2, 8

- a. See the introduction to this volume for explanation of mitigation types.
- b. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

13.9 PUBLIC OUTREACH

Table 13-14 lists public outreach activities for this jurisdiction.

Table 13-14. Local Public Outreach

Local Outreach Activity	Date	Number of People Involved
Safety Committee	Meets the second Tuesday of each month	12
Code Red	N/A	N/A
Teldio/Twilio Mass Notification System	June 2021	4
City of Boise Special Events Committee	Meets every other Wednesday	2

13.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **2017 Ada County Multi-Hazard Mitigation Plan** – The previous HMP was reviewed to update this annex.
- **Boise Centre’s Capital Expenditures Policy** – This policy is utilized to identify how and what projects can be budgeted with GBAD’s capital funds.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

14. INDEPENDENT SCHOOL DISTRICT OF BOISE #1

14.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Bill McKitrick
 8169 W. Victory Rd
 Boise, ID 83709
 Telephone: 208-854-4086
 e-mail Address: Bill.McKitrick@Boiseschools.org

Alternate Point of Contact

Lisa Roberts
 8169 W. Victory Rd
 Boise, ID 83709
 Telephone: 208-854-4774
 e-mail Address: Lisa.Roberts@boiseschools.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 14-1.

Table 14-1. Local Hazard Mitigation Planning Team Members

Name	Title
Lisa Roberts	Deputy Superintendent
Bill McKitrick	Safety and Security Supervisor
Tom Willis	Facilities Administrator
Kyle Dennis	Assistant Facilities Administrator

14.2 JURISDICTION PROFILE

14.2.1 Overview

Enrollment in the Boise School District has been relatively level over the last four years. BSD is the second largest district in the State of Idaho with over 25,500 students. The FY 2020-21 budget uses a predicted District enrollment decrease of 400 students. The District anticipates a decrease at the elementary level as smaller class sizes enter the District. Birth rates in Ada County have decreased from a high of 5,788 in 2007 to 4,861 in 2018. The State Charter Commission did not approve any new charters within the District boundaries for 2020-21

The Boise School District assumes responsibility for the adoption of this plan; Safety and Security Steering Committee will oversee its implementation.

14.2.2 Service Area

The Boise School District is a PreK-12 grade public school district, serves approximately 25,500 students in 48 schools and employs approximately 4,300 people, of whom approximately 1,890 are certified staff. In the district, there are 33 elementary schools, 8 junior high schools, 5 senior high schools, and 1 online school.

14.2.3 Assets

Table 14-2 summarizes the assets of the District and their value.

Table 14-2. Special Purpose District Assets	
Asset	Value
Equipment	
Electric Forklift	\$ 22,156.00
Front End Loader	\$ 53,215.00
Deep Tine Aerator	\$ 20,488.00
Turf Sweeper	\$ 20,744.00
Tractor	\$ 27,790.00
Diesel Mower	\$ 72,910.00
Mini Excavators	\$ 36,671.00
Mini Excavators	\$ 26,758.80
Stock Picker Crown	\$ 26,597.89
Reach Truck Crown	\$ 42,573.67
Mower HR700	\$ 79,965.33
Mower HR700	\$ 79,965.33
Pump Machine	\$ 20,762.50
Lawn Mover	\$ 23,209.20
2015 Ford Escape	\$ 22,234.84
2014 Chevy Silverado	\$ 25,233.00
2009 GMC ¾ 4x4	\$ 20,881.00
2009 GMC ¾ 4x4	\$ 22,196.00
2013 Chevy Silverado	\$ 22,196.00
2013 Chevy Silverado	\$22,417.73
2013 Chevy Silverado	\$22,415.54
2007 GMC Savana	\$22,415.54
2007 GMC Savana	\$28,343.00
2007 GMC Savana	\$28,343.00
2012 Chevy RWD 3500	\$28,343.00
2013 CMC Savana	\$33,171.00
1996 Gruman GMC	\$35,488.00
1996 Gruman GMC	\$27,969.00
2002 Ford E-450	\$32,349.80
1997 Ford &-700	\$35,497.10
2005 Chevy Truck	\$38,095.00
2018 Ford Cargo Van	\$30,101.00
2018 Chevy Cargo Van	\$20,984.06
2018 Chevy Cargo Van	\$20,984.06
2018 Chevy Cargo Van	\$20,984.06
2018 Chevy Cargo Van	\$20,984.06
2018 Chevy Cargo Van	\$20,984.06
2006 Ford F750	\$27,790.00

Asset	Value
Sideflow Down Draft Spray Booth	\$29,132.00
Sideflow Down Draft Spray Booth	\$29,132.00
Clausing Colchester Lathe Center	\$97,470.00
Bridgeport Milling Machine w/ Access.	\$76,400.00
Hass Mini Mill Machining Center	\$33,021.75
Hydraulic Press Brake	\$27,936.90
X-660 Laser System	\$21,250.00
Hunter Alignment and Balancer	\$36,830.70
Haas SI-10 CNC Turning Center	\$45,978.00
Hetra 15,000 Lb Lift Post w/Hook-Up	\$34,316.64
Car-O-Liner Straightener w/Access	\$30,000.00
Hunter Alignment and Balancer	\$23,238.50
Laser Cutting System	\$25,910.00
Retro Systems Hornet HS	\$47,449.00
Tire Changer Hunter Revolution	\$30,139.00
Alex Pro Patient Dummy	\$31,290.00
Spray Bay	\$28,350.00
HD Vertical Machine	\$63,400.00
Rotary Lift 12000lbs	\$20,247.00
Universal Laser System Borah	\$24,461.00
Universal Laser System Capital	\$24,461.00
Custom Fluid Company Robot	\$33,000.00
King Machine Simulator Milling Machine	\$22,388.75
Tek Pipeline, LLC Super Micro computer	\$21,382.85
Mohawk Resources, LTD Tire Drum	\$24,457.04
King Machine Simulator Milling Machine	\$22,388.75
<i>Total:</i>	<i>\$2,116,803.54</i>
Critical Facilities	
Adams Elementary School	\$6,414,904
Amity Elementary School	\$16,326,146
ASCENT	\$1,258,455
Boise High	\$37,990,998
Borah High	\$21,875,809
Capital High	\$58,145,701
Collister Elementary School	\$6,371,220
Cynthia Mann Elementary School	\$12,455,471
Fort Boise 300 W. Fort St.	\$7,788,668
Garfield Elementary	\$11,624,220
Grace Jordan Elementary School	\$13,701,475
Hawthorne Elementary School	\$9,234,791
Hidden Springs Elementary	\$3,291,010
Highlands Elementary	\$17,212,500
Hillcrest Elementary	\$8,427,500

Asset	Value
Hillside Jr. High	\$16,608,255
Horizon	\$12,675,905
Jefferson Elementary	\$9,983,906
Koelsch Elementary	\$11,342,523
Les Bois Jr. High	\$31,721,238
Liberty Elementary	\$12,283,999
Longfellow Elementary	\$6,497,068
Lowell Elementary	\$11,053,871
Madison ECC	\$2,545,056
Maple Grove Elementary	\$9,329,106
Monroe Elementary	\$5,270,585
Morley Nelson	\$13,539,500
Mountain View Elementary	\$17,850,000
North Jr. High	\$25,293,264
Owyhee Elementary	\$6,532,063
Pierce Park Elementary	\$18,487,500
Riverglen Jr. High	\$31,559,731
Riverside Elementar	\$12,711,474
Roosevelt Elementary	\$8,443,996
Shadow Hills Elementar	\$12,077,110
South Jr. High	\$31,937,931
STEP Program	\$1,339,515
Taft Elementary	\$7,308,056
Timberline High	\$53,430,343
Trail Wind	\$11,760,783
Valley View Elementary	\$20,000,000
Washington Elementary	\$18,750,000
West Jr. High	\$29,709,785
White Pine	\$12,645,181
Whitney Elementary	\$15,449,458
Whittier Elementary	\$15,205,446
Facilities & Operations	\$12,750,000
District Service Center	\$8,047,759
<i>Total:</i>	<i>\$746,259,275</i>

14.3 CURRENT TRENDS

District population continues to increase as development progresses, particularly in the southern end of the district. A new high school, junior high and 2 elementary schools are to be needed to adequately service the increased development.

14.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 14-3.
- An assessment of fiscal capabilities is presented in Table 14-4.
- An assessment of administrative and technical capabilities is presented in Table 14-5.
- An assessment of education and outreach capabilities is presented in Table 14-6.
- Classifications under various community mitigation programs are presented in Table 14-7.

Table 14-3. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
Board Policy 9310- Facility Safety Program	4/10/17	N/A
Board Policy 3313-Safe and Secure Learning/Work Environment	7/01/21	N/A
Boise Schools Emergency Operations Plans	10/01/21	N/A

Table 14-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	No
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	No
Development Impact Fees for Homebuyers or Developers	No

Table 14-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices	No
Engineers or professionals trained in building or infrastructure construction practices	No
Planners or engineers with an understanding of natural hazards	No
Staff with training in benefit/cost analysis	No
Surveyors	No
Personnel skilled or trained in GIS applications	Yes
<i>If Yes, Department /Position:</i> Boundaries and Transportation	
Scientist familiar with natural hazards in local area	No
Emergency manager	Yes
<i>If Yes, Department /Position:</i> Safety and Security Specialist	
Grant writers	No
Other	No
<i>If Yes, Department /Position:</i>	

Table 14-6. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes- Dan Hollar, Public Affairs
Do you have personnel skilled or trained in website development?	Yes- Will Goodman, Technology Admin
Do you have hazard mitigation information available on your website? <i>If yes, briefly describe:</i> Periodic/seasonal updates on hazards	Yes
Do you use social media for hazard mitigation education and outreach? <i>If yes, briefly describe:</i> Winter Storm Safety Notification	Yes
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe:</i> Safety and Security Advisory Committee	Yes
Do you have any other programs in place that could be used to communicate hazard-related information? <i>If yes, briefly describe:</i> Parent/Community Newsletters/Communications	Yes
Do you have any established warning systems for hazard events? <i>If yes, briefly describe:</i> Code Red/ISAWS – residents may sign up to receive emergency notifications and critical community alerts. Both systems are IPAWS enabled and may additionally access that integrated system for public warnings.	Yes

Table 14-7. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	No	N/A	N/A
DUNS#	Yes	122740046	N/A
Community Rating System	N/A	N/A	N/A
Building Code Effectiveness Grading Schedule	N/A	N/A	N/A
Public Protection	N/A	N/A	N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

14.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

14.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Site Emergency Operations Plans-** School EOPs are crafted and reviewed annually based on an individualized threat profile for each school. Threat profiles include elements of hazard mitigation plans as appropriate for the site.

14.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- [Facilities Master Plan](#)—The Facilities Master Plan may reference hazard mapping and data from this hazard mitigation plan when updating recommended project lists.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

14.6 RISK ASSESSMENT

14.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 14-8 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 14-8. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
COVID-19 Pandemic	DR-4534	January 20, 2020 and continuing	All School Cancelled/Virtual
Flooding	DR-4342	March 29 – June 15, 2017	N/A
Wildfires	DR-1341	July 27 – September 26, 2000	N/A
Earthquake	N/A	March 31, 2020	N/A

Type of Event	FEMA Disaster #	Date	Damage Assessment
Winter Weather Cancellation	N/A	11/14/2014	All School Cancelled
Winter Weather Cancellation	N/A	2/27/14	All School Cancelled
Winter Weather Cancellation	N/A	1/10/2013	All School Cancelled
Winter Weather Cancellation	N/A	12/1/2010	All School Cancelled

14.6.2 Hazard Risk Ranking

Table 14-9 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and district operations. Mitigation actions target hazards with high and medium rankings.

Table 14-9. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	Extreme Weather	33	High
2	Wildfire	22	Medium
3	Flood	18	Medium
4	Dam/Canal Failure	18	Medium
5	Earthquake	16	Medium
6	Landslide	12	Low
7	Drought	9	Low
8	Volcano	6	Low

14.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Wild land fire- Interface schools
- Landslide- Foothills schools
- Extreme Weather/Winter Storms- All schools
- Seismic- All schools
- Public Health Hazards- All schools (faculty and students) are extremely vulnerable to public health hazards. This is very evident due to the impacts during the COVID-19 pandemic.

Mitigation actions addressing these issues were prioritized for consideration in the action plan in this annex.

14.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 14-10 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 14-10. Status of Previous Plan Actions

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Action BSD-1 —Retrofit Unreinforced Masonry Structures <i>Comment:</i> Continues through retrofit of existing structures and the completion of several new buildings.			•	BSD-1
Action BSD-2 —Mobile Generators for Shelter Facilities <i>Comment:</i> Continue to fund as budget is allowing			•	BSD-3
Action BSD-3 —Partner with EMCR for disaster response and preparedness, including updates to the county EOP <i>Comment:</i> Continues. EOPs have successfully been shared with community resources including access to live cameras at all sites and electronic door access.			•	BSD-4
Action BSD-4 —Continue internal (staff) and external (student/family) hazard education programs. <i>Comment:</i> Progress continues and now includes ISCRS.			•	BSD-5
Action BSD-5 —Coordinate building EOP documents into county-wide EOP parameters <i>Comment:</i> Continues. EOPs now incorporates ISCRS at all facilities.			•	BSD-6
Action BSD-6 —Support County-wide initiatives identified in Volume 1. <i>Comment:</i> Continues district wide			•	BSD-7
Action BSD-7 —Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Volume 1. <i>Comment:</i> Continues district wide			•	BSD-2

14.8 HAZARD MITIGATION ACTION PLAN

Table 14-11 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 14-12 identifies the priority for each action. Table 14-13 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 14-11. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action BSD-1 —Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those with unreinforced masonry or that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas. <i>Hazards Mitigated:</i> Earthquake, Extreme Weather, Flood, Wildfire						
Existing	1, 2, 3, 10	BSD		High	District Funds/Bonds, HMGP, BRIC, FMA	Long-term
Action BSD-2 —Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan. <i>Hazards Mitigated:</i> All hazards						
New & Existing	1-10	BSD	N/A	Low	Staff Time, District Funds, FEMA Mitigation Grant Funding for 5-year update	Short-term
Action BSD-3 — Purchase generators for critical facilities and infrastructure that lack adequate backup power, including mobile generators for shelter facilities. <i>Hazards Mitigated:</i> Extreme Weather, Wildfire, Flood, Earthquake, Dam/Canal Failure, Landslide						
Existing	1, 3, 7, 10	BSD	N/A	Low	District Funds	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action BSD-4 —Partner with EMCR for disaster response and preparedness, including updates to the county EOP.						
<i>Hazards Mitigated:</i> All hazards						
New & Existing	1-10	BSD	EMCR	Low	District Funds	Ongoing
Action BSD-5 —Continue internal (staff) and external (student/family) hazard education programs.						
<i>Hazards Mitigated:</i> All hazards						
New & Existing	1, 7, 9	BSD	N/A	Low	District Funds	Ongoing
Action BSD-6 —Coordinate building EOP documents into county-wide EOP parameters.						
<i>Hazards Mitigated:</i> All hazards						
New & Existing	1-10	BSD	N/A	Low	Staff Time, District Funds	Short-term
Action BSD-7 — Support County-wide initiatives identified in Volume 1.						
<i>Hazards Mitigated:</i> All hazards						
New & Existing	1-10	BSD	N/A	Low	Staff Time, District Funds	Short-term

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date
 Acronyms used here are defined at the beginning of this volume.

Table 14-12. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	4	High	High	Yes	Yes	Yes	Medium	High
2	10	Low	Low	Yes	No	Yes	High	Low
3	4	High	Medium	Yes	Yes	No	Medium	High
4	10	Low	Low	Yes	No	Yes	High	Low
5	3	Low	Low	Yes	No	Yes	High	Low
6	10	Low	Low	Yes	No	Yes	High	Low
7	10	Low	Low	Yes	No	Yes	High	Low

a. See the introduction to this volume for explanation of priorities.

Table 14-13. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building ^b
High-Risk Hazards								
Extreme Weather		BSD-1, 2	BSD-5, 7		BSD-3, 7			BSD-2, 4, 5, 6, 7
Medium-Risk Hazards								
Wildfire		BSD-1, 2	BSD-5, 7		BSD-3, 7			BSD-2, 4, 5, 6, 7

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building ^b
Flood		BSD-1, 2	BSD-5, 7		BSD-3, 7			BSD-2, 4, 5, 6, 7
Earthquake		BSD-1, 2	BSD-5, 7		BSD-3, 7			BSD-2, 4, 5, 6, 7
Dam/Canal Failure		BSD-1, 1	BSD-5, 7		BSD-3, 7			BSD-2, 4, 5, 6, 7
Low-Risk Hazards								
Landslide		BSD-2	BSD-5, 7		BSD-3, 7			BSD-2, 4, 5, 6, 7
Drought		BSD-2	BSD-5, 7					BSD-2, 4, 5, 6, 7
Volcano								BSD-2, 4, 5, 6, 7

- a. See the introduction to this volume for explanation of mitigation types.
- b. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

14.9 PUBLIC OUTREACH

Table 14-14 lists public outreach activities for this jurisdiction.

Local Outreach Activity	Date	Number of People Involved
School Board Presentation and roundtable	9/13/21	20
School Board Presentation and roundtable	12/20/21	20
School Board Presentation and roundtable	3/14/22	20
School Board Presentation and roundtable	5/9/22	20

14.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **2017 Ada County Multi-Hazard Mitigation Plan** – The previous HMP was reviewed to update this annex.
- **Boise Schools Emergency Operations Plan**—The operations plans were reviewed for the full capabilities assessment and considered in action plan development.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

15. JOINT SCHOOL DISTRICT #2

15.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Spencer McLean, Administrator Buildings and Grounds
 2301 E. Lanark St.
 Meridian ID, 83642
 Telephone:208-350-5210
 e-mail Address: mclean.spencer@westada.org

Alternate Point of Contact

TJ Evans, Assistant Administrator Buildings and Grounds
 2301 E. Lanark St.
 Meridian ID, 83642
 Telephone:208-350-5210
 e-mail Address: evans.tj@westada.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 15-1.

Table 15-1. Local Hazard Mitigation Planning Team Members

Name	Title
Spencer McLean	Administrator Buildings and Grounds
TJ Evans	Assistant Administrator Buildings and Grounds
Tom Pill	Maintenance Supervisor
Bill Woffington	Grounds Supervisor
Tawnya Harrison	Custodial Supervisor
Jacob Helderman	Project Coordinator

15.2 JURISDICTION PROFILE

15.2.1 Overview

The District was formed as a result of a reorganization plan that reduced 1,082 school districts in Idaho in 1945 to 301 districts by 1950. The District included all or part of thirty-three school districts surrounding the communities of Meridian, Boise, Eagle, Star, Garden City and surrounding rural areas located in Ada and Canyon Counties. The name of the District was changed three times since it was formed from 1950 through 1952. On July 1, 1963, the name was officially changed to Joint School District Number 2. The District has experienced rapid growth in recent years and has become the largest school district in the state of Idaho.

The District employs approximately 4,050 certified and classified staff which educates nearly 38,000 students.

The authority to govern, which resides in a five member board of trustees, has been extended to it by the state (Idaho Code 33-501). As provided by Idaho law, the board of trustees of each school district has the power to levy

taxes for school purposes. Each Idaho school district is a political subdivision of the state of Idaho. The majority of the District's funding is supplied by the State of Idaho based on Student Average Daily Attendance.

The West Ada School District assumes responsibility for the adoption of this plan; the Facilities Leadership team will oversee its implementation.

15.2.2 Service Area

Joint School District #2 consists of approximately 382 square miles and serves a population of about 38,000 students.

15.2.3 Assets

Table 15-2 summarizes the assets of the District and their value.

Asset	Value
Property	
1293 acres of land	\$22,839,552.00
Equipment	
56 Maintenance and Operations Vehicles	N/A
9 Large Tractors	N/A
8 Large Trailers	N/A
4 Food Services Vehicles	N/A
Total:	N/A
Critical Facilities	
Meridian Elementary	\$6,275,670
Mary McPherson Elementary	\$6,180,970
Star Elementary	\$4,364,013
Ustick Elementary	\$5,509,268
McMillan Elementary	\$7,239,759
Chief Joe Elementary	\$7,239,759
Lake Hazel Elementary	\$7,894,826
Pioneer Elementary	\$7,928,105
Summerwind Elementary	\$7,255,732
Christine Donnel School of the Arts	\$7,007,240
Joplin Elementary	\$5,438,956
Eagle Hills Elementary	\$5,891,319
Frontier Elementary	\$8,602,969
Linder Elementary (Barbara Morgan)	\$5,832,200
Silver Sage Elementary	\$4,896,942
Seven Oaks Elementary	\$7,492,279
Chaparral Elementary	\$7,538,969
Eliiza Hart Spalding Elementary	\$7,538,969
Cecil D. Andrus Elementary	\$7,460,852
River Valley Elementary	\$7,523,549

Asset	Value
Ponderosa Elementary	\$7,560,918
Peregrine Elementary	\$7,607,705
Discovery Elementary	\$8,125,227
Pepper Ridge Elementary	\$8,145,831
Galileo Math and Science	\$14,725,824
Hunter Elementary	\$14,005,364
Prospect Elementary	\$10,960,037
Desert Sage Elementary	\$11,774,310
Paramount Elementary	\$11,774,351
Centennial High School	\$26,920,140
Meridian High School	\$33,811,300
Hillsdale Elementary	N/A
Eagle High School	\$35,136,967
Mountain View High School	\$35,455,840
Rocky Mountain High School	\$58,130,742
Owyhee High School	N/A
Renaissance High School	\$1,800,000
Lowell Scott Middle School	\$17,487,857
Meridian Middle School	\$23,383,504
Lake Hazel Middle School	\$18,740,062
Victory Middle School	N/A
Eagle Middle School	\$17,959,832
Lewis and Clark Middle School	\$17,322,419
Sawtooth Middle School	\$18,643,661
Heritage Middle School	\$16,763,760
Crossroads Middle School	\$3,004,767
Pathways Middle School	\$1,008,719
Meridian Academy	\$3,219,956
Eagle Academy	\$4,790,969
Central Academy	\$3,401,475
Technology Charter School	\$2,131,937
Medial Arts Charter School	\$3,088,352
District Service Center	\$69,421,053
Maintenance Facility	\$2,205,650
Grounds Facility	\$1,212,829
Transportation Facility	\$4,942,400
Gravel Pit Site	N/A
Ustick/Meridian Site	N/A
Amity/Eagle Site	N/A
Keego Springs site	N/A
Total	\$707,680,000

15.3 CURRENT TRENDS

Enrollment for Joint School District No. 2 has grown by 1,500 students in the last five years. Even though economic issues have slowed housing growth. The Joint School District No. 2 is expected to grow substantially into the future. Funding continues to be a vital issue. The Joint School District No. 2 has the second lowest revenue per pupil in the United States in districts over 10,000 students.

Joint School District #2 is adding three new middle schools, 1 new elementary school and 1 new academy over the next 12 months. With the rapid building of new homes we do not foresee the expansion / addition of new buildings slowing down within the next 5 years.

Joint School District No. 2 serves the cities of Meridian, Eagle, Star, parts of Boise and Garden City plus surrounding rural areas that make up 382 square miles with varying geographical areas. Some district facilities are in areas affected by flooding, while other areas could be more susceptible to wildfire and earthquakes. Severe weather, both winter and summer could affect most facilities.

15.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 15-3.
- An assessment of fiscal capabilities is presented in Table 15-4.
- An assessment of administrative and technical capabilities is presented in Table 15-5.
- An assessment of education and outreach capabilities is presented in Table 15-6.
- Classifications under various community mitigation programs are presented in Table 15-7.

Table 15-3. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
Joint School District No. 2 Strategic Plan		
Joint School District No. 2 Emergency Operations Plan		
Ada County Multi-Hazard Mitigation Plan	2017	Update in progress
State of Idaho Hazard Mitigation Plan	2018	
Idaho Department of Building Safety		

Table 15-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
<i>If yes, specify:</i>	
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No

Table 15-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices <i>If Yes, Department /Position:</i>	No
Engineers or professionals trained in building or infrastructure construction practices <i>If Yes, Department /Position:</i>	No
Planners or engineers with an understanding of natural hazards <i>If Yes, Department /Position:</i>	No
Staff with training in benefit/cost analysis <i>If Yes, Department /Position:</i> Facilities Department	Yes
Surveyors <i>If Yes, Department /Position:</i>	No
Personnel skilled or trained in GIS applications <i>If Yes, Department /Position:</i>	No
Scientist familiar with natural hazards in local area <i>If Yes, Department /Position:</i>	No
Emergency manager <i>If Yes, Department /Position:</i> Administrator Buildings and Grounds	Yes
Grant writers <i>If Yes, Department /Position:</i> Keri Davidson	Yes

Table 15-6. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes Gregory Wilson
Do you have personnel skilled or trained in website development?	Yes Devan Delashmutt
Do you have hazard mitigation information available on your website? <i>If yes, briefly describe:</i>	No
Do you use social media for hazard mitigation education and outreach? <i>If yes, briefly describe:</i> Blackboard (allows us to text / email patrons)	Yes
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe:</i>	No

Criterion	Response
Do you have any other programs that could be used to communicate hazard-related information? <i>If yes, briefly describe:</i>	No
Do you have any established warning systems for hazard events? <i>If yes, briefly describe:</i> Code Red/ISAWS – residents may sign up to receive emergency notifications and critical community alerts. Both systems are IPAWS enabled and may additionally access that integrated system for public warnings.	Yes

Table 15-7. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	N/A	N/A	N/A
DUNS#	Yes	029604402	N/A
Community Rating System	N/A	N/A	N/A
Building Code Effectiveness Grading Schedule	N/A	N/A	N/A
Public Protection	N/A	N/A	N/A
Storm Ready	N/A	N/A	N/A
Firewise	N/A	N/A	N/A

15.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

15.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Joint School District No. 2 Emergency Operations Plan**—The Emergency operations plan ties in with the Hazard Mitigation plan by cross referencing the notification processes between the two plans as well as evacuation procedures.
- **Idaho Department of Building Safety**—We are currently working with the State on implementing security procedures that will help the communication and access to real time video around our District.

15.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Joint School District No. 2 Strategic Plan**—We would like to coordinate the goals and objectives from this Multi-Hazard Mitigation Plan with our Strategic Plan as this will allow us to coordinate with all of the departments throughout the District on one plan.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

15.6 RISK ASSESSMENT

15.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 15-8 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Type of Event	FEMA Disaster #	Date	Damage Assessment
COVID-19 Pandemic	N/A	January 20, 2020 – ongoing	All in-person instruction canceled – Virtual
Flooding	N/A	March 29 – June 15, 2017	N/A
Severe Weather – Cold	N/A	1/2015	\$25,230.00
Severe Weather – Cold	N/A	12/18/2008	\$26,621.00
Severe Weather – Wind	N/A	1/4/2008	\$1,807.00
Severe Weather – Hail	N/A	4/9/2007	\$33,075.00
Severe Weather – Cold	N/A	1/20/2007	\$5,700.00
Severe Weather – Hail	N/A	7/15/2005	\$80,015.00
Wildfire – Air Quality	N/A	9/1/2000	N/A
Drought – Dry Well	N/A	10/31/1992	N/A
Earthquake	N/A	1983	N/A
Volcanic Eruption – Ash	N/A	5/22/1980	N/A

15.6.2 Hazard Risk Ranking

Table 15-9 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and district operations. Mitigation actions target hazards with high and medium rankings.

Rank	Hazard	Risk Ranking Score	Risk Category
1	Extreme Weather	33	High
2	Wildfire	22	Medium
3	Flood	18	Medium
4	Dam/Canal failure	18	Medium
5	Earthquake	16	Medium
6	Drought	9	Low
7	Landslide	6	Low
8	Volcano	6	Low

15.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Sewer Lines
- Electrical Connections
- Wildland Fire- Interface schools
- Extreme Weather/Winter Storms- All schools
- Seismic- All schools
- Public Health Hazards- All schools including the staff, patrons and students are vulnerable to public health hazards. Example - COVID-19 pandemic.

Mitigation actions addressing these issues were prioritized for consideration in the action plan in this annex.

15.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 15-10 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
JSD2-1 —Conduct structural and nonstructural feasibility studies and retrofits of district facilities to minimize injuries and damage from flood, earthquake and severe weather. <i>Comment: The district has completed the study at 40% of our buildings, but the additional 60% need to be done.</i>			✓	JSD2-9
JSD2-2 —Install hail guards over roof top HVAC units. <i>Comment: Completed during the previous plan maintenance period.</i>	✓			
JSD2-3 —Train Maintenance staff to perform visual screening for potential seismic hazards. <i>Comment: Ongoing</i>			✓	JSD2-8
JSD2-4 —Install drainage collectors at district facilities experiencing flooding. <i>Comment: Completed during the previous plan maintenance period.</i>	✓			
JSD2-5 —Create and maintain a hazard mitigation web page on the District’s website. <i>Comment: Completed during the previous plan maintenance period.</i>	✓			
JSD2-6 —Develop and maintain a Continuity of Operations Plan (COOP) <i>Comment: Completed during the previous plan maintenance period.</i>	✓			
JSD2-7 —Continue to support the implementation, maintenance, and updating of the Ada County Hazard Mitigation Plan. <i>Comment: Supported during the previous plan period and will continue to do so.</i>			✓	JSD2-2
JSD2-8 —Partner with cities and county to provide public education and awareness of potential natural disasters in Ada County. <i>Comment: Completed during the previous plan maintenance period.</i>	✓			

15.8 HAZARD MITIGATION ACTION PLAN

Table 15-11 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 15-12 identifies the priority for each action. Table 15-13 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 15-11. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action JSD2-1 —Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
<u>Hazards Mitigated:</u> Flood, Earthquake						
Existing	1-3,10	JSD2	N/A	High	Capital funds, HMGP, BRIC, FMA	Long term
Action JSD2-2 —Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
<u>Hazards Mitigated:</u> All hazards						
New & Existing	All	JSD2	N/A	Medium	Staff Time, General Funds/Capital funds	Long term
Action JSD2-3 — Purchase generators for critical facilities and infrastructure that lack adequate backup power, including mobile generators						
<u>Hazards Mitigated:</u> Flood, Earthquake, Dam/Canal Failure, Severe Weather, Wildfire, Landslide						
Existing	1,7,10	JSD2	N/A	Low	District funds	Short term
Action JSD2-4 —Coordinate with other local school districts and other state agencies to gather information and data for emergency and disaster events readiness.						
<u>Hazards Mitigated:</u> Severe Weather, Flood						
Existing and New	1-4, 7-9	JSD2	N/A	Low	District funds	Long term
Action JSD2-5 — Increased awareness and training to all staff and personnel with educational opportunities.						
<u>Hazards Mitigated:</u> All hazards						
New and Existing	4, 7, 10	JSD2	N/A	Low	District funds	Ongoing
Action JSD2-6 —Use data to further plans of improving understanding of the location and potential impacts of the identified hazards.						
<u>Hazards Mitigated:</u> All hazards						
New and Existing	All	JSD2		Medium	District funds	Ongoing
Action JSD2-7 — Seek out more efficient and ecofriendly waste disposal in order limit the impact of discarded waste in the event of a natural disaster.						
<u>Hazards Mitigated:</u> Waste disposal, Flood, Severe Weather						
New	3, 9	JSD2	N/A	Medium	District Funds	Ongoing
Action JSD2-8 — Train Maintenance staff to perform visual screening for potential seismic hazards.						
<u>Hazards Mitigated:</u> Earthquake						
Existing	2, 10	JSD2	N/A	Low	District Funds	Ongoing
Action JSD2-9 — Conduct structural and nonstructural feasibility studies and retrofits of district facilities to minimize injuries and damage from flood, earthquake and severe weather.						
<u>Hazards Mitigated:</u> Flood, Earthquake, Severe Weather						
Existing	1, 2, 10	JSD2	N/A	Low	District Funds	Ongoing

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date

Acronyms used here are defined at the beginning of this volume.

Table 15-12. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	3	High	High	Yes	Yes	No	Medium	High
2	3	Low	Low	Yes	No	Yes	High	Low
3	3	High	Medium	Yes	Yes	No	Medium	High
4	3	Medium	Low	Yes	Yes	Yes	High	High
5	3	Medium	Low	Yes	No	Yes	Medium	Low
6	3	Medium	Low	Yes	Yes	Yes	Medium	Medium
7	2	High	Medium	Yes	Yes	Yes	High	Low
8	2	Low	Low	Yes	No	Yes	High	Low

a. See the introduction to this volume for explanation of priorities.

Table 15-13. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
High-Risk Hazards								
Extreme Weather	JSD2-2, 9	JSD2-1	JSD2-5		JSD2-3, 7			JSD2-2, 4, 5, 6, 7
Medium-Risk Hazards								
Flood	JSD2-9	JSD2-1	JSD2-5		JSD2-3, 7			JSD2-2, 4, 5, 6, 7
Earthquake	JSD2-3, 9	JSD2-1, 3	JSD2-5, 8		JSD2-3			JSD2-2, 5, 6, 8
Dam/Canal Failure		JSD2-1	JSD2-5		JSD2-3			JSD2-2, 5, 6
Wildfire			JSD2-5		JSD2-3			JSD2-2, 5, 6
Low-Risk Hazards								
Drought			JSD2-5					JSD2-2, 5, 6
Landslide			JSD2-5		JSD2-3			JSD2-2, 5, 6
Volcano								JSD2-2, 5, 6

- a. See the introduction to this volume for explanation of mitigation types.
- b. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

15.9 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **2017 Ada County Multi-Hazard Mitigation Plan** – The previous HMP was reviewed to update this annex.

- **Joint School District No. 2 Emergency Operations Plan**—The EOP was reviewed for the full capabilities assessment and action plan development.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

16. KUNA RURAL FIRE DISTRICT

16.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

T.J. Lawrence, Fire Chief
150 W Boise Street
Kuna, Idaho 83634
Telephone: 208-370-3127
e-mail Address: tlawrence@kunafire.com

Alternate Point of Contact

Kristal Hinkle, Officer of Administration
150 W Boise Street
Kuna, Idaho 83634
Telephone: 208-922-1144
e-mail Address: khinkle@kunafire.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 16-1.

Table 16-1. Local Hazard Mitigation Planning Team Members

Name	Title
T.J. Lawrence	Fire Chief
Kristal Hinkle	Officer of Administration

16.2 JURISDICTION PROFILE

16.2.1 Overview

Kuna Rural Fire District (KRFD) was established in 1951 and provides fire protection, rescue services and wildland fire protection. Ada County paramedics respond out of the District station and KRFD responds to EMS calls. The District is a mix of urban, rural, agriculture and wildland areas. The District provides protection services for the City of Kuna, the southern portion of Ada County, and a portion of southwest Canyon County. Kuna Fire District also provides contract services to multiple entities in the southeast portion of Ada County as well as providing mutual aid to multiple agencies countywide and statewide. A large portion of Ada County borders the southern 20 mile boundary of the Kuna Fire District, that portion of the County is very remote and considered “no man’s land” as far as Fire and EMS Services. Kuna is typically dispatched to those areas for mutual aid due to our proximity to the area.

The District is governed by a board of five elected Commissioners with one Officer of Administration, and employs a Fire Chief, and 15 fulltime Firefighter/Paramedics who respond to approximately 2,000 incidents per year. Approximately 90% of the District’s budget is generated from tax assessment and the remaining 10% from fee based services.

The Board of Commissioners assumes responsibility for the adoption of this plan; Board of Commissioners and Fire Chief will oversee its implementation.

The District participates in the Public Protection Class Rating System and currently has a rating of:

- 4 within 1,000 feet of a water connection
- 8 within five miles of the fire station
- 9 between 5 and 10 miles of the fire station
- 10 over ten miles of the fire station.

16.2.2 Service Area

The district serves a population of 33,000 as of 2021 Its service area covers an area of 110 square miles that covers the City of Kuna, the southern portion of Ada County, and part of southwest Canyon County.

16.2.3 Assets

Table 16-2 summarizes the assets of the District and their value.

Table 16-2. Special Purpose District Assets	
Asset	Value
Property	
4 acres of land	\$900,000.00
Total:	\$900,000.00
Equipment	
Two Engines/Pumpers	\$1,160,000.00
One Tender	\$300,000.00
Two Brush Trucks	\$600,000.00
One Command Vehicle	\$75,000.00
One Squad F150	\$15,000.00
One Ford Explorer	\$8,500.00
Total:	\$2,158,000.00
Critical Facilities	
Fire Station #1	\$3,000,000.00
Total:	\$3,000,000.00

16.3 CURRENT TRENDS

The Kuna Fire District has experienced 43.4% population increase since the previous planning effort. This has resulted in an increase of 66.7% in total call volume (fire and EMS) over the past five years. The increase in call volume is due to the continued growth throughout the District, and we are expecting this trend to increase over the next five years due to the fact we are the second fastest growing area in the State of Idaho.

16.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 16-3.
- An assessment of fiscal capabilities is presented in Table 16-4.
- An assessment of administrative and technical capabilities is presented in Table 16-5.
- An assessment of education and outreach capabilities is presented in Table 16-6.
- Classifications under various community mitigation programs are presented in Table 16-7.

Table 16-3. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
Idaho State Code—Title 31	Varies	
National Fire Protection Association Codes	Varies	
Kuna Rural Fire District Policy Code		
The District must adhere to all applicable codes and regulations enforced by Federal, State and Local authorities that influence the District service area.	Varies	
International Wildland Urban Interface Code	2021	
Ada/Canyon Hazard Mitigation Plan	2017	Update in progress
City of Kuna Ordinance and Comprehensive Plan	2015	
Williams Northwest Pipeline (Natural Gas) Public Safety Response Manual		
Intermountain Gas Safety Response Manual		

Table 16-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	No
Capital Improvements Project Funding	No
Authority to Levy Taxes for Specific Purposes	No
User Fees for Water, Sewer, Gas or Electric Service	No
<i>If yes, specify:</i>	
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes

Table 16-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices <i>If Yes, Department /Position:</i>	No
Engineers or professionals trained in building or infrastructure construction practices <i>If Yes, Department /Position:</i>	No
Planners or engineers with an understanding of natural hazards <i>If Yes, Department /Position:</i>	No
Staff with training in benefit/cost analysis <i>If Yes, Department /Position:</i> Officer of Administration	Yes
Surveyors <i>If Yes, Department /Position:</i>	No
Personnel skilled or trained in GIS applications <i>If Yes, Department /Position:</i>	No
Scientist familiar with natural hazards in local area <i>If Yes, Department /Position:</i>	No
Emergency manager <i>If Yes, Department /Position:</i> Chief	Yes
Grant writers <i>If Yes, Department /Position:</i> Chief	Yes

Table 16-6. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes. Fire Chief
Do you have personnel skilled or trained in website development?	Yes. Officer of Administration
Do you have hazard mitigation information available on your website? <i>If yes, briefly describe:</i>	No
Do you use social media for hazard mitigation education and outreach? <i>If yes, briefly describe:</i> Facebook	Yes
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe:</i>	No
Do you have any other programs in place that could be used to communicate hazard-related information? <i>If yes, briefly describe:</i>	No
Do you have any established warning systems for hazard events? <i>If yes, briefly describe:</i> Code Red/ISAWS – residents may sign up to receive emergency notifications and critical community alerts. Both systems are IPAWS enabled and may additionally access that integrated system for public warnings.	Yes

Table 16-7. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	N/A	N/A	N/A
DUNS#	Yes	028600419	N/A
Community Rating System	N/A	N/A	N/A
Building Code Effectiveness Grading Schedule	N/A	N/A	N/A
Public Protection	Yes	4/8/9/10	2012 (in process of reclassification)
Storm Ready	N/A	N/A	N/A
Firewise	N/A	N/A	N/A

16.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

16.5.1 Existing Integration

Existing integration has not been identified as established between local hazard mitigation planning and other local plans and programs, but opportunities exist for future integration as described below.

16.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Community Wildfire Protection Plan**—A countywide Community Wildfire Protection Plan is in development and will use data and mapping from this hazard mitigation plan.
- **Kuna Rural Fire District Policy Code** —Updates to the District Policy Code will integrate hazard mapping from this hazard mitigation plan for flood and wildfire hazard area as applicable.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

16.6 RISK ASSESSMENT

16.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 16-8 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 16-8. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
COVID-19 Pandemic	DR-4534	January 20, 2020 and continuing	\$3,000
Severe Storm/Thunder Storm—Wind	N/A	08/22/2010	\$15,000
Wind	N/A	03/29/2009	\$6,666
Flood	N/A	06/04/2006	\$750,000
Severe Storm/Thunder Storm—Wind	N/A	07/25/2002	N/A
Severe Storm/Thunder Storm—Wind	N/A	01/16/1999	\$1,000

Type of Event	FEMA Disaster #	Date	Damage Assessment
Severe Storm/Thunder Storm—Wind	N/A	09/07/1998	\$4,000
Lightning	N/A	09/07/1998	\$2,000
Severe Storm/Thunder Storm—Wind	N/A	09/06/1998	\$1,600
Hail—Severe Storm/Thunder Storm—Wind	N/A	04/23/1998	\$4,000
Hazardous Spill/Fire	N/A	1997	N/A
Wind	N/A	09/17/1997	\$400
Lightning/Wild Fire	N/A	07/30/1996	N/A
Lightning/Wild Fire	N/A	1996	N/A
Lightning/Wild Fire	N/A	07/28/1995	\$800,000

16.6.2 Hazard Risk Ranking

Table 16-9 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and district operations. Mitigation actions target hazards with high and medium rankings. Rankings are based on the risk assessment for the City of Kuna, local knowledge, and understanding of the hazard events.

Table 16-9. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	Wildfire	33	High
2	Extreme Weather	33	High
3	Flood	18	Medium
4	Earthquake	16	Medium
5	Drought	16	Medium
6	Volcano	6	Low
7	Dam/Canal Failure	0	Low
8	Landslide	0	Low

16.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- The large size of the district service area does not allow for a quick response time to all areas of the district. Overlapping calls and lengthy drive times interfere with rapid response to some areas. If the district had another station to dispatch 911 response from, it would be able to service outlying areas more quickly.

Mitigation actions addressing these issues were prioritized for consideration in the action plan in this annex.

16.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 16-10 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 16-10. Status of Previous Plan Actions

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Action KFD-1 —Support County-wide initiatives identified in Volume 1 <i>Comment: Ongoing</i>			✓	KFD-3
Action KFD12 —Continue to support the implementation, monitoring, maintenance, and updating of the Plan, as defined in Volume 1. <i>Comment: Ongoing</i>			✓	KFD-2
Action KFD-3 —Comply with all applicable building and fire codes, as well as other regulations when constructing or significantly remodeling infrastructure facilities. <i>Comment: Ongoing, enforced by adopted codes</i>			✓	KFD-4
Action KFD-4 —Ensure a reliable source of water for fire suppression (meeting acceptable standards for minimum volume and duration of flow) for existing and new development. <i>Comment: Ongoing, enforced by adopted code</i>			✓	KFD-5
Action KFD-5 —Develop and maintain a coordinated approach between fire jurisdictions and water supply agencies to identify needed improvements to the water distribution system, initially focusing on areas of highest wildfire hazard. <i>Comment: Ongoing</i>			✓	KFD-6
Action KFD-6 —Ensure all dead-end segments of public roads in high hazard areas have at least a “T” intersection turn-around sufficient for typical wildland fire equipment. <i>Comment: Ongoing, enforced by adopted code</i>			✓	KFD-7
Action KFD-7 —Require that development in high fire hazard areas provide adequate access roads, onsite fire protection systems, evacuation signage and fire breaks <i>Comment: Ongoing process</i>			✓	KFD-8
Action KFD-8 —Ensure adequate fire equipment roads or fire road access to developed and open space areas. <i>Comment: Ongoing</i>			✓	KFD-9
Action KFD-9 —Construct a Railroad overpass to access south side of Kuna for emergency access and evacuation routes. Approx. 70 trains pass through and often block access to large portion of the District. <i>Comment: The City of Kuna is doing a feasibility study. Removed since the project is not under district authority.</i>		✓		
Action KFD-10 —Evacuation routes, map and mark evacuation options from southern portion of District. Provide public education in regards to evacuations. <i>Comment: No longer needed. Multiple accessible roadways and options for evacuation are available.</i>		✓		
Action KFD-11 —Increase communication capabilities between agencies, coordination of radio types and use of existing and new systems. <i>Comment: Vehicle radios are being updated gradually, but additional ones need update.</i>			✓	KFD-10

16.8 HAZARD MITIGATION ACTION PLAN

Table 16-11 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 16-12 identifies the priority for each action. Table 16-13 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 16-11. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action KFD-1 —Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas. <u>Hazards Mitigated:</u> Wildfire, Extreme Weather, Flood, Earthquake, Dam/Canal Failure, Landslide						
Existing	1, 2, 3	KRFD	N/A	High	HMGP, BRIC, FMA	Short-term
Action KFD-2 —Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan. <u>Hazards Mitigated:</u> Wildfire, Extreme Weather, Flood, Earthquake, Drought, Dam/Canal Failure, Landslide, Volcano						
New & Existing	1, 2, 6, 7, 8, 9, 10	KRFD	N/A	Low	Staff Time, General Funds	Short-term
Action KFD-3 — Support County-wide initiatives identified in Volume 1. <u>Hazards Mitigated:</u> Wildfire, Extreme Weather, Flood, Earthquake, Drought, Dam/Canal Failure, Landslide, Volcano						
New & Existing	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	KRFD	N/A	Low	Staff Time, General Funds	Short-term
Action KFD-4 — Comply with all applicable building and fire codes, as well as other regulations when constructing or significantly remodeling infrastructure facilities. <u>Hazards Mitigated:</u> Wildfire, Extreme Weather, Flood, Earthquake, Drought, Dam/Canal Failure, Landslide						
New & Existing	3, 4, 5	KRFD	N/A	Low	Staff Time, General Funds	Ongoing
Action KFD-5 — Ensure a reliable source of water for fire suppression (meeting acceptable standards for minimum volume and duration of flow) for existing and new development. <u>Hazards Mitigated:</u> Wildfire, Drought						
New & Existing	1, 9, 10	KRFD	N/A	Low	Staff Time, General Funds	Ongoing
Action KFD-6 — Develop and maintain a coordinated approach between fire jurisdictions and water supply agencies to identify needed improvements to the water distribution system, initially focusing on areas of highest wildfire hazard. <u>Hazards Mitigated:</u> Wildfire, Drought						
New & Existing	1, 9, 10	KRFD	N/A	Low	Staff Time, General Funds	Ongoing
Action KFD-7 — Ensure all dead-end segments of public roads in high hazard areas have at least a “T” intersection turn-around sufficient for typical wildland fire equipment. <u>Hazards Mitigated:</u> Wildfire						
New & Existing	1, 5, 9, 10	KRFD	N/A	Low	Staff Time, General Funds	Ongoing
Action KFD-8 — Require that development in high fire hazard areas provide adequate access roads, onsite fire protection systems, evacuation signage and fire breaks <u>Hazards Mitigated:</u> Wildfire						
New	1, 4, 5, 9, 10	KRFD	N/A	Low	Staff Time, General Funds	Ongoing
Action KFD-9 — Ensure adequate fire equipment roads or fire road access to developed and open space areas. <u>Hazards Mitigated:</u> Wildfire						
New & Existing	1, 9, 10	KRFD	N/A	Low	Staff Time, General Funds	Ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action KFD-10 — Increase communication capabilities between agencies, coordination of radio types and use of existing and new systems.						
<i>Hazards Mitigated:</i> Wildfire, Extreme Weather, Flood, Earthquake, Dam/Canal Failure, Landslide, Volcano						
New & Existing	7, 9	KRFD	N/A	Low	Staff Time, General Funds	Ongoing
Action KFD-11 — Add hazard mitigation information to the District website, including tips for residents to create defensible space around their homes.						
<i>Hazards Mitigated:</i> Wildfire						
New & Existing	2, 8	KRFD	N/A	Low	Staff Time, General Funds	Short-term
Action KFD-12 — Engage in a feasibility study to determine potential location and benefits of building a new station to serve outlying areas.						
<i>Hazards Mitigated:</i> Wildfire, Extreme Weather, Flood, Earthquake, Dam/Canal Failure, Landslide						
New & Existing	2, 10	KRFD	N/A	Low	HMGP, BRIC	Short-term

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date

Acronyms used here are defined at the beginning of this volume.

Table 16-12. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	3	High	High	Yes	Yes	No	Medium	High
2	7	Low	Low	Yes	No	Yes	High	Low
3	10	Low	Low	Yes	No	Yes	High	Low
4	3	Medium	Low	Yes	No	Yes	High	Low
5	3	Medium	Low	Yes	No	Yes	High	Low
6	3	Medium	Low	Yes	No	Yes	High	Low
7	4	Medium	Low	Yes	No	Yes	High	Low
8	5	Medium	Low	Yes	No	Yes	High	Low
9	3	Medium	Low	Yes	No	Yes	High	Low
10	2	Medium	Low	Yes	No	Yes	High	Low
11	2	Low	Low	Yes	No	Yes	High	Low
12	2	Low	High	No	Yes	No	Low	Medium

a. See the introduction to this volume for explanation of priorities.

Table 16-13. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
High-Risk Hazards								
Wildfire	KFD-4, 8, 9	KFD-1, 5	KFD-11		KFD-10			KFD-2, 3, 6, 7, 12
Extreme Weather	KFD-4	KFD-1			KFD-10			KFD-2, 3, 12
Medium-Risk Hazards								
Flood	KFD-4	KFD-1			KFD-10			KFD-2, 3, 12
Earthquake	KFD-4	KFD-1			KFD-10			KFD-2, 3, 12
Drought	KFD-4	KFD-5						KFD-2, 3, 6
Low-Risk Hazards								
Dam/Canal Failure	KFD-4	KFD-1			KFD-10			KFD-2, 3, 12
Landslide	KFD-4	KFD-1			KFD-10			KFD-2, 3, 12
Volcano								KFD-2, 3, 10

- a. See the introduction to this volume for explanation of mitigation types.
- b. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

16.9 PUBLIC OUTREACH

Table 16-14 lists public outreach activities for this jurisdiction.

Table 16-14. Local Public Outreach

Local Outreach Activity	Date	Number of People Involved
Elementary School Public Safety	October each year	Several hundred
Career Day and Classes for Mock Interviews	October each year	200

16.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **2017 Ada County Multi-Hazard Mitigation Plan** – The previous HMP was reviewed.
- **Kuna Rural Fire District Insurance Records**—Insurance records were reviewed to determine asset values
- **Kuna Rural Fire District Website**—The website was used in the capability assessment and action plan development.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

17. MERIDIAN DEVELOPMENT CORPORATION

17.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Ashley Squyres, Administrator
Mailing Address: 104 East Fairview Ave, #239
Meridian, ID 83642
Telephone: 208-830-7786
e-mail: meridiandevelopmentcorp@gmail.com

Alternate Point of Contact

Dave Winder, Board Chairman
Mailing Address: 104 East Fairview Ave, #239
Meridian, ID 83642
Telephone: 208-866-0610
e-mail: dave.winder@paccra.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 17-1.

Table 17-1. Local Hazard Mitigation Planning Team Members

Name	Title
Ashley Squyres	Administrator

17.2 JURISDICTION PROFILE

17.2.1 Overview

The Meridian Development Corporation (MDC) was established by Resolution No. 01-367 of the City Council of the City of Meridian, Idaho adopted July 24, 2001 to function as the City’s urban renewal agency. It is an independent agency, authorized under the authority of the Idaho Urban Renewal Law of 1965, as amended, Chapter 20, Title 50, Idaho Code.

The Meridian Development Corporation is committed to the economic stimulation and expansion of Downtown Meridian into a thriving area that provides opportunities in which to live, work, and play. Renewal and redevelopment will be supported through strategic use of resources to create successful projects that will attract and serve the people of Meridian.

The Meridian City Council created the agency and appointed nine Commissioners for rotating three-year terms. MDC has its own guiding documents, budget, and board.

The Meridian Development Corporation board assumes responsibility for the adoption of this plan; the City of Meridian will oversee its implementation.

- Funding sources: Tax Increment Financing

17.2.2 Service Area

The District service area is all located within the City of Meridian city limits. It includes several tax increment financing (TIF) districts.

The District takes in about 34 square miles and serves a population of 127,890.

17.2.3 Assets

The District does not own property, equipment, or critical facilities.

17.3 CURRENT TRENDS

At this time, each of our TIF districts are redeveloping and growing. This includes our Downtown District and our Ten Mile District along with sub-districts located in Downtown.

17.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 17-2.
- An assessment of fiscal capabilities is presented in Table 17-3.
- An assessment of administrative and technical capabilities is presented in Table 17-4.
- An assessment of education and outreach capabilities is presented in Table 17-5.
- Classifications under various community mitigation programs are presented in Table 17-6.

Table 17-2. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
Destination Downtown Master Plan		City of Meridian and MDC
Downtown Meridian Transportation Management Plan	2005	City of Meridian and MDC
City of Meridian Downtown Streetscape Design Guidelines	2007	City of Meridian and MDC
Downtown Marketing Strategy	2004	MDC
Ten Mile District Plan	2016	City of Meridian and MDC

Table 17-3. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes, through TIF financing
Authority to Levy Taxes for Specific Purposes	This is what TIF financing is for - urban renewal
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Available, but the board chooses not to bond.
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Other	No

If yes, specify:

Table 17-4. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices <i>If Yes, Department /Position:</i> Ashley Squyres	Yes
Engineers or professionals trained in building or infrastructure construction practices	No
Planners or engineers with an understanding of natural hazards <i>If Yes, Department /Position:</i> Ashley Squyres	Yes
Staff with training in benefit/cost analysis <i>If Yes, Department /Position:</i> Ashley Squyres	Yes
Surveyors	No
Personnel skilled or trained in GIS applications	No
Scientist familiar with natural hazards in local area	No
Emergency manager	No
Grant writers <i>If Yes, Department /Position:</i> Ashley Squyres	Yes
Other <i>If Yes, Department /Position:</i>	No

Table 17-5. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website?	No
Do you use social media for hazard mitigation education and outreach?	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe:</i>	No
Do you have any other programs in place that could be used to communicate hazard-related information?	No
Do you have any established warning systems for hazard events? <i>If yes, briefly describe:</i>	No

Table 17-6. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	N/A	N/A	N/A
DUNS#	Yes	808762434	N/A
Community Rating System	N/A	N/A	N/A
Building Code Effectiveness Grading Schedule	N/A	N/A	N/A
Public Protection	No	N/A	N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

17.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

17.5.1 Existing Integration

There is currently no existing integration between local hazard mitigation planning and district plans and programs.

17.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Destination Downtown Master Plan**—may include hazard mitigation plan hazard mapping when looking at future development
- **Ten Mile District Plan**—may include hazard mitigation plan hazard mapping when looking at future development

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

17.6 RISK ASSESSMENT

17.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 17-7 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 17-7. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
Thunderstorm/Microburst	N/A	6/22/2021	Tree broken in half due to thunderstorm outflow winds. Estimated 60MPH wind gusts
Cloudburst Rain Event	N/A	Sept 2013	Unknown
Cloudburst Rain Events	N/A	Aug 2010	Unknown
Wildfires	N/A	Sept 2000	Unknown
Rain & Flooding	N/A	Dec 1964	Unknown

17.6.2 Hazard Risk Ranking

Table 17-8 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and district operations. Mitigation actions target hazards with high and medium rankings.

Table 17-8. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	Extreme Weather	33	High
2	Flood	18	Medium
3	Earthquake	16	Medium
4	Drought	9	Low
5	Dam/Canal Failure	6	Low
6	Landslide	6	Low
7	Volcano	6	Low
8	Wildfire	0	Low

17.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. No additional jurisdiction-specific issues have been identified after a review of the results of the risk assessment, public involvement strategy, and other available resources.

17.7 HAZARD MITIGATION ACTION PLAN

Table 17-9 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 17-10 identifies the priority for each action. Table 17-11 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 17-9. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action MDC-1 —Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
<i>Hazards Mitigated:</i> Wildfire, Extreme Weather, Flood, Earthquake, Dam/Canal Failure, Landslide						
Existing	3, 8, 9	City of Meridian	MDC	High	HMGP, BRIC, FMA	Short-term
Action MDC-2 —Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
<i>Hazards Mitigated:</i> Wildfire, Extreme Weather, Flood, Earthquake, Dam/Canal Failure, Landslide, Drought, Volcano						
New & Existing	All	MDC		Low	Staff Time, General Funds	Short-term
Action MDC-3 — Support county-wide initiatives identified in Volume 1.						
<i>Hazards Mitigated:</i> Wildfire, Extreme Weather, Flood, Earthquake, Dam/Canal Failure, Landslide, Drought, Volcano						
Existing	All	MDC		Low	Staff Time, General Funds	Short-term
Action MDC-4 — Integrate Hazard Mitigation Plan hazard mapping into district plan updates, as applicable.						
<i>Hazards Mitigated:</i> Wildfire, Extreme Weather, Flood, Earthquake, Dam/Canal Failure, Landslide						
New & Existing	1, 2, 6	MDC		Low	Staff Time, General Funds	Short-term
Action MDC-5 — Construct Ninemile Creek Flood Mitigation Project as designed to eliminate flood risk to people, property and critical lifelines. The proposed improvements include constructing storm drain infrastructure and pipeline from Story Park to the outlet into the existing Ninemile Creek Channel north of the Union Pacific Railroad tracks. (Coordinates with the City of Meridian Action M-13.)						
<i>Hazards Mitigated:</i> Flood						
New & Existing	1, 3, 9, 10	MDC	City of Meridian	\$4.5 Million	HMGP, BRIC, MDC, FMA	Short-term

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date
 Acronyms used here are defined at the beginning of this volume.

Table 17-10. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	3	High	High	Yes	Yes	No	Medium	High
2	10	Low	Low	Yes	No	Yes	High	Low
3	10	Low	Low	Yes	No	Yes	High	Low
4	3	Low	Low	Yes	No	Yes	High	Low
5	4	High	Medium	Yes	Yes	No	Medium	High

a. See the introduction to this volume for explanation of priorities.

Table 17-11. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Medium-Risk Hazards								
Extreme Weather		MDC-1						MDC-2, 3, 4
Flood		MDC-1				MDC-5		MDC-2, 3, 4
Earthquake		MDC-1						MDC-2, 3, 4
Low-Risk Hazards								
Drought								MDC-2, 3
Dam/Canal Failure		MDC-1						MDC-2, 3, 4
Landslide		MDC-1						MDC-2, 3, 4
Wildfire		MDC-1						MDC-2, 3, 4
Volcano								MDC-2, 3

- a. See the introduction to this volume for explanation of mitigation types.
- b. Based on current community capacity, this jurisdiction did not identify a need for expansion of education and outreach or administrative and technical capabilities. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

17.8 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **Destination Downtown Master Plan**—The Master Plan was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **Downtown Meridian Transportation Management Plan**— Reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **City of Meridian Downtown Streetscape Design Guidelines**— Reviewed for the full capability assessment.
- **Downtown Marketing Strategy**— Reviewed for the full capability assessment.
- **Ten Mile District Plan**— Reviewed for the full capability assessment.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

18. NORTH ADA COUNTY FIRE & RESCUE DISTRICT

18.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Shelley Young, Fire District Administrator
5800 Glenwood Street
Garden City, ID 83714
Telephone: 208-375-0906
e-mail Address: shelley@nacfire.org

Alternate Point of Contact

Jeff Ramey, Commissioner/Chairman
5800 Glenwood Street
Garden City, ID 83714
Telephone: 208-375-0906
e-mail Address: chiefncathy@gmail.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 18-1.

Table 18-1. Local Hazard Mitigation Planning Team Members

Name	Title
Shelley Young	Fire District Administrator

18.2 JURISDICTION PROFILE

18.2.1 Overview

The North Ada County Fire & Rescue (NACFR) District is the result of the 1960s-era merger of Cole Fire District and Collister Fire District. A three-member elected board of officials governs NACFR. The Board assumes responsibility for adoption of this plan.

NACFR is funded by a levy on property values within the District. NACFR covers 34 square miles, with a roughly equal mix of urban commercial and suburban and rural residential areas and serves a population of approximately 24,500. The largest percentage of the population is located in the City of Garden City. The hazard environment is notable for a substantial hazardous materials presence in the commercial area, a large swath of urban interface in the Boise foothills and along the Boise River, and the presence of the Boise River itself. Station 16 has one of the highest run volumes of any fire station in the State of Idaho.

NACFR owns three fire stations: two within the city limits of Garden City (Stations 16 and 18), and one in Hidden Springs (formerly Station 20), located in the foothills north of Boise. As of June 15, 2022, the Hidden Springs Station (now Eagle Fire Station 5) has a full time staff and response due to a contract for service with the Eagle Fire District. To date, funding has not been available to allow NACFR to staff Station 18 for structural fire and emergency medical response. Ada County Paramedics does staff Station 18 on a part-time basis.

In 2009 NACFR signed a Joint Powers Agreement with Boise City Fire Department to provide staffing and oversee Operations for NACFR. In 2021 NACFR signed an additional Joint Powers Agreement with Eagle Fire Department to provide staffing and oversee operations for NACFR in a portion of the NACFR geographical area located near what is now Eagle Fire Station 5 and within the area of unincorporated Ada County.

The North Ada County Fire & Rescue Board of Commissioners assumes responsibility for the adoption of this plan; North Ada County Fire & Rescue District will oversee its implementation.

The District participates in the Public Protection Class Rating System and currently has a rating of 3 within City limits and 3W in areas of unincorporated Ada County located within district boundaries (subdistrict #1) where a water system and hydrants are present.

The district serves a population of 24,500 as of April 2022. Its service area covers an area of 34 square miles, which has a total potential taxable value of \$3.7 billion dollars.

18.2.2 Assets

Table 18-2 summarizes the assets of the District and their value.

Table 18-2. Special Purpose District Assets	
Asset	Value
Property	
1 acre of land	\$50,000
Equipment	
2017 Pierce Engine Arrow XT	\$650,000
2004 Pierce Enforcer	\$250,000
2004 Pierce Enforcer	\$150,000
2003 Pierce Water Tender	\$100,000
2005 GMC 5500 Brush Truck	\$100,000
2005 GMC 5500 Brush Truck	\$100,000
2008 Kawasaki Mule UTV	\$8,000
Total:	\$1,308,000
Critical Facilities	
Fire Station 16	\$1,500,000
Fire Station 18	\$3,000,000
Fire Station 20	\$2,000,000
Total:	\$6,500,000

18.3 CURRENT TRENDS

Due to reductions in revenue, in 2010, NACFR was forced to close one of its two Garden City Fire Stations. The entire State of Idaho is experiencing unprecedented growth, and the NACFR district, including the Boise River corridor, is growing exponentially. NACFR currently staffs Station 16 in Garden City with a BLS Engine Company and Station 5 located to the North with a BLS Engine Company. Station 5 responds in a rural area experiencing record residential growth.

In the longer term, local land use designations allow for an increase in light commercial and residential land uses within the service area. In FY2021 developers began building multi-story structures along the Boise River Corridor, and for the first time the NACFR district will include buildings of more than 5 stories with an 18-story condominium and commercial use structure planned within the next 3 years. This increase may result in an increase in hazards and will expose a larger, more densely configured population to them. This will also result in a projected increase in call volume.

18.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 18-3.
- An assessment of fiscal capabilities is presented in Table 18-4.
- An assessment of administrative and technical capabilities is presented in Table 18-5.
- An assessment of education and outreach capabilities is presented in Table 18-6.
- Classifications under various community mitigation programs are presented in Table 18-7.

Table 18-3. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
Idaho Code	2021	Annually based on legislature
Idaho Emergency Operations Plan	2019	
Idaho State Hazard Mitigation Plan	2018	
Ada County Flood Plan	2018	
Ada County Hazmat Plan	2018	
Ada County Wildfire Response Plan	2018	
Ada County Mass Casualty Incident Plan	N/A	
Ada County Multi-Hazard Mitigation Plan	2017	
Ada County Wildland-Urban Interface Wildfire Mitigation Plan	N/A	
City of Garden City Evacuation Plan	N/A	
City of Garden City Code 4-13-1	N/A	
City of Garden City Code 8-3	N/A	
NACFR Resolutions	2021	Annually based on need
NACFR Strategic Plan	2018	
Boise City Fire Department Standard of Cover-2021	2021	
National Fire Protection Association Standards and Recommended Practices (various)	N/A	
Eagle Fire Department Standard of Cover		

Table 18-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	No
Capital Improvements Project Funding	No
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes

Table 18-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices <i>If Yes, Department /Position:</i> Contract Support	Yes
Engineers or professionals trained in building or infrastructure construction practices <i>If Yes, Department /Position:</i> Contract Support	Yes
Planners or engineers with an understanding of natural hazards <i>If Yes, Department /Position:</i> Contract Support	Yes
Staff with training in benefit/cost analysis <i>If Yes, Department /Position:</i> Contract Support	Yes
Surveyors	No
Personnel skilled or trained in GIS applications <i>If Yes, Department /Position:</i> Contract Support	Yes
Scientist familiar with natural hazards in local area	No
Emergency manager <i>If Yes, Department /Position:</i> Ada County Emergency Management; Contract Support – City Boise (Fire) Emergency Management;	Yes
Grant writers <i>If Yes, Department /Position:</i> Contract Support	Yes

Table 18-6. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes. Contract Support
Do you have personnel skilled or trained in website development?	Yes. Contract Support
Do you have hazard mitigation information available on your website? <i>If yes, briefly describe:</i> Link to ACEMHMP	Yes
Do you use social media for hazard mitigation education and outreach? <i>If yes, briefly describe:</i> Social media outreach program with accounts on both Facebook and Twitter	Yes. Contract Support
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe:</i> Hidden Springs HOA	Yes

Criterion	Response
Do you have any other programs in place that could be used to communicate hazard-related information? <i>If yes, briefly describe:</i> Website-currently not utilized	Yes
Do you have any established warning systems for hazard events? <i>If yes, briefly describe:</i> Code Red/ISAWS – residents may sign up to receive emergency notifications and critical community alerts. Both systems are IPAWS enabled and may additionally access that integrated system for public warnings.	Yes

Table 18-7. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	No	N/A	N/A
DUNS#	Yes	118061687	N/A
Community Rating System	N/A	N/A	N/A
Building Code Effectiveness Grading Schedule	N/A	N/A	N/A
Public Protection	Yes	3	2013
Storm Ready	Yes	N/A	N/A
Firewise	Yes	N/A	N/A

18.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for future integration. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

18.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Firewise Communities**—The Firewise program encourages homeowners (in this case the Hidden Springs HOA) to prepare for wildland/urban interface fires.

18.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Firewise Communities**-The District will soon undertake a strategic planning effort to assess the impact of projected growth in the foothills on fire and EMS services. The Firewise process may provide input to the strategic planning process.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

18.6 RISK ASSESSMENT

18.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 18-8 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 18-8. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
Goose Fire	N/A	10/6/2020	441 acres burned, numerous evacuations
COVID-19 Pandemic	DR-4534	1/20/2020-Ongoing	N/A
Flooding	DR-4342	3/29/2017	Public Assistance County-wide: \$4,493,792
Winter Storms	N/A	December 2016	Extreme snowfall impacted services
Highway 16 Fire	N/A	2010	5 homes lost
McFarland Fire	N/A	2008	N/A
Oregon Trail Fire	N/A	2008	18 homes lost; 1 human life lost
Wildfires	DR-1341	2000	N/A
Foothills flooding	N/A	1959, 1969, 1979, 1982, 1986, 1997	In 1969 approximately 500 houses damaged by flash flooding and landslides.
Boise River floods	N/A	1936, 1938, 1943, (Boise River flood control dams built late 40s-50s) 1963, 1964, 1965, 1983, 1993, 1997, 1998	N/A
Challis Earthquake	N/A	1983	N/A
Mt. St. Helens eruption	N/A	1980	N/A

18.6.2 Hazard Risk Ranking

Table 18-9 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and district operations. Mitigation actions target hazards with high and medium rankings.

Table 18-9. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	Flood	48	High
2	Severe Weather	33	High
3	Wildfire	18	Medium
4	Earthquake	16	Medium
5	Dam/Canal Failure	12	Low
6	Drought	9	Low
7	Volcano	6	Low
8	Landslide	3	Low

18.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Fire Station located in the flood plain.
- Isolated development in the foothills exposed to urban interface wildfires, with limited access and extended response times.
- Fire Stations need retrofitting for earthquakes

Mitigation actions addressing these issues were prioritized for consideration in the action plan in this annex.

18.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 18-10 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 18-10. Status of Previous Plan Actions

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Action NACFR-1 —Develop consistent standards for development in high-risk/underserved areas <i>Comment: Removed as written, but reworded to be more specific in action plan update, as NACFR-3</i>		✓		
Action NACFR-2 —Conduct wildland-urban interface GIS-based hazard assessment <i>Comment: Ongoing capability.</i>			✓	NACFR-5
Action NACFR-3 —Perform Earthquake Retrofitting of Fire Stations 16, 18, 20 <i>Comment: No progress</i>			✓	NACFR-6
Action NACFR 4 —Continue Firewise Community program for residents in the foothills <i>Comment: Ongoing capability; this is currently done on behalf of NACFR by Boise Fire Department.</i>			✓	NACFR-4
Action NACFR-5 —Conduct Location/Construction Study for new Flood/Earthquake resistant Fire Station to replace Station 16 <i>Comment: No progress</i>			✓	NACFR-7
Action NACFR-6 —Construct new flood/earthquake resistant fire station <i>Comment: No progress</i>			✓	NACFR-8
Action NACFR-7 —Campaign to get neighborhoods to revise covenants and homeowners' association (HOA) rules to mitigate natural hazards. <i>Comment: WUI/Firewise education programs ongoing, other hazards currently not being addressed;</i>			✓	NACFR-9
Action NACFR-8 —Modify NACFR web-site to include links to hazard mitigation and preparedness sites. <i>Comment: Ongoing capability</i>			✓	NACFR-10
Action NACFR-9 —Establish Strategic Planning process for foothills <i>Comment: Ongoing capability</i>			✓	NACFR-11

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Action NACFR-10 —Develop/enhance ability to capture perishable data, including dollar values, after significant events <i>Comment: No progress</i>			✓	NACFR-12
Action NACFR-11 —Actively participate in Plan maintenance protocols as defined in Volume 1 of the Multi-Hazard Mitigation Plan. <i>Comment: Ongoing capability</i>			✓	NACFR-2
Action NACFR-12 —Support the county-wide initiatives identified in Volume 1 of the Multi-Hazard Mitigation Plan. <i>Comment: Ongoing capability</i>			✓	NACFR-13
Action NACFR-13 —Provide fire safety, fire prevention and Firewise education to neighborhoods, schools and community via the internet, social media and direct public outreach. <i>Comment: Ongoing capability</i>			✓	NACFR-14
Action NACFR-14 —Meet and coordinate with private organizations, state, federal and other local agencies to develop, conduct and maintain wildfire mitigation projects. <i>Comment: Ongoing capability. This is currently done on behalf of NACFR by Boise Fire Department.</i>			✓	NACFR-15

18.8 HAZARD MITIGATION ACTION PLAN

Table 18-11 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 18-12 identifies the priority for each action. Table 18-13 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 18-11. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action NACFR-1—Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas. <i>Hazards Mitigated:</i> Flood						
Existing	2, 3	NACFR	N/A	High	HMGP, BRIC, FMA	Short-term
Action NACFR-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan. <i>Hazards Mitigated:</i> All						
New & Existing	All	NACFR	N/A	Low	Staff Time, General Funds	Short-term
Action NACFR-3— Update, adopt, and enforce a new Wildland Urban Interface (WUI) Code to replace the existing code. Improve and update existing WUI hazard zones. (Coordinates with City of Boise Action B-11, Whitney Fire Protection District Action WFD-3) <i>Hazards Mitigated:</i> Wildfire						
New & Existing	1, 2, 4, 5, 6, 9, 10	Boise Fire Department	NACFR, Whitney Fire	Low	Local	Short-Term
Action NACFR-4— Continue Firewise Community program for residents in the foothills and promote adoption of Firewise for development within the wildland urban interface overlay. (Coordinates with City of Boise Action B-21, Whitney Fire Protection District WFD-5) <i>Hazards Mitigated:</i> Wildfire						
New and Existing	1, 2, 5, 6, 8, 9	Boise Fire Department	NACFR, Whitney Fire	Low	Local funds	Short-term and ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action NACFR-5— Complete a Wildland-Urban Interface (WUI) risk assessment (a GIS exercise looking at vegetation in the undeveloped area, age of homes and other relevant factors). Improve individual parcel data with wildfire assessments. Provide a public portal to share data and educate on risk and community wildfire adaptation. (Coordinates with City of Boise Action B-7 and Whitney Fire						
<u>Hazards Mitigated:</u> Wildfire						
New and Existing	2, 4, 6, 8, 9, 10	Boise Fire Department	NACFR	Medium	Western States Grant, HMGP Grant, Local	Short-term and ongoing
Action NACFR-6— Perform Earthquake Retrofitting of Fire Stations 16, 18, 20						
<u>Hazards Mitigated:</u> Earthquake						
Existing	1, 2, 3, 10	NACFR	N/A	High	BRIC, NACFR	Long-Term
Action NACFR-7— Conduct Location/Construction Study for new Flood/Earthquake resistant Fire Station to replace Station 16						
<u>Hazards Mitigated:</u> Flood, Earthquake						
Existing	1, 2, 3, 10	NACFR	N/A	High	BRIC, NACFR	Long-Term
Action NACFR-8— Construct new flood/earthquake resistant fire station						
<u>Hazards Mitigated:</u> Flood, Earthquake						
New	1, 2, 3, 10	NACFR	N/A	HIGH	BRIC, NACFR	Long-Term
Action NACFR-9— Campaign to get neighborhoods to revise covenants and homeowners' association (HOA) rules to mitigate natural hazards. (Coordinates with City of Boise Action B-22)						
<u>Hazards Mitigated:</u> Flood, Earthquake, Wildfire						
New and Existing	2, 5, 6, 8, 9	Boise Fire Department	NACFR	Low	Staff Time, General Fund	Short-term
Action NACFR-10— Modify NACFR website to include links to hazard mitigation and preparedness sites.						
<u>Hazards Mitigated:</u> All						
Existing	8	NACFR	N/A	Low	NACFR Staff Time	Short/Ongoing
Action NACFR-11— Establish Strategic Planning process for foothills. (Coordinates with City of Boise Action B-23, Eagle Fire Protection District Action EFD-12)						
<u>Hazards Mitigated:</u> Wildfire						
Existing	2, 3, 4, 5, 6, 9	Boise Fire Department	Eagle Fire Protection, NACFR	Medium	Rural Fire Assistance Grant, National Fire Plan	Long-term/Ongoing
Action NACFR-12— Develop/enhance ability to capture perishable data, including dollar values, after significant events. (Coordinates with City of Boise Action B-24)						
<u>Hazards Mitigated:</u> All						
Existing	2	Boise Fire Department	NACFR	Low	Local Funds	Ongoing
Action NACFR-13— Support the county-wide initiatives identified in Volume 1 of the Multi-Hazard Mitigation Plan.						
<u>Hazards Mitigated:</u> All						
New and Existing	All	NACFR	N/A	Low	NACFR	Short-Term/Ongoing
Action NACFR-14— Conduct wildland fire prevention education and outreach via the internet, social media and direct public outreach to support and promote fire adapted communities. Focus on fuel reduction on private property around new and existing homes via incentivizing homeowners, providing free debris pick-up and replacement Firewise vegetation at a discount. (Coordinates with City of Boise Action B-8, Whitney Fire Protection District Action WFD-7)						
<u>Hazards Mitigated:</u> Wildfire						
New and Existing	1, 8, 9, 10	Boise Fire Department	NACFR, Whitney Fire	Low	Western State Grant, Local	Short-term and Ongoing

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action NACFR-15— Meet and coordinate with private organizations, state, federal and other local agencies to develop, conduct and maintain wildfire mitigation and fuel-reduction projects, including prescribed fire (Rx fire), pile-burning and managed fire. Increase capacity to conduct these projects through hiring personnel and expenditures for equipment and biological control methods. (Coordinates with City of Boise Action B-15, Flood Control District #10 Action FCD10-12, Whitney Fire Protection District WFD-8)						
<u>Hazards Mitigated:</u> Wildfire						
New and Existing	1, 6, 9, 10	Boise Fire Department	FCD #10, NACFR, Whitney Fire	Low	Staff time; general fund	Ongoing

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date

Acronyms used here are defined at the beginning of this volume.

Table 18-12. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	2	High	High	Yes	Yes	No	Medium	High
2	10	Low	Low	Yes	Yes	Yes	High	Low
3	3	Medium	Low	Yes	Yes	Yes	Medium	Medium
4	6	High	Low	Yes	Yes	Yes	High	High
5	6	High	Medium	Yes	Yes	Yes	Medium	Medium
6	4	High	High	Yes	Yes	No	Medium	High
7	4	Medium	High	Yes	Yes	No	Medium	Medium
8	4	High	High	Yes	Yes	No	Medium	High
9	5	High	Low	Yes	Yes	Yes	Medium	Medium
10	1	Medium	Low	Yes	Yes	Yes	High	Medium
11	6	Medium	Medium	Yes	Yes	Yes	High	High
12	1	Low	Low	Yes	Yes	Yes	Medium	Medium
13	10	Medium	Low	Yes	Yes	Yes	Medium	Medium
14	2	Medium	Low	Yes	No	Yes	High	Low
15	4	High	Low	Yes	No	Yes	High	Low

a. See the introduction to this volume for explanation of priorities.

Table 1813. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							Community Capacity Building ^b
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	
High-Risk Hazards								
Flood	NACFR-2, 3, 9	NACFR-1, 6, 7, 8	NACFR-9, 10, 13					NACFR-3, 9, 12
Severe Weather	NACFR-2, 3		NACFR-10, 13					NACFR-3, 12

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building ^b
Medium-Risk Hazards								
Wildfire	NACFR-2, 3, 4, 9, 11	NACFR-4, 3, 14, 15	NACFR-4, 5, 3, 9, 10, 13, 14, 15	NACFR-14, 15	NACFR-11, 15			NACFR-3, 4, 5, 9, 11, 12, 14, 15
Earthquake	NACFR-2, 3, 5, 9	NACFR-6, 7, 8	NACFR-5, 9, 10, 13					NACFR-3, 9, 12
Low-Risk Hazards								
Dam Failure	NACFR-2, 3		NACFR-10, 13					NACFR-12
Landslide	NACFR-2, 3		NACFR-10, 13					NACFR-3, 12
Drought	NACFR-2, 3		NACFR-10, 13					NACFR-3, 12
Volcano								NACFR-12

- a. See the introduction to this volume for explanation of mitigation types.
- b. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

18.9 PUBLIC OUTREACH

Table 18-14 lists public outreach activities for this jurisdiction.

Table 18-14. Local Public Outreach

Local Outreach Activity	Date	Number of People Involved
Accomplished through a JPA with Boise City Fire Department	Continuously	N/A
Accomplished through a JPA with Eagle Fire District	Continuously	N/A

18.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **2017 Ada County Multi-Hazard Mitigation Plan** – The previous HMP was reviewed to update this annex.
- **2018 North Ada County Fire & Rescue District Strategic Plan** – This document is driving actions identified in the Ada County Multi-Hazard Mitigation Plan.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

19. STAR JOINT FIRE PROTECTION DISTRICT

19.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Greg Timinsky Fire Chief
11665 W State St
Star, ID 83669
Telephone: 208.286.7772
e-mail Address: gtiminsky@starfirerescue.org

Alternate Point of Contact

Robin Ward
11665 W State St
Star, ID 83669
Telephone: 208.286.7772
e-mail Address: rward@starfirerescue.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 19-1.

Table 19-1. Local Hazard Mitigation Planning Team Members

Name	Title
Greg Timinsky	Fire Chief

19.2 JURISDICTION PROFILE

19.2.1 Overview

The Star Joint Fire Protection District (SFD) was established in 1953 and is comprised of 55 square miles of protection area that falls within the counties of Ada & Canyon. The fire department was originally started because there was no fire protection for this area. Some local farmers and residents pulled together to organize an all-volunteer fire department and purchased an engine. As years went on the fire department had bake sales and other fundraising events to purchase other equipment as well as pay for fuel, power and maintenance of the station and equipment. In 1953 the residents decided that it was time to formalize the fire department and form a taxing fire district that evolved from an all-volunteer to a combination fire department. The fire district encompasses the City of Star, rural area, farming ground, and foothills, with a population of 16,500 district wide. The fire district evolved from just fire protection to fire and medical emergency responses as well as structural firefighting, wildland firefighting, and other tasks that we are called to do. The district is governed by a board consisting of three commissioners.

The Star Fire Protection District assumes responsibility for the adoption of this plan; Star Fire Protection District will oversee its implementation.

The District participates in the Public Protection Class Rating System and currently has a rating of 3/10.

19.2.2 Service Area

The District service area covers 55 square miles, serving a population of 16,500.

19.2.3 Assets

Table 19-2 summarizes the assets of the District and their value.

Table 19-2. Special Purpose District Assets	
Asset	Value
Property	
3 Acres	450,000.00
Equipment	
Engine 51	620,000.00
Engine 52	400,000.00
Brush 51	375,000.00
Brush 52	100,000.00
Training Engine	50,000.00
Total:	\$1,995,000.00
Critical Facilities	
Station 51	\$9,500,000.00
Station 52	\$4,000,000.00
Total:	\$13,500,000.00

19.3 CURRENT TRENDS

The demand for the services we provide have been increasing for the last 10 years on an average rate of 7% as calculated by us using emergency responses per year. The City of Star population has increased by approximately 70% over the last 10 years and projections by the county were in the next 10 to 15 years we would be at 25,000 residents. We are partnering with Middleton Fire Department’s to jointly buy, build and staff future stations as demand for services arises. Star currently now staffed station on Kingsbury Rd Middleton Idaho in Star Fire Districts area that is being jointly staffed with Middleton Fire.

19.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 19-3.
- An assessment of fiscal capabilities is presented in Table 19-4.

- An assessment of administrative and technical capabilities is presented in Table 19-5.
- An assessment of education and outreach capabilities is presented in Table 19-6.
- Classifications under various community mitigation programs are presented in Table 19-7.

Table 19-3. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
The Ada County Multi-Hazard Mitigation Plan	2017	Update in progress

Table 19-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	No
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service <i>If yes, specify:</i> Plan Review Fees	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	No
<i>If yes, specify:</i>	

Table 19-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices	No
Engineers or professionals trained in building or infrastructure construction practices	No
Planners or engineers with an understanding of natural hazards	No
Staff with training in benefit/cost analysis	No
Surveyors	No
Personnel skilled or trained in GIS applications	No
Scientist familiar with natural hazards in local area	No
Emergency manager	No
Grant writers	No
Other	No

Table 19-6. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes (Fire Chief Greg Timinsky)
Do you have personnel skilled or trained in website development?	Yes (David Sparks)
Do you have hazard mitigation information available on your website? <i>If yes, briefly describe:</i> Safe burning practices	Yes
Do you use social media for hazard mitigation education and outreach?	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe:</i>	No
Do you have any other programs in place that could be used to communicate hazard-related information? <i>If yes, briefly describe:</i>	No
Do you have any established warning systems for hazard events? <i>If yes, briefly describe:</i> Code Red/ISAWS – residents may sign up to receive emergency notifications and critical community alerts. Both systems are IPAWS enabled and may additionally access that integrated system for public warnings.	Yes

Table 19-7. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	No	N/A	N/A
DUNS#	Yes	838048635	N/A
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	No	N/A	N/A
Public Protection	Yes	3/10	August 1, 2018
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

19.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

19.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Wildfire Risk Map**—Referred to mapping of hazards in the HMP.

19.5.2 Opportunities for Future Integration

The capability assessment presented in this annex reviewed potential opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. The capability assessment did not identify additional plans or programs to integrate hazard mitigation information in the future.

19.6 RISK ASSESSMENT

19.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 19-8 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 19-8. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
COVID-19	DR-4534	January 20, 2020 and continuing	PPE reimbursements from State of Idaho, equipment purchased to work from home, personnel overtime costs totaling approximately \$400,000
Flood	DR-4342	March 29 – June 15, 2017	Countywide Public Assistance \$4,493,792
Wildfire		August 11, 2015	Thunderstorm winds knocked down a power pole and started a brush fire. SFD provided suppression support.
Flood		2012	Flood
Wildfires		August 15, 2011	Nine wildfires in Ada and Elmore Counties due to lightning burned overnight and into the morning. SFD provided suppression support.
Wildland Fire		August 22, 2010	Several thousand acres and homes burned
Wildfire		July 28, 2010	Lightning sparked a grass fire near Eagle and burned approximately 5000 acres and 5 structures including 3 homes. SFD provided suppression support.
Dam Failure/Flooding		2010	Annual event
Dam Failure/Flooding		2010	Annual event
Wind Events		Ongoing	Yearly events that cause damage to homes and personal property
Earthquake		1986	Challis

19.6.2 Hazard Risk Ranking

Table 19-9 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and district operations. Mitigation actions target hazards with high and medium rankings. The rankings are based on the City of Star, local experiences, and understanding of the hazards as they relate to the district.

Table 19-9. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	Wildfire	33	High
2	Extreme Weather	33	High
3	Drought	18	Medium
4	Dam/Canal Failure	18	Medium
5	Flood	18	Medium
6	Earthquake	12	Medium
7	Landslide	12	Low
8	Volcano	6	Low

19.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- The district is responsible for responding to emergencies along 6 miles of river frontage. These responses are not necessarily related to emergencies during flooding events but can occur at any time.
- Within the City of Star, heavy traffic is often an issue that impedes response time.

Mitigation actions addressing these issues were prioritized for consideration in the action plan in this annex.

19.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 19-10 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 19-10. Status of Previous Plan Actions

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Action SFD-1 —Construct a new Fire Station on the South of Boise River outside of the floodplain and dam failure inundation area. <i>Comment: No plans for this area. Currently the responsibility of the City of Meridian.</i>		✓		
Action SFD-2 —Support County-wide initiatives identified in Volume 1 <i>Comment: Ongoing capability</i>			✓	SFD-3
Action SFD-3 —Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Volume 1. <i>Comment: Ongoing capability</i>			•	SFD-2

19.8 HAZARD MITIGATION ACTION PLAN

Table 19-11 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 19-12 identifies the priority for each action. Table 19-13 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 19-11. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
<p>Action SFD-1—Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas. Including, but not limited to:</p> <ul style="list-style-type: none"> A new fire station north of the Boise River on Floating Feather Road, which will be out of the mapped floodplain. The district owns the land, but a station needs to be built. <p><u>Hazards Mitigated:</u> Wildfire, Extreme Weather, Dam/Canal Failure, Flood, Earthquake, Landslide</p>						
Existing	1, 3, 10	Star Fire District		High	HMGP, BRIC, FMA	Short-term
<p>Action SFD-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.</p> <p><u>Hazards Mitigated:</u> Wildfire, Drought, Extreme Weather, Dam/Canal Failure, Flood, Earthquake, Landslide, Volcano</p>						
New & Existing	All	Star Fire District		Low	Staff Time, General Funds	Short-term
<p>Action SFD-3— Support County-wide initiatives identified in Volume 1</p> <p><u>Hazards Mitigated:</u> Wildfire, Drought, Extreme Weather, Dam/Canal Failure, Flood, Earthquake, Landslide, Volcano</p>						
New & Existing	All	Star Fire District		Low	Staff Time, General Funds	Short-term
<p>Action SFD-4— Coordinate with developers as wildland area (north of Beacon Light to the County line) is developed. Area water sources for firefighting will need to be established before housing development occurs.</p> <p><u>Hazards Mitigated:</u> Wildfire</p>						
New	1, 3, 10	Star Fire District		High	HMGP, BRIC	Long-term
<p>Action SFD-5— Develop a Joint Emergency Operation Plan with the City of Star, Star Sewer and Water District, and Star Joint Fire Protection District: This plan is necessary to establish a single, comprehensive framework for the management of domestic incidents. The City of Star will lead this all-discipline action, but Star Sewer and Water District and Star Joint Fire Protection District will aid in planning for all hazards. (Coordinates with City of Star S-7 and Star Sewer and Water District SSW-4)</p> <p><u>Hazards Mitigated:</u> All Hazards</p>						
New & Existing	All	City of Star	SSW District, Star Joint Fire Protection District	Low	City Funds, District Funds, HMGP	Short-term
<p>Action SFD-6— Provide fire safety, fire prevention and Firewise education to neighborhoods, schools and community via the internet, social media and direct public outreach. (Coordinates with City of Star Action S-11)</p> <p><u>Hazards Mitigated:</u> Wildfire</p>						
New & Existing	8, 9	Star Joint Fire Protection District	City of Star	Low	City Funds, District Funds	Ongoing
<p>Action SFD-7— In partnership with Eagle Fire Protection District, Middleton Rural Fire District, and Star Fire Protection District, continue to support wildfire mitigation projects such as those sponsored by the Healthy Hills Initiative within the Eagle city limits or urban growth area. (Coordinates with Eagle Fire Protection District Action EFD-10, City of Eagle Action E-7)</p> <p><u>Hazards Mitigated:</u> Wildfire</p>						
New & Existing	2, 4, 5, 6, 7, 8, 9	City of Eagle	Eagle Fire Protection, Middleton Rural Fire District, Star Fire Protection District	Low	Staff Time HMGP, BRIC	Ongoing

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date

Acronyms used here are defined at the beginning of this volume.

Table 19-12. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	3	High	High	Yes	Yes	No	Medium	High
2	10	Low	Low	Yes	No	Yes	High	Low
3	10	Low	Low	Yes	No	Yes	High	Low
4	3	High	High	Yes	Yes	No	Medium	High
5	10	Low	Low	Yes	Yes	Yes	High	Medium
6	2	Low	Low	Yes	No	Yes	High	Low
7	7	Medium	Low	Yes	Yes	No	Medium	Medium

a. See the introduction to this volume for explanation of priorities.

Table 19-13. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building ^b
High-Risk Hazards								
Wildfire		SFD-1	SFD-6			SFD-4		SFD-2, 3, 5, 7
Extreme Weather		SFD-1						SFD-2, 3, 5
Medium-Risk Hazards								
Drought								SFD-2, 3, 5
Dam/Canal Failure		SFD-1						SFD-2, 3, 5
Flood		SFD-1						SFD-2, 3, 5
Earthquake		SFD-1						SFD-2, 3, 5
Low-Risk Hazards								
Landslide		SFD-1						SFD-2, 3, 5
Volcano								SFD-2, 3, 5

a. See the introduction to this volume for explanation of mitigation types.

b. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

19.9 PUBLIC OUTREACH

Table 19-14 lists public outreach activities for this jurisdiction.

Table 19-14. Local Public Outreach

Local Outreach Activity	Date	Number of People Involved
Public School Outreach for Fire Prevention/Career Day	Every October	3 firefighters, approximately 200 students

19.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **2017 Ada County Multi-Hazard Mitigation Plan** – The previous HMP was reviewed to update this annex.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

20. STAR SEWER AND WATER DISTRICT

20.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Ryan V. Morgan, District Engineer
 10831 West State Street
 Star, ID, 83369
 Telephone: 208-286-7388
 e-mail Address: rmorgan@starswd.com

Alternate Point of Contact

Hank Day, Public Works Director
 10831 West State Street
 Star, ID, 83369
 Telephone: 208-286-7388
 e-mail Address: hday@starswd.com

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 20-1.

Table 201. Local Hazard Mitigation Planning Team Members

Name	Title
Ryan Morgan	District Engineer
Hank Day	District Public Works Director
Terra Estarada	District Office Manager
Greg Timinsky	District Board Member

20.2 JURISDICTION PROFILE

20.2.1 Overview

The Star Sewer & Water District (District) receives its operating authority from Idaho State Code, Title 42, Chapter 32, Sections 43-3201 to 42-3238. The District was created 1966 in response to a need for central water and sewer service. A five-member elected Board of Directors governs the District. The District’s current service area is bounded by Kingsbury Road to the west, Highway 16 and Plummer Road on the east, the Highway 20/26 to the south, and the foothills to the north. The District’s impact area was established based on topographic, natural and existing jurisdictional boundaries.

The District provides both sewer and water services to an area which includes the City of Star and unincorporated lands in Ada and Canyon County. The area’s economic base consists of agriculture, commercial, and some light industrial districts. The District is committed to providing the service area with quality water and sewer service for residential, commercial, and most industrial/public needs.

Star Sewer & Water District operates a wastewater treatment plant consisting of a membrane bioreactor mechanical plant, and a partially aerated treatment and polishing lagoon treatment system. The combined effluent

from the lagoon and mechanical plant discharges to the Lawrence-Kennedy Canal under an NPDES permit that has been in effect since September 1999.

Sewer lift stations serve as a central point of collection for gravity sewer lines. The raw sewage is conveyed by gravity to these collection points and the lift stations pressurize and lift the sewage either into other gravity collection lines or push the flow directly to the wastewater treatment plant. The District currently owns six lift stations located on Big Wood Way (River Ranch), WWTP property, W State Street (Western Regional, Short Lane (Amazon Falls), Hidden Dale Drive (Craftsman), and Joplin Road (Southern Regional Lift Station)

The District owns five operable wells and two water storage tanks. Three wells are primary wells that are used to fill the tank with groundwater and or serve water to the public directly. Water flows by gravity out of the tank and provides pressurized domestic and fire flows to the service area. The District also maintains a distribution system including approximately 90 miles of pipeline.

Star Sewer & Water District operates almost exclusively on revenue from new connections and current user fees. A small amount is also levied on property taxes to pay for the District’s operation and maintenance costs and the property and administrative liability insurance.

The Star Sewer and Water District Board assumes responsibility for the adoption of this plan; Star Sewer and Water District will oversee its implementation.

20.2.2 Service Area

The District serves a population of approximately 15,000 as of 2022. Its service area covers an area of 25 square miles, which has a total market value (including occupancy rolls) of \$2,401,619,819

20.2.3 Assets

Table 20-2 summarizes the assets of the District and their value.

Table 20-2. Special Purpose District Assets	
Asset	Value
Property	
14.5 acres of land	\$1,450,000
Equipment	
Operations and Maintenance Vehicles	\$450,000
87 Miles of sewer pipe	\$55,123,000
87 miles of water pipe	\$43,639,000
Total:	\$99,212,000
Critical Facilities	
District Office	\$1,160,000
Wastewater Treatment Plant	\$45,000,000
River Ranch Lift Station	\$750,000
Western Regional Lift Station	\$1,100,000
Craftsman Lift Station	\$750,000
Amazon Falls Lift Station	\$850,000
Southern Regional Lift Station	1,750,000

Asset	Value
Well 3 and Well House	400,000
Well 6 and Well 7	\$3,500,000
Water Tanks (2)	1,250,000
Booster Station	\$600,000
Total:	\$54,700,000

20.3 CURRENT TRENDS

Population trends used to estimate future population of the Star Sewer & Water District service area can be approximated by utilizing existing population projections created for the District in the 2015 Wastewater Facility Planning Study. From 2000 to 2022, the City of Star experienced a ten-fold increase in population. Even during the recent downturn in the housing market, the City of Star maintained a fairly steady growth rate. For example, in fiscal year 2014, the Star Sewer & Water District issued 213 new sewer/water connections, in 2015 that number was 200 new sewer/water connections. During 2021 the District issued 1098 new sewer/water connections

If a growth percentage of 5% (as selected by District officials for the 2015 Wastewater Facility Planning Study) is used, the estimated population served by the Star Sewer & Water District will be approximately 22,500 by 2030. It should be noted that current growth rates have been higher than 5% and the population estimate could be as high as 30,000 by 2030.

20.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 20-3.
- An assessment of fiscal capabilities is presented in Table 20-4.
- An assessment of administrative and technical capabilities is presented in Table 20-5.
- An assessment of education and outreach capabilities is presented in Table 20-6.
- Classifications under various community mitigation programs are presented in Table 20-7.

Table 20-3. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
Clean Water Act	1972	
Endangered Species Act	1973	
Idaho Department of Environmental Quality	N/A	
U.S. Environmental Protection Agency	N/A	
Idaho Administrative Code	N/A	
Idaho Administrative Procedure Act	N/A	
Wastewater Facility Planning Study (2015)	2015	Applied for grant to update this plan
Water System Master Plan Update (2014)	2014	Applied for grant to update this plan
Idaho Statewide Implementation Plan		
All other applicable laws, ordinances, codes and policies enforced by federal, state and local authorities with a sphere of influence over the District’s service area.		
Star Sewer and Water District Construction Drawing Standards	April 2020	

Table 20-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	No
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service <i>If yes, specify:</i> Water and Sewer	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Fees for Homebuyers or Developers	Yes
Other	Yes
<i>If yes, specify:</i> Local Improvement District, Community Improvement District	

Table 20-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices <i>If Yes, Department /Position:</i> District Engineer and Contract Engineering Firm	Yes
Engineers or professionals trained in building or infrastructure construction practices <i>If Yes, Department /Position:</i> District Engineer and Contract Engineering Firm	Yes
Planners or engineers with an understanding of natural hazards <i>If Yes, Department /Position:</i> District Engineer	Yes
Staff with training in benefit/cost analysis <i>If Yes, Department /Position:</i> Contract engineer	Yes
Surveyors <i>If Yes, Department /Position:</i> Contract engineer	Yes
Personnel skilled or trained in GIS applications <i>If Yes, Department /Position:</i> District engineer and Water Department Staff Member	Yes
Scientist familiar with natural hazards in local area <i>If Yes, Department /Position:</i> Contract engineer	Yes
Emergency manager <i>If Yes, Department /Position:</i> Ada County Emergency Management and Community Resilience	Yes
Grant writers <i>If Yes, Department /Position:</i> Contract engineering firm	Yes

Table 20-6. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	No
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? <i>If yes, briefly describe:</i>	No
Do you use social media for hazard mitigation education and outreach? <i>If yes, briefly describe:</i>	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe:</i>	No
Do you have any other programs in place that could be used to communicate hazard-related information? <i>If yes, briefly describe:</i>	No
Do you have any established warning systems for hazard events? <i>If yes, briefly describe:</i> Code Red/ISAWS – residents may sign up to receive emergency notifications and critical community alerts. Both systems are IPAWS enabled and may additionally access that integrated system for public warnings. We also have the ability to mass email costumers about emergency situations.	Yes

Table 20-7. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	N/A	N/A	N/A
DUNS#	Yes	027210330	N/A
Community Rating System	N/A	N/A	N/A
Building Code Effectiveness Grading Schedule	N/A	N/A	N/A
Public Protection	N/A	N/A	N/A
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A

20.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

20.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **City of Star Comprehensive Plan**—The 2008 Star Comprehensive Plan includes mitigation related policies as they relate to the protection of human life and property from flood events.
- **Ada County Wildfire Response Plan**—The Wildfire Response Plan for Ada County includes procedures that will mitigate risk to human life and property from a wildfire.

20.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- **Star City, Star Sewer & Water District, and Star Joint Fire Protection District Joint Emergency Operation Plan (EOP)**—This joint plan has not been developed, but the Multi-Hazard Mitigation Plan hazard and risk data will inform the EOP.
- **Star Sewer & Water District Continuity of Operation Plan (COOP)**—This plan has not been developed, but the Multi-Hazard Mitigation Plan hazard and risk data will inform the COOP.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

20.6 RISK ASSESSMENT

20.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 20-8 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 20-8. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
COVID-19	DR-4534	January 20, 2020 and continuing	Overtime and adaptations in work conditions
Flooding	DR-4342	May/June 2017	Public Assistance Countywide: \$4,493,792
Flooding	N/A	May 30,2011	\$4,500

20.6.2 Hazard Risk Ranking

Table 20-9 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and district operations. Mitigation actions target hazards with high and medium rankings.

Table 20-9. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	Flood	33	High
2	Earthquake	33	High
3	Extreme Weather	33	High
4	Landslide	16	Medium
5	Wildfire	16	Medium
6	Dam/Canal Failure	12	Low
7	Drought	9	Low
8	Volcano	6	Low

20.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- The District has one major trunk line that is responsible for 80% of the flow to 80% of the City of Star. This trunk line is located in farm fields that have a high potential for development, currently several of these fields are under development with a high risk of damage to the pipeline. This has already happened once in the last 2 months. The District intends to reroute this pipeline to be located in public right of way under pavement.

Mitigation actions addressing these issues were prioritized for consideration in the action plan in this annex.

20.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 20-10 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 20-10. Status of Previous Plan Actions

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>SSW-1—Add Backup Generators to Trellis Wells: The groundwater wells in the Trellis Subdivision currently have no backup power source to continue operating in the case of a power outage. To continue to provide service during hazards, both wells will be equipped with backup generators.</p> <p>Comment: <i>Generators have been added to one of the Trellis Wells, the second well is no longer operational.</i></p>	✓			
<p>SSW-2—Add Backup Generator to River Ranch Lift Station: The lift station currently has no backup power source to continue operating in the case of a power outage. To continue to provide service during hazards, the lift station will be equipped with a backup generator.</p> <p>Comment: <i>Completed in 2020</i></p>	✓			
<p>SSW-3—Waterproof Manholes in 100-year Floodplain: The sewer collection system has many pipes and manholes that are in the 100-year floodplain. The manhole lids and structures are not waterproof and could pose significant risk to other facilities if flood water were to enter through the manholes.</p> <p>Comment: <i>Manholes are being identified and new policies are being prepared. New construction requires manhole rims to be located 0.5 feet above the base flood elevation. All new construction is being built to the mentioned standards, the district is still identifying manholes to floodproof.</i></p>			✓	SSW-3
<p>SSW-4—Assess Flood Risk of WWTP, Western Regional Lift Station, and River Ranch Lift Station: The risk to these facilities has not been evaluated since new FIRM maps were created. In order to prevent possible damage from flood events, a flood risk evaluation should be completed.</p> <p>Comment: <i>Completed 8/17/20</i></p>	•			
<p>SSW-5—Develop a Joint Emergency Operation Plan with Star City and Star Joint Fire Protection District: This plan is necessary to establish a single, comprehensive framework for the management of domestic incidents. The City of Star will lead this all-discipline action, but Star Sewer & Water District will aid in planning for all hazards.</p> <p>Comment: <i>Plan needs reviewed and updated.</i></p>			✓	SSW-4
<p>SSW-6—Develop a Continuity of Operation Plan: This plan will provide specific policies and procedures that will be carried out in the event of an emergency, including localized acts of nature, accidents, and technological or attack-related emergencies. The plan will address how the District will continue to perform essential functions in the event of compromised facilities or leadership, and how the District will return to normal operations.</p> <p>Comment: <i>The treatment plant is in the middle of a major upgrade. Plans are being prepared after completion the current District Operation Plan will be reviewed and updated. Plat upgrade should be completed in early 2023</i></p>			✓	SSW-5
<p>SSW-7—Support County-wide Initiatives Identified in Volume 1 of the Multi-Hazard Mitigation Plan</p> <p>Comment: <i>SSWD will continue to work with other agencies.</i></p>			✓	SSW-6
<p>SSW-8—Actively Participate in the Plan Maintenance Protocols Outlined in Volume 1 of the Multi-Hazard Mitigation Plan</p> <p>Comment: <i>SSWD is working with other agencies and supporting their efforts.</i></p>			•	SSW-2

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
<p>SSW-9—SCADA System at Trellis Wells: The wells in the Trellis subdivision currently don't have any emergency alert system or automatic operational controls in place. In order to receive emergency alerts from these wells, a SCADA system must be installed and this system must have cable or satellite communication with the District operations office.</p> <p><i>Comment:</i> SCADA has been added to one of the Trellis Wells, the second well is no longer operational</p>	✓			
<p>SSW-10—Water Tank Power & SCADA (Supervisory Control and Data Acquisition): The water tank currently receives power from solar panels and batteries. In addition, there is no SCADA system. In case of an emergency, a backup primary power supply would provide more reliability in operations for the water tank; primary power supply will be extended to the tank as part of this project. In order to receive emergency alerts from the tank, a SCADA system must be installed and this system must have cable or satellite communication with the operations office.</p> <p><i>Comment:</i> The new water tank and booster station improvements have been completed</p>	✓			
<p>SSW-11—Add Backup Generator at the WWTP: The WWTP currently has one backup power generator, but this generator is not capable of powering the entire plant. A second backup generator is recommended to improve redundancy and expand backup power to full plant operations.</p> <p><i>Comment:</i> Construction is currently underway for the WWTP expansion. Improvements include an additional generator that will meet the needs of the WWTP.</p>			✓	SSW-7

20.8 HAZARD MITIGATION ACTION PLAN

Table 20-11 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 20-12 identifies the priority for each action. Table 20-13 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 20-11. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
<p>Action SSW-1—Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.</p> <p><i>Hazards Mitigated:</i> Flood, Earthquake, Landslide, Wildfire, Severe Weather, Dam/Canal Failure</p>						
Existing	All	SSWD	N/A	High	HMGP, BRIC, FMA	Short-term
<p>Action SSW-2—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.</p> <p><i>Hazards Mitigated:</i> All Hazards</p>						
New & Existing	All	SSW District	N/A	Low	Staff Time, District Funds	Short-term
<p>Action SSW-3—Waterproof Manholes in 100-year Floodplain: The sewer collection system has many pipes and manholes that are in the 100-year floodplain. The manhole lids and structures are not waterproof and could pose significant risk to other facilities if flood water were to enter through the manholes.</p> <p><i>Hazards Mitigated:</i> Flood, Severe Weather, Dam/Canal Failure</p>						
Existing	1, 10	SSW District	N/A	High	District Funds, HMGP	Long-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action SSW-4 — Develop a Joint Emergency Operation Plan with the City of Star, Star Sewer and Water District, and Star Joint Fire Protection District: This plan is necessary to establish a single, comprehensive framework for the management of domestic incidents. The City of Star will lead this all-discipline action, but Star Sewer and Water District and Star Joint Fire Protection District will aid in planning for all hazards. (Coordinates with City of Star Action S-7 and Star Joint Fire Protection District SFD-5)						
<i>Hazards Mitigated:</i> All Hazards						
New & Existing	All	City of Star	SSW District, Star Joint Fire Protection District	Low	City Funds, District Funds, HMGP	Short-term
Action SSW-5 — Develop a Continuity of Operation Plan: This plan will provide specific policies and procedures that will be carried out in the event of an emergency, including localized acts of nature, accidents, and technological or attack-related emergencies. The plan will address how the District will continue to perform essential functions in the event of compromised facilities or leadership, and how the District will return to normal operations.						
<i>Hazards Mitigated:</i> All Hazards						
New & Existing	All	SSW District	N/A	Low	Staff Time, District Funds	Short-term
Action SSW-6 — Support County-wide Initiatives Identified in Volume 1 of the Multi-Hazard Mitigation Plan						
<i>Hazards Mitigated:</i> All Hazards						
New & Existing	All	SSW District	N/A	Low	Staff Time, District Funds	Short-term
Action SSW-7 — Add Backup Generator at the WWTP: The WWTP currently has one backup power generator, but this generator is not capable of powering the entire plant. A second backup generator is recommended to improve redundancy and expand backup power to full plant operations.						
<i>Hazards Mitigated:</i> All Hazards						
New & Existing	3, 7, 10	SSW District	N/A	High	District Funds, HMGP	Short-term

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date

Acronyms used here are defined at the beginning of this volume.

Table 20-12. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
SSW-1	10	High	High	Yes	Yes	No	Medium	High
SSW-2	10	Low	Low	Yes	No	Yes	High	Low
SSW-3	2	High	Medium	Yes	Yes	No	Medium	High
SSW-4	10	Low	Low	Yes	Yes	Yes	High	Medium
SSW-5	10	Low	Low	Yes	No	Yes	High	Low
SSW-6	10	Low	Low	Yes	No	Yes	High	Low
SSW-7	3	Medium	Medium	Yes	Yes	Yes	High	Medium

a. See the introduction to this volume for explanation of priorities.

Table 20-13. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building ^b
High-Risk Hazards								
Flood		SSW-1, 3	SSW-2		SSW-7			SSW-2, 4, 5, 6
Earthquake		SSW-1, 3	SSW-2		SSW-7			SSW-2, 4, 5, 6
Extreme Weather		SSW-3	SSW-2		SSW-7			SSW-2, 4, 5, 6
Medium-Risk Hazards								
Landslide		SSW-1, 3	SSW-2		SSW-7			SSW-2, 4, 5, 6
Wildfire		SSW-1, 3	SSW-2		SSW-7			SSW-2, 4, 5, 6
Low-Risk Hazards								
Dam/Canal Failure		SSW-3	SSW-2		SSW-7			SSW-2, 4, 5, 6
Drought			SSW-2		SSW-7			SSW-2, 4, 5, 6
Volcano			SSW-2		SSW-7			SSW-2, 4, 5, 6

- a. See the introduction to this volume for explanation of mitigation types.
- b. Based on current community capacity, this jurisdiction did not identify a need for expansion of administrative and technical capabilities. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

20.9 PUBLIC OUTREACH

Table 20-14 lists public outreach activities for this jurisdiction.

Table 20-14. Local Public Outreach

Local Outreach Activity	Date	Number of People Involved
Monthly Newsletter includes water conservation items and other timely tips	Ongoing	All district clients
Water Aware Brochure	April/May 2020	Provided at most local events including Easter egg hunt & fishing derby

20.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **2017 Ada County Multi-Hazard Mitigation Plan** – The previous HMP was reviewed to update this annex.
- **Wastewater Facility Planning Study (2015)**—Used to help identify historic and future growth information, as well as infrastructure needs.
- **Water System Master Plan Update (2014)**—Used to help identify historic and future growth information, as well as infrastructure needs.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

21. WHITNEY FIRE PROTECTION DISTRICT

21.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Greg Womack, Fire Chief
 2515 S. Five Mile Road
 Boise, ID 83709
 Telephone: 208-869-5210
 e-mail Address: gwomack@whitneyfiredistrict.org

Alternate Point of Contact

Mallory Wilson, Emergency Manager
 333 N. Mark Stall Place
 Boise, ID 83704
 Telephone: 208-570-6552
 e-mail Address: mgwilson@cityofboise.org

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 21-1.

Table 21-1. Local Hazard Mitigation Planning Team Members

Name	Title
Greg Womack	Fire Chief
Renn Ross	Fire Chief (Retired during plan update)
Mallory Wilson	Emergency Manager
Jerry McAdams	Wildfire Mitigation Specialist

21.2 JURISDICTION PROFILE

21.2.1 Overview

The Whitney Fire Protection District (WFPD) is a tax district created pursuant to Idaho Code, Title 31 Counties and County Law, Chapter 14 Fire Protection District. The WFPD is responsible for the protection of property against fire and the preservation of life and for the enforcement of any of the fire codes and other rules adopted by the Idaho State Fire Marshal. The WFPD was established in 1947.

A three-member elected Board of Fire Commissioners, each serving a staggered four-year term, elected from a specific sub-district, governs the WFPD. The Fire Chief provides contract administration between the WFPD and the City of Boise Fire Department. The primary source of revenue for the WFPD is generated through the collection of property taxes, with some state sales tax revenues and interest income.

The WFPD contracts with the Boise City Fire Department for all operational services, some fire prevention services and logistical support services. The WFPD owns one fire station and maintains a fleet of two engines and one tender. The WFPD station and apparatus are staffed by the Boise City Fire Department per the contract agreement.

The WFPD service area encompasses approximately 18 square miles, primarily residential and rural areas within Ada County. The majority of the WFPD lies within the Area of Impact of the City of Boise and is subject to annexation at the discretion of the city.

The Whitney Fire Protection District assumes responsibility for the adoption of this plan; the Boise City Fire Department will oversee its implementation.

The District participates in the Public Protection Class Rating System and currently has a rating of 3 for properties within 1000 feet of a hydrant and an 8 for properties beyond 1000 feet from a hydrant but within 5 miles of a fire station.

21.2.2 Service Area

The district serves a population of 21,000. Its service area covers an area of 18 square miles, which has a total value of \$3,489,026,167.00.

21.2.3 Assets

Table 21-2 summarizes the assets of the District and their value.

Asset	Value
Property	
1.6 acres of land (owned by the City of Boise)	N/A
Equipment	
2003 Pierce Fire Engine	\$287,000
2008 Pierce Fire Engine	\$408,873
2010 Pierce Water Tender	\$324,954
Total:	\$1,020,827
Critical Facilities	
Fire Station #17	\$3,211,687
Total:	\$3,211,687

21.3 CURRENT TRENDS

The district has seen growth in both population and valuation over the last several years. The district covers a significant inventory of residential homes south of the City of Boise but within the City’s Impact Area.

21.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this

annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 21-3.
- An assessment of fiscal capabilities is presented in Table 21-4.
- An assessment of administrative and technical capabilities is presented in Table 21-5.
- An assessment of education and outreach capabilities is presented in Table 21-6.
- Classifications under various community mitigation programs are presented in Table 21-7.

Table 21-3. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
Ada County Ordinance Title 8, Chapter 3, Article B: Wildland-Urban Interface Overlay District.	6/14/2000	N/A
Ada County Ordinance Title 7, Chapter 3 Adoption of the ICC Urban-Wildfire Interface Code, 2006 Edition	6/18/2008	N/A
Annexation Policy	6/12/2008	N/A

Table 21-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	No
Capital Improvements Project Funding	No
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No

Table 21-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices <i>If Yes, Department /Position:</i> Contract with City of Boise	Yes
Engineers or professionals trained in building or infrastructure construction practices <i>If Yes, Department /Position:</i> Contract with City of Boise	Yes
Planners or engineers with an understanding of natural hazards <i>If Yes, Department /Position:</i> Contract with City of Boise	Yes
Staff with training in benefit/cost analysis <i>If Yes, Department /Position:</i> Contract with City of Boise	Yes
Surveyors <i>If Yes, Department /Position:</i> Contract with City of Boise	Yes
Personnel skilled or trained in GIS applications <i>If Yes, Department /Position:</i> Contract with City of Boise	Yes

Staff/Personnel Resource	Available?
Scientist familiar with natural hazards in local area	No
Emergency manager	Yes
<i>If Yes, Department /Position:</i> Ada County Emergency Management	
Grant writers	Yes
<i>If Yes, Department /Position:</i> Contract with City of Boise	
Other	Yes
<i>If Yes, Department /Position:</i> Contract with City of Boise	

Table 21-6. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes – Contract with City of Boise
Do you have personnel skilled or trained in website development?	Yes – Contract with City of Boise
Do you have hazard mitigation information available on your website?	Yes
<i>If yes, briefly describe:</i> Contract with City of Boise	
Do you use social media for hazard mitigation education and outreach?	Yes
<i>If yes, briefly describe:</i> Contract with City of Boise	
Do you have any citizen boards or commissions that address issues related to hazard mitigation?	No
<i>If yes, briefly describe:</i>	
Do you have any other programs in place that could be used to communicate hazard-related information?	Yes
<i>If yes, briefly describe:</i> Contract with City of Boise	
Do you have any established warning systems for hazard events?	Yes
<i>If yes, briefly describe:</i> Code Red/ISAWS – residents may sign up to receive emergency notifications and critical community alerts. Both systems are IPAWS enabled and may additionally access that integrated system for public warnings.	

Table 21-7. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	No	N/A	N/A
DUNS#	Yes	832898048	N/A
Community Rating System	N/A	N/A	N/A
Building Code Effectiveness Grading Schedule	N/A	N/A	N/A
Public Protection	Yes	3-10	7/23/2016
Storm Ready	Yes	N/A	N/A
Firewise	Yes	N/A	N/A

21.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for future integration. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

21.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- **Ada County Wildfire Response Plan**— To provide for the life safety of for responders and the populace. Minimize damage to valued resources and the environment from the adverse effects of Wildfire. Develop community awareness and understanding of the wildfire hazard.
- **Ada County Flood Response Plan**— To prevent injury and loss of life due to flooding and flood related causes. Develop Community awareness and understanding of the flood hazard.

21.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- All future updates to plans and programs as identified in the “Existing Integration” section above may use hazard mapping and data from this Multi-Hazard Mitigation Plan to determine hazard areas and increase community awareness.

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan in this annex.

21.6 RISK ASSESSMENT

21.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 21-8 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 21-8. Past Natural Hazard Events

Type of Event	FEMA Disaster #	Date	Damage Assessment
COVID-19 Pandemic	DR-4534	1/20/20-ongoing	N/A
Flooding	DR-4342	3/29/2017	Public Assistance County-wide: \$4,493,792
Winter Storms	N/A	December 2016	Extreme snowfall impacted services
Grass Fire	N/A	7/2/2011	N/A
Brush Fire	N/A	7/4/2011	N/A
Natural Vegetation Fire	N/A	9/11/2011	N/A
Brush Fire	N/A	9/28/2011	N/A
Brush Fire	N/A	3/28/2012	N/A
Grass Fire	N/A	6/12/2012	N/A
Grass Fire	N/A	7/5/2012	N/A
Grass Fire	N/A	8/12/2012	N/A

Type of Event	FEMA Disaster #	Date	Damage Assessment
Brush Fire	N/A	10/29/2012	N/A
Natural Vegetation Fire	N/A	2/10/2013	N/A
Brush Fire	N/A	3/9/2013	N/A
Grass Fire	N/A	7/1/2013	N/A
Brush Fire	N/A	9/16/2013	N/A
Grass Fire	N/A	7/1/2014	N/A
Grass Fire	N/A	7/5/2014	N/A
Brush Fire	N/A	7/22/2014	N/A
Natural Vegetation Fire	N/A	10/15/2015	N/A

21.6.2 Hazard Risk Ranking

Table 21-9 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and district operations. Mitigation actions target hazards with high and medium rankings.

Table 21-9. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1	Severe Weather		High
2	Wildfire		Medium
3	Flood		Medium
4	Earthquake		Medium
5	Landslide		Low
6	Dam Failure		Low
7	Drought		Low
8	Volcano		Low

21.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

Mitigation actions addressing these issues were prioritized for consideration in the action plan in this annex.

21.7 STATUS OF PREVIOUS PLAN ACTIONS

Table 21-10 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 21-10. Status of Previous Plan Actions

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Action WFD-1—Enforce existing wildland urban interface standards in Ada County. <i>Comment: Ongoing. Carried over and reworded slightly to better represent the intent of the action.</i>			X	WFD-3
Action WFD-2—Require Local Fire District Approval of Water and Access Requirements for all projects. <i>Comment: Ongoing</i>			X	WFD-4
Action WFD-3—Promote adoption of Firewise for development within the wildland urban interface Overlay <i>Comment: Ongoing</i>			X	WFD-5
Action WFD-4—Support County-wide initiatives identified in Volume 1. <i>Comment: Ongoing</i>			X	WFD-6
Action WFD-5—Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Volume 1. <i>Comment: Ongoing</i>			X	WFD-2
Action WFD-6—Provide fire safety, fire prevention and Firewise education to neighborhoods, schools and community via the internet, social media and direct public outreach. <i>Comment: Ongoing</i>			X	WFD-7
Action WFD-7—Meet and coordinate with private organizations, state, federal and other local agencies to develop, conduct and maintain wildfire mitigation projects. <i>Comment: Ongoing</i>			X	WFD-8

21.8 HAZARD MITIGATION ACTION PLAN

Table 21-11 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 21-12 identifies the priority for each action. Table 21-13 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 21-11. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action WFD-1 —Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas. Hazards Mitigated: Flood, Earthquake, Wildfire						
Existing	2, 3, 4	Whitney Fire	N/A	High	HMGP, BRIC, FMA	Short-term
Action WFD-2 —Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan. Hazards Mitigated: All hazards						
New & Existing	1, 2, 6, 7, 8, 9, 10	Whitney Fire	N/A	Low	Staff Time, local funds	Short-term
Action WFD-3 — Update, adopt, and enforce a new Wildland Urban Interface (WUI) Code to replace the existing code. Improve and update existing WUI hazard zones. (Coordinates with City of Boise Action B-11, North Ada County Fire & Rescue Action NACFR-3) Hazards Mitigated: Wildfire						

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
New & Existing	1, 2, 4, 5, 6, 9, 10	Boise Fire Department	NACFR, Whitney Fire	Low	Local	Short-Term

Action WFD-4— Require Local Fire District Approval of Water and Access Requirements for all projects.

Hazards Mitigated: Wildfire

New	1, 2, 4, 5, 9	Whitney Fire	Ada County	Low	Local funds	Short-term and ongoing
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Action WFD-5— Continue Firewise Community program for residents in the foothills and promote adoption of Firewise for development within the wildland urban interface overlay. (Coordinates with City of Boise Action B-21, North Ada County Fire & Rescue Action NACFR-4)

Hazards Mitigated: Wildfire

New and Existing	1, 2, 5, 6, 8, 9	Boise Fire Department	NACFR, Whitney Fire	Low	Local funds	Short-term and ongoing
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Action WFD-6— Support County-wide initiatives identified in Volume 1.

Hazards Mitigated: All Hazards

New and Existing	1, 2, 6, 7, 8, 9, 10	Whitney Fire		Low	Local	Short-term and ongoing
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Action WFD-7— Conduct wildland fire prevention education and outreach via the internet, social media and direct public outreach to support and promote fire adapted communities. Focus on fuel reduction on private property around new and existing homes via incentivizing homeowners, providing free debris pick-up and replacement Firewise vegetation at a discount. (Coordinates with City of Boise Action B-8, North Ada County Fire & Rescue Action NACFR-14)

Hazards Mitigated: Wildfire

New and Existing	1, 8, 9, 10	Boise Fire Department	NACFR, Whitney Fire	Low	Western State Grant, Local	Short-term and Ongoing
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Action WFD-8— Meet and coordinate with private organizations, state, federal and other local agencies to develop, conduct and maintain wildfire mitigation and fuel-reduction projects, including prescribed fire (Rx fire), pile-burning and managed fire. Increase capacity to conduct these projects through hiring personnel and expenditures for equipment and biological control methods. (Coordinates with City of Boise Action B-15, Flood Control District #10 Action FCD10-12, North Ada County Fire & Rescue District Action NACFR-15)

Hazards Mitigated: Wildfire

New and Existing	1, 6, 9, 10	Boise Fire	FCD #10, NACFR, Whitney Fire	Low	General fund	Ongoing
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Action WFD-9— Complete a Wildland-Urban Interface (WUI) risk assessment (a GIS exercise looking at vegetation in the undeveloped area, age of homes and other relevant factors). Improve individual parcel data with wildfire assessments. Provide a public portal to share data and educate on risk and community wildfire adaptation. (Coordinates with City of Boise Action B-7 and North Ada County Fire & Rescue District Action NACFR-5)

Hazards Mitigated: Wildfire

New and Existing	2, 4, 6, 8, 9, 10	Boise Fire Department	Whitney Fire, NACFR	Medium	Western States Grant, HMGP Grant, Local	Short-term and ongoing
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a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date

Acronyms used here are defined at the beginning of this volume.

Table 21-12. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	3	High	High	Yes	Yes	No	Medium	High
2	7	Medium	Low	Yes	Yes	Yes	High	High
3	7	Medium	Low	Yes	No	Yes	High	Low
4	5	Medium	Low	Yes	No	Yes	High	Low
5	6	High	Low	Yes	Yes	Yes	High	High
6	7	Medium	Low	Yes	Yes	Yes	High	High
7	2	Medium	Low	Yes	No	Yes	High	Low
8	4	High	Low	Yes	No	Yes	High	Low
9	6	High	Medium	Yes	Yes	Yes	Medium	Medium

a. See the introduction to this volume for explanation of priorities.

Table 21-13. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building ^b
High-Risk Hazards								
Severe Weather								WFD-2, 6
Medium-Risk Hazards								
Wildfire	WFD-3, 4, 5	WFD-1, 3, 4, 5	WFD-1, 5, 7	WFD-3, 4, 5, 7, 8				WFD-2, 3, 5, 7, 8, 9
Flood		WFD-1						WFD-2, 6
Earthquake		WFD-1						WFD-2, 6
Low-Risk Hazards								
Landslide								WFD-2, 6
Dam Failure								WFD-2, 6
Drought								WFD-2, 6
Volcano								WFD-2, 6

a. See the introduction to this volume for explanation of mitigation types.

b. In addition to the community capacity building actions listed in this table, this jurisdiction is expanding its financial capabilities through its participation in and adoption of this hazard mitigation plan, which establishes grant-funding eligibility.

21.9 INFORMATION SOURCES USED FOR THIS ANNEX

The following reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **2017 Ada County Multi-Hazard Mitigation Plan** – The previous HMP was reviewed to update this annex.

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

2022 Ada County Multi-Hazard Mitigation Plan

Appendix A. Annex Instructions and Templates

Instructions for Completing Municipal Annex Template

INSTRUCTIONS FOR COMPLETING MUNICIPAL ANNEX TEMPLATE

Jurisdictional annex templates for the 2022 *Ada County Hazard Mitigation Plan* update will be completed in three phases. **This document provides instructions for completing Phase 3 of the template for municipalities.**

The target timeline for completion is as follows:

- **Phase 1**—Team, Profile, Trends, and Previous Plan Status
 - **Deploy:** July 19, 2021
 - **Due:** September 3, 2021 by close of business
- **Phase 2**—Capability Assessment, Integration Review, and Information Sources
 - **Deploy:** September 27, 2021
 - **Due:** November 12, 2021 by close of business
- **Phase 3**—Risk Assessment, Action Plan, Information Sources, Future Needs, and Additional Comments
 - **Deploy:** April 12, 2022
 - **Mandatory Phase 3 Workshops:** Targeted for the week of April 11. We will schedule multiple workshops during that week to provide options for attendance
 - **Due:** May 13, 2022 by close of business, Mountain Time

Please direct any questions and return your completed Phase 3 template in electronic format to:

Megan Brotherton
Tetra Tech
Phone: (808) 339-9119
E-mail: megan.brotherton@tetrattech.com

A Note About Formatting

The template for the annex is a Microsoft Word document in a format that will be used in the final plan. Partners are asked to use this template so that a uniform product will be completed for each partner.

Content should be entered directly into the template rather than creating text in another document and pasting it into the template. Text from another source may alter the formatting of the document.

The section and table numbering in the document will be updated when completed annexes are combined into the final document. Please do not adjust any of the numbering.

For planning partners who participated in the 2017 planning effort, relevant information has been brought over to the 2022 template. Fields that require attention have been highlighted using the following color coding:

- **Yellow:** Text has been brought over from 2017 Plan and should be reviewed and updated as needed.
- **Green:** This is a new field that will require information that was not included in 2017.

Un-highlight each field that you update so that reviewers will know an edit has been made.

New planning partners will need to complete the template in its entirety.

PHASE 1 INSTRUCTIONS

CHAPTER TITLE

In the chapter title at the top of Page 1, type in the complete official name of your municipality (e.g., City of Pleasantville, West County). Do not change the chapter number. Revise only the jurisdiction name. If your jurisdiction's name has already been entered, verify that wording and spelling are correct; revise as needed.

LOCAL HAZARD MITIGATION PLANNING TEAM

Points of Contact

Provide the name, title, mailing address, telephone number, and e-mail address for the primary point of contact for your jurisdiction. This should be the person responsible for monitoring, evaluating and updating the annex for your jurisdiction. This person should also be the principle liaison between your jurisdiction and the Steering Committee overseeing development of this plan.

In addition, designate an alternate point of contact. This would be a person to contact should the primary point of contact be unavailable or no longer employed by the jurisdiction.

Note: Both of these contacts should match the contacts that were designated in your jurisdiction's letter of intent to participate in this planning process. If you have changed the primary or secondary contact, let the planning team know by inserting a comment into the document.

Who Should Be on the Local Mitigation Planning Team

The Local Hazard Mitigation Planning Team is responsible for developing your jurisdiction's annex to the hazard mitigation plan. Team membership should represent agencies with authority to regulate development and enforce local ordinances or regulatory standards, such as building/fire code enforcement, emergency management, emergency services, floodplain management, parks and recreation, planning/ community development, public information, public works/ engineering, stormwater management, transportation, or infrastructure.

Participating Planning Team

Populate Table 1-1 with the names of staff from your jurisdiction who participated in preparing this annex or otherwise contributed to the planning process for this hazard mitigation plan.

JURISDICTION PROFILE

Provide information specific to your jurisdiction as indicated, in a style similar to the examples provided below. This should be information that will not be provided in the overall mitigation plan document.

If Municipal (incorporated city) GIS data files are available, please send with your completed Phase 1. The files should include GIS data for facilities such as city halls, public works buildings, community centers, city police stations, city fire stations.

Location and Features

Describe the community's location, size and prominent features, in a statement similar to the example below:

EXAMPLE: The City of Jones is in the northwest portion of Smith County, along the Pacific Coast in northern California. It is almost 150 miles northeast of San Francisco. The city's total area is 4.2 square miles, with boundaries generally extending north-south from State Highway 111 to the Johnson River and east-west from Coast Road to East Frank Avenue. The City of Allen is to the north, unincorporated county is to the west, the City of Bethany is to the south, and the Pacific Ocean is to the west.

Jones is home to the University of Arbor, Bickerson Manufacturing, and the western portion of Soosoo National Park. Significant geographic features include the Watery River, which flows southwest across the city, Lake Splash in the city's northwest corner, and the foothills of the Craggy Mountains on the east side.

History

Describe the community's history, focusing on economy and development, and note its year of incorporation, in a statement similar to the example below:

EXAMPLE: The City of Jones was incorporated in 1858. The area was settled during the gold rush in the 1850s as a supply center for miners. As the gold rush died down, timber and fishing became the area's major economic resources. By 1913, the Jones Teachers College, a predecessor to today's University of Arbor, was founded. Recently, the presence of the college has come to shape Jones' population into a young and educated demographic. In 1981 the City developed the Jones Marsh and Wildlife Sanctuary, an environmentally friendly sewage treatment enhancement system.

With numerous annexations since its original incorporation, the city's area has almost doubled. Today it features a commercial core in the center of the city, with mostly residential areas to the north and south, the university to the west and the national park on the east.

Governing Body Format

Describe the community's key governance elements and staffing, in a statement similar to the example below:

EXAMPLE: The City of Jones is governed by a five-member city council. The City consists of six departments: Finance, Environmental Services, Community Development, Public Works, Police, and the City Manager's Office. The City has 13 commissions and task forces, which report to the City Council. The City currently employs a total of 155 employees (full-time equivalent).

The City Council assumes responsibility for the adoption of this plan; the City Manager will oversee its implementation.

CURRENT TRENDS

Population

Provide the most current population estimate for your jurisdiction based on an official means of tracking (e.g., the U.S. Census or state agency that develops population estimates). Describe the current estimate and recent population trends in a statement similar to the example below.

EXAMPLE: According to California Department of Finance, the population of Jones as of July 2020 was 17,280. Since 2010, the population has grown at an average annual rate of 1.2 percent, though that rate is declining, with an annual average of only 0.8 percent since 2015.

Development

In the highlighted text that says “Describe trends in general,” provide a brief description of your jurisdiction’s recent development trends in a statement similar to the example below:

EXAMPLE: Anticipated future development for Jones is low to moderate, consisting primarily of residential growth. Recent development has been mostly infill. There has been a focus on affordable housing and a push for more secondary mother-in-law units. Future growth in the City will be managed as identified in the City’s 2018 general plan. City actions, such as those relating to land use, annexations, zoning, subdivision and design review, redevelopment, and capital improvements, must be consistent with the plan.

Complete the table titled “Recent and Expected Future Development Trends.” Note:

- The portion of the table requesting the number of permits by year is specifically looking for development permits for **new** construction. If your jurisdiction does not have the ability to differentiate between permit types, list the total number of permits and indicate “N/A” (not applicable) for the permit sub-types.
- If your jurisdiction does not have the ability to track permits by hazard area, delete the bullet list of hazard areas and insert a qualitative description of where development has occurred.

PUBLIC OUTREACH

Note that this section is part of the Phase 3 annex, but documentation can begin in Phase 1 if applicable.

FEMA requirements for public outreach will be met by the County’s engagement efforts and are included in the main part of the plan. These may include public meetings, a StoryMap, surveys, etc. If individual jurisdictions want to have a more robust outreach for their local community, the public outreach table in each annex may be used to memorialize those local efforts.

This table should record local public outreach efforts made by your jurisdiction to inform the community of the plan update process. Examples may include local surveys on hazard awareness/preparedness, social media blasts, press releases, and outreach to local groups (CERT, senior citizen organizations, etc.) **This section is optional.**

THIS COMPLETES PHASE 1

PHASE 2 INSTRUCTIONS

CAPABILITY ASSESSMENT

Note that it is unlikely that one person will be able to complete all sections of the capability assessment alone. The primary preparer will likely need to reach out to other departments within the local government for information. It may be beneficial to provide these individuals with background information about this planning process, as input from them will be needed again during Phase 3 of the annex development.

Planning and Regulatory Capability

In the table titled “Planning and Regulatory Capability,” indicate “Yes” or “No” for each listed code, ordinance, requirement or planning document in each of the following columns:

- **Local Authority**—Enter “Yes” if your jurisdiction has prepared or adopted the identified item; otherwise, enter “No.” If yes, then enter the code, ordinance number, or plan name and its date of adoption in the comments column. *Note: If you enter yes, be sure to provide a comment with the appropriate code, ordinance or plan and date of adoption.*
- **Other Jurisdiction Authority**—Enter “Yes” if another agency (e.g., a state agency or special purpose district) enforces or administers the identified item in a way that may impact your jurisdiction or if any state or federal regulations or laws would prohibit local implementation of the identified item; otherwise, enter “No.” *Note: If you enter yes, be sure to provide a comment indicating the other agency and its relevant authority.*
- **State Mandated**—Enter “Yes” if state laws or other requirements enable or require the listed item to be implemented at the local level; otherwise, enter “No.” *Note: If you enter yes, be sure to provide a comment describing the relevant state mandate.*
- **Integration Opportunity**—Enter “Yes” if there are obvious ways that the code, ordinance or plan can be coordinated with the hazard mitigation plan. Consider the following:
 - If you answered “Yes” in the Local Authority column for this item, then enter “Yes” for integration opportunity if any of the following are true:
 - The item already addresses hazards and their impacts and should be updated to reflect new information about risk from this hazard mitigation plan
 - The item does not address hazards and their impacts but is due for an update in the next 5 years and could be updated in a way that does address hazards and impacts
 - The item identifies projects for implementation and these could be reviewed to determine if they can be modified to help address hazard mitigation goals
 - The item identifies projects for implementation and some of these should be considered for inclusion in the hazard mitigation action plan for your jurisdiction
 - If you answered “No” in the Local Authority column for this item, then enter “Yes” for integration opportunity if your jurisdiction will develop the item over the next 5 years

Note: Each capability with a “Yes” answer to Integration Opportunity will be discussed in more detail later in the annex. You may wish to keep notes when assessing the Integration Opportunity or review the “Integration with Other Planning Initiatives” section below.
- **Comments**—Enter the code number and adoption date for any local code indicated as being in place; provide other comments as appropriate to describe capabilities for each entry. **DO NOT OVERLOOK THIS STEP**

For the categories “General Plan” and “Capital Improvement Plan,” answer the specific questions shown, in addition to completing the four columns indicating level of capability.

Development and Permit Capability

Complete the table titled “Development and Permitting Capabilities.”

Fiscal Capability

Complete the table titled “Fiscal Capability” by indicating whether each of the listed financial resources is accessible to your jurisdiction. Enter “Yes” if the resource is fully accessible to your jurisdiction. Enter “No” if there are limitations or prerequisites that may hinder your use of this resource.

Administrative and Technical Capability

Complete the table titled “Administrative and Technical Capability” by indicating whether your jurisdiction has access to each of the listed personnel resources. Enter “Yes” or “No” in the column labeled “Available?”. If yes, then enter the department and position title. If you have contract support with these capabilities, you can still answer “Yes.” Indicate in the department row that this resource is provided through contract.

Education and Outreach Capability

Complete the table titled “Education and Outreach.”

HAZARD MITIGATION ACTION PLAN INPUT

When preparing the hazard mitigation action plan in Phase 3, review all the above capability assessment tables and consider including actions to provide a capability that your jurisdiction does not currently have, update a capability that your jurisdiction does have, or implement an action that is recommended in an existing plan or program.

National Flood Insurance Program Compliance

Complete the table titled “National Flood Insurance Program Compliance.”

Community Classifications

Complete the table titled “Community Classifications” to indicate your jurisdiction’s participation in various national programs related to natural hazard mitigation. For each program enter “Yes” or “No” in the second column to indicate whether your jurisdiction participates. If yes, then enter the classification that your jurisdiction has earned under the program in the third column and the date on which that classification was issued in the fourth column; enter “N/A” in the third and fourth columns if your jurisdiction is not participating. If you do not know your current classification, information is available at the following websites:

- **FIPS Code**— <https://www.census.gov/geographies/reference-files/2018/demo/popest/2018-fips.html>

- **DUNS #**— <https://www.dnb.com/duns-number.html>
- **Community Rating System**— <https://www.fema.gov/floodplain-management/community-rating-system>
- **Building Code Effectiveness Grading Schedule**— <https://www.isomitigation.com/bcegs/iso-s-building-code-effectiveness-grading-schedule-bcegs.html>
- **Public Protection Classification**— <https://www.isomitigation.com/ppc/>
- **Storm Ready**— <https://www.weather.gov/stormready/communities>
- **Firewise**— <http://www.firewise.org/usa-recognition-program/map-of-active-participants.aspx>
- **Tsunami Ready**— <https://www.weather.gov/tsunamiready/communities>

INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as general planning and capital facilities planning, and that relevant information from those sources is used in hazard mitigation. FEMA recommends integration as follows:

- Integrate hazard mitigation plan goals with community objectives (e.g. incorporate the goals for risk reduction and safety into the policies of other plans).
- Use the risk assessment to inform plans and policies (e.g. incorporate risk assessment findings into land use plans, site plan review, emergency operations plans).
- Implement mitigation actions through existing mechanisms (e.g. include mitigation projects in the capital improvement plan).
- Think about mitigation before and after a disaster (e.g. build recovery planning on existing mitigation plans and goals).

After reviewing the plans, programs and ordinances identified in the capability assessment tables, identify all plans and programs that have already been integrated with the hazard mitigation plan, and those that offer opportunities for future integration. The simplest way to do this is to review the Planning and Regulatory Capabilities table to see which items were marked as “Yes” under the Integration Opportunity column.

Existing Integration

In the highlighted bullet list, list items for which you entered “Yes” under the Integration Opportunity column of the “Planning and Regulatory Capability” table because the plan or ordinance already addresses potential impacts or includes specific projects that should be included as action items in the mitigation action plan. Consider listing items marked as Completed in the “Status of Previous Plan Actions” table if they were indicated as being ongoing actions. Provide a brief description of how the plan or ordinance is integrated. Examples are as follows:

- **Capital Improvement Plan**—The capital improvement plan includes projects that can help mitigate potential hazards. The City will act to ensure consistency between the hazard mitigation plan and the current and future capital improvement plans. The hazard mitigation plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.

- **Building Code and Fire Code**—The City’s adoption of the 2016 California building and fire codes incorporated local modifications to account for the climatic, topographic and geographic conditions that exist in the City.
- **General Plan**—The general plan includes a Safety Element to protect the community from unreasonable risk by establishing policies and actions to avoid or minimize the following hazards:
 - Geologic and seismic hazards
 - Fire hazards
 - Hazardous materials
 - Flood control
 - Impacts from climate change.
- **Climate Action Plan**—The City’s Climate Action Plan includes projects for reducing greenhouse gas emissions and adapting to likely impacts of climate change. These projects were reviewed to identify cross-planning initiatives that serve both adaptation and mitigation objectives.

HAZARD MITIGATION ACTION PLAN INPUT

When preparing the hazard mitigation action plan in Phase 3, any plans that fall into the “Existing Integration” category should be reviewed and elements from them should be included in the action plan as appropriate.

Opportunities for Future Integration

List any remaining items that say “Yes” in the Integration Opportunity column in the Planning and Regulatory Capabilities table and explain the process by which integration could occur. Examples follow:

- **Zoning Code**—The City is conducting a comprehensive update to its zoning code. Additional mitigation and abatement measures will be considered for incorporation into the code.
- **Capital Improvement Projects**—Capital improvement project proposals may take into consideration hazard mitigation potential as a means of evaluating project prioritization.
- **Post-Disaster Recovery Plan**—The City does not have a recovery plan and intends to develop one as a mitigation planning action during the next five years. The plan will build on the goals and objectives identified in the hazard mitigation plan.

After you have accounted for all items marked as “Yes” under the Integration Opportunity column, consider other programs you may have in place in your jurisdiction that include routine consideration and management of hazard risk. Examples of such programs may include: tree pruning programs, right-of-way mowing programs, erosion control or stream maintenance programs, etc. Add any such programs to the integration discussion and provide a brief description of how these programs manage (or could be adapted to manage) risk from hazards.

HAZARD MITIGATION ACTION PLAN INPUT

When preparing the hazard mitigation action plan in Phase 3, an action to integrate any identified “Opportunities for Future Integration” should be considered for inclusion in the action plan.

INFORMATION SOURCES USED FOR THIS ANNEX

Note that this section will ultimately describe all information sources used to develop this annex, but that only the sources used for Phases 1 and 2 will be listed at this point. Additional sources will be added with the preparation of the Phase 3 annex.

This section should describe what resources you used to complete the annex and how you used them. Several items are started for you, but be sure to update and enhance any descriptions. Providing this information is a requirement to pass the state and FEMA review process.

PUBLIC OUTREACH

Note that this section is part of the Phase 3 annex, but documentation can begin in Phases 1 and 2 if applicable.

FEMA requirements for public outreach will be met by the County's engagement efforts and are included in the main part of the plan. These may include public meetings, a StoryMap, surveys, etc. If individual jurisdictions want to have a more robust outreach for their local community, the public outreach table in each annex may be used to memorialize those local efforts.

This table should record local public outreach efforts made by your jurisdiction to inform the community of the plan update process. Examples may include local surveys on hazard awareness/preparedness, social media blasts, press releases, and outreach to local groups (CERT, senior citizen organizations, etc.) **This section is optional.**

THIS COMPLETES PHASE 2

PHASE 3 INSTRUCTIONS

RISK ASSESSMENT

Jurisdiction-Specific Natural Hazard Event History

In the table titled “Past Natural Hazard Events,” list in chronological order (most recent first) any natural hazard event that has caused damage to your jurisdiction. Include the date of the event and the estimated dollar amount of damage it caused. You are welcome to include any events, but special attention should be made to include major storms and federally declared disasters. Refer to the table below that lists hazard events in the planning area as recognized by the County, the state, and the federal government.

Table 1. Presidential Disaster Declarations for the Planning Area

Incident Dates	FEMA Disaster # or Event Name	County Emergency Op. Center Activated	Gubernatorial Declaration	Presidential Declaration
1/20/2020 - continuing	DR-4534 COVID-19 Pandemic			✓
3/29 – 6/15/2017	DR-4342 Flooding			✓
2/9/2017 ^a	Record Snowfall		✓	✓
7/27 - 9/26/2000	DR-1341 Wildfires			✓
12/31/1964	DR-186 Heavy Rains & Flooding			✓
2/14/1963	DR-143 Flood			✓
2/14/1962	DR-120 Flood			✓
6/26/1961	DR-116 Flood			✓
7/22/1960	DR-105 Wildfires			✓
5/27/1957	DR-76 Flood			✓
4/21/1956	DR-55 Flood			✓

a. Declaration date

We recommend including most large-scale disasters, unless you know that there were no impacts on your jurisdiction. Specifically, we recommend that you include these events if you have damage estimate information or can provide a brief description of impacts that occurred within your community. In addition to these events, refer to the NOAA storm events database included in the toolkit. We recommend conducting a search for the name of your jurisdiction in order to identify events with known impacts. Other potential sources of damage information include the following

- Preliminary damage estimates your jurisdiction filed with the county or state
- Insurance claims data
- Newspaper archives
- Emergency management documents (general plan safety element, emergency response plan, etc.)
- Resident input.

If you do not have estimates for costs of damage caused, list “Not Available” in the “Damage Assessment” column or list a brief description of the damage rather than a dollar value (e.g., Main Street closed as a result of flooding, downed trees and residential damage). Note that tracking such damage is a valid and useful mitigation action if your jurisdiction does not currently track such information.

Hazard Risk Ranking

Risk ranking identifies which hazards pose the greatest risk to the community, based on how likely it is for each hazard to occur (this is called the community's exposure) and how great an impact each hazard will have if it does occur (this is called the community's vulnerability). Every jurisdiction has differing degrees of risk exposure and vulnerability and therefore needs to rank risk for its own area. The risk ranking for each jurisdiction has been calculated in the "Loss Matrix" spreadsheet included in the annex preparation toolkit. The ranking is on the basis of risk ranking scores for each hazard that were calculated based on the hazard's probability of occurrence and its potential impact on people, property and the economy.

The results for your jurisdiction have already been entered into the "Hazard Risk Ranking" table in your Phase 3 annex template. The hazard with the highest risk rating is listed at the top of table and was given a rank of 1; the hazard with the second highest rating is listed second with a rank of 2; and so on. Two hazards with equal risk ranking scores were given the same rank. Hazards were assigned to "High," "Medium," or "Low" risk categories based on the risk ranking score. If you wish to review the calculations in detail, the appendix at the end of these instructions describes the calculation methodology that the spreadsheet uses.

Review the hazard risk ranking information that is included in your annex. If these results differ from what you know based on substantiated data and documentation, you may alter the ranking and risk categories based on this knowledge. If you do so, indicate the reason for the change in your template. For example:

"Drought was ranked as low; however, the jurisdiction's economy is heavily reliant on water-using industries, such as agriculture or manufacturing, so this hazard should be ranked as medium."

HAZARD MITIGATION ACTION PLAN INPUT

When preparing the hazard mitigation action plan in Phase 3, you will need to have at least one mitigation action for each hazard ranked as "high."

Jurisdiction-Specific Vulnerabilities

Repetitive Loss Properties

A repetitive loss property is any property for which FEMA has paid two or more flood insurance claims in excess of \$1,000 in any rolling 10-year period since 1978. In the space provided, the following information has been included in your annex based on data provided by FEMA:

- The number of any FEMA-identified repetitive-loss properties in your jurisdiction.
- The number of any FEMA-identified severe-repetitive-loss properties in your jurisdiction.
- The number (if any) of repetitive-loss or severe-repetitive-loss properties in your jurisdiction that have been mitigated. Mitigated for this exercise means that flood protection has been provided to the structure.

HAZARD MITIGATION ACTION PLAN INPUT

When preparing the hazard mitigation action plan in Phase 3, if your jurisdiction has any repetitive loss properties, you should strongly consider including a mitigation action that addresses mitigating these properties.

Other Noted Vulnerabilities

Review the results of the risk assessment included in the toolkit, your jurisdiction's natural events history, and any relevant public comments/input, then develop a few sentences that discuss specific hazard vulnerabilities. You do not need to develop a sentence for every hazard, but identify a few issues you would like to highlight. Also list any known hazard vulnerabilities in your jurisdiction that may not be apparent from the risk assessment and other information provided.

Spending some time thinking about the results of the risk assessment and other noted vulnerabilities will be a big help in the development of your hazard mitigation action plan. The following are examples of vulnerabilities you could identify through this exercise:

- About 45 percent of the population lives in the 0.2 percent annual chance flood hazard area, where flood insurance is generally not required.
- A magnitude 7.5 earthquake on the Smithburg Fault is estimated to produce nearly 1 million tons of structure debris.
- Over the past 10 years, the jurisdiction has experienced more than \$6 million in damage from severe storm events.
- More than 50 buildings are located in areas that would be permanently inundated with 12 inches of sea level rise.
- The results of the public survey indicated that 40 percent of Smithburg residents would not be able to be self-sufficient for 5 days following a major event.
- An urban drainage issue at a specific location results in localized flooding every time it rains.
- One area of the community frequently loses power due to a lack of tree maintenance.
- A critical facility, such as a police station, is not equipped with a generator.
- A neighborhood has the potential to have ingress and egress cut off as the result of a flood or earthquake (e.g. a bridge is the only access).
- Substantial number of buildings in one area of the community are unreinforced masonry or soft-story construction.
- An area along the river is eroding and threatening public and/or private property.

- A large visitor population that may not be aware of tsunami risk.

HAZARD MITIGATION ACTION PLAN INPUT

When preparing the hazard mitigation action plan in Phase 3, consider including actions to address the jurisdiction-specific vulnerabilities listed in this section.

HAZARD MITIGATION ACTION PLAN

Hazard Mitigation Action Plan Matrix

The hazard mitigation action plan is the heart of your jurisdictional annex. This is where you will identify the actions your jurisdiction would like to pursue with this plan.

Select Recommended Actions

All of the work that you have done thus far should provide you with ideas for actions. Throughout these instructions, green boxes labeled “Hazard Mitigation Action Plan Input” have indicated information that needs to be considered in the selection of mitigation actions. The following sections describe how to consider these and other information sources to develop a list of potential actions.

Be sure to consider the following factors in your selection of actions:

- Select actions that are consistent with the overall purpose, goals, and objectives of the hazard mitigation plan.
- Identify actions where benefits exceed costs.
- Include any action that your jurisdiction has committed to pursuing, regardless of grant eligibility.
- Know what is and is not grant-eligible under various federal grant programs (see the fact sheet on FEMA hazard mitigation grant programs in the annex preparation toolkit and the table below).

Table 2. Federal Hazard Mitigation Grant Program Eligibility by Action Type

Eligible Activities	HMGP (Hazard Mitigation Grant Program)	BRIC (Building Resilient Infrastructure and Communities)	FMA (Flood Mitigation Assistance)
Mitigation Projects			
Property Acquisition and Structure Demolition	√	√	√
Property Acquisition and Structure Relocation	√	√	√
Structure Elevation	√	√	√
Mitigation Reconstruction	√	√	√
Dry Floodproofing of Historic Residential Structures	√	√	√
Dry Floodproofing of Non-residential Structures	√	√	√
Generators	√	√	
Localized Flood Risk Reduction Projects	√	√	√
Non-Localized Flood Risk Reduction Projects	√	√	

Eligible Activities	HMGP (Hazard Mitigation Grant Program)	BRIC (Building Resilient Infrastructure and Communities)	FMA (Flood Mitigation Assistance)
Structural Retrofitting of Existing Buildings	√	√	√
Non-structural Retrofitting of Existing Buildings and Facilities	√	√	√
Safe Room Construction	√	√	
Wind Retrofit for One- and Two-Family Residences	√	√	
Infrastructure Retrofit	√	√	√
Soil Stabilization	√	√	√
Wildland fire Mitigation	√	√	
Post-Disaster Code Enforcement	√		
Advance Assistance	√		
5 Percent Initiative Projects*	√		
Aquifer and Storage Recovery**	√	√	√
Flood Diversion and Storage**	√	√	√
Floodplain and Stream Restoration**	√	√	√
Green Infrastructure**	√	√	√
Miscellaneous/Other**	√	√	√
Hazard Mitigation Planning	√	√	√
Technical Assistance			√
Management Costs	√	√	√

* FEMA allows increasing the 5% initiative amount under the Hazard Mitigation Grant Program up to 10% for a presidential major disaster declaration. The additional 5% initiative funding can be used for activities that promote disaster-resistant codes for all hazards. As a condition of the award, either a disaster-resistant building code must be adopted or an improved Building Code Effectiveness Grading Schedule is required.

** Indicates that any proposed action will be evaluated on its own merit against program requirements. Eligible projects will be approved provided funding is available.

Material Previously Developed for This Annex

Capability Assessment Section—Planning and Regulatory Capability Table, Fiscal Capability Table, Administrative and Technical Capability Table, Education and Outreach Table, and Community Classification Table

Review these tables and consider the following:

- For any capability that you do not currently have, consider whether your jurisdiction should have this capability. If so, consider including an action to develop/acquire the capability.
- For any capability that you do currently have, consider whether this capability can be leveraged to increase or improve hazard mitigation in the jurisdiction.
- If any capabilities listed in the Planning and Regulatory Capabilities table have not been updated in more than 10 years, consider an action to review and update the capability and, as appropriate, incorporate hazard mitigation principles or information obtained in the risk assessment.

- Consider including actions that are identified in other plans and programs (capital improvement plans, strategic plans, etc.) as actions in this plan.

Capability Assessment Section—National Flood Insurance Program Compliance table

Review the table and consider the following:

- If you have no certified floodplain managers and you have flood risk, consider adding an action to provide key staff members with training to obtain certification.
- If your flood damage prevention was last updated in or before 2004, you should identify an action to update your ordinance to ensure it is compliant with current NFIP requirements.
- If you have any outstanding NFIP compliance issues, be sure to add an action to address them.
- If flood hazard maps do not adequately address the flood risk within your jurisdiction, consider actions to request new mapping or conduct studies.
- If you wish to begin to participate in CRS or you already to participate and would like to improve your classification, consider this as an action.
- If the number of flood insurance policies in your jurisdiction is low relative to the number of structures in the floodplain, consider an action that will promote flood insurance in your jurisdiction.

Capability Assessment Section— Adaptive Capacity for Climate Change Table

Consider your responses to this section:

- For criteria that you listed as medium or low, think of ways you could improve this rating (see adaptive capacity portion of the mitigation best practices catalog).
- For criteria you listed as high, think about how you can leverage this capacity to improve or enhance mitigation or continue to improve this capacity.
- For criteria that you were unable to provide responses for, consider ways you could improve your understanding of this capacity (see mitigation best practices and adaptive capacity catalog).

Integration Review Section

Review the items you identified in this section and consider an action that specifically says what the plan, code, ordinance etc. is and how it will be integrated. For items that address land use, include them in the prepopulated action in your template that reads as follows:

“Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community, including _____.”

Risk Ranking Section

You must identify at least one mitigation action that is clearly defined and actionable (i.e. not a preparedness or response action) for every hazard that is categorized in the risk ranking as “high” or “medium” risk.

Jurisdiction-Specific Vulnerabilities Section

Review the vulnerability issues that you identified in this section and consider actions to address them (see mitigation best practices catalog). Two examples are shown in the table below.

Table 3. Example Actions to Address Jurisdiction-Specific Vulnerabilities

Noted Vulnerability	Example Mitigation Action
About 45 percent of the population lives in the 0.2 percent annual chance flood hazard area where flood insurance is generally not required.	Implement an annual public information initiative that targets residents in the 0.2 percent annual chance flood hazard area. Provide information on the availability of relatively low cost flood insurance policies.
An urban drainage issue results in localized flooding every time it rains.	Replace undersized culverts that are contributing to localized flooding. Priority areas include: <ul style="list-style-type: none"> • The corner of Main Street and 1st Street • Old Oak subdivision.

Status of Previous Plan Actions Section

If your jurisdiction participated in a previous hazard mitigation plan, be sure to include any actions that were identified as “carry over” actions.

Other Sources

Mitigation Best Practices Catalog

A catalog that includes best practices identified by FEMA and other agencies, as well as recommendations from the steering committee and other stakeholders, is included in your toolkit. Review the catalog and identify actions your jurisdiction should consider for its action plan.

Public Input

Review input received during the process, specifically the public survey results included in your toolkit.

Common Actions for All Partners

The following six actions have been prepopulated in your annex template; **these six actions should be included in every annex and should not be removed:**

- Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard.
- Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions within the community.
- Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.
- Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements:
 - Enforce the flood damage prevention ordinance.
 - Participate in floodplain identification and mapping updates.
 - Provide public assistance/information on floodplain requirements and impacts.

- Identify and pursue strategies to increase adaptive capacity to climate change.
- Purchase generators for critical facilities and infrastructure that lack adequate back-up power.

In addition, the core planning team recommends that every planning partner strongly consider the following actions:

- Develop and implement a program to capture perishable data after significant events (e.g. high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the hazard mitigation plan.
- Support the County-wide initiatives identified in Volume I of the hazard mitigation plan.
- Develop a post-disaster recovery plan and a debris management plan.
- Develop and/or update plans that support or enhance continuity of operations following disasters.

The specifics of all these common actions should be adjusted as needed for the particulars of each community.

Complete the Table

Complete the table titled “Hazard Mitigation Action Plan Matrix” for all the actions you have identified and would like to include in the plan:

- Enter the action number (see box on next page) and description. **If the action is carried over from your previous hazard mitigation plan, return to the “Status of Previous Plan Actions” table you completed in Phase 1 and enter the new action number in the column labeled “Action # in Update.”**
- Indicate whether the action mitigates hazards for new and/or existing assets.
- Identify the specific hazards the action will mitigate (note: you must list each hazard by name; simply indicating “all hazards” is not deemed acceptable).
- Identify by number the mitigation plan objectives that the action addresses (see toolkit).
- Indicate who will be the lead in administering the action. This will most likely be a department within your jurisdiction (e.g. planning or public works). If you wish to indicate more than one department as responsible for the action, clearly identify one as the lead agency and list the others in the “supporting agency” column.
- Enter an estimated cost in dollars if known; otherwise, enter “High,” “Medium,” or “Low,” as determined for the prioritization process described in the following section.
- Identify funding sources for the action. If it is a grant, include the grant-providing agency as well as funding sources for any required cost share. Refer to your fiscal capability assessment to identify possible sources of funding and refer to the table on page 13 of these instructions for project eligibility for FEMA’s hazard mitigation assistance grant programs.

Action Numbering

Actions are to be numbered using the letter code for your jurisdiction shown below, followed by a hyphen and the action’s sequential number:

- Ada County—AC-1, AC-2...
- City of Boise—B-1, B-2...
- City of Eagle—E-1, E-2...
- City of Garden City—GC-1, GC-2...
- City of Kuna—K-1, K-2...
- City of Meridian—M-1, M-2...
- City of Star—S-1, S-2...

- Indicate the time line as “short-term” (1 to 5 years) or “long-term” (5 years or greater) or “ongoing” (a continual program)

Mitigation Action Priority

Complete the information in the table titled “Mitigation Action Priority” as follows:

- **Action #**—Indicate the action number from the Hazard Mitigation Action Plan Matrix table.
- **# of Objectives Met**—Enter the number of objectives the action will meet.
- **Benefits**—Enter “High,” “Medium” or “Low” as follows:
 - High—Action will provide an immediate reduction of risk exposure for life and property.
 - Medium—Action will have a long-term impact on the reduction of risk exposure for life and property, or action will provide an immediate reduction in the risk exposure for property.
 - Low—Long-term benefits of the action are difficult to quantify in the short term.
- **Cost**—Enter “High,” “Medium” or “Low” as follows:
 - High—Existing funding will not cover the cost of the action; implementation would require new revenue through an alternative source (for example, bonds, grants, and fee increases).
 - Medium—The action could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the action would have to be spread over multiple years.
 - Low—The action could be funded under the existing budget. The action is part of or can be part of an ongoing existing program.
- **Do Benefits Exceed the Cost?**—Enter “Yes” or “No.” This is a qualitative assessment. Enter “Yes” if the benefit rating (high, medium or low) is the same as or higher than the cost rating (high benefit/high cost; high benefit/medium cost; medium benefit/low cost; etc.). Enter “No” if the benefit rating is lower than the cost rating (medium benefit/high cost, low benefit/medium cost; etc.)
- **Is the Action Grant-Eligible?**—Enter “Yes” or “No.” Refer to the fact sheet on FEMA hazard mitigation grant programs in the annex preparation toolkit and the table on page 13 of these instructions.
- **Can Action Be Funded Under Existing Program Budgets?**—Enter “Yes” or “No.” In other words, is this action currently budgeted for, or would it require a new budget authorization or funding from another source such as grants?
- **Implementation Priority**— Enter “High,” “Medium” or “Low” as follows:
 - High Priority—An action that meets multiple objectives, has benefits that exceed costs, and has a secured source of funding. Action can be completed in the short term (1 to 5 years).
 - Medium Priority—An action that meets multiple objectives, has benefits that exceed costs, and is eligible for funding though no funding has yet been secured for it. Action can be completed in the short term (1 to 5 years), once funding is secured. Medium-priority actions become high-priority actions once funding is secured.
 - Low Priority—An action that will mitigate the risk of a hazard, has benefits that do not exceed the costs or are difficult to quantify, has no secured source of funding, and is not eligible for any known grant funding. Action can be completed in the long term (1 to 10 years). Low-priority actions may be eligible for grant funding from programs that have not yet been identified.
- **Grant Pursuit Priority**— Enter “High,” “Medium” or “Low” as follows:

- **High Priority**—An action that meets identified grant eligibility requirements, has high benefits, and is listed as high or medium implementation priority; local funding options are unavailable or available local funds could be used instead for actions that are not eligible for grant funding.
- **Medium Priority**—An action that meets identified grant eligibility requirements, has medium or low benefits, and is listed as medium or low implementation priority; local funding options are unavailable.
- **Low Priority**—An action that has not been identified as meeting any grant eligibility requirements.

Actions identified as high-grant-pursuit priority actions should be closely reviewed for consideration when grant funding opportunities arise.

Note: If a jurisdiction wishes to identify an action as high priority that is outside of the prioritization scheme for high priorities, a note indicating so should be inserted and a rationale should be provided.

Analysis of Mitigation Actions

In the table titled “Analysis of Mitigation Actions,” for each combination of hazard type and mitigation type, enter the numbers of all recommended actions that address that hazard type and can be categorized as that mitigation type. The mitigation types are as follows:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education & Awareness**—Actions to inform residents and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, wetland restoration and preservation, and green infrastructure.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.
- **Climate Resilience**—Actions that incorporate methods to mitigate and/or adapt to the impacts of climate change. Includes aquifer storage and recovery activities, incorporating future conditions projections in project design or planning, or actions that specifically address jurisdiction-specific climate change risks, such as sea-level rise or urban heat island effect.
- **Community Capacity Building**—Actions that increase or enhance local capabilities to adjust to potential damage, to take advantage of opportunities, or to respond to consequences. Includes staff training, memorandums of understanding, development of plans and studies, and monitoring programs.

This exercise demonstrates that the jurisdiction has selected a comprehensive range of actions. This table must show at least one action to address each “high” and “medium” ranked hazard. Planning partners should aim to identify at least one action for each mitigation type, but this is not required.

An example of a completed “Analysis of Mitigation Actions” table is provided below. Note that an action can be more than one mitigation type.

Sample Completed Table – Analysis of Mitigation Actions								
Hazard Type	Action Addressing Hazard, by Mitigation Type							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building
High-Risk Hazards								
Dam Failure	EX-2, 3, 4, 5, 6	EX-1, 6	EX-4, 6		EX-8, 11			EX-3, 4, 8, 9, 10
Drought	EX-2	EX-1	EX-4					EX-3, 4, 8, 9, 10
Medium-Risk Hazards								
Earthquake	EX-2, 3, 4, 5, 7	EX-1, 7	EX-4		EX-8, 11			EX-3, 4, 8, 9
Flooding	EX-2, 3, 4, 5, 6, 7	EX-1, 6, 7	EX-4, 6	EX-9	EX-8, 11	EX-6		EX-3, 4, 8, 9, 10
Landslide	EX-2, 3, 4, 5, 7	EX-1, 7	EX-4		EX-8, 11			EX-3, 4, 8, 9, 10
Low-Risk Hazards								
Severe Weather	EX-2, 3, 4, 5, 7	EX-1, 7, 9	EX-4		EX-8, 9, 11		EX-8, 7	EX-3, 4, 8, 9, 10
Wildfire	EX-2, 3, 4, 5, 7	EX-1, 7, 9	EX-4, 9	EX-9	EX-8, 11			EX-3, 4, 8, 9, 10

PUBLIC OUTREACH

FEMA requirements for public outreach will be met by the County’s engagement efforts and are included in the main part of the plan. These may include public meetings, a StoryMap, surveys, etc. If individual jurisdictions want to have a more robust outreach for their local community, the public outreach table in each annex may be used to memorialize those local efforts.

This table should record local public outreach efforts made by your jurisdiction to inform the community of the plan update process. Examples may include local surveys on hazard awareness/preparedness, social media blasts, press releases, and outreach to local groups (CERT, senior citizen organizations, etc.) **This section is optional.**

INFORMATION SOURCES USED FOR THIS ANNEX

This section should describe what resources you used to complete the annex and how you used them. The sources used for Phases 1 and 2 should have been entered previously. List any additional sources used for the preparation of the Phase 3 annex. Review to ensure that all materials used in all three phases are identified. Providing this information is a requirement to pass the state and FEMA review process.

FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

In this section, identify any future studies, analyses, reports, or surveys your jurisdiction needs to better understand its vulnerability to identified or currently unidentified risks. These could be needs based on federal or state agency mandates. **This section is optional.**

ADDITIONAL COMMENTS

Use this section to add any additional information pertinent to hazard mitigation and your jurisdiction not covered in this template. **This section is optional.**

THIS COMPLETES PHASE 3

APPENDIX— Risk Ranking Calculation Methodology

The instructions below describe the methodology for how risk rankings were derived in the “Loss Matrix” spreadsheet provided with the annex preparation toolkit. The risk-ranking for each hazard assessed its probability of occurrence and its potential impact on people, property, and the economy. Refer to the Loss Matrix spreadsheet in order to follow along.

Probability of Occurrence

A probability factor is assigned based on how often a hazard is likely to occur. The probability of occurrence of a hazard event is generally based on past hazard events in an area, although weight can be given to expected future probability of occurrence based on established return intervals and changing climate conditions. For example, if your jurisdiction has experienced two damaging floods in the last 25 years, the probability of occurrence is high for flooding and scores a 3 under this category. If your jurisdiction has experienced no damage from landslides in the last 100 years, your probability of occurrence for landslide is low, and scores a 1 under this category. Each hazard was assigned a probability factor as follows:

- High—Hazard event is likely to occur within 25 years (Probability Factor = 3)
- Medium—Hazard event is likely to occur within 100 years (Probability Factor = 2)
- Low—Hazard event is not likely to occur within 100 years (Probability Factor = 1)
- None—There is no exposure to the hazard and no probability of occurrence (Probability Factor = 0)

Potential Impacts of Each Hazard

The impact of each hazard is divided into three categories: impacts on people, impacts on property, and impacts on the economy. These categories are also assigned weighted values. Impact on people was assigned a weighting factor of 3, impact on property was assigned a weighting factor of 2 and impact on the economy was assigned a weighting factor of 1.

Impact factors for each category (people, property, economy) are described below:

- **People**—Values are assigned based on the percentage of the total *population exposed* to the hazard event. The degree of impact on individuals will vary and is not measurable, so the calculation assumes for simplicity and consistency that all people exposed to a hazard because they live in a hazard zone will be equally impacted when a hazard event occurs. Impact factors were assigned as follows:
 - High—25 percent or more of the population is exposed to a hazard (Impact Factor = 3)
 - Medium—10 percent to 24 percent of the population is exposed to a hazard (Impact Factor = 2)
 - Low—9 percent or less of the population is exposed to the hazard (Impact Factor = 1)
 - No impact—None of the population is exposed to a hazard (Impact Factor = 0)
- **Property**—Values are assigned based on the percentage of the total *property value exposed* to the hazard event:
 - High—25 percent or more of the total replacement value is exposed to a hazard (Impact Factor = 3)
 - Medium—10 percent to 24 percent of the total replacement value is exposed to a hazard (Impact Factor = 2)
 - Low—9 percent or less of the total replacement value is exposed to the hazard (Impact Factor = 1)

- No impact—None of the total replacement value is exposed to a hazard (Impact Factor = 0)
- **Economy**—Values were assigned based on the percentage of the total *property value vulnerable* to the hazard event. Values represent estimates of the loss from a major event of each hazard in comparison to the total replacement value of the property exposed to the hazard. For some hazards, such as wildland fire and landslide, vulnerability may be considered to be the same or a portion of exposure due to the lack of loss estimation tools specific to those hazards.
 - High—Estimated loss from the hazard is 10 percent or more of the total replacement value (Impact Factor = 3)
 - Medium—Estimated loss from the hazard is 5 percent to 9 percent of the total replacement value (Impact Factor = 2)
 - Low—Estimated loss from the hazard is 4 percent or less of the total replacement value (Impact Factor = 1)
 - No impact—No loss is estimated from the hazard (Impact Factor = 0).

Impacts on People

The percent of the total population exposed to each hazard of concern with a defined extent and location (e.g. floodplain) can be found in the loss estimate matrix in the **green highlighted column**. For those hazards that do not have a defined extent and location the entire population or a portion of the population is considered to be exposed, depending on the hazard. For the drought hazard, it is common for jurisdictions to list “low” or “none,” because all people in the planning area would be exposed to drought, but impacts to the health and safety of individuals are expected to be minimal.

Impacts on Property

The percent of the total value exposed to each hazard of concern with a defined extent and location (e.g. floodplain) can be found in the loss estimate matrix in the **blue highlighted column**. For those hazards that do not have a defined extent and location (e.g. severe weather) the entire building stock is generally considered to be exposed. For the drought hazard, it is common for jurisdictions to list “low” or “none,” because all structures in the planning area would be exposed to drought, but impacts to structures are expected to be minimal.

Impacts on the Economy

The loss estimates for each hazard of concern that was modeled (i.e. dam failure, flood, earthquake) can be found in the loss estimate matrix in the **orange highlighted column**. For those hazards that have a defined extent and location, but do not have modeled loss results, loss estimates can be the same as exposure or a portion thereof. For example, a large percentage of the building stock may be exposed to landslide or wildland fire risk, but it would not be expected that one event that resulted in loss to all exposed structures would occur. For those hazards that do not have a defined extent and location, exposure is based on the hazard type.

Risk Rating for Each Hazard

A risk rating for each hazard was determined by multiplying the assigned probability factor by the sum of the weighted impact factors for people, property and the economy:

$$\text{Risk Rating} = \text{Probability Factor} \times \text{Weighted Impact Factor \{people + property + economy\}}$$

This is the number that is shown in the risk ranking table in your template. Generally, score of 30 or greater receive a “high” rating, score between 15 and 30 receive a “medium” rating, and score of less than 15 receives a “low” rating.

Municipal Annex Template

1. JURISDICTION NAME

1.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Name, Title
Street Address
City, State ZIP
Telephone: xxx-xxx-xxxx
e-mail Address: xxx@xxx.xxx

Alternate Point of Contact

Name, Title
Street Address
City, State ZIP
Telephone: xxx-xxx-xxxx
e-mail Address: xxx@xxx.xxx

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 1-1.

Table 1-1. Local Hazard Mitigation Planning Team Members

Name	Title
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

1.2 JURISDICTION PROFILE

1.2.1 Location and Features

[jurisdiction name] is in [general location description]

The current boundaries generally extend from [describe], encompassing an area of [area in square miles].

[general description of key features]

1.2.2 History

[jurisdiction name] was incorporated in [date]. [brief historical summary]

1.2.3 Governing Body Format

[general description].

The [name of adopting body] assumes responsibility for the adoption of this plan; [name of oversight agency] will oversee its implementation.

1.3 CURRENT TRENDS

1.3.1 Population

According to [identify data source], the population of [jurisdiction name] as of [month year] was [population]. Since [year], the population has grown at an average annual rate of [number] percent.


1.3.2 Development

DESCRIBE TRENDS IN GENERAL.

Identifying previous and future development trends is achieved through a comprehensive review of permitting since completion of the previous plan and in anticipation of future development. Tracking previous and future growth in potential hazard areas provides an overview of increased exposure to a hazard within a community. Table 1-2 summarizes development trends in the performance period since the preparation of the previous hazard mitigation plan, as well as expected future development trends.

Table 1-2. Recent and Expected Future Development Trends

Criterion	Response																														
Has your jurisdiction annexed any land since the preparation of the previous hazard mitigation plan? <i>If yes, give the estimated area annexed and estimated number of parcels or structures.</i>	Yes/No [redacted]																														
Is your jurisdiction expected to annex any areas during the performance period of this plan? <i>If yes, describe land areas and dominant uses. If yes, who currently has permitting authority over these areas?</i>	Yes/No [redacted]																														
Are any areas targeted for development or major redevelopment in the next five years? <i>If yes, briefly describe, including whether any of the areas are in known hazard risk areas</i>	Yes/No [redacted]																														
How many permits for new construction were issued in your jurisdiction since the preparation of the previous hazard mitigation plan?	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th></th> <th style="background-color: #003366; color: white;">2016</th> <th style="background-color: #003366; color: white;">2017</th> <th style="background-color: #003366; color: white;">2018</th> <th style="background-color: #003366; color: white;">2019</th> <th style="background-color: #003366; color: white;">2020</th> </tr> </thead> <tbody> <tr> <td>Single Family</td> <td>[redacted]</td> <td>[redacted]</td> <td>[redacted]</td> <td>[redacted]</td> <td>[redacted]</td> </tr> <tr> <td>Multi-Family</td> <td>[redacted]</td> <td>[redacted]</td> <td>[redacted]</td> <td>[redacted]</td> <td>[redacted]</td> </tr> <tr> <td>Other</td> <td>[redacted]</td> <td>[redacted]</td> <td>[redacted]</td> <td>[redacted]</td> <td>[redacted]</td> </tr> <tr> <td>Total</td> <td>[redacted]</td> <td>[redacted]</td> <td>[redacted]</td> <td>[redacted]</td> <td>[redacted]</td> </tr> </tbody> </table>		2016	2017	2018	2019	2020	Single Family	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	Multi-Family	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	Other	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	Total	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
	2016	2017	2018	2019	2020																										
Single Family	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]																										
Multi-Family	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]																										
Other	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]																										
Total	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]																										
Provide the number of new-construction permits for each hazard area or provide a qualitative description of where development has occurred.	<ul style="list-style-type: none"> • Special Flood Hazard Areas: # • Landslide: # • High Liquefaction Areas: # • Tsunami Inundation Area: # • Wildfire Risk Areas: # 																														

Criterion		Response
Describe the level of buildout in the jurisdiction, based on your jurisdiction’s buildable lands inventory. If no such inventory exists, provide a qualitative description.		

1.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 1-3.
- Development and permitting capabilities are presented in Table 1-4.
- An assessment of fiscal capabilities is presented in Table 1-5.
- An assessment of administrative and technical capabilities is presented in Table 1-6.
- An assessment of education and outreach capabilities is presented in Table 1-7.
- Information on National Flood Insurance Program (NFIP) compliance is presented in Table 1-8.
- Classifications under various community mitigation programs are presented in Table 1-9.

Table 1-3. Planning and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Codes, Ordinances, & Requirements				
Building Code <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Zoning Code <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Subdivisions <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Stormwater Management <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Post-Disaster Recovery <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Real Estate Disclosure <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Growth Management <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Site Plan Review <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Environmental Protection <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Flood Damage Prevention <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Emergency Management <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Climate Change <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Other <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Planning Documents				
General Plan <i>Is the plan compliant with Assembly Bill 2140? Yes/No</i> <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Capital Improvement Plan <i>How often is the plan updated? </i> <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Disaster Debris Management Plan <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Floodplain or Watershed Plan <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Stormwater Plan <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Urban Water Management Plan <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No

	Local Authority	Other Jurisdiction Authority	State Mandated	Integration Opportunity?
Habitat Conservation Plan <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Economic Development Plan <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Shoreline Management Plan <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Community Wildfire Protection Plan <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Forest Management Plan <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Climate Action Plan <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Comprehensive Emergency Management Plan <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Threat & Hazard Identification & Risk Assessment (THIRA) <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Post-Disaster Recovery Plan <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Continuity of Operations Plan <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Public Health Plan <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No
Other <i>Comment: Enter Comment</i>	Yes/No	Yes/No	Yes/No	Yes/No

Table 1-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? <i>If no, who does? If yes, which department? Enter Response</i>	Yes/No
Does your jurisdiction have the ability to track permits by hazard area?	Yes/No
Does your jurisdiction have a buildable lands inventory?	Yes/No

Table 1-5. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes/No
Capital Improvements Project Funding	Yes/No
Authority to Levy Taxes for Specific Purposes	Yes/No
User Fees for Water, Sewer, Gas or Electric Service	Yes/No
<i>If yes, specify:</i> Enter Response	
Incur Debt through General Obligation Bonds	Yes/No
Incur Debt through Special Tax Bonds	Yes/No
Incur Debt through Private Activity Bonds	Yes/No
Withhold Public Expenditures in Hazard-Prone Areas	Yes/No
State-Sponsored Grant Programs	Yes/No
Development Impact Fees for Homebuyers or Developers	Yes/No
Other	Yes/No
<i>If yes, specify:</i> Enter Response	

Table 1-6. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices	Yes/No
<i>If Yes, Department /Position:</i> Enter Response	
Engineers or professionals trained in building or infrastructure construction practices	Yes/No
<i>If Yes, Department /Position:</i> Enter Response	
Planners or engineers with an understanding of natural hazards	Yes/No
<i>If Yes, Department /Position:</i> Enter Response	
Staff with training in benefit/cost analysis	Yes/No
<i>If Yes, Department /Position:</i> Enter Response	
Surveyors	Yes/No
<i>If Yes, Department /Position:</i> Enter Response	
Personnel skilled or trained in GIS applications	Yes/No
<i>If Yes, Department /Position:</i> Enter Response	
Scientist familiar with natural hazards in local area	Yes/No
<i>If Yes, Department /Position:</i> Enter Response	
Emergency manager	Yes/No
<i>If Yes, Department /Position:</i> Enter Response	
Grant writers	Yes/No
<i>If Yes, Department /Position:</i> Enter Response	
Other	Yes/No
<i>If Yes, Department /Position:</i> Enter Response	

Table 1-7. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes/No
Do you have personnel skilled or trained in website development?	Yes/No
Do you have hazard mitigation information available on your website? <i>If yes, briefly describe:</i> Enter Response	Yes/No
Do you use social media for hazard mitigation education and outreach? <i>If yes, briefly describe:</i> Enter Response	Yes/No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe:</i> Enter Response	Yes/No
Do you have any other programs in place that could be used to communicate hazard-related information? <i>If yes, briefly describe:</i> Enter Response	Yes/No
Do you have any established warning systems for hazard events? <i>If yes, briefly describe:</i> Enter Response	Yes/No

Table 1-8. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Enter Response
Who is your floodplain administrator? (department/position)	Enter Response
Are any certified floodplain managers on staff in your jurisdiction?	Yes/No
What is the date that your flood damage prevention ordinance was last amended?	Enter Response
Does your floodplain management program meet or exceed minimum requirements? <i>If exceeds, in what ways?</i> Enter Response	Meets/Exceeds
When was the most recent Community Assistance Visit or Community Assistance Contact?	Enter Response
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? <i>If so, state what they are.</i> Enter Response	Yes/No
Are any RiskMAP projects currently underway in your jurisdiction? <i>If so, state what they are.</i> Enter Response	Yes/No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <i>If no, state why.</i> Enter Response	Yes/No
Does your floodplain management staff need any assistance or training to support its floodplain management program? <i>If so, what type of assistance/training is needed?</i> Enter Response	Yes/No
Does your jurisdiction participate in the Community Rating System (CRS)? <i>If yes, is your jurisdiction interested in improving its CRS Classification?</i> Yes/No <i>If no, is your jurisdiction interested in joining the CRS program?</i> Yes/No	Yes/No
How many flood insurance policies are in force in your jurisdiction? ^a <i>What is the insurance in force?</i> \$ <input type="text"/> <i>What is the premium in force?</i> \$ <input type="text"/>	Enter Response

Criterion	Response
How many total loss claims have been filed in your jurisdiction? ^a	Enter Response
How many claims are still open or were closed without payment?	Enter Response
What were the total payments for losses? \$ _____	
a. According to FEMA statistics as of MONTH XX, 20XX	

Table 1-9. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	Yes/No		Date
DUNS #	Yes/No		Date
Community Rating System	Yes/No		Date
Building Code Effectiveness Grading Schedule	Yes/No		Date
Public Protection	Yes/No		Date
Storm Ready	Yes/No		Date
Firewise	Yes/No		Date
Tsunami Ready	Yes/No		Date

1.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as general planning and capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

1.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- Plan or Program Name—Description
- Plan or Program Name—Description
- Plan or Program Name—Description
- Plan or Program Name—Description
- Plan or Program Name—Description

1.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this

plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- Plan or Program Name—Description
- Plan or Program Name—Description
- Plan or Program Name—Description
- Plan or Program Name—Description
- Plan or Program Name—Description

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

1.6 RISK ASSESSMENT

1.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 1-10 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Type of Event	FEMA Disaster #	Date	Damage Assessment
Insert event type		Date	\$
Insert event type		Date	\$
Insert event type		Date	\$
Insert event type		Date	\$
Insert event type		Date	\$
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1.6.2 Hazard Risk Ranking

Table 1-11 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and the economy. Mitigation actions target hazards with high and medium rankings.

Table 1-11. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1			High/Medium/Low
2			High/Medium/Low
3			High/Medium/Low
4			High/Medium/Low
5			High/Medium/Low
6			High/Medium/Low
7			High/Medium/Low
8			High/Medium/Low
9			High/Medium/Low

1.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. This section provides information on a few key vulnerabilities for this jurisdiction. Available jurisdiction-specific risk maps of the hazards are provided at the end of this annex.

Repetitive Loss Properties

Repetitive loss records are as follows:

- Number of FEMA-identified Repetitive-Loss Properties: XX
- Number of FEMA-identified Severe-Repetitive-Loss Properties: XX
- Number of Repetitive-Loss Properties or Severe-Repetitive-Loss Properties that have been mitigated: XX

Other Noted Vulnerabilities

The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Insert as appropriate.
- Insert as appropriate.
- Insert as appropriate.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.

1.7 STATUS OF PREVIOUS PLAN ACTIONS

If your jurisdiction has no previous hazard mitigation plan, please enter an “X” in the box at right and do not complete this section.

Table 1-12 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 1-12. Status of Previous Plan Actions

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Insert Action Number & Text <i>Comment: Enter Comment</i>				
Insert Action Number & Text <i>Comment: Enter Comment</i>				
Insert Action Number & Text <i>Comment: Enter Comment</i>				
Insert Action Number & Text <i>Comment: Enter Comment</i>				
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Insert Action Number & Text <i>Comment: Enter Comment</i>				
Insert Action Number & Text <i>Comment: Enter Comment</i>				

1.8 HAZARD MITIGATION ACTION PLAN

Table 1-13 lists the identified actions, which make up the hazard mitigation action plan for this jurisdiction. Table 1-14 identifies the priority for each action. Table 1-15 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 1-13. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
<p>Action xxx-1—Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.</p> <p><u>Hazards Mitigated:</u> Enter Response</p>						
Existing	Enter Response	Enter Response	Enter Response	High	HMGP, PDM, FMA	Short-term
<p>Action xxx-2— Integrate the hazard mitigation plan into other plans, ordinances and programs that dictate land use decisions in the community, including [redacted]</p> <p><u>Hazards Mitigated:</u> Enter Response</p>						
New & Existing	Enter Response	Enter Response	Enter Response	Low	Staff Time, General Funds	Ongoing
<p>Action xxx-3—Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.</p> <p><u>Hazards Mitigated:</u> Enter Response</p>						
New & Existing	Enter Response	Enter Response	Enter Response	Low	Staff Time, General Funds	Short-term
<p>Action xxx-4—Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements:</p> <ul style="list-style-type: none"> • Enforce the flood damage prevention ordinance. • Participate in floodplain identification and mapping updates. • Provide public assistance/information on floodplain requirements and impacts. <p><u>Hazards Mitigated:</u> Enter Response</p>						
New & Existing	Enter Response	Enter Response	Enter Response	Low	Staff Time, General Funds	Ongoing
<p>Action xxx-5—Identify and pursue strategies to increase adaptive capacity to climate change including but not limited to the following:</p> <ul style="list-style-type: none"> • [redacted] <p><u>Hazards Mitigated:</u> Enter Response</p>						
New & Existing	Enter Response	Enter Response	Enter Response	Low	Staff Time, General Funds	Short-term
<p>Action xxx-6— Purchase generators for critical facilities and infrastructure that lack adequate backup power, including [redacted]</p> <p><u>Hazards Mitigated:</u> Dam failure, earthquake, flooding, landslide, severe weather, tsunami, wildfire</p>						
Existing	Enter Response	Enter Response	Enter Response			
<p>Action xxx-7—Description</p> <p><u>Hazards Mitigated:</u> Enter Response</p>						
Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response
<p>Action xxx-8—Description</p> <p><u>Hazards Mitigated:</u> Enter Response</p>						
Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response
<p>Action xxx-9—Description</p> <p><u>Hazards Mitigated:</u> Enter Response</p>						
Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response
<p>Action xxx-10—Description</p> <p><u>Hazards Mitigated:</u> Enter Response</p>						
Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action xxx-11—Description						
<i>Hazards Mitigated:</i> Enter Response						
Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date
 Acronyms used here are defined at the beginning of this volume.

Table 1-14. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	3	High	High	Yes	Yes	No	Medium	High
2	7	Medium	Low	Yes	No	Yes	High	Low
3	3	Low	Low	Yes	No	Yes	High	Low
4	6	Medium	Low	Yes	No	Yes	High	Low
5	7	Medium	Low	Yes	No	Yes	High	Medium
6	3	High	Medium	Yes	Yes	No	Medium	High
7								
8								
9								
10								
11								

a. See the introduction to this volume for explanation of priorities.

Table 1-15. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building
High-Risk Hazards								
Medium-Risk Hazards								

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building
Low-Risk Hazards								
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

a. See the introduction to this volume for explanation of mitigation types.

1.9 PUBLIC OUTREACH

Table 1-16 lists public outreach activities for this jurisdiction.

Local Outreach Activity	Date	Number of People Involved
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]

1.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- **[redacted] Municipal Code**—The municipal code was reviewed for the full capability assessment and for identifying opportunities for action plan integration.
- **[redacted] Flood Damage Prevention Ordinance**—The flood damage prevention ordinance was reviewed for compliance with the National Flood Insurance Program.
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.
- <INSERT DOCUMENT AND DESCRIPTION OF HOW IT WAS USED>

1.11 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

Insert text, if any; otherwise, delete section

1.12 ADDITIONAL COMMENTS

Insert text, if any; otherwise, delete section

Instructions for Completing Special-Purpose District Annex Template

INSTRUCTIONS FOR COMPLETING SPECIAL-PURPOSE DISTRICT ANNEX TEMPLATE

Jurisdictional annex templates for the 2022 *Ada County Hazard Mitigation Plan* update will be completed in three phases. **This document provides instructions for completing Phase 3 of the template for special-purpose districts.**

The target timeline for completion is as follows:

- **Phase 1**—Team, Profile, Trends, and Previous Plan Status
 - **Deploy:** July 19, 2021
 - **Due:** September 3, 2021 by close of business
- **Phase 2**—Capability Assessment, Integration Review, and Information Sources
 - **Deploy:** September 27, 2021
 - **Due:** November 12, 2021 by close of business
- **Phase 3**—Risk Assessment, Action Plan, Information Sources, Future Needs, and Additional Comments
 - **Deploy:** April 12, 2022
 - **Mandatory Phase 3 Workshops:** Targeted for the week of April 11. We will schedule multiple workshops during that week to provide options for attendance
 - **Due:** May 13, 2022 by close of business, Mountain Time

Please direct any questions and return your completed Phase 3 template in electronic format to:

Megan Brotherton
Tetra Tech
Phone: (808) 339-9119
E-mail: megan.brotherton@tetrattech.com

A Note About Formatting

The template for the annex is a Microsoft Word document in a format that will be used in the final plan. Partners are asked to use this template so that a uniform product will be completed for each partner.

Content should be entered directly into the template rather than creating text in another document and pasting it into the template. Text from another source may alter the formatting of the document.

The section and table numbering in the document will be updated when completed annexes are combined into the final document. Please do not adjust any of the numbering.

For planning partners who participated in the 2017 planning effort, relevant information has been brought over to the 2022 template. Fields that require attention have been highlighted using the following color coding:

- **Yellow:** Text has been brought over from 2017 Plan and should be reviewed and updated as needed.
- **Green:** This is a new field that will require information that was not included in 2017.

Please un-highlight each field that you update so that reviewers will know an edit has been made.

New planning partners will need to complete the template in its entirety.

IMPORTANT! READ THIS FIRST

Phase 1 and Phase 2 templates were previously provided to your jurisdiction for completion.

If your jurisdiction returned the completed Phase 1 & 2 templates:

- The Phase 1 & 2 content you provided is already incorporated into your Phase 3 template.
- Review the template to see if we have inserted any comments requesting further work to be done on Phase 1 or 2
 - ***If any comments are included, address them.*** Then, begin your work on Phase 3 following the Phase 3 instructions beginning on page 11.
 - If no comments are included, then you **DO NOT** need to do any further work on the Phase 1 or Phase 2 content. ***Go directly to the instructions for Phase 3, beginning on page 11.***

If your jurisdiction has **NOT** yet done any work on the Phase 1 or Phase 2 template:

- Follow the instructions beginning on page 3 for providing the Phase 1 and Phase 2 information.
- Then proceed with the Phase 3 instructions beginning on page 11.

If your jurisdiction started work on the Phase 1 or 2 template but never completed and submitted it, copy the work you had completed so far into the new template. Then complete Phases 1, 2, and 3 following the instructions provided here.

PHASE 1 INSTRUCTIONS**CHAPTER TITLE**

In the chapter title at the top of Page 1, type in the complete official name of your district (e.g. West County Fire Protection District #1, Johnsonville Flood Protection District). Do not change the chapter number. Revise only the jurisdiction name. If your jurisdiction's name has already been entered, verify that wording and spelling are correct; revise as needed.

LOCAL HAZARD MITIGATION PLANNING TEAM**Points of Contact**

Provide the name, title, mailing address, telephone number, and e-mail address for the primary point of contact for your jurisdiction. This should be the person responsible for monitoring, evaluating, and updating the annex for your jurisdiction. This person should also be the principle liaison between your jurisdiction and the Steering Committee overseeing development of this plan.

In addition, designate an alternate point of contact. This would be a person to contact should the primary point of contact be unavailable or no longer employed by the jurisdiction.

Note: Both of these contacts should match the contacts that were designated in your jurisdiction's letter of intent to participate in this planning process. If you have changed the primary or secondary contact, let the planning team know by inserting a comment into the document.

Participating Planning Team

Populate Table 1-1 with the names of staff from your jurisdiction who participated in preparing this annex or otherwise contributed to the planning process for this hazard mitigation plan.

JURISDICTION PROFILE**Overview**

Provide a brief summary description of the following:

- The purpose of the jurisdiction
- The date of inception
- The type of organization
- The number of employees
- Funding sources
- The type of governing body, and who has adoptive authority.

This should be information that is specific to your jurisdiction and will not be provided in the overall, planning area-wide mitigation plan document. Provide a statement similar to the example below:

EXAMPLE: *The Johnsonville Community Services District is a special district created in 1952 to provide water and sewer service. A five-member elected Board of Directors governs the District. The Board assumes responsibility for the adoption of this plan; the General Manager will oversee its implementation. The District currently employs a staff of 21. Funding comes primarily through rates and revenue bonds.*

Service Area

Provide a brief description of the following:

- Who the District’s customers are and an approximation of how many are currently served
- The area served, in square miles
- The geographic extent of the service area

This should be information that is specific to your jurisdiction and will not be provided in the overall, planning area-wide mitigation plan document. Provide a statement similar to the example below:

EXAMPLE: *The Johnsonville Community Services District serves unincorporated areas of Jones County east of the City of Smithburg, including the communities of Johnsonville, Creeks Corner, Jones Hill, Fields Landing, King Salmon, and Freshwater. The current total service area is 3.3 square miles. As of April 30, 2020, the District serves 7,305 water connections and 6,108 sewer connections.*

Assets

List District-owned assets in the categories shown on the table (and described in the sections below). Include an approximate value for each asset and a subtotal value for identified assets in each category.

If District GIS data files are available, please send with your completed Phase 1. The files should include GIS data for the critical facilities and infrastructure that are identified in the assets table, including the name of the facility and what it is (e.g. “1.5MG water tank”).

Property

Provide an approximate value for any land owned by the District.

Equipment

List equipment owned by the District that is used in times of emergency or that, if incapacitated, could severely impact the service area (vehicles, generators, pumps, etc.). Provide an approximate replacement value for each item. Equipment of similar type may be listed as a single category (e.g., “3 diesel-powered generators”). For water and sewer districts, include mileage of pipeline under this category.

Critical Facilities

List District-owned facilities that are vital to maintain services to the service area. Include the address of each facility. Provide an approximate replacement value for each line. Critical facilities are generally defined as facilities owned by the District that are critical to District operations and to public health or safety and that are especially important following hazard events, including but not limited to the following:

- Structures or facilities that produce, use, or store hazardous materials (highly volatile, flammable, explosive, toxic and/or water-reactive materials)
- Hospitals, nursing homes, and housing facilities likely to contain occupants who may not be sufficiently mobile to avoid death or injury during a natural hazard event
- Mass gathering facilities that may be used as evacuation shelters (such as schools or community centers)
- Transportation infrastructure such as roads, bridges and airports that provide sources for evacuation before, during and after natural hazard events
- Police stations, fire stations, government facilities, vehicle equipment and storage facilities, and emergency operation centers that are needed for response activities before, during and after a natural hazard event
- Public utility facilities such as drinking water, stormwater, and wastewater systems that are vital to providing normal services to damaged areas before, during and after natural hazard events.

The table below shows an example of assets to be listed in this section.

Sample Completed Table – Special District Assets	
Asset	Value
Property	
11.5 Acres	\$5,750,000
Equipment	
Total length of pipe 40 miles (\$1.32 million per mile X 40 miles)	\$52,800,000
4 Emergency Generators	\$250,000
Total:	\$53,050,000
Critical Facilities	
Administrative Buildings – 357 S. Jones Street	\$2,750,000
Philips Pump Station – 111 Fifth Avenue N.	\$377,000
Total:	\$3,127,000

NOTE: Placeholders in the table of assets request **ADDRESSES** for critical facilities. These addresses will not be included in the final published annex, but are needed in order to perform risk mapping and risk analysis for the hazard mitigation plan. Include the addresses in the table if convenient. If not, then provide a separate document listing all critical facilities and addresses for use in development of the hazard mitigation plan.

CURRENT TRENDS

Provide a brief description of previous growth trends in the service area and anticipated future increase or decrease in services (if applicable). This should be information that is specific to your jurisdiction and will not be provided in the overall, planning area-wide mitigation plan document. Provide a statement similar to the example below:

EXAMPLE: *The Johnsonville Community Services District originally was formed to serve only the Johnsonville area. The District’s service area expanded throughout the years to include the full area served today. Total customers have increased by 3 percent since 2010. Population in the service area is not projected to change significantly over the next 10 years, and the District has no plans to expand its service area.*

PUBLIC OUTREACH

Note that this section is part of the Phase 3 annex, but documentation can begin in Phase 1 if applicable.

FEMA requirements for public outreach will be met by the County’s engagement efforts and are included in the main part of the plan. These may include public meetings, a StoryMap, surveys, etc. If individual jurisdictions want to have a more robust outreach for their local community, the public outreach table in each annex may be used to memorialize those local efforts.

This table should record local public outreach efforts made by your jurisdiction to inform the community of this hazard mitigation plan update process. Examples may include local surveys on hazard awareness/preparedness, social media blasts, press releases, and outreach to local groups (CERT, senior citizen organizations, etc.) **This section is optional.**

THIS COMPLETES PHASE 1

PHASE 2 INSTRUCTIONS

CAPABILITY ASSESSMENT

Note that it is unlikely that one person will be able to complete all sections of the capability assessment alone. The primary preparer will likely need to reach out to other departments within the local government for information. It may be beneficial to provide these individuals with background information about this planning process, as input from them will be needed again during Phase 3 of the annex development.

Planning and Regulatory Capability

List any federal, state, local or district ordinances, plans, or policies that apply to your jurisdiction and relate to hazard mitigation. Provide the date of last update and any comments as appropriate. The table below shows an example of items to be listed in this section.

Sample Completed Table – Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
District Design Standards	2010	
Capital Improvement Program	Updated annually	covers 5 year timeframe
Emergency Operations Plan	2000	
Facility Maintenance Manual	1990	
State Building Code	2016	
Division of State Architects		Review of all building and site design features is required prior to construction

Fiscal Capability

Complete the table titled “Fiscal Capability” by indicating whether each of the listed financial resources is accessible to your jurisdiction. Enter “Yes” if the resource is fully accessible to your jurisdiction. Enter “No” if there are limitations or prerequisites that may hinder your use of this resource.

Administrative and Technical Capability

Complete the table titled “Administrative and Technical Capability” by indicating whether your jurisdiction has access to each of the listed personnel resources. Enter “Yes” or “No” in the column labeled “Available?”. If yes, then enter the department and position title. If you have contract support with these capabilities, you can still answer “Yes.” Indicate in the department row that this resource is provided through contract.

Education and Outreach Capability

Complete the table titled “Education and Outreach.”

HAZARD MITIGATION ACTION PLAN INPUT

When preparing the hazard mitigation action plan in Phase 3, review all the above capability assessment tables and consider including actions to provide a capability that your jurisdiction does not currently have, update a capability that your jurisdiction does have, or implement an action that is recommended in an existing plan or program.

Community Classifications

Complete the table titled “Community Classifications” to indicate your jurisdiction’s participation in various national programs related to natural hazard mitigation. For each program enter “Yes” or “No” in the second column to indicate whether your jurisdiction participates. If yes, then enter the classification that your jurisdiction has earned under the program in the third column and the date on which that classification was issued in the fourth column; enter “N/A” in the third and fourth columns if your jurisdiction is not participating. If you do not know your current classification, information is available at the following websites:

- **FIPS Code**— <https://www.census.gov/geographies/reference-files/2018/demo/pepest/2018-fips.html>
- **DUNS #**— <https://www.dnb.com/duns-number.html>
- **Community Rating System**— <https://www.fema.gov/floodplain-management/community-rating-system>
- **Building Code Effectiveness Grading Schedule**— <https://www.isomitigation.com/bcegs/iso-s-building-code-effectiveness-grading-schedule-bcegs.html>
- **Public Protection Classification**— <https://www.isomitigation.com/ppc/>
- **Storm Ready**— <https://www.weather.gov/stormready/communities>
- **Firewise**— <http://www.firewise.org/usa-recognition-program/map-of-active-participants.aspx>
- **Tsunami Ready**— <https://www.weather.gov/tsunamiready/communities>

INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. FEMA recommends integration as follows:

- Integrate hazard mitigation plan goals with community objectives (e.g. incorporate the goals for risk reduction and safety into the policies of other plans).
- Use the risk assessment to inform plans and policies (e.g. incorporate risk assessment findings into emergency operations plans).
- Implement mitigation actions through existing mechanisms (e.g. include mitigation projects in the capital improvement plan).
- Think about mitigation before and after a disaster (e.g. build recovery planning on existing mitigation plans and goals).

After reviewing the plans, programs and ordinances identified in the capability assessment tables, identify all plans and programs that have already been integrated with the hazard mitigation plan, and those that offer opportunities for future integration.

Existing Integration

In the highlighted bullet list, provide a brief description of integrated plans or ordinances and how each is integrated. Consider listing items marked as Completed in the “Status of Previous Plan Actions” table if they were indicated as being ongoing actions. Examples are as follows:

- **Capital Improvement Plan**—The capital improvement plan includes projects that can help mitigate potential hazards. The District will act to ensure consistency between the hazard mitigation plan and the current and future capital improvement plans. The hazard mitigation plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.
- **Emergency Operations Plan**—The results of the risk assessment were used in the development of the emergency operations plan.
- **Facilities Plan**—The results of the risk assessment and mapped hazard areas are used in facility planning for the District. Potential sites are reviewed for hazard risks, and appropriate mitigation measures are considered in building and site design.

HAZARD MITIGATION ACTION PLAN INPUT

When preparing the hazard mitigation action plan in Phase 3, any plans that fall into the “Existing Integration” category should be reviewed and elements from them should be included in the action plan as appropriate.

Opportunities for Future Integration

List any plans or programs that offer the potential for future integration and describe the process by which integration will occur. Examples follow:

- **Capital Improvement Projects**—Capital improvement project proposals may take into consideration hazard mitigation potential as a means of evaluating project prioritization.
- **Post-Disaster Recovery Plan**—The District does not have a recovery plan and intends to develop one as a mitigation planning action during the next five years. The plan will build on the mitigation goals and objectives identified in the mitigation plan.

Consider other programs you may have in place in your jurisdiction that include routine consideration and management of hazard risk. Examples of such programs may include: tree pruning programs, right-of-way mowing programs, erosion control or stream maintenance programs, etc. Add any such programs to the integration discussion and provide a brief description of how these program manage (or could be adapted to manage) risk from hazards.

HAZARD MITIGATION ACTION PLAN INPUT

When preparing the hazard mitigation action plan in Phase 3, an action to integrate any identified “Opportunities for Future Integration” should be considered for inclusion in the action plan.

PUBLIC OUTREACH

Note that this section is part of the Phase 3 annex, but documentation can begin in Phases 1 and 2 if applicable.

FEMA requirements for public outreach will be met by the County's engagement efforts and are included in the main part of the plan. These may include public meetings, a StoryMap, surveys, etc. If individual jurisdictions want to have a more robust outreach for their local community, the public outreach table in each annex may be used to memorialize those local efforts.

This table should record local public outreach efforts made by your jurisdiction to inform the community of this hazard mitigation plan update process. Examples may include local surveys on hazard awareness/preparedness, social media blasts, press releases, and outreach to local groups (CERT, senior citizen organizations, etc.) **This section is optional.**

INFORMATION SOURCES USED FOR THIS ANNEX

Note that this section will ultimately describe all information sources used to develop this annex, but that only the sources used for Phases 1 and 2 will be listed at this point. Additional sources will be added with the preparation of the Phase 3 annex.

This section should describe what resources you used to complete the annex and how you used them. Several items are started for you, but be sure to update and enhance any descriptions. Providing this information is a requirement to pass the state and FEMA review process.

THIS COMPLETES PHASE 2

PHASE 3 INSTRUCTIONS

RISK ASSESSMENT

Jurisdiction-Specific Natural Hazard Event History

In the table titled “Past Natural Hazard Events,” list in chronological order (most recent first) any natural hazard event that has caused damage to your jurisdiction. Include the date of the event and the estimated dollar amount of damage it caused. You are welcome to include any events, but special attention should be made to include major storms and federally declared disasters. Refer to the table below that lists hazard events in the planning area as recognized by the county, the state, and the federal government.

Table 1. Presidential Disaster Declarations for the Planning Area

Incident Dates	FEMA Disaster # or Event Name	County Emergency Op. Center Activated	Gubernatorial Declaration	Presidential Declaration
1/20/2020 - continuing	DR-4534 COVID-19 Pandemic			✓
3/29 – 6/15/2017	DR-4342 Flooding			✓
2/9/2017 ^a	Record Snowfall		✓	✓
7/27 - 9/26/2000	DR-1341 Wildfires			✓
12/31/1964	DR-186 Heavy Rains & Flooding			✓
2/14/1963	DR-143 Flood			✓
2/14/1962	DR-120 Flood			✓
6/26/1961	DR-116 Flood			✓
7/22/1960	DR-105 Wildfires			✓
5/27/1957	DR-76 Flood			✓
4/21/1956	DR-55 Flood			✓

a. Declaration date

We recommend including most large-scale disasters, unless you know that there were no impacts on your jurisdiction. Specifically, we recommend that you include these events if you have damage estimate information or can provide a brief description of impacts that occurred within your community. In addition to these events, refer to the NOAA storm events database included in the toolkit. We recommend conducting a search for the name of your jurisdiction in order to identify events with known impacts. Other potential sources of damage information include the following

- Preliminary damage estimates your jurisdiction filed with the county or state
- Insurance claims data
- Newspaper archives
- Emergency management documents (general plan safety element, emergency response plan, etc.)
- Resident input.

If you do not have estimates for costs of damage caused, list “Not Available” in the “Damage Assessment” column or list a brief description of the damage rather than a dollar value (e.g., Main Street closed as a result of flooding, downed trees and residential damage). Note that tracking such damage is a valid and useful mitigation action if your jurisdiction does not currently track such information.

Hazard Risk Ranking

Risk ranking identifies which hazards pose the greatest risk to the community, based on how likely it is for each hazard to occur (this is called the community's exposure) and how great an impact each hazard will have if it does occur (this is called the community's vulnerability). Every jurisdiction has differing degrees of risk exposure and vulnerability and therefore needs to rank risk for its own area. Risk rankings for cities and the county have been calculated in the "Loss Matrix" spreadsheet included in the annex preparation toolkit. These rankings are on the basis of risk ranking scores for each hazard that were calculated based on the hazard's probability of occurrence and its potential impact on people, property and the economy.

The risk ranking methodology used for cities and counties is not usable for special-purpose districts because the risk-related mapping generally does not align with the boundaries of districts. To rank risk for your District, use the following procedure:

- Find the risk ranking scores in the Loss Matrix spreadsheet (on the "Risk Ranking Summary" tab) for the county overall and for any cities whose area overlaps that of your District.
- For each hazard, generate a risk ranking score for your District by calculating the average of the scores for those other jurisdictions.
- Rank the hazards based on those average scores:
 - Assign the rank of 1 to the hazard with the highest risk ranking score, the rank of 2 to the hazard with the second highest ranking score; and so on.
 - Assign the same rank to any two hazards with equal risk ranking scores
- If the resulting ranking differs from what you know based on substantiated data and documentation, alter the scores and ranking as needed based on this knowledge.
- Assign each hazard to the risk category of "High," "Medium," or "Low" based on the risk rating score:
 - Low for scores of 0 to 15
 - Medium for scores of 16 to 30
 - High for scores greater than 30

Enter the results of this analysis in the "Hazard Risk Ranking" table in the template; enter the hazards in order of ranking, with 1 at the top of the table.

HAZARD MITIGATION ACTION PLAN INPUT

When preparing the hazard mitigation action plan in Phase 3, you will need to have at least one mitigation action for each hazard ranked as "high."

Jurisdiction-Specific Vulnerabilities

Review the results of the risk assessment included in the toolkit, your jurisdiction's natural events history, and any relevant public comments/input, then develop a few sentences that discuss specific hazard vulnerabilities. You do not need to develop a sentence for every hazard, but identify a few issues you would like to highlight. Also list any known hazard vulnerabilities in your jurisdiction that may not be apparent from the risk assessment and other information provided.

Spending some time thinking about the results of the risk assessment and other noted vulnerabilities will be a big help in the development of your hazard mitigation action plan. The following are examples of vulnerabilities you could identify through this exercise:

- Over the past 10 years, the jurisdiction has experienced more than \$1 million in damage to critical assets from severe storm events.
- 17 critical assets are in areas that would be permanently inundated with 12 inches of sea level rise.
- One significant District asset is not equipped with a generator and four District buildings are unreinforced masonry or soft-story construction.
- An area along the river is eroding and threatening a District-owned treatment facility.

HAZARD MITIGATION ACTION PLAN INPUT

When preparing the hazard mitigation action plan in Phase 3, consider including actions to address the jurisdiction-specific vulnerabilities listed in this section.

HAZARD MITIGATION ACTION PLAN

Hazard Mitigation Action Plan Matrix

The hazard mitigation action plan is the heart of your jurisdictional annex. This is where you will identify the actions your jurisdiction would like to pursue with this plan.

Select Recommended Actions

All of the work that you have done thus far should provide you with ideas for actions. Throughout these instructions, green boxes labeled “Hazard Mitigation Action Plan Input” have indicated information that needs to be considered in the selection of mitigation actions. The following sections describe how to consider these and other information sources to develop a list of potential actions.

Be sure to consider the following factors in your selection of actions:

- Select actions that are consistent with the overall purpose, goals, and objectives of the hazard mitigation plan.
- Identify actions where benefits exceed costs.
- Include any action that your jurisdiction has committed to pursuing, regardless of grant eligibility.
- Know what is and is not grant-eligible under various federal grant programs (see the fact sheet on FEMA hazard mitigation grant programs in the toolkit and the table on the next page).

Material Previously Developed for This Annex

Capability Assessment Section—Planning and Regulatory Capability Table, Fiscal Capability Table, Administrative and Technical Capability Table, and Education and Outreach Table

Review these tables and consider the following:

- For any capability that you do not currently have, consider whether your jurisdiction should have this capability. If so, consider including an action to develop/acquire the capability.
- For any capability that you do currently have, consider whether this capability can be leveraged to increase or improve hazard mitigation in the jurisdiction.
- If any items listed in the Planning and Regulatory Capabilities table have not been updated in more than 10 years, consider an action to review and update the capability and, as appropriate, incorporate hazard mitigation principles or information obtained in the risk assessment.
- Consider including actions that are identified in other plans and programs (capital improvement plans, strategic plans, etc.) as actions in this plan.

Capability Assessment Section— Adaptive Capacity for Climate Change Table

Consider your responses to this section:

- For criteria that you listed as medium or low, think of ways you could improve this rating (see adaptive capacity portion of the mitigation best practices catalog).
- For criteria you listed as high, think about how you can leverage this capacity to improve or enhance mitigation or continue to improve this capacity.
- For criteria that you were unable to provide responses for, consider ways you could improve your understanding of this capacity (see mitigation best practices and adaptive capacity catalog).

Table 2. Federal Hazard Mitigation Grant Program Eligibility by Action Type

Eligible Activities	HMGP (Hazard Mitigation Grant Program)	BRIC (Building Resilient Infrastructure and Communities)	FMA (Flood Mitigation Assistance)
Mitigation Projects			
Property Acquisition and Structure Demolition	√	√	√
Property Acquisition and Structure Relocation	√	√	√
Structure Elevation	√	√	√
Mitigation Reconstruction	√	√	√
Dry Floodproofing of Non-residential Structures	√	√	√
Generators	√	√	
Localized Flood Risk Reduction Projects	√	√	√
Non-Localized Flood Risk Reduction Projects	√	√	
Structural Retrofitting of Existing Buildings	√	√	√
Non-structural Retrofitting of Existing Buildings and Facilities	√	√	√
Safe Room Construction	√	√	
Infrastructure Retrofit	√	√	√
Soil Stabilization	√	√	√
Wildfire Mitigation	√	√	
Post-Disaster Code Enforcement	√		
Advance Assistance	√		
5 Percent Initiative Projects*	√		
Aquifer and Storage Recovery**	√	√	√
Flood Diversion and Storage**	√	√	√

Eligible Activities	HMGP (Hazard Mitigation Grant Program)	BRIC (Building Resilient Infrastructure and Communities)	FMA (Flood Mitigation Assistance)
Floodplain and Stream Restoration**	√	√	√
Green Infrastructure**	√	√	√
Miscellaneous/Other**	√	√	√
Hazard Mitigation Planning	√	√	√
Technical Assistance			√
Management Costs	√	√	√

- * FEMA allows increasing the 5% initiative amount under the Hazard Mitigation Grant Program up to 10% for a presidential major disaster declaration. The additional 5% initiative funding can be used for activities that promote disaster-resistant codes for all hazards. As a condition of the award, either a disaster-resistant building code must be adopted or an improved Building Code Effectiveness Grading Schedule is required.
- ** Indicates that any proposed action will be evaluated on its own merit against program requirements. Eligible projects will be approved provided funding is available.

Integration Review Section

Review the items you identified in this section and consider an action that specifically says what the plan, code, ordinance etc. is and how it will be integrated.

Risk Ranking Section

You must identify at least one mitigation action that is clearly defined and actionable (i.e. not a preparedness or response action) for every hazard that is categorized in the risk ranking as “high” or “medium” risk.

Jurisdiction-Specific Vulnerabilities Section

Review the vulnerability issues that you identified in this section and consider actions to address them (see mitigation best practices catalog).

Status of Previous Plan Actions Section

If your jurisdiction participated in a previous hazard mitigation plan, be sure to include any actions that were identified as “carry over” actions.

Other Sources

Mitigation Best Practices Catalog

A catalog that includes best practices identified by FEMA and other agencies, as well as recommendations from the steering committee and other stakeholders, is included in your toolkit. Review the catalog and identify actions your jurisdiction should consider for its action plan.

Public Input

Review input received during the process, specifically the public survey results included in your toolkit.

Common Actions for All Partners

The following three actions have been prepopulated in your annex template; **these three actions should be included in every annex and should not be removed:**

- Where appropriate, support retro-fitting, purchase or relocation of structures located in high hazard areas, prioritizing those structures that have experienced repetitive losses and/or are located in high or medium ranked hazard.
- Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.
- Purchase generators for critical facilities and infrastructure that lack adequate back-up power.

In addition, the core planning team recommends that every planning partner strongly consider the following actions:

- Identify and pursue strategies to increase adaptive capacity to climate change.
- Develop and implement a program to capture perishable data after significant events (e.g. high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the hazard mitigation plan.
- Support the County-wide initiatives identified in Volume I of the hazard mitigation plan.
- Develop a post-disaster recovery plan and a debris management plan.
- Develop and/or update plans that support or enhance continuity of operations following disasters.

The specifics of all these common actions should be adjusted as needed for the particulars of each community.

Complete the Table

Complete the table titled “Hazard Mitigation Action Plan Matrix” for all the actions you have identified and would like to include in the plan:

- Enter the action number (see box at right) and description. **If the action is carried over from your previous hazard mitigation plan, return to the “Status of Previous Plan Actions” table you completed in Phase 1 and enter the new action number in the column labeled “Action # in Update.”**
- Indicate whether the action mitigates hazards for new and/or existing assets.
- Identify the specific hazards the action will mitigate (note: you must list each hazard by name; simply indicating “all hazards” is not deemed acceptable).
- Identify by number the mitigation plan objectives that the action addresses (see toolkit).
- Indicate who will be the lead in administering the action. This will most likely be a department within your jurisdiction (e.g. planning or public works). If you wish to indicate more than one department as responsible for the action, clearly identify one as the lead agency and list the others in the “supporting agency” column.
- Enter an estimated cost in dollars if known; otherwise, enter “High,” “Medium,” or “Low,” as determined for the prioritization process described in the following section.
- Identify funding sources for the action. If it is a grant, include the grant-providing agency as well as funding sources for any required cost share. Refer to your fiscal capability assessment to identify possible sources of funding and refer to the table on page 14 of these instructions for project eligibility for FEMA’s hazard mitigation assistance grant programs.
- Indicate the time line as “short-term” (1 to 5 years) or “long-term” (5 years or greater) or “ongoing” (a continual program)

Action Numbering

Actions are to be numbered using the code for your jurisdiction shown below, followed by a hyphen and the action’s sequential number:

- Ada Couty Highway District—ACHD-1, ACHD-2...
- Eagle Fire Protection District—EFD-1, EFD-2...
- Eagle Sewer District—ESD-1, ESD-2...
- Eagle Urban Renewal Agency—EURA-1, EURA-2...
- Flood Control District #10—FCD10-1, FCD10-2...
- Greater Boise Auditorium District — GBAD-1, GBAD-2...
- Independent School District Of Boise #1—BSD-1, BSD-2...
- Joint School District #2—JSD2-1, JSD2-2...
- Kuna Rural Fire District—KFD-1, KFD-2...
- Kuna School District—KSD-1, KSD-2...
- Meridian Development Corporation—MDC-1, MDC-2...
- North Ada County Fire & Rescue— NACFR-1, NACFR-2...
- Star Joint Fire Protection District —SFD-1, SFD-2...
- Star Sewer and Water District—SSW-1, SSW-2...
- West Boise Sewer District— WBS -1, WBS -2...
- Whitney Fire Protection District— WFD -1, WFD -2

Mitigation Action Priority

Complete the information in the table titled “Mitigation Action Priority” as follows:

- **Action #**—Indicate the action number from the Hazard Mitigation Action Plan Matrix table.
- **# of Objectives Met**—Enter the total number of objectives the action will meet.
- **Benefits**—Enter “High,” “Medium” or “Low” as follows:
 - High—Action will provide an immediate reduction of risk exposure for life and property.
 - Medium—Action will have a long-term impact on the reduction of risk exposure for life and property, or action will provide an immediate reduction in the risk exposure for property.

- Low—Long-term benefits of the action are difficult to quantify in the short term.
- **Cost**—Enter “High,” “Medium” or “Low” as follows:
 - High—Existing funding will not cover the cost of the action; implementation would require new revenue through an alternative source (for example, bonds, grants, and fee increases).
 - Medium—The action could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the action would have to be spread over multiple years.
 - Low—The action could be funded under the existing budget. The action is part of or can be part of an ongoing existing program.
- **Do Benefits Exceed the Cost?**—Enter “Yes” or “No.” This is a qualitative assessment. Enter “Yes” if the benefit rating (high, medium or low) is the same as or higher than the cost rating (high benefit/high cost; high benefit/medium cost; medium benefit/low cost; etc.). Enter “No” if the benefit rating is lower than the cost rating (medium benefit/high cost, low benefit/medium cost; etc.)
- **Is the Action Grant-Eligible?**—Enter “Yes” or “No.” Refer to the fact sheet on FEMA hazard mitigation grant programs in the annex preparation toolkit and the table on page 14 of these instructions.
- **Can Action Be Funded Under Existing Program Budgets?**—Enter “Yes” or “No.” In other words, is this action currently budgeted for, or would it require a new budget authorization or funding from another source such as grants?
- **Implementation Priority**— Enter “High,” “Medium” or “Low” as follows:
 - High Priority—An action that meets multiple objectives, has benefits that exceed costs, and has a secured source of funding. Action can be completed in the short term (1 to 5 years).
 - Medium Priority—An action that meets multiple objectives, has benefits that exceed costs, and is eligible for funding though no funding has yet been secured for it. Action can be completed in the short term (1 to 5 years), once funding is secured. Medium-priority actions become high-priority actions once funding is secured.
 - Low Priority—An action that will mitigate the risk of a hazard, has benefits that do not exceed the costs or are difficult to quantify, has no secured source of funding, and is not eligible for any known grant funding. Action can be completed in the long term (1 to 10 years). Low-priority actions may be eligible for grant funding from programs that have not yet been identified.
- **Grant Pursuit Priority**— Enter “High,” “Medium” or “Low” as follows:
 - High Priority—An action that meets identified grant eligibility requirements, has high benefits, and is listed as high or medium implementation priority; local funding options are unavailable or available local funds could be used instead for actions that are not eligible for grant funding.
 - Medium Priority—An action that meets identified grant eligibility requirements, has medium or low benefits, and is listed as medium or low implementation priority; local funding options are unavailable.
 - Low Priority—An action that has not been identified as meeting any grant eligibility requirements.

Actions identified as high-grant-pursuit priority actions should be closely reviewed for consideration when grant funding opportunities arise.

Note: If a jurisdiction wishes to identify an action as high priority that is outside of the prioritization scheme for high priorities, a note indicating so should be inserted and a rationale should be provided.

Analysis of Mitigation Actions

In the table titled “Analysis of Mitigation Actions,” for each combination of hazard type and mitigation type, enter the numbers of all recommended actions that address that hazard type and can be categorized as that mitigation type. The mitigation types are as follows:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education & Awareness**—Actions to inform residents and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, wetland restoration and preservation, and green infrastructure.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.
- **Climate Resilience**—Actions that incorporate methods to mitigate and/or adapt to the impacts of climate change. Includes aquifer storage and recovery activities, incorporating future conditions projections in project design or planning, or actions that specifically address jurisdiction-specific climate change risks, such as sea-level rise or urban heat island effect.
- **Community Capacity Building**—Actions that increase or enhance local capabilities to adjust to potential damage, to take advantage of opportunities, or to respond to consequences. Includes staff training, memorandums of understanding, development of plans and studies, and monitoring programs.

This exercise demonstrates that the jurisdiction has selected a comprehensive range of actions. This table must show at least one action to address each “high” and “medium” ranked hazard. Planning partners should aim to identify at least one action for each mitigation type, but this is not required.

An example of a completed “Analysis of Mitigation Actions” table is provided below. Note that an action can be more than one mitigation type.

Sample Completed Table – Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilience	Community Capacity Building
High-Risk Hazards								
Dam Failure	EX-2, 3, 4, 5, 6	EX-1, 6	EX-4, 6		EX-8, 11			EX-3, 4, 8, 9, 10
Drought	EX-2	EX-1	EX-4					EX-3, 4, 8, 9, 10
Medium-Risk Hazards								
Earthquake	EX-2, 3, 4, 5, 7	EX-1, 7	EX-4		EX-8, 11			EX-3, 4, 8, 9
Flooding	EX-2, 3, 4, 5, 6, 7	EX-1, 6, 7	EX-4, 6	EX-9	EX-8, 11	EX-6		EX-3, 4, 8, 9, 10
Landslide	EX-2, 3, 4, 5, 7	EX-1, 7	EX-4		EX-8, 11			EX-3, 4, 8, 9, 10
Low-Risk Hazards								
Severe Weather	EX-2, 3, 4, 5, 7	EX-1, 7, 9	EX-4		EX-8, 9, 11		EX-8, 7	EX-3, 4, 8, 9, 10
Wildfire	EX-2, 3, 4, 5, 7	EX-1, 7, 9	EX-4, 9	EX-9	EX-8, 11			EX-3, 4, 8, 9, 10

PUBLIC OUTREACH

FEMA requirements for public outreach will be met by the County’s engagement efforts and are included in the main part of the plan. These may include public meetings, a StoryMap, surveys, etc. If individual jurisdictions want to have a more robust outreach for their local community, the public outreach table in each annex may be used to memorialize those local efforts.

This table should record local public outreach efforts made by your jurisdiction to inform the community of this hazard mitigation plan update process. Examples may include local surveys on hazard awareness/preparedness, social media blasts, press releases, and outreach to local groups (CERT, senior citizen organizations, etc.) **This section is optional.**

INFORMATION SOURCES USED FOR THIS ANNEX

This section should describe what resources you used to complete the annex and how you used them. The sources used for Phases 1 and 2 should have been entered previously. List any additional sources used for the preparation of the Phase 3 annex. Review to ensure that all materials used in all three phases are identified. Providing this information is a requirement to pass the state and FEMA review process.

FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

In this section, identify any future studies, analyses, reports, or surveys your jurisdiction needs to better understand its vulnerability to identified or currently unidentified risks. These could be needs based on federal or state agency mandates. **This section is optional.**

ADDITIONAL COMMENTS

Use this section to add any additional information pertinent to hazard mitigation and your jurisdiction not covered in this template. **This section is optional.**

THIS COMPLETES PHASE 3

Special-Purpose District Annex Template

1. DISTRICT NAME

1.1 LOCAL HAZARD MITIGATION PLANNING TEAM

Primary Point of Contact

Name, Title
Street Address
City, State ZIP
Telephone: xxx-xxx-xxxx
e-mail Address: xxx@xxx.xxx

Alternate Point of Contact

Name, Title
Street Address
City, State ZIP
Telephone: xxx-xxx-xxxx
e-mail Address: xxx@xxx.xxx

This annex was developed by the local hazard mitigation planning team, whose members are listed in Table 1-1.

Table 1-1. Local Hazard Mitigation Planning Team Members

Name	Title
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]

1.2 JURISDICTION PROFILE

1.2.1 Overview

Insert Narrative Profile Information, per Instructions.

The [name of adopting body] assumes responsibility for the adoption of this plan; [name of oversight agency] will oversee its implementation.

All fire districts should include the following sentence (non-fire special purpose districts should delete the sentence):

The District participates/does not participate in the Public Protection Class Rating System and currently has a rating of #.

1.2.2 Service Area

The District service area covers [area in square miles], serving a population of [population].

1.2.3 Assets

Table 1-2 summarizes the assets of the District and their value.

Table 1-2. Special Purpose District Assets	
Asset	Value
Property	
[number] acres of land	\$ [value]
Equipment	
[description]	\$ [value]
[description]	\$ [value]
[description]	\$ [value]
[description]	\$ [value]
[description]	\$ [value]
Total:	\$ [value]
Critical Facilities	
[description – Include Address]	\$ [value]
[description – Include Address]	\$ [value]
[description – Include Address]	\$ [value]
[description – Include Address]	\$ [value]
Total:	\$ [value]

1.3 CURRENT TRENDS

Insert summary description of service trends.

1.4 CAPABILITY ASSESSMENT

This section describes an assessment of existing capabilities for implementing hazard mitigation strategies. The introduction at the beginning of this volume of the hazard mitigation plan describes the components included in the capability assessment and their significance for hazard mitigation planning.

Findings of the capability assessment were reviewed to identify opportunities to expand, initiate or integrate capabilities to further hazard mitigation goals and objectives. Where such opportunities were identified and determined to be feasible, they are included in the action plan. The “Analysis of Mitigation Actions” table in this annex identifies these as community capacity building mitigation actions. The findings of the assessment are presented as follows:

- An assessment of planning and regulatory capabilities is presented in Table 1-3.
- An assessment of fiscal capabilities is presented in Table 1-4.
- An assessment of administrative and technical capabilities is presented in Table 1-5.
- An assessment of education and outreach capabilities is presented in Table 1-6.

- Classifications under various community mitigation programs are presented in Table 1-7.

Table 1-3. Planning and Regulatory Capability

Plan, Study or Program	Date of Most Recent Update	Comment
Name of code, ordinance, policy, program or plan		
Name of code, ordinance, policy, program or plan		
Name of code, ordinance, policy, program or plan		
Name of code, ordinance, policy, program or plan		
Name of code, ordinance, policy, program or plan		

Table 1-4. Fiscal Capability

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants	Yes/No
Capital Improvements Project Funding	Yes/No
Authority to Levy Taxes for Specific Purposes	Yes/No
User Fees for Water, Sewer, Gas or Electric Service <i>If yes, specify: Enter Response</i>	Yes/No
Incur Debt through General Obligation Bonds	Yes/No
Incur Debt through Special Tax Bonds	Yes/No
Incur Debt through Private Activity Bonds	Yes/No
Withhold Public Expenditures in Hazard-Prone Areas	Yes/No
State-Sponsored Grant Programs	Yes/No
Development Impact Fees for Homebuyers or Developers	Yes/No
Other <i>If yes, specify: Enter Response</i>	Yes/No

Table 1-5. Administrative and Technical Capability

Staff/Personnel Resource	Available?
Planners or engineers with knowledge of land development and land management practices <i>If Yes, Department /Position:</i> Enter Response	Yes/No
Engineers or professionals trained in building or infrastructure construction practices <i>If Yes, Department /Position:</i> Enter Response	Yes/No
Planners or engineers with an understanding of natural hazards <i>If Yes, Department /Position:</i> Enter Response	Yes/No
Staff with training in benefit/cost analysis <i>If Yes, Department /Position:</i> Enter Response	Yes/No
Surveyors <i>If Yes, Department /Position:</i> Enter Response	Yes/No
Personnel skilled or trained in GIS applications <i>If Yes, Department /Position:</i> Enter Response	Yes/No
Scientist familiar with natural hazards in local area <i>If Yes, Department /Position:</i> Enter Response	Yes/No
Emergency manager <i>If Yes, Department /Position:</i> Enter Response	Yes/No
Grant writers <i>If Yes, Department /Position:</i> Enter Response	Yes/No
Other <i>If Yes, Department /Position:</i> Enter Response	Yes/No

Table 1-6. Education and Outreach Capability

Criterion	Response
Do you have a public information officer or communications office?	Yes/No
Do you have personnel skilled or trained in website development?	Yes/No
Do you have hazard mitigation information available on your website? <i>If yes, briefly describe:</i> Enter Response	Yes/No
Do you use social media for hazard mitigation education and outreach? <i>If yes, briefly describe:</i> Enter Response	Yes/No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? <i>If yes, briefly describe:</i> Enter Response	Yes/No
Do you have any other programs in place that could be used to communicate hazard-related information? <i>If yes, briefly describe:</i> Enter Response	Yes/No
Do you have any established warning systems for hazard events? <i>If yes, briefly describe:</i> Enter Response	Yes/No

Table 1-7. Community Classifications

	Participating?	Classification	Date Classified
FIPS Code	Yes/No		Date
DUNS#	Yes/No		Date
Community Rating System	Yes/No		Date
Building Code Effectiveness Grading Schedule	Yes/No		Date
Public Protection	Yes/No		Date
Storm Ready	Yes/No		Date
Firewise	Yes/No		Date
Tsunami Ready	Yes/No		Date

1.5 INTEGRATION REVIEW

For hazard mitigation planning, “integration” means that hazard mitigation information is used in other relevant planning mechanisms, such as capital facilities planning, and that relevant information from those sources is used in hazard mitigation. This section identifies where such integration is already in place, and where there are opportunities for further integration in the future. Resources listed at the end of this annex were used to provide information on integration. The progress reporting process described in Volume 1 of the hazard mitigation plan will document the progress of hazard mitigation actions related to integration and identify new opportunities for integration.

1.5.1 Existing Integration

Some level of integration has already been established between local hazard mitigation planning and the following other local plans and programs:

- Plan or Program Name—Description
- Plan or Program Name—Description
- Plan or Program Name—Description
- Plan or Program Name—Description
- Plan or Program Name—Description

1.5.2 Opportunities for Future Integration

The capability assessment presented in this annex indicates opportunities to integrate this mitigation plan with other jurisdictional planning/regulatory capabilities. Capabilities were identified as integration opportunities if they can support or enhance the actions identified in this plan or be supported or enhanced by components of this plan. The capability assessment identified the following plans and programs that do not currently integrate hazard mitigation information but provide opportunities to do so in the future:

- Plan or Program Name—Description
- Plan or Program Name—Description
- Plan or Program Name—Description
- Plan or Program Name—Description

• **Plan or Program Name—Description**

Taking action to integrate each of these programs with the hazard mitigation plan was considered as a mitigation action to include in the action plan presented in this annex.

1.6 RISK ASSESSMENT

1.6.1 Jurisdiction-Specific Natural Hazard Event History

Table 1-8 lists past occurrences of natural hazards for which specific damage was recorded in this jurisdiction. Other hazard events that broadly affected the entire planning area, including this jurisdiction, are listed in the risk assessments in Volume 1 of this hazard mitigation plan.

Table 1-8. Past Natural Hazard Events			
Type of Event	FEMA Disaster #	Date	Damage Assessment
Insert event type		Date	\$
Insert event type		Date	\$
Insert event type		Date	\$
Insert event type		Date	\$
Insert event type		Date	\$
Insert event type		Date	\$
Insert event type		Date	\$
Insert event type		Date	\$
Insert event type		Date	\$
Insert event type		Date	\$
Insert event type		Date	\$
Insert event type		Date	\$
Insert event type		Date	\$
Insert event type		Date	\$
Insert event type		Date	\$
Insert event type		Date	\$
Insert event type		Date	\$

1.6.2 Hazard Risk Ranking

Table 1-9 presents a local ranking of all hazards of concern for which this hazard mitigation plan provides complete risk assessments. As described in detail in Volume 1, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property and district operations. Mitigation actions target hazards with high and medium rankings.

Table 1-9. Hazard Risk Ranking

Rank	Hazard	Risk Ranking Score	Risk Category
1			High/Medium/Low
2			High/Medium/Low
3			High/Medium/Low
4			High/Medium/Low
5			High/Medium/Low
6			High/Medium/Low
7			High/Medium/Low
8			High/Medium/Low
9			High/Medium/Low

1.6.3 Jurisdiction-Specific Vulnerabilities

Volume 1 of this hazard mitigation plan provides complete risk assessments for each identified hazard of concern. The following jurisdiction-specific issues have been identified based on a review of the results of the risk assessment, public involvement strategy, and other available resources:

- Insert as appropriate.
- Insert as appropriate.
- Insert as appropriate.

Mitigation actions addressing these issues were prioritized for consideration in the action plan presented in this annex.

1.7 STATUS OF PREVIOUS PLAN ACTIONS

If your jurisdiction has no previous hazard mitigation plan, please enter an “X” in the box at right and do not complete this section.

Table 1-10 summarizes the actions that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

Table 1-10. Status of Previous Plan Actions

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Insert Action Number & Text Comment: Enter Comment				
Insert Action Number & Text Comment: Enter Comment				
Insert Action Number & Text Comment: Enter Comment				
Insert Action Number & Text Comment: Enter Comment				

Action Item from Previous Plan	Completed	Removed; No Longer Feasible	Carried Over to Plan Update	
			Check if Yes	Action # in Update
Insert Action Number & Text Comment: Enter Comment	█	█	█	
Insert Action Number & Text Comment: Enter Comment	█	█	█	
Insert Action Number & Text Comment: Enter Comment	█	█	█	
Insert Action Number & Text Comment: Enter Comment	█	█	█	
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Insert Action Number & Text Comment: Enter Comment	█	█	█	
Insert Action Number & Text Comment: Enter Comment	█	█	█	
Insert Action Number & Text Comment: Enter Comment	█	█	█	

1.8 HAZARD MITIGATION ACTION PLAN

Table 1-11 lists the actions that make up the hazard mitigation action plan for this jurisdiction. Table 1-12 identifies the priority for each action. Table 1-13 summarizes the mitigation actions by hazard of concern and mitigation type.

Table 1-11. Hazard Mitigation Action Plan Matrix

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action xxx-1 —Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.						
Hazards Mitigated: Enter Response						
Existing	Enter Response	Enter Response	Enter Response	High	HMGP, PDM, FMA	Short-term

Benefits New or Existing Assets	Objectives Met	Lead Agency	Support Agency	Estimated Cost	Sources of Funding	Timeline ^a
Action xxx-2 —Actively participate in the plan maintenance protocols outlined in Volume 1 of this hazard mitigation plan.						
<i>Hazards Mitigated:</i> All hazards						
New & Existing	Enter Response	Enter Response	Enter Response	Low	Staff Time, General Funds	Short-term
Action xxx-3 —Purchase generators for critical facilities and infrastructure that lack adequate backup power, including [redacted].						
<i>Hazards Mitigated:</i> Dam failure, earthquake, flooding, landslide, severe weather, tsunami, wildfire						
Existing	Enter Response	Enter Response	Enter Response			
Action xxx-4 —Description						
<i>Hazards Mitigated:</i> Enter Response						
Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response
Action xxx-5 —Description						
<i>Hazards Mitigated:</i> Enter Response						
Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response
Action xxx-6 —Description						
<i>Hazards Mitigated:</i> Enter Response						
Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response
Action xxx-7 —Description						
<i>Hazards Mitigated:</i> Enter Response						
Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response
Action xxx-8 —Description						
<i>Hazards Mitigated:</i> Enter Response						
Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response	Enter Response

a. Short-term = Completion within 5 years; Long-term = Completion within 10 years; Ongoing= Continuing new or existing program with no completion date
Acronyms used here are defined at the beginning of this volume.

Table 1-12. Mitigation Action Priority

Action #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Cost?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Implementation Priority ^a	Grant Pursuit Priority ^a
1	3	High	High	Yes	Yes	No	Medium	High
2	3	Low	Low	Yes	No	Yes	High	Low
3	3	High	Medium	Yes	Yes	No	Medium	High
4	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
5	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
6	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
7	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
8	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
9	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

a. See the introduction to this volume for explanation of priorities.

Table 1-13. Analysis of Mitigation Actions

Hazard Type	Action Addressing Hazard, by Mitigation Type ^a							
	Prevention	Property Protection	Public Education & Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
High-Risk Hazards								
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Medium-Risk Hazards								
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Low-Risk Hazards								
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

a. See the introduction to this volume for explanation of mitigation types.

1.9 PUBLIC OUTREACH

Table 1-14 lists public outreach activities for this jurisdiction.

Table 1-14. Local Public Outreach

Local Outreach Activity	Date	Number of People Involved
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

1.10 INFORMATION SOURCES USED FOR THIS ANNEX

The following technical reports, plans, and regulatory mechanisms were reviewed to provide information for this annex.

- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>
- <INSERT PLAN/PROGRAM AND DESCRIPTION OF HOW IT WAS USED>

The following outside resources and references were reviewed:

- **Hazard Mitigation Plan Annex Development Toolkit**—The toolkit was used to support the identification of past hazard events and noted vulnerabilities, the risk ranking, and the development of the mitigation action plan.

- <INSERT DOCUMENT AND DESCRIPTION OF HOW IT WAS USED>

1.11 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

Insert text, if any; otherwise, delete section

1.12 ADDITIONAL COMMENTS

Insert text, if any; otherwise, delete section



Proposal

8450 Garvey Drive
 Raleigh, NC 27616
 (800) 332-6798 Fax (919) 954-0203
www.moscadesign.com

Date 9/29/2022
 Quote # SH-92922-C1
 Cust ID STAR ID
 Exp. Date 10/29/2022

Proposal For:
 Dana Partridge
City of Star
 P.O. Box 130
 Star, ID 83669
 (208) 286-7247
Email:

Ship To Address:
City of Star
 ATTN: Dana Partridge
 10769 W. State Street
 Star, ID 83669

dpartridge@staridaho.org

PO Number	Ship Date	Ship Via	F.O.B	Terms
	ASAP	Pick Up in Raleigh	Origin	Net 20 Days
QTY			Unit Price	Total
1	Mosca Design Panel Tree. #SSPT-18. Tree Height: 18". Includes 738 C-7 LED Lights, with 1/3 Twinkle (colors to be determined), Two Tone Brown Core Natural Branch Garland, 17 Garland Panels, and all required assembly hdw. Small Ornamentation Package (7 per Panel). Base Diameter of Tree: 10'.		\$ 10,770.60	\$ 10,770.60
1	Mosca Design Silhouette 3D Nativity Star. #TTNS3D-3. Size: 3'. Includes 64 C-7 LED Pure White Steady Burn Lights, and all assembly hardware.		\$ 681.21	\$ 681.21
1	Mosca Design Holiday Design Star. #DSNSTR-12. Size: 12'. Constructed of Fiberglass and Aluminum, with 5mm LED Lights.		\$ 22,113.00	\$ 22,113.00
Freight to be estimated based on final items purchased.				
Sales Tax Exemption #: Out of State Exemption				
All orders paid with a credit card will include a 3.5% Bank Service Fee added to the final bill (as shown below).				

Notes:

Estimated Lead Time: 6 to 8 Weeks After Receipt of signed proposal/acceptance (and mock up if required)

Any Shipping Costs shown above are estimates only. Actual Shipping Costs will be added to your invoice.

Sub Total	\$	33,564.81
Estimated Freight	\$	-
7.25% Sales Tax	\$	-
Grand Total:	\$	33,564.81
Total If Paid By Credit Card:	\$	34,739.58

Accepted By:

By signing above, purchaser agrees to all terms and conditions, and authorizes Mosca Design, Inc. to place order accordingly.

THANK YOU FOR YOUR BUSINESS

LEGAL NOTICE PUBLIC HEARING

Notice is hereby given that the Star City Council will hold a Public Hearing on **October 4, 2022** at the Star City Hall, 10769 W. State Street, Star, Idaho at 7:00 pm, or as soon thereafter as the matter may be heard.

Application: Madenford Estates Subdivision
Files #'s AZ-22-06 Annexation-Zoning
DA-22-06 Development Agreement
PP-22-11 Preliminary Plat

Applicant/Representative: Brad Candau

Owner: Gary Madenford

Action: The Applicant is seeking approval of an Annexation and Zoning (R-3), a Development Agreement, and Preliminary Plat for a proposed residential subdivision consisting of 15 residential lots and 3 common lots. The property is located at 3605 N. Pollard Lane in Star, Idaho, and consists of 5 acres with a proposed density of 3.0 dwelling units per acre. The parcel is part of a recent parcel division through Ada County. Access to the proposed development will be through a new subdivision that is currently under construction to the west (Cresta Del Sol Subdivision).

Property Location: The subject property is generally located north of Beacon Light Road and west of N. Pollard Road. Ada County Parcel No. R5455720020.

Information/Comments: A complete copy of the applications are available at City Hall for public review. The City invites all interested parties to attend the meeting and provide public testimony. Written comments will be accepted by the City up to 2 days prior to the date of the public hearing.

Services for persons with disabilities may be made available if notice is received in advance of the meeting by calling Star City Hall at (208) 286-7247.

Shawn L. Nickel
Planning Director and Zoning Administrator
snickel@staridaho.org



CITY OF STAR
LAND USE STAFF REPORT

TO: Mayor & Council

FROM: City of Star Planning Department *Shen T. Madenford*

MEETING DATE: **October 04, 2022 – PUBLIC HEARING**

FILE(S) #: AZ-22-06 Annexation and Zoning
DA-22-06 Development Agreement
PP-22-11 Preliminary Plat for Madenford Estates Subdivision

OWNER/APPLICANT/REPRESENTATIVE

Applicant: Brad Candau 349 N. Story Book Way Eagle, Idaho 83616	Property Owner: Gary Madenford 3605 N. Pollard Lane Star, Idaho 83669	Representative: Antonio Conti Ackerman-Estvold 7661 W. Riverside Dr., Ste. 102 Garden City, Idaho 83714
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REQUEST

Request: The Applicant is seeking approval of Annexation and Zoning (R-3-DA), a Development Agreement, and Preliminary Plat for a proposed residential subdivision consisting of 15 residential lots and 3 common lots. The property is located at 3605 N. Pollard Lane in Star, Idaho and consists of 5 acres with a proposed density of 3.0 dwelling units per acre. The parcel is part of a recent parcel division through Ada County. Access to the proposed development will be through a new subdivision that is currently under construction to the west (Cresta Del Sol Subdivision).

PROPERTY INFORMATION

Property Location: The subject property is generally located north of Beacon Light Road and west of N. Pollard Road. Ada County Parcel No. R5455720020.

Surrounding Land Use/Designations:

	Zoning Designation	Comp Plan Designation	Land Use
Existing	Rural Urban Transition (RUT)	Estate Urban Residential	Agricultural/Single-Family Residential
Proposed	R-3-DA	Estate Urban Residential	Single Family Residential
North of site	Rural Urban Transition (RUT)	Estate Urban Residential	Agricultural/Residential
South of site	Rural Urban Transition (RUT)/Residential (R-3)	Estate Urban Residential	Single Family Residential (Cresta Del Sol Subdivision)/Agricultural
East of site	Residential (R-2)	Estate Rural Residential	River Birch Golf Course
West of site	Rural Urban Transition (RUT)/Residential (R-3)	Estate Urban Residential	Single Family Residential (Cresta Del Sol Subdivision)/Agricultural

Existing Site Characteristics: The property (prior to the lot split) currently has a single-family residence with outbuildings and agricultural use. The developable area is vacant.

Irrigation/Drainage District(s): Farmer’s Union Ditch Company
P.O. Box 1474
Eagle, Idaho 83616

Flood Zone: This property is not currently located in Special Flood Hazzard Zone A.
FEMA FIRM Panel Number: 16001C0130J
Effective Date: 6/19/2020

Special On-Site Features:

- ✪ Areas of Critical Environmental Concern – No known areas.
- ✪ Evidence of Erosion – No evidence.
- ✪ Fish Habitat – No.
- ✪ Floodplain – No.
- ✪ Mature Trees – Yes.
- ✪ Riparian Vegetation – No.
- ✪ Steep Slopes – Yes, on west side of property.
- ✪ Stream/Creek – None.
- ✪ Unique Animal Life – No unique animal life has been identified.
- ✪ Unique Plant Life – No unique plant life has been identified.
- ✪ Unstable Soils – No known issues.
- ✪ Historical Assets – No historical assets have been observed.

Wildlife Habitat – No known sensitive wildlife habitat observed.

APPLICATION REQUIREMENTS

Pre-Application Meeting Held	December 21, 2021
Neighborhood Meeting Held	November 9, 2021
Application Submitted & Fees Paid	January 31, 2022
Application Accepted	August 2, 2022
Residents within 300' Notified	September 13, 2022
Agencies Notified	August 2, 2022
Legal Notice Published	September 16, 2022
Property Posted	September 22, 2022

HISTORY

This property does not have any history of land use applications within the City of Star.

CODE DEFINITIONS / COMPREHENSIVE PLAN

UNIFIED DEVELOPMENT CODE:

8-1B-1: ANNEXATION AND ZONING; REZONE:

B. Standards:

1. The subject property shall meet the minimum dimensional standards of the proper district.
2. The city may require a development agreement in conjunction with the annexation and zoning, or rezone, pursuant to Idaho Code section 67-6511A, which may include a concept plan. In addition to other processes permitted by city and state code, exceptions or waivers of standards, other than use, may be permitted through execution of a development agreement. A development agreement and concept plan shall be required for any rezone to a mixed-use zone, high density zone or land which includes steep slope (land over 25%) or floodway.
3. The termination of a development agreement shall result in the reversal of the official zoning map amendment approval and applicable development approval for any undeveloped portion of property subject to the development agreement. The undeveloped property subject to the development agreement shall be rezoned to the district classification as designated by the development agreement. When no designation is provided, the property shall revert to its original zoning or, if the original designation no longer exists, to the closest current equivalent zoning as determined by the current Comprehensive Plan Land Use Map designation.
4. An amendment or termination of a previously recorded development agreement shall be

recorded in the office of the county recorder by the clerk.

5. An approved development agreement must be executed within ninety (90) days of the meeting at which the development agreement is approved by the city council. A one-time administrative extension of maximum thirty (30) days may be granted by the zoning administrator. Additional extensions may be approved by majority vote of the city council. Failure to execute the development agreement within the required timeframe will result in the denial of all related applications.

C. Required Findings: The council shall review the application at the public hearing. In order to grant an annexation and zoning or rezone, the council shall make the following findings:

1. The map amendment complies with the applicable provisions of the comprehensive plan;
2. The map amendment complies with the regulations outlined for the proposed district;
3. The map amendment shall not be materially detrimental to the public health, safety, and welfare; and
4. The map amendment shall not result in an adverse impact upon the delivery of services by any political subdivision providing public services within the city.
5. The annexation (as applicable) is in the best interest of city.

8-3A-1: ZONING DISTRICTS AND PURPOSE ESTABLISHED:

R RESIDENTIAL DISTRICT: To provide regulations and districts for various residential neighborhoods. Gross density in a Residential (R) district shall be determined according to the numeral following the R. The numeral designates the maximum number of dwelling units per acre. In zoning designations of R-1, R-2, R-3, R-4 and R-5, housing shall be single family detached unless approved with a PUD or development agreement. Connection to municipal water and sewer facilities are required for all subdivision and lot split applications submitted after the effective date hereof in all districts exceeding one dwelling unit per acre. Wells and septic systems may be permitted for larger lots in this land use designation that are not adjacent to municipal services, as determined by the Sewer District, and if approved by the applicable Health Department. Private streets may be approved in this district for access to newly subdivided or split property. This district does allow for some non-residential uses as specified in 8-3A-3.

DA DEVELOPMENT AGREEMENT: This designation, following any zoning designation noted on the official zoning map of the city (i.e., C-2-DA), indicates that the zoning was approved by the city with a development agreement, with specific conditions of zoning.

8-3A-3: USES WITHIN ZONING DISTRICTS

The following table lists principal permitted (P), accessory uses (A), conditional (C), or prohibited



ZONING DISTRICT USES	A	R-R	R
Accessory structure	A	A	A
Dwelling:			
Multi-family 1	N	N	C
Secondary 1	A	A	A
Single-family attached	N	N	C
Single-family detached	P	P	P
Two-family duplex	N	N	P

(N) uses.

8-3A-4: ZONING DISTRICT DIMENSIONAL STANDARDS:

Zoning District	Maximum Height Note Conditions	Minimum Yard Setbacks Note Conditions			
		Front (1)	Rear	Interior Side	Street Side
R-3	35'	15' to living area/side load garage 20' to garage face	15'	7.5' ⁽²⁾	20'

Notes:

1. Front yard setback shall be measured from the face of the garage to the face of the sidewalk, allowing for 20' of parking on the driveway without overhang onto the sidewalk.
2. Zero-Lot-Line and reduced front and rear setback waivers may be requested through the Development Agreement process. All other side yard setback requests for detached structures shall not be granted waivers, unless as part of a Planned Unit Development.
3. All setbacks in the CBD, C-1, C-2, LO, IL, PS, RC and M-U zone shall maintain a minimum 15' when adjacent to a residential use or zone.
4. As approved by the Fire District.

8-4E-2: COMMON OPEN SPACE AND SITE AMENITY REQUIREMENTS - STANDARDS:

A. Open Space and Site Amenity Requirement (see also Chapter 8 "Architectural Review"):

1. The total land area of all common open space shall equal or exceed fifteen percent (15%) of the gross land area of the development. Ten percent (10%) of that area shall be usable open space.
2. Each development is required to have at least one site amenity.
3. One additional site amenity shall be required for each additional twenty (20) acres of development area, plus one additional amenity per 75 residential units.
4. Developments with a density of less than 1 dwelling units per acre may request a reduction in total required open space and amenities to the Council. Developments with a density of less than 2 dwelling units per acre may request a 50% reduction in total required open space to the Council.
5. For multi-family developments, see Section 8-5-20 for additional standards.

B. Qualified Open Space: The following may qualify to meet the common open space requirements:

1. Any open space that is active or passive in its intended use, and accessible or visible by all residents of the development, including, but not limited to:
 - a. Open grassy area of at least fifty feet by one hundred feet (50' x 100') in area;
 - b. Qualified natural areas;
 - c. Ponds or water features where active fishing, paddle boarding or other activities are provided (50% qualifies towards total required open space, must be accessible by all residents to qualify.) ponds must be aerated;
 - d. A plaza.
2. Additions to a public park or other public open space area.
3. The buffer area along collector and arterial streets may be included in required overall common open space for residential subdivisions.
4. Parkway along local residential streets with detached sidewalks that meet all the following standards may count toward the common open space requirement:
 - a. The parkway is a minimum of eight feet (8') in width from street curb to edge of sidewalk and includes street trees as specified otherwise herein.
 - b. Except for alley accessed dwelling units, the area for curb cuts to each residential lot or common driveway shall be excluded from the open space calculation. For purposes of this calculation, the curb cut area shall be a minimum area of twenty-six feet (26') by the width of the parkway.

c. Stormwater detention facilities do not qualify to meet the common area open space requirements, unless all of the following is met:

1. Must be at least fifty feet by one hundred feet (50' x 100') in area;
2. Specifically designed as a dual use facility, as determined by the administrator, to include minimal slopes, grass throughout, and guarantee of water percolation within 24 hours of storm event.
3. Is located in a development that has a second usable open space area that contains a qualified site amenity as herein defined.

5. Visual natural space, including open ditches, wetlands, slopes or other areas that may not be readily accessible to residents, and is provided with open style fencing, may qualify for up to 20% of the required open space total.

C. Qualified Site Amenities: Qualified site amenities shall include, but not be limited to, the following:

1. Clubhouse;
2. Fitness facilities, indoors or outdoors;
3. Public art;
4. Picnic area; or
5. Recreation amenities:
 - a. Swimming pool.
 - b. Children's play structures.
 - c. Sports courts.
 - d. Additional open space in excess of 5% usable space.
 - e. RV parking for the use of the residents within the development.
 - f. School and/or Fire station sites if accepted by the district.
 - g. Pedestrian or bicycle circulation system amenities meeting the following requirements:
 - (1) The system is not required for sidewalks adjacent to public right of way;
 - (2) The system connects to existing or planned pedestrian or bicycle routes outside the development; and
 - (3) The system is designed and constructed in accord with standards set forth by the city of Star;

D. Location: The common open space and site amenities shall be located on a common lot or an area with a common maintenance agreement.

COMPREHENSIVE PLAN:

8.2.3 Land Use Map Designations:

Estate Urban Residential

Suitable primarily for single family residential use. Densities in this land use area are to range from 1 unit per acre to 3 units per acre. Densities not exceeding 1 to 2 units per acre are to be encouraged in areas of the floodplain, ridgeline developable areas, hillside developable areas, and where new residential lots are proposed adjacent to existing residential lots of one acre and larger where those existing larger lots are not likely to be subdivided in the future. Clustering is encouraged to preserve open space. A density bonus may be considered if open space is preserved, and land of at least 40% of additional preserved open space is developable.

8.3 Goal:

Encourage the development of a diverse community that provides a mix of land uses, housing types, and a variety of employment options, social and recreational opportunities, and where possible, an assortment of amenities within walking distance of residential development.

8.4 Objectives:

- Implement the Land Use Map and associated policies as the official guide for development.
- Manage urban sprawl in order to minimize costs of urban services and to protect rural areas.
- Encourage land uses that are in harmony with existing resources, scenic areas, natural wildlife areas, and surrounding land uses.

8.5.3 Policies Related Mostly to the Urban Residential Planning Areas:

A. The Neighborhood Residential Land Use is to encourage urban style development densities to limit urban sprawl.

B. Low densities within the Neighborhood Residential Land Use are to be designed within the floodplain, ridgeline developable areas, hillside developable areas and where new residential lots are proposed adjacent to existing residential lots of one acre and larger where those existing larger lots are not likely to be subdivided in the future.

8.5.9 Additional Land Use Component Policies:

- Encourage flexibility in site design and innovative land uses.
- Work with Ada County Highway District (ACHD), Canyon Highway District #4 (CHD4), and Idaho Department of Transportation (ITD) for better coordination of roadway and access needs.
- Support well-planned, pedestrian-friendly developments.
- Dark sky provision should be adopted within the code to assure down style lighting in all developments and Star should consider joining the International Dark Sky Association.

18.4 Implementation Policies:

- F. Development Agreements allow the city to enter into a contract with a developer upon rezoning. The Development Agreement may provide the city and the developer with certain assurances regarding the proposed development upon rezoning.

PROJECT OVERVIEW

ANNEXATION & REZONE:

The applicant is requesting approval of an annexation and zoning application with a zoning designation of Residential (R-3-DA) on 5.0 acres. This zoning district would allow for a maximum residential density of 3 dwelling unit per acre. The property is located in an area that will be serviceable with central sewer and water provided by Star Sewer and Water District in the near future. The property will be accessed by a public road, W. Trident Ridge Drive, located in Cresta Del Sol Subdivision, Phase 4 and the only road in the development will be public. The rezone request includes a development agreement that will address future density and development standards.

PRELIMINARY PLAT:

The Preliminary Plat submitted contains 15 single family residential lots and 4 common area lots on 5.0 acres with a proposed density of 3.0 dwelling units per acre. The lots will have access and frontage from a public street. Lots will range in size from 9,304 square feet to 11,283 square feet with the average buildable lot being 10,218 square feet. The submitted preliminary does not identify street widths or size of the proposed sidewalk. All roads must be in a 50-foot wide right of way with paved streets measuring 36 feet from back of curb to back of curb. All internal sidewalks must be detached, concrete and a minimum of five feet wide. Primary access for the development will be on W. Trident Ridge Drive through the Cresta Del Sol development to the west. Street names must be obtained by the Ada County Street Naming Committee prior to

signature of the final plat. Open space must be 15 percent of the gross parcel size with 10 percent of the gross parcel size in usable open space.

The Unified Development Code, Section 8-4E-2 requires a development of this size to have a minimum of 1 site amenity. The applicant is proposing a walking path that goes around the perimeter of the development and connects into the sidewalk of Cresta Del Sol on the west.

ADDITIONAL DEVELOPMENT FEATURES:

- Sidewalks
Internal sidewalks shall be detached, concrete and a minimum of five feet (5') wide throughout the development.
- Lighting
Streetlights shall reflect the "Dark Sky" criteria with all lighting. The same streetlight design shall continue throughout the entire development. The applicant has submitted a proposed streetlight plan. All proposed light locations satisfy City code. **Applicant has provided a streetlight plan but has not provided a street light design/cut sheet for City approval. The plan meets City code for light locations. Applicant will be required to work with Staff and submit a cut sheet and design before signature of the final plat.**
- Street Names
Applicant has not provided documentation from Ada County that the street names are acceptable and have been approved. This will be required at final plat.
- Subdivision Name
Applicant has provided a letter from Ada County that the subdivision name has been approved and reserved for this development. **The subdivision name approved shall match the final plat prior to signatures on the mylar.**
- Landscaping - As required by the Unified Development Code, Chapter 8, Section 8-8C-2-M (2) Street Trees; A minimum of one street tree shall be planted for every thirty-five (35) linear feet of street frontage. The applicant shall use "Treasure Valley Tree Selection Guide", as adopted by the Unified Development Code. Section 8-8C-2, J5 states that a minimum of one deciduous shade tree per four thousand (4,000) square feet of common area shall be provided. **The submitted landscape plan appears to satisfy these requirements for both the open space and street trees.**
- Setbacks – **The subdivision will adhere to the setbacks of the R-3 zoning designation noted earlier in this report.**

- Block lengths – The only block in the development meets the 750’ block length requirement.
- Mailbox Cluster – Applicant has provided documentation from the Star Postmaster depicting the approved location for the mailbox cluster. This shall be located on lot 18 with the cluster facing north and accessible from W. Trident Ridge Court.
- Phasing – The development is proposing to be built out in two phases however, Phase 1 will be the lot to the east and not annexed into the City of Star but split in the county. Phase 2 will be this development, annexed into the City of Star as proposed in this report.

DEVELOPMENT AGREEMENT

Through the Development Agreement process, the applicant is proposing to work with the City to provide further insurances that the development will be built as presented and/or modified by the Council through the review process. Items that should be considered by the applicant and Council include the following:

- Density;
- ITD Proportionate Share Fees;
- Emergency Access

AGENCY RESPONSES

ACHD	August 24, 2022
Star Trans & Pathways	August 29, 2022
Ada County BOCC Approval of Lot Split	April 28, 2022
Star Fire District	September 28, 2022

PUBLIC RESPONSES

No public comments have been received.

STAFF RECOMMENDATION

Based upon the information provided to staff in the applications and agency comments received to date, the proposed annexation and zoning request and associated applications including the preliminary plat meets the requirements, standards and intent for development as they relate to the Comprehensive Plan and Unified Development Code. The proposed density of 3.0 dwelling units per acre is within the range of 1-3 dwelling units per acre allowed in the Estate Urban



Residential Comprehensive Plan Future Land Use Map. Staff is supportive of proposed diversity in lot sizes, housing sizes and density that the (R-3) zoning designation will provide.

The Council should consider the entire record and testimony presented at their scheduled public hearing prior to rendering its decision on the matter. Should the Council vote to approve the applications, either as presented or with added or revised conditions of approval, Council shall direct staff to draft findings of fact and conclusions of law for the Council to consider at a future date. A development agreement will also be brought back to the Council for review of proposed Conditions of Approval for the rezone.

FINDINGS

The Council may **approve, conditionally approve, deny** or **table** this request. In order to approve these applications, the Unified Development Code requires that Council must find the following:

ANNEXATION/REZONE FINDINGS:

1. The map amendment complies with the applicable provisions of the Comprehensive Plan. *The purpose of the Star Comprehensive Plan is to promote the health, safety, and general welfare of the people of the City of Star and its Impact Area. Some of the prime objectives of the Comprehensive Plan include:*

- ✓ *Protection of property rights.*
- ✓ *Adequate public facilities and services are provided to the people at reasonable cost.*
- ✓ *Ensure the local economy is protected.*
- ✓ *Encourage urban and urban-type development and overcrowding of land.*
- ✓ *Ensure development is commensurate with the physical characteristics of the land.*

The goal of the Comprehensive Plan for Land Use is to encourage the development of a diverse community that provides a mixture of land uses, housing types, and a variety of employment options, social and recreational opportunities, and where possible provides an assortment of amenities within walking distance of a residential development. The Council must find compliance with the Comprehensive Plan.

2. The map amendment complies with the regulations outlined for the proposed district, specifically, the purposes statement.

The Council must find that the proposal complies with the proposed district and purpose statement. The purpose of the residential districts is to provide regulations and districts for various residential neighborhoods with gross densities in compliance with the intent of the Comprehensive Plan designation. Housing shall be single family detached unless approved with a PUD or development agreement. Connection to municipal water and sewer facilities are required for all subdivision and lot split applications in all districts exceeding one dwelling unit per acre. Private streets may be approved in this district for

access to newly subdivided or split property.

3. The map amendment shall not be materially detrimental to the public health, safety, and welfare; and

The Council must find that there is no indication from the material submitted by any political agency stating that this annexation and zoning of this property will be materially detrimental to the public health, safety or welfare.

4. The map amendment shall not result in an adverse impact upon the delivery of services by any political subdivision providing public services within the city including, but not limited to, school districts.

The Council must find that it has not been presented with any information from agencies having jurisdiction that public services will be adversely impacted other than traffic, which will continue to be impacted as the City grows.

5. The annexation is in the best interest of the city.

The Council must find that this annexation is reasonably necessary for the orderly development of the City.

PRELIMINARY PLAT FINDINGS:

1. The plat is in compliance with the Comprehensive Plan.

The City must find that this Plat follows designations, spirit and intent of the Comprehensive Plan regarding residential development and meets several of the objectives of the Comprehensive Plan such as:

1. *Designing development projects that minimize impacts on existing adjacent properties, and*
2. *Managing urban sprawl to protect outlying rural areas.*

2. Public Services are available or can be made available and are adequate to accommodate the proposed development.

The City must find that Agencies having jurisdiction on this parcel were notified of this action, and that it has not received notice that public services are not available or cannot be made available for this development.

3. There is public financial capability of supporting services for the proposed development;

The City must find that they have not been notified of any deficiencies in public financial capabilities to support this development.

4. The development will not be detrimental to the public health, safety or general welfare;

The City must find that it has not been presented with any facts stating this Preliminary Plat will be materially detrimental to the public health, safety and welfare. Residential uses are a permitted use.

5. The development preserves significant natural, scenic or historic features;
The City must find that there are no known natural, scenic, or historic features that have been identified within this Preliminary Plat.

Upon granting approval or denial of the application, the Council shall specify:

1. The Ordinance and standards used in evaluating the application;
2. The reasons for recommending approval or denial; and
3. The actions, if any, that the applicant could take to obtain approval.

CONDITIONS OF APPROVAL

1. The approved Preliminary Plat for the Madenford Estates Subdivision shall comply with all statutory requirements of applicable agencies and districts having jurisdiction in the City of Star.
2. **The applicant shall enter into a Development Agreement with the City, agreeing to proportionate share assessment by ITD regarding impacts to the State Highway System. ITD has calculated the fees to be \$1,000.00 per residential lot. These fees will be collected by the City of Star, by phase, prior to final plat signature. The development agreement shall be signed and recorded as part of the ordinance for annexation and zoning and shall contain the details of the fees to be collected.**
3. **All roads shall be 36 feet from back of curb to back of curb as required in the Unified Development Code Section 8-6B-2.**
4. **All sidewalks shall be a minimum of 5 feet wide and detached as required by the Unified Development Code Section 8-4A-17.**
5. Streetlights shall comply with the Star City Code and shall be of the same design throughout the entire subdivision. Streetlights shall be continuous throughout the subdivision and shall be maintained by the Homeowners Association. **Streetlights shall be installed and energized prior to issuing of building permits.** Design shall follow Code with requirements for light trespass and "Dark Skies" lighting. **Applicant/Owner shall work with staff and submit a streetlight design that meets city standards prior to Final Plat approval. Streetlights shall comply with the Star City Code regarding light trespass and "Dark Sky" initiative.**
6. The property with the approved Preliminary Plat shall be satisfactorily weed abated, preventing a public nuisance, per Star City Code.
7. The property associated with this approved Final Plat, in addition to the property of all future phases shall be properly maintained throughout the construction process to include trash picked up and trash receptacles emptied with regular frequency, streets swept and cleaned weekly, including any streets used to access the property and all debris shall be prevented from accumulating on any adjacent property or public right of way and shall remove all debris from public way at least daily.
8. All signed Irrigation District Agreements with the Irrigation Districts shall be provided to the City of Star with each subsequent Final Plat application.

- 9. Street trees shall be installed per Chapter 8, Section 8-8C-2-M(2) Street Trees. Applicant shall provide locations for the local street trees at the time of final plat. If driveway locations will not be determined until sale of the lot, Applicant agrees to not receive the Certificate of Occupancy until street trees are confirmed in place.**
- 10. Pressurized irrigation systems shall comply with the Irrigation District(s) and the City of Star Codes. Plans for pressurized irrigation systems shall be submitted to, and approved by the City of Star Engineer, prior to installation.
- 11. A plat note supporting the "Right to Farm Act" as per Idaho Code Title 22, Chapter 45, shall be shown on the Final Plat.
- 12. A copy of the CC&R's shall be submitted to the City of Star at Final Plat.
- 13. A letter from the US Postal Service shall be given to the City at Final Plat stating the subdivision is in compliance with the Postal Service.
- 14. A form signed by the Star Sewer & Water District shall be submitted to the City prior to the signature of the Final Plat stating that all conditions of the District have been met, including annexation into the District.
- 15. Prior to signing the final plat, Applicant shall provide approval from Ada County for all street names, and they should be accurately reflected on the plat.**
- 16. Prior to signing the final plat, the development name shall be accurately reflected on the mylar and be consistent with the approval from Ada County.**
- 17. A plat note shall state that development standards for residential development shall comply with the effective building and zoning requirements at time of building permit issuance, unless amended in the Development Agreement or CUP conditions.
- 18. Development standards for single family residential units shall comply with effective building and zoning requirements at time of building permit issuance, or as approved through the Development Agreement or as stated herein.
- 19. All common areas shall be owned and maintained by the Homeowners Association.
- 20. The applicant shall provide a sign, to be located at all construction entrances, indicating the rules for all contractors that will be working on the property starting at grading and running through home sales that addresses items including but not limited to dust, music, dogs, starting/stopping hours for contractors (7a.m. start time). **Sign shall be approved by the City prior to start of construction.**
- 21. A sign application is required for any subdivision signs.
- 22. Owner/Developer will agree to install a 2" (High Density Polyethylene) HDPE SDR-11 roll pipe in the shared utility trench to be used for future fiber optic and/or copper telecommunication cables.**
- 23. Any additional Condition of Approval as required by Staff and City Council.**

COUNCIL DECISION

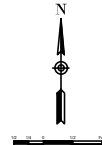
The Star City Council _____ File Number AZ-22-06/DA-22-06/PP-22-11 for Madenford Estates Subdivision on _____, 2022.



PRELIMINARY PLAT FOR
**MADENFORD ESTATES
 UNIT 2**

A PORTION OF THE NORTHWEST 1/4 OF THE
 SOUTHWEST 1/4 OF SECTION 33, T.5N., R. 1 W.,
 BOISE MERIDIAN, CITY OF STAR, ADA COUNTY,
 IDAHO.

JANUARY 2022 SCALE: 1" = 750' SHEET 1 OF 1



Graphic Scale:
 Attention is Drawn to the Fact That Drawing Scales May be
 Altered During Reproduction Processes. Scales Shown
 Herein are Based on a Full Scale Sheet Size of 8.5" x 11".
 Scale: 1" = 750'

**ACKERMAN
 ESTVOLD**
 7661 West Riverside Drive, Ste. 102 · Garden City, ID 83714
 208.853.8470 · www.ackerman-estvold.com
 Licensed Professional Engineer, State of Idaho, No. 10000

**MADENFORD ESTATES UNIT 2
 VICINITY MAP**
 3605 N POLLARD LANE, STAR, ID

DRAWN BY: AMC
 CHECKED BY: AMC
 DATE: 01/03/2022

PRELIMINARY
 PLAT
1.0



January 11, 2022

City of Star
Planning and Zoning
10769 W. State Street
Star, ID 83669

RE: Detailed Letter for Madenford Estates Unit 2 Subdivision Preliminary Plat

To whom it may concern,

Attached to this letter are application documents for a preliminary plat at 3605 North Pollard Lane, Star, Idaho. This application pertains to Lot 2 of the Madenford Estates Subdivision (Ada County parcel R5455720020), totaling 5.0 acres. The property is located in the City of Star Impact Area, however, Star does not have public services on site as the lot is currently vacant.

The property is currently zoned RUT in Ada County. This project proposes a change in zoning to R-3. The property is bounded by Lot 2 Block 1 of the Manteca Subdivision to the north, Lot 1 of the Madenford Estates Subdivision to the east, Moyle Estates subdivision to the south, and Moyle Village Subdivision to the west. The subdivisions to the west and south are zoned R-3 and the subdivisions to the east and north are zoned RUT.

This project proposes the development of the 5.0 acre parcel into 15 single family residential lots and 4 common lots. The common lots are to be used for a public road, irrigation pumps, and open space. Water and sewer services will be provided by the Star Sewer and Water District upon annexation into the City of Star. Future connections will be in accordance with all city codes. Access to the Madenford Estates Unit 2 Subdivision will be provided through West Trident Ridge Drive in Moyle Village Subdivision west of the property. All extensions of existing public roads will be consistent with ACHD and City of Star standards, including streets, curbs, gutters, sidewalks, and streetlights.

A neighborhood meeting was held on November 9, 2021 on site. Ten letters were sent out notifying all neighbors of the meeting within 300' of the property. The development plan and site layout of the proposed subdivision were discussed at the meeting. A list of attendees is attached to this application.

Thank you in advance for your consideration and support. We look forward to working with the city staff.

Respectfully submitted,



Antonio M Conti, P.E., P.L.S.



ANNEXATION & ZONING - REZONE APPLICATION

***All information must be filled out to be processed.

FILE NO.: _____
Date Application Received: _____ Fee Paid: _____
Processed by: City: _____

Applicant Information:

PRIMARY CONTACT IS: Applicant ___ Owner ___ Representative **X**

Applicant Name: Brad Candau
 Applicant Address: 349 N Story Book Way, Eagle, ID Zip: 83616
 Phone: 925-963-3788 Email: bradca@aol.com

Owner Name: Gary Madenford
 Owner Address: 3605 N Pollard Lane, Star, ID Zip: 83669
 Phone: 208-830-9911 Email: debry@mail.com

Representative (e.g., architect, engineer, developer):
 Contact: Antonio Conti Firm Name: Ackerman-Estvold
 Address: 7661 West Riverside Dr., Ste 102, Garden City, ID Zip: 83714
 Phone: 208-853-6470 Email: antonio.conti@ackerman-estvold.com

Property Information:

Site Address: 3605 N Pollard Lane, Star, ID 83669 Parcel Number: R5455720020
 Total Acreage of Site: 5.00
 Total Acreage of Site in Special Flood Hazard Area: 0.0
 Proposed Zoning Designation of Site: R-3

Zoning Designations:

	Zoning Designation	Comp Plan Designation	Land Use
Existing	RUT	Estate Residential	Vacant Lot
Proposed	R-3	Estate Residential	Residential
North of site	RUT	Estate Residential	Residential
South of site	R-3	Estate Residential	Residential
East of site	RUT	Estate Residential	Residential
West of site	R-3	Estate Residential	Residential


Special On-Site Features (Yes or No – If yes explain):

- Areas of Critical Environmental Concern - No
- Evidence of Erosion - No
- Fish Habitat - No
- Floodplain - No
- Mature Trees - Yes
- Riparian Vegetation - No
- Steep Slopes - No
- Stream/Creek - No
- Unique Animal Life - No
- Unique Plant Life - No
- Unstable Soils - No
- Wildlife Habitat - No
- Historical Assets - No

Application Requirements:

*(Applications are required to contain one copy of the following unless otherwise noted. **When combining with other applications (Prelim Plat, CUP, etc.) please include one paper copy for all applications**)*

Applicant (√)	Description	Staff (√)
✓	Pre-application meeting with the Planning Department required prior to neighborhood meeting.	
✓	Copy of neighborhood meeting notice sent to property owners within 300 feet and meeting sign-in sheet. (Please contact the City for addresses & labels) (Applicants are required to hold a neighborhood meeting to provide an opportunity for public review of the proposed project prior to the submittal of an application.)	
✓	Completed and signed Annexation & Zoning/Rezone Application	
	Fee: (Include Development Agreement Fee). Please contact the City for current fee. Fees may be paid in person with check or electronically with credit card. Please call City for electronic payment. Additional service fee will apply to all electronic payments.	
✓	Narrative fully describing the proposed project (must be signed by applicant)	
✓	Legal description of the property to be annexed and/or rezoned: <ul style="list-style-type: none"> Include a metes & bounds description to the section line/centerline of all adjacent roadways, stamped and signed by a registered professional land surveyor, with a calculated closure sheet. Scaled exhibit map showing the boundaries of the legal description in compliance w/the requirements of the Idaho State Tax Commission Property Tax Administrative Rules IDAPA 35.01.03.225.01h. If requesting more than one zoning designation, include a legal description for each zone along with an overall annexation/rezone boundary description. Also include the boundaries of each different zone on the map. Submit word.doc and pdf version with engineer's seal. 	
✓	Recorded warranty deed for the subject property	

✓	If the signature on this application is not the owner of the property, an original notarized statement (affidavit of legal interest) from the owner stating the applicant is authorized to submit this application.	
✓	One (1) 8½" X 11" copy and electronic copy in pdf. format of vicinity map showing the location of the subject property	
✓	One (1) full-size 24" X 36" copy and one (1) 11" X 17" copy of associated CUP/PUD Site Plan/Preliminary Plat. If this application is not accompanied by a plat or site plan, please submit conceptual development plan for the property.	
✓	Electronic copy in pdf. format of submitted plat, site or conceptual plan.	
	List of name(s) and address(es) of all canal or irrigation ditches within or contiguous to the proposed development.	
✓	One (1) copy of names and addresses printed on address labels, of property owners within three hundred feet (300') of the external boundaries of the property being considered as shown on record in the County Assessor's office. Please contact the City to request addresses and labels.	
	Two (2) copies of the Electronic versions of submitted application including neighborhood meeting information, signed application, narrative, legal description, warranty deed, vicinity map, preliminary plat/site plan, irrigation district information, shall be submitted in original pdf format (no scans for preliminary plat/site plans) on two (2) thumb drives only (no discs) with the files named with project name and plan type.	
	Signed Certification of Posting with pictures. (see attached posting requirements and certification form) – To be completed by application after acceptance of application. Staff will notify applicant of hearing and posting date.	
	*Applicant agrees to enter into a Development Agreement with this application. Applicant's Signature: 	
	Property shall be annexed into Star Sewer and Water District prior to Final Plat approval, building permits. Please contact SSWD for details.	

FEE REQUIREMENT:

*** I have read and understand the above requirements. I further understand fees will be collected at the time of filing an application. I understand that there may be other fees associated with this application incurred by the City in obtaining reviews or referrals by architect, engineering, or other professionals necessary to enable the City to expedite this application. I understand that I, as the applicant, am responsible for all payments to the City of Star.*



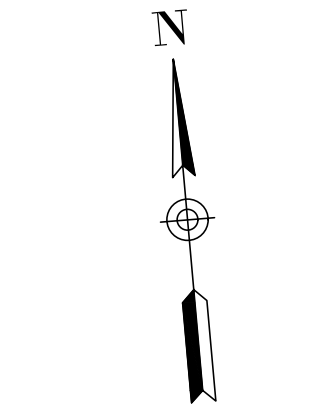
 Applicant/Representative Signature

 Date

PRELIMINARY PLAT FOR MADENFORD ESTATES UNIT 2

A PORTION OF THE NORTHWEST 1/4 OF THE
SOUTHWEST 1/4 OF SECTION 33, T.5N., R.1W.,
BOISE MERIDIAN, ADA COUNTY, IDAHO.

JANUARY 2022 SCALE: 1" = 30' SHEET 1 OF 1



Graphic Scale:

Attention is Drawn to the Fact That Drawing Scales May be Altered During Reproduction Processes. Scales Shown Hereon are Based on a Full Scale Sheet Size of 24" x 36".

Scale: 1" = 30'

LEGEND:

- SET 5/8" REBAR WITH PLASTIC CAP MARKED LS 18350
- ▲ FOUND MONUMENT AS NOTED
- CALCULATED POINT - NOTHING FOUND OR SET
- B.O.B. BASIS OF BEARING
- CP&F CORNER PERPETUATION AND FILING RECORD
- SUBJECT PARCEL
- - - PROPERTY LINE
- - - REFERENCE BOUNDARIES
- - - EASEMENT

PRELIMINARY PLAT DATA

TOTAL SITE AREA	5.00 ACRES
SINGLE-FAMILY RESIDENTIAL (70.40%)	3.52 ACRES
RIGHT-OF-WAY (13.80%)	0.69 ACRES
COMMON AREA (15.80%)	0.79 ACRES
EXISTING ZONING	RUT
PROPOSED ZONING	R-3
SINGLE-FAMILY RESIDENTIAL LOTS	15
OPEN SPACE/Common Lots	3
PUBLIC ROAD	1
TOTAL LOTS	19
GROSS RESIDENTIAL DENSITY	3.00 DU/ACRE
NET RESIDENTIAL DENSITY (EXCLUDES PUBLIC STREET & OPEN SPACE)	4.26 DU/ACRE
AMENITIES	
1. WALKING PATHWAYS	

NOTES

- SANITARY SEWER AND DOMESTIC WATER SERVICES TO BE PROVIDED BY EXTENSION OF STAR SEWER & WATER DISTRICT
- SUBJECT PROPERTY DOES NOT FALL WITHIN ANY FEMA FLOOD HAZARD ZONE - SEE FIRM PANEL 16001C01303 DATED 06/19/2020.
- ALL LOTS ARE HEREBY DESIGNATED AS HAVING A PERMANENT EASEMENT FOR PUBLIC UTILITIES, IRRIGATION, AND LOT DRAINAGE OVER THE FIFTEEN (15) FEET ADJACENT TO ANY PUBLIC STREET. THIS EASEMENT SHALL NOT PRECLUDE THE CONSTRUCTION OF HARD-SURFACED DRIVEWAYS AND WALKWAYS TO EACH LOT.
- UNLESS OTHERWISE SHOWN AND DIMENSIONED, ALL LOTS ARE HEREBY DESIGNATED AS HAVING A PERMANENT EASEMENT FOR PUBLIC UTILITIES, IRRIGATION, AND LOT DRAINAGE OVER THE FIVE (5) FEET ADJACENT TO ANY INTERIOR SIDE LOT LINE, AND OVER THE TWELVE (12) FEET ADJACENT TO ANY REAR LOT LINE OR SUBDIVISION BOUNDARY.
- THIS SUBDIVISION WILL BE SUBJECT TO THE TERMS OF A DEVELOPMENT AGREEMENT WITH THE CITY OF STAR.
- IRRIGATION WATER SHALL BE PROVIDED FROM THE FARMERS UNION DITCH COMPANY IN COMPLIANCE WITH IDAHO CODE 31-3805(B). LOTS WITHIN THE SUBDIVISION WILL BE ENTITLED TO IRRIGATION WATER RIGHTS, AND THE INDIVIDUAL LOTS WILL BE SUBJECT TO IRRIGATION WATER ASSESSMENTS.
- BUILDING SETBACKS AND DIMENSIONAL STANDARDS IN THIS SUBDIVISION SHALL BE IN COMPLIANCE WITH THE APPLICABLE ZONING REGULATIONS OF THE CITY OF STAR OR AS OTHERWISE APPROVED IN THE DEVELOPMENT AGREEMENT.
- LOTS 1, 10, AND 18 ARE COMMON/OPEN SPACE LOTS TO BE OWNED AND MAINTAINED BY MADENFORD ESTATES UNIT 2 HOMEOWNERS ASSOCIATION OR ITS ASSIGNS.
- LOT 10 HAS BEEN PROVIDED FOR THE FARMERS UNION DITCH COMPANY AND IS SUBJECT TO MAINTENANCE AND EASEMENTS FOR THE FARMERS UNION DITCH COMPANY.
- LOT 19 IS A PUBLIC ROAD LOT FOR ACCESS TO LOTS 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, AND 17. THIS LOT WILL BE COVERED BY A BLANKET EASEMENT FOR UTILITIES AND DRAINAGE. THIS LOT SHALL BE OWNED AND MAINTAINED BY ADA COUNTY.
- LOT 18 WILL CONTAIN AN UNDERGROUND SEEPAGE BED FOR DRAINAGE OF THE SUBDIVISION.

OWNER OF RECORD

GARY MADENFORD
3605 N POLLARD LANE
STAR, ID 83669

DEVELOPER

BRAD CANDAU
349 N STORY BOOK WAY
EAGLE, ID 83616

ENGINEER

ANTONIO CONTI
7661 WEST RIVERSIDE DR., STE 102
GARDEN CITY, ID 83714



7661 West Riverside Drive, Ste. 102 · Garden City, ID 83714
208.853.6470 · www.ackerman-estvold.com
Minot, ND | Fargo, ND | Williston, ND | Boise, ID

MADENFORD ESTATES UNIT 2 PRELIMINARY PLAT 3605 N POLLARD LANE, STAR, ID

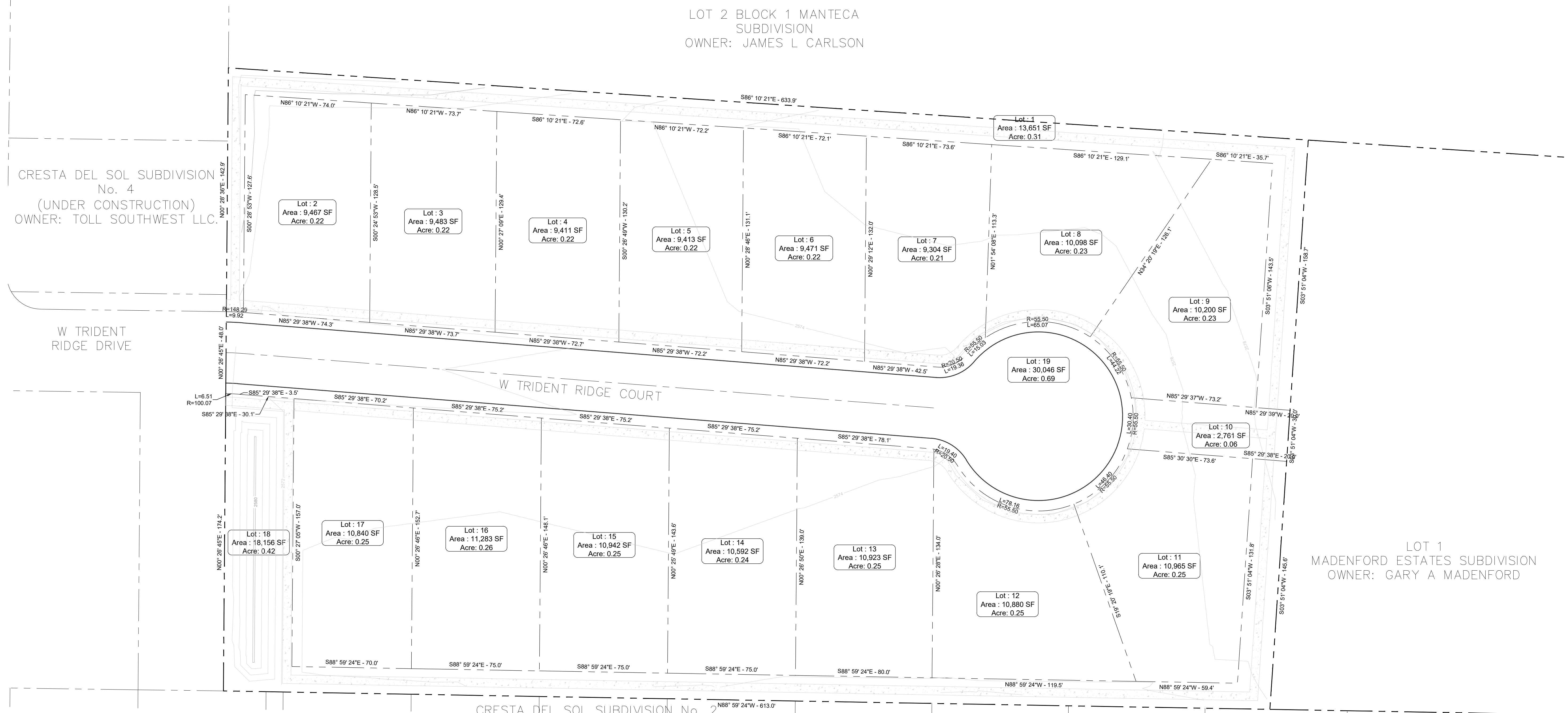
DRAWN BY: KES
CHECKED BY: AMC

DATE: 01/07/2022

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PRELIMINARY
PLAT

1.0



Issue Description	Date
ISSUE	1-24-22



JENSENBELTS ASSOCIATES
 Site Planning
 Landscape Architecture
 1509 Tyrell Lane, Ste 130
 Boise, Idaho 83706
 Ph. (208) 343-7175
 www.jensenbelts.com

**MADENFORD ESTATES UNIT 2
 STAR, IDAHO
 PRELIMINARY PLAT LANDSCAPE PLAN**

Job Number 2202

Drawn KCS Checked KCS
 Scale AS SHOWN

Sheet Title
CONCEPT LANDSCAPE PLAN

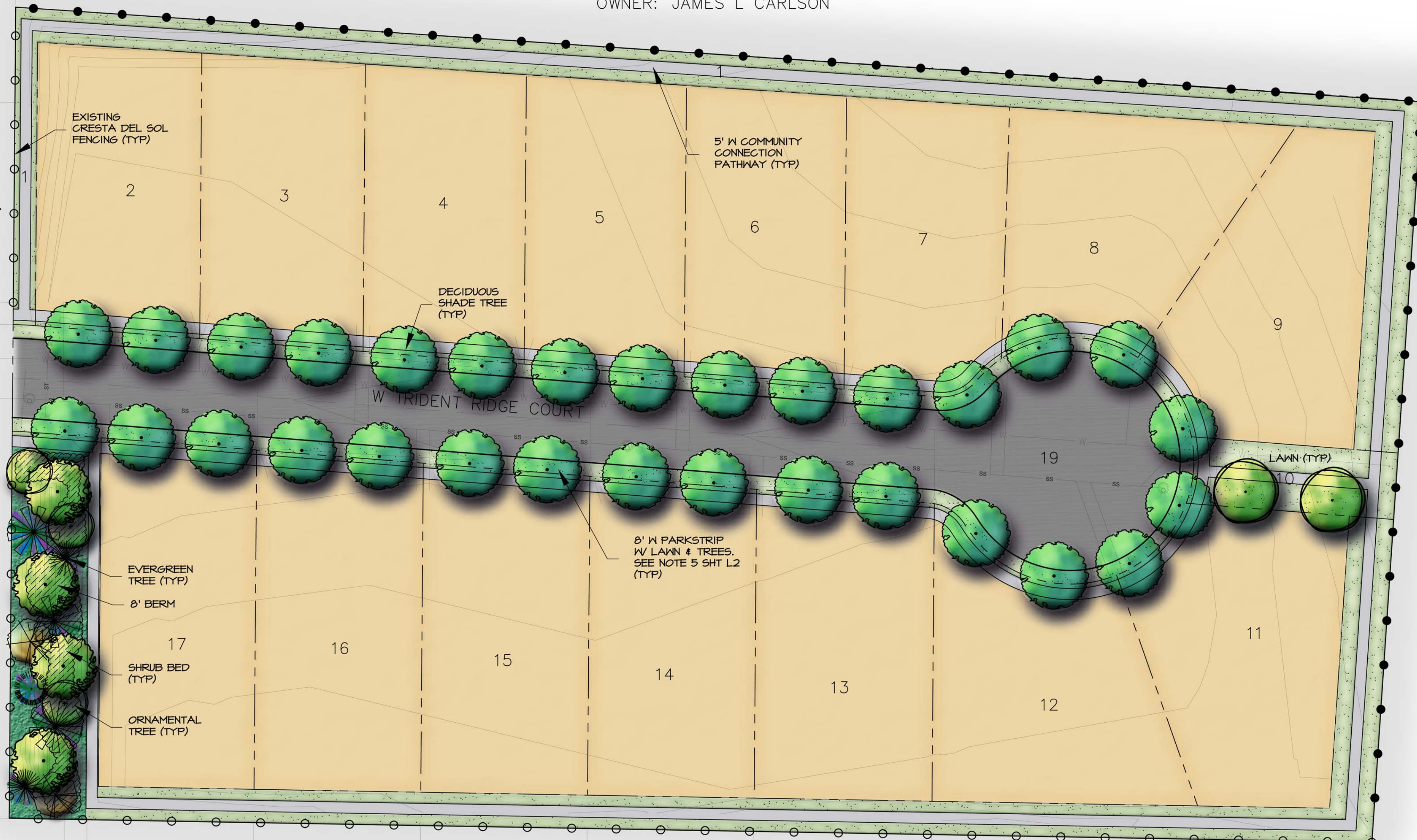
Sheet Number
L1
 1 of 2 Sheets

LOT 2 BLOCK 1 MANTECA SUBDIVISION
 OWNER: JAMES L CARLSON

CRESTA DEL SOL SUBDIVISION No. 4
 (UNDER CONSTRUCTION)
 OWNER: TOLL SOUTHWEST LLC.

LOT 1
 MADENFORD ESTATES SUBDIVISION
 OWNER: GARY A MADENFORD

CRESTA DEL SOL SUBDIVISION No. 2
 (UNDER CONSTRUCTION)
 OWNER: TOLL SOUTHWEST, LLC.

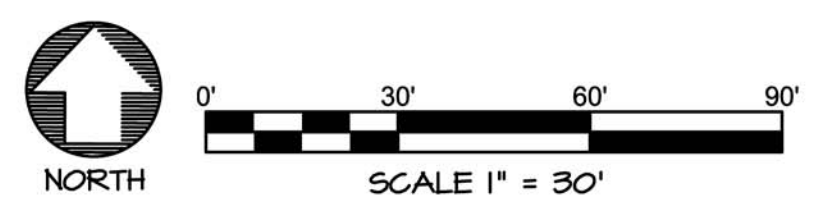


PLANT PALETTE

SYM COMMON NAME		SYM COMMON NAME		SYM DESCRIPTION	
EVERGREEN TREES		SHRUBS/ORNAMENTAL GRASSES/PERENNIALS		LAWN	
	AUSTRIAN PINE BLACK HILLS SPRUCE FAT ALBERT BLUE SPRUCE MOONGLOW JUNIPER NORWAY SPRUCE VANDERWOLFS PINE		ARIZONA SUN GAILLARDIA BLACK EYED SUSAN BLUE GRAMMA GRASS BLUE MIST SPIREA BLUE OAT GRASS BLUE RUG JUNIPER PURPLE CONEFLOWER RED FLOWER CARPET ROSE DARTS GOLD NINEBARK STELLA DE ORO DAYLILLY FINE LINE BUCKTHORN GRO-LOW SUMAC HUSKER RED PENSTEMON IVORY HALO DOGWOOD KARL FOERSTER REED GRASS LITTLE DEVIL NINEBARK HIDCOTE BLUE ENGLISH LAVENDER IVORY TOWER YUCCA MAIDEN GRASS BRAKELIGHTS RED YUCCA SUMMERWINE NINEBARK		LAWN
SHADE/STREET TREES (CLASS II)				6' SOLID VINYL FENCE ADJACENT TO COMMON AREAS AND PERIMETER PROPERTY LINES. (TYP) SEE DTL 4, SHT L2.	
	CRIMSON SPIRE OAK CHANTICLEER PEAR SKYLINE HONEYLOCUST LITTLELEAF LINDEN TULIP TREE				
ORNAMENTAL TREES (CLASS I)					
	FLAME AMUR MAPLE CANADA RED CHOKECHERRY CRUZAN CRUSADER HAWTHORN ROYAL RAINDROPS CRABAPPLE SPRING SNOW CRABAPPLE				

NOTES

1. REFER TO SHEET L2 FOR PLANT PALETTE, LANDSCAPE CALCULATIONS, AND LANDSCAPE DETAILS.





Mary May, President
Alexis Pickering, Vice-President
Jim D. Hansen, 2nd Vice President
Kent Goldthorpe, Commissioner
Dave McKinney, Commissioner

August 24, 2022

To: Brad Candau
349 N. Story Book Way
Eagle, Idaho 83616

Subject: SPP22-0008/ AZ-22-06, DA-22-06, PP-22-11
3605 N. Pollard Lane
Parcel # R5455720020
Madenford Estates Unit 2 Subdivision

The applicant is requesting annexation and zoning of 5 acres into the City of Star with a R-3 (Estate Urban Residential) zoning designation. The applicant is also requesting approval of a development agreement and a preliminary plat application to allow approval for the development of 15 single family residential lots and 4 common lots of the 5 acres.

A. Findings of Fact

1. Internal Local Streets

a. **Existing Conditions:** There are no streets within the site. As part of ACHD’s approval of the Moyle Village and Moyle Heights development, otherwise known as Cresta Del Sol there is one local street, Trident Ridge Drive, proposed to stub to the site’s west property line. This stub has not been constructed yet.

b. **Policy:**

Local Roadway Policy: District Policy 7207.2.1 states that the developer is responsible for improving all local street frontages adjacent to the site regardless of whether or not access is taken to all of the adjacent streets.

Street Section and Right-of-Way Policy: District Policy 7207.5 states that right-of-way widths for all local streets shall generally not be less than 47-feet wide and that the standard street section shall be 33-feet (back-of-curb to back-of-curb).

Standard Urban Local Street—33-foot Street Section and Right-of-way Policy: District Policy 7207.5.2 states that the standard street section shall be 33-feet (back-of-curb to back-of-curb) for developments with any buildable lot that is less than 1 acre in size. This street section shall include curb, gutter, and minimum 5-foot wide concrete sidewalks on both sides and shall typically be constructed within 47-feet of right-of-way.

For the City of Kuna and City of Star: Unless otherwise approved by Kuna or Star, the standard street section shall be 36-feet (back-of-curb to back-of-curb) for developments with any buildable lot that is less than 1 acre in size. This street

section shall include curb, gutter, and minimum 5-foot wide concrete sidewalks both sides and shall typically be constructed within 50-feet of right-of-way.

Continuation of Streets Policy: District Policy 7207.2.4 states that an existing street, or a street in an approved preliminary plat, which ends at a boundary of a proposed development shall be extended in that development. The extension shall include provisions for continuation of storm drainage facilities. Benefits of connectivity include but are not limited to the following:

- Reduces vehicle miles traveled.
- Increases pedestrian and bicycle connectivity.
- Increases access for emergency services.
- Reduces need for additional access points to the arterial street system.
- Promotes the efficient delivery of services including trash, mail, and deliveries.
- Promotes appropriate intra-neighborhood traffic circulation to schools, parks, neighborhood commercial centers, transit stops, etc.
- Promotes orderly development.

Sidewalk Policy: District Policy 7207.5.7 states that five-foot wide concrete sidewalk is required on both sides of all local street, except those in rural developments with net densities of one dwelling unit per 1.0 acre or less, or in hillside conditions where there is no direct lot frontage, in which case a sidewalk shall be constructed along one side of the street. Some local jurisdictions may require wider sidewalks.

The sidewalk may be placed next to the back-of-curb. Where feasible, a parkway strip at least 8-feet wide between the back-of-curb and the street edge of the sidewalk is recommended to provide increased safety and protection of pedestrians and to allow for the planting of trees in accordance with the District's Tree Planting Policy. If no trees are to be planted in the parkway strip, the applicant may submit a request to the District, with justification, to reduce the width of the parkway strip.

Detached sidewalks are encouraged and should be parallel to the adjacent roadway. Meandering sidewalks are discouraged.

A permanent right-of-way easement shall be provided if public sidewalks are placed outside of the dedicated right-of-way. The easement shall encompass the entire area between the right-of-way line and 2-feet behind the back edge of the sidewalk. Sidewalks shall either be located wholly within the public right-of-way or wholly within an easement.

Cul-de-sac Streets Policy: District policy 7207.5.8 requires cul-de-sacs to be constructed to provide a minimum turning radius of 45-feet; in rural areas or for temporary cul-de-sacs the emergency service providers may require a greater radius. Landscape and parking islands may be constructed in turnarounds if a minimum 29-foot street section is constructed around the island. The pavement width shall be sufficient to allow the turning around of a standard AASHTO SU design vehicle without backing. The developer shall provide written approval from the appropriate fire department for this design element.

The District will consider alternatives to the standard cul-de-sac turnaround on a case-by-case basis. This will be based on turning area, drainage, maintenance

considerations and the written approval of the agency providing emergency service for the area where the development is located.

- c. **Applicant’s Proposal:** The applicant is proposing to extend Trident Ridge Drive into the site and construct the roadway as a 36-foot wide local street section with curb, gutter, and a 5-foot wide concrete sidewalk.

The applicant is proposing to construct a cul-de-sac turnaround at the terminus of the roadway.

- d. **Staff Comments/Recommendations:** The applicant’s proposal meets’ District policy and should be approved, as proposed. For detached sidewalks located outside of the dedicated right-of-way, the right of-way may be reduced to 2-feet behind back of curb with a permanent right-of-way easement that extends from the right-of way line to 2-feet behind back of sidewalk. Sidewalk shall be located wholly within right-of-way or wholly within an easement.

The cul-de-sac turnaround at the terminus of Trident Ridge Drive should be constructed with a minimum turning radius of 50-feet.

2. Tree Planters

Tree Planter Policy: Tree Planter Policy: The District’s Tree Planter Policy prohibits all trees in planters less than 8-feet in width without the installation of root barriers. Class II trees may be allowed in planters with a minimum width of 8-feet, and Class I and Class III trees may be allowed in planters with a minimum width of 10-feet.

3. Landscaping

Landscaping Policy: A license agreement is required for all landscaping proposed within ACHD right-of-way or easement areas. Trees shall be located no closer than 10-feet from all public storm drain facilities. Landscaping should be designed to eliminate site obstructions in the vision triangle at intersections. District Policy 5104.3.1 requires a 40-foot vision triangle and a 3-foot height restriction on all landscaping located at an uncontrolled intersection and a 50-foot offset from stop signs. Landscape plans are required with the submittal of civil plans and must meet all District requirements prior to signature of the final plat and/or approval of the civil plans.

B. Site Specific Conditions of Approval

1. Extend Trident Ridge Drive into the site and construct the roadway as a 36-foot wide street section with curb, gutter, and a 5-foot wide concrete sidewalk.
2. Dedicate right-of-way to 2-feet behind back of sidewalk for attached sidewalk or dedicate the right-of-way width to 2-feet behind back of curb for detached sidewalk.
3. Provided a permanent right-of-way easement that extends from the right-of way line to 2-feet behind back of sidewalk. Sidewalk shall be located wholly within right-of-way or wholly within an easement.
4. Construct a cul-de-sac turnaround at the terminus of Trident Ridge Court with a minimum turning radius of 50-feet.

- 5. A Traffic Impact Fee will be assessed by ACHD and will be due prior to issuance of building permit. Please contact the ACHD Planner (see below) for information regarding impact fees.
- 6. Submit civil plans to ACHD Development Services for review and approval. The impact fee assessment will not be released until the civil plans are approved by ACHD.
- 7. Comply with the Standard Conditions of Approval as noted below.

C. Traffic Information

Trip Generation

This development is estimated to generate 141 additional vehicle trips per day (10 existing); and 14 additional vehicle trips per hour in the PM peak hour (1 existing), based on the Institute of Transportation Engineers Trip Generation Manual, 11th edition.

Condition of Area Roadways: Traffic Count is based on Vehicles per hour (VPH)

Roadway	Frontage	Functional Classification	PM Peak Hour Traffic Count	PM Peak Hour Level of Service
Beacon Light Road	0-feet	Minor Arterial	167	Better Than "E"
Pollard Lane	0-feet	Local	30	N/A

* Acceptable level of service for a two-lane minor arterial is "E" (575 VPH).

** ACHD does not set level of service thresholds for local roadways.

Average Daily Traffic Count (VDT): Average daily traffic counts are based on ACHD's most current traffic counts

- The average daily traffic count for Pollard Lane north of Beacon Light Road was 798 on July 8, 2020.
- The average daily traffic count for Beacon Light Road west of State Highway 16 was 2,853 on July 8, 2020.

D. Attachments

1. Vicinity Map
2. Site Plan
3. Standard Conditions of Approval
4. Appeal Guidelines

If you have any questions, please feel free to contact me at (208) 387-6171.

Sincerely,



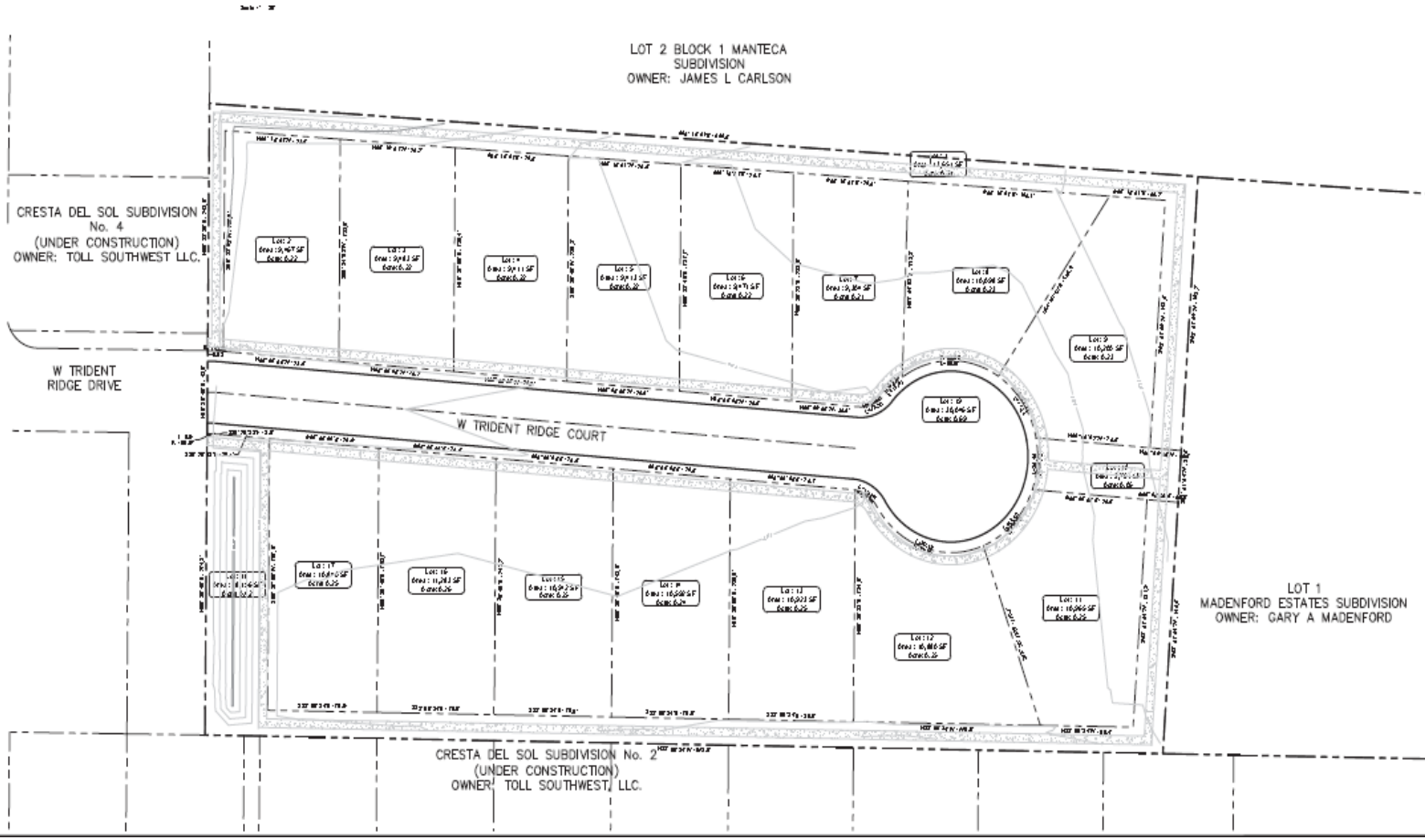
Renata Ball-Hamilton
Planner
Development Services

cc: City of Star (Shawn Nickel & Barbara Norgrove), Via Email
Owner (Gary A. Madenford), Via Email
Rep (Antonio Conti of Ackerman-Estvold), Via Email

VICINITY MAP



SITE PLAN



Standard Conditions of Approval

1. All proposed irrigation facilities shall be located outside of the ACHD right-of-way (including all easements). Any existing irrigation facilities shall be relocated outside of the ACHD right-of-way (including all easements).
2. Private Utilities including sewer or water systems are prohibited from being located within the ACHD right-of-way.
3. In accordance with District policy, 7203.6, the applicant may be required to update any existing non-compliant pedestrian improvements abutting the site to meet current Americans with Disabilities Act (ADA) requirements. The applicant's engineer should provide documentation of ADA compliance to District Development Review staff for review.
4. Replace any existing damaged curb, gutter, and sidewalk and any that may be damaged during the construction of the proposed development. Contact Construction Services at 387-6280 (with file number) for details.
5. A license agreement and compliance with the District's Tree Planter policy is required for all landscaping proposed within ACHD right-of-way or easement areas.
6. All utility relocation costs associated with improving street frontages abutting the site shall be borne by the developer.
7. It is the responsibility of the applicant to verify all existing utilities within the right-of-way. The applicant at no cost to ACHD shall repair existing utilities damaged by the applicant. The applicant shall be required to call DIGLINE (1-811-342-1585) at least two full business days prior to breaking ground within ACHD right-of-way. The applicant shall contact ACHD Traffic Operations 387-6190 in the event any ACHD conduits (spare or filled) are compromised during any phase of construction.
8. Utility street cuts in pavement less than five years old are not allowed unless approved in writing by the District. Contact the District's Utility Coordinator at 387-6258 (with file numbers) for details.
9. All design and construction shall be in accordance with the ACHD Policy Manual, ISPWC Standards and approved supplements, Construction Services procedures and all applicable ACHD Standards unless specifically waived herein. An engineer registered in the State of Idaho shall prepare and certify all improvement plans.
10. Construction, use and property development shall be in conformance with all applicable requirements of ACHD prior to District approval for occupancy.
11. No change in the terms and conditions of this approval shall be valid unless they are in writing and signed by the applicant or the applicant's authorized representative and an authorized representative of ACHD. The burden shall be upon the applicant to obtain written confirmation of any change from ACHD.
12. If the site plan or use should change in the future, ACHD Planning Review will review the site plan and may require additional improvements to the transportation system at that time. Any change in the planned use of the property, which is the subject of this application, shall require the applicant to comply with ACHD Policy and Standard Conditions of Approval in place at that time unless a waiver/variance of the requirements or other legal relief is granted by the ACHD Commission.

Request for Appeal of Staff Decision

1. **Appeal of Staff Decision:** The Commission shall hear and decide appeals by an applicant of the final decision made by the Development Services Manager when it is alleged that the Development Services Manager did not properly apply this section 7101.6, did not consider all of the relevant facts presented, made an error of fact or law, abused discretion or acted arbitrarily and capriciously in the interpretation or enforcement of the ACHD Policy Manual.
 - a. **Filing Fee:** The Commission may, from time to time, set reasonable fees to be charged the applicant for the processing of appeals, to cover administrative costs.
 - b. **Initiation:** An appeal is initiated by the filing of a written notice of appeal with the Secretary and Clerk of the District, which must be filed within ten (10) working days from the date of the decision that is the subject of the appeal. The notice of appeal shall refer to the decision being appealed, identify the appellant by name, address and telephone number and state the grounds for the appeal. The grounds shall include a written summary of the provisions of the policy relevant to the appeal and/or the facts and law relied upon and shall include a written argument in support of the appeal. The Commission shall not consider a notice of appeal that does not comply with the provisions of this subsection.
 - c. **Time to Reply:** The Development Services Manager shall have ten (10) working days from the date of the filing of the notice of appeal to reply to the notice of the appeal, and may during such time meet with the appellant to discuss the matter, and may also consider and/or modify the decision that is being appealed. A copy of the reply and any modifications to the decision being appealed will be provided to the appellant prior to the Commission hearing on the appeal.
 - d. **Notice of Hearing:** Unless otherwise agreed to by the appellant, the hearing of the appeal will be noticed and scheduled on the Commission agenda at a regular meeting to be held within thirty (30) days following the delivery to the appellant of the Development Services Manager's reply to the notice of appeal. A copy of the decision being appealed, the notice of appeal and the reply shall be delivered to the Commission at least one (1) week prior to the hearing.
 - e. **Action by Commission:** Following the hearing, the Commission shall either affirm or reverse, in whole or part, or otherwise modify, amend, or supplement the decision being appealed, as such action is adequately supported by the law and evidence presented at the hearing.

**STAR TRANSPORTATION AND PATHWAY COMMITTEE
DEVELOPMENT REVIEW**

August 29, 2022

BARON PRO. REZONE

Recommend: No comments, at this time.

CHERISHED ESTATES

Recommend: 8' sidewalk along Floating Feather
All internal pathways should be Public (open to)

FALLBROOK Phase 6

Recommend: No Comments

INSPIRADO SUBDIVISION

Recommend: Streets Inspirado Dr. and Sunset Springs Way should be classified as Collector streets with 8' sidewalks.
Easement, if not constructed, for pathway along the Phyllis cancel

SAUNDERE RIDGE ESTATES

Review: Lot No. 2 has questionable access.

GLENDORA

Recommend: 5' sidewalks within subdivision
Question do we need pathway to Mid-School on East side?

MADENFORD ESTATES

Recommend: 5' sidewalks in subdivision (as standard)

COLT HEIGHTS No. 6

Recommend: Pathway along cancel (consider requiring construction)

MADENFORD ESTATES

Recommend: All pathways should be Public (open to)



ADA COUNTY DEVELOPMENT SERVICES

200 W. FRONT STREET, BOISE, IDAHO 83702-7300
<https://adacounty.id.gov/developmentservices>

PHONE (208) 287-7900
FAX (208) 287-7909

Section 7, Item A.

BUILDING • COMMUNITY PLANNING • ENGINEERING & SURVEYING • PERMITTING

April 28, 2022

Ackerman-Estvold; Antonio Conti
7661 W. Riverside Dr, Ste 102
Garden City, ID 83714

RE: PROJECT #202103123-S-PR

Dear Mr. Conti,

The Board of Ada County Commissioners voted at their April 27, 2022, meeting to approve the application subject to the Conditions of Approval attached to the Findings of Fact, Conclusions of Law, and Order. The Board reached its decision based on the Findings of Fact and Conclusions of Law.

This letter is to further inform you that to the extent a final decision has been made on a site-specific land use request, an applicant has the right to request a regulatory taking analysis under Idaho Code.

If you have any further questions, please feel free to contact me at (208) 287-7924, or via email at clindstrom@adacounty.id.gov.

Sincerely,

A handwritten signature in cursive script that reads "Connor Lindstrom".

Connor Lindstrom
Associate Planner, Ada County Development Services

Enclosure

Cc: West Beacon Light, LLC – Brad Candu, 349 N. Story Brook Way, Eagle, ID 83616 (via email)



MIDDLETON STAR FIRE DISTRICTS

Section 7, Item A.

Fire District Headquarters
11665 W. State St., Suite B
Star, Idaho 83669

Tel. No.: (208) 286-7772
Web: www.midstarfire.org
Email: permits@starfirerescue.org

DATE: September 28, 2022
TO: City of Star – Planning and Zoning
FROM: Victor Islas, Deputy Chief
SUBJECT: Fire District Review
PROJECT NAME: Madenford Estates Subdivision
Files: AZ-22-06, DA-22-06, PP-22-11

Fire District Summary Report:

1. **Overview** This development can be serviced by the Star Fire Protection District. This development shall comply with the 2018 International Fire Code (IFC) and any codes set forth by the City of Star, Idaho.
2. **Fire Response Time:** This development will be served by the Star Fire Protection District Station 51, located at 11665 W. State St., Star, Idaho 83669. Station 51 is 3.4 miles with a travel time of 8 minutes under ideal driving conditions to the purposed entrance at W. Trident Ridge Drive.
3. **Accessibility:** Roadway Access, Traffic, Radio Coverage
 - a. Access roads shall be provided and maintained following Appendix D and Section 503 of the IFC. Access shall include adequate roadway widths, signage, turnarounds, and turning radius for fire apparatus.
 - b. Access road design shall be designed and constructed to allow for evacuation simultaneously with emergency response operations.
 - c. All access roads in this development shall remain clear and unobstructed during construction of the development. Additional parking restrictions may be required as to always maintain access for emergency vehicles. Hydrants shall always remain unobstructed per city code.
 - d. Traffic calming devices will require approval by the Fire District
 - e. An unobstructed vertical clearance of no less than 13 feet 6 inches shall be always maintained.
 - f. The applicant shall work with Ada County, City of Star and Star Fire Protection District to provide an address identification plan and signage which meets the requirements set forth by each agency. Addressing shall be placed in a position that is plainly legible and visible from the street or road fronting the property, as set forth in International Fire Code Section 505.1
 - g. All residential, commercial, and industrial buildings within the City shall have approved address numbers, building numbers, or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property. These numbers shall contrast with their background. When required by the fire code official, address numbers shall be provided in additional approved locations to facilitate emergency response.



MIDDLETON STAR FIRE DISTRICTS

Section 7, Item A.

Fire District Headquarters
11665 W. State St., Suite B
Star, Idaho 83669

Tel. No.: (208) 286-7772
Web: www.midstarfire.org
Email: permits@starfirerescue.org

- h. Address numbers shall have a minimum stroke width of one-half inch (0.5"), and of a color contrasting with the background. The required height of each address number shall be calculated by the distance of the addressed building from the road, as follows:

Less than one hundred feet (100')	6"
one hundred feet to one hundred fifty feet (100 - 150')	8"
one hundred fifty-one feet to two hundred feet (151 - 200')	10"
two hundred one feet to two hundred fifty-one feet (201 - 251')	12"

- i. Upon commencement of initial construction of a new structure, a clear visible freestanding sign or post shall be erected and maintained in place until the permanent address numerals are attached or otherwise displaced upon the premises at completion.
4. **Water Supply:** Water supply requirements will be followed as described in Appendix B of the 2018 International Fire Code unless agreed upon by the Fire District.
- a. Fire Flow: One- and two-family dwellings not exceeding 3,600 square feet require a fire-flow of 1,000 gallons per minute for a duration of 1 hour to service the entire project. One- and two-family dwellings in excess of 3,600 square feet require a minimum fire flow as specified in Appendix B of the International Fire Code
 - b. Water Supply: Acceptance of the water supply for fire protection will be by the Fire District and water quality by Star Sewer & Water for bacteria testing.
 - c. Water Supply: Final Approval of the fire hydrant locations shall be by the Star Fire Protection District or their designee in accordance with International Fire Code Section (IFC) 508.5.4 as follows:
 - i. Fire hydrants shall have a locking Storz LDH connection in place of the 4 1/2" outlet. The Storz connection may be integrated into the hydrant, or an approved adapter may be used on the 4 1/2" outlet.
 - ii. Fire hydrants shall have the Storz outlet face the main street or parking lot drive aisle.
 - iii. Fire hydrants shall be placed on corners when spacing permits.
 - iv. Fire hydrants shall not have any vertical obstructions to outlets within 10'.
 - v. Fire hydrants shall be placed 18" above finished grade to the center of the Storz outlet.
 - vi. Fire hydrants shall be provided to meet the requirements of Star Sewer & Water Standards.
 - vii. Show all proposed or existing hydrants for all new construction or additions to existing buildings within 1,000 feet of the project.
 - viii. Fire hydrant relocations to be approved by the Fire District & Star Sewer and Water.
 - ix. Hydrants are to always remain clear and unobstructed.
 - x. Hydrants to be marked with temporary fencing creating a 3 ft clearance around the hydrant and shall remain in place until approved by fire district. See exhibit 1.



MIDDLETON STAR FIRE DISTRICTS

Section 7, Item A.

Fire District Headquarters
11665 W. State St., Suite B
Star, Idaho 83669

Tel. No.: (208) 286-7772
Web: www.midstarfire.org
Email: permits@starfirerescue.org

-
- xi. Developer to review landscape plans to ensure landscaping will not obstruct hydrants.
5. **Inspections:** Final inspection by the Fire District of the above listed including hydrant flow must be completed before building permits are issued.
6. **Additional Comments:**
- a. Side Setback as per City Code. Any modification to setback will require review and approval by the Fire District.
 - b. Streetlights shall be turned on once residential building begins, Lighting is essential in assisting first responders with identifying entrances safely while responding to calls for service.



MIDDLETON STAR FIRE DISTRICTS

Section 7, Item A.

Fire District Headquarters
11665 W. State St., Suite B
Star, Idaho 83669

Tel. No.: (208) 286-7772
Web: www.midstarfire.org
Email: permits@starfirerescue.org

Exabit 1



LEGAL NOTICE PUBLIC HEARING

Notice is hereby given that the Star City Council will hold a Public Hearing on **October 4, 2022** at the Star City Hall, 10769 W. State Street, Star, Idaho at 7:00 pm, or as soon thereafter as the matter may be heard.

Application: Junction Crossing Subdivision No. 2
Files #'s PP-22-08 Preliminary Plat

Applicant/Representative: Chris Todd, Green Mountain RP, LLC

Owner: John Browning

Action: The Applicant is seeking approval of a Preliminary Plat with 3 mixed-use lots, 3 commercial lots and 3 future buildable lots with 2 common lots. The property is located at 7884 W. State Street in Star, Idaho, and consists of 8.84 acres.

Property Location: The subject property is generally located on the north side of State Street (Hwy 44), between N. Hamlin Ave. and N. Short Lane. Ada County Parcel No. R37200000247 & R3720000226.

Information/Comments: A complete copy of the applications are available at City Hall for public review. The City invites all interested parties to attend the meeting and provide public testimony. Written comments will be accepted by the City up to 2 days prior to the date of the public hearing.

Services for persons with disabilities may be made available if notice is received in advance of the meeting by calling Star City Hall at (208) 286-7247.

Shawn L. Nickel
Planning Director and Zoning Administrator
snickel@staridaho.org



CITY OF STAR
LAND USE STAFF REPORT

TO: Mayor & Council

FROM: City of Star – Planning & Zoning *Shen T. Muth*

MEETING DATE: October 4, 2022 – PUBLIC HEARING

FILE(S) #: **PP-22-08 Preliminary Plat for Junction Crossing Subdivision No. 2**

OWNER/APPLICANT/REPRESENTATIVE

Property Owner:
John Browning
4315 N. Sage Hill
Star, Idaho 83669

Applicant/Representative:
Chris Todd
Green Mtn Resources & Planning, LLC
12537 W. Goldcrest Street
Star, Idaho 83669

REQUEST

Request: The Applicant is seeking approval of a Preliminary Plat with 3 mixed-use lots, 3 commercial lots and 3 future buildable lots with 2 common lots. The property is located at 7884 W. State Street in Star, Idaho and consists of 8.84 acres.

PROPERTY INFORMATION

Property Location: The subject property is generally located on the north side of State Street (Hwy 44), between N. Hamlin Ave. and N. Short Lane. Ada County Parcel No. R37200000247 & R37200000226.

Existing Site Characteristics: The property previously had a single-family dwelling and assorted accessory buildings but is now currently vacant.

Irrigation/Drainage District(s): - Pioneer Ditch Company, Ltd.
P.O. Box 70
Star, Idaho 83669

Flood Zone: This property is located in an area of minimal flood hazard, Zone X.
 FEMA FIRM panel: 16001C0130H
 Effective Date: Revised 2/19/2003

Special On-Site Features:

- ✪ Areas of Critical Environmental Concern – None identified.
- ✪ Evidence of Erosion – No known areas.
- ✪ Fish Habitat – No known areas.
- ✪ Mature Trees – None.
- ✪ Riparian Vegetation – No.
- ✪ Steep Slopes – None.
- ✪ Stream/Creek – None.
- ✪ Unique Animal Life – No unique animal life has been identified.
- ✪ Unique Plant Life – No unique plant life has been identified.
- ✪ Unstable Soils – No known issues.
- ✪ Wildlife Habitat – No wildlife habitat has been developed or will be destroyed.
- ✪ Historical Assets – No historical assets have been observed.

APPLICATION REQUIREMENTS

Pre-Application Meeting Held	January 6, 2022
Neighborhood Meeting Held	July 8, 2022
Application Submitted & Fees Paid	July 13, 2022
Application Accepted	September 8, 2022
Residents within 300' Notified	September 13, 2022
Agencies Notified	September 8, 2022
Legal Notice Published	September 16, 2022
Property Posted	September 13, 2022

HISTORY

- **May 15, 2018** – Application for Annexation and Zoning was tabled to June 19, 2018.
- **June 19, 2018** – Council approved annexation (AZ-18-04) and zoning For Amazon Falls.

SURROUNDING ZONING/COMPREHENSIVE PLAN MAP/LAND USE DESIGNATIONS

	Zoning Designation	Comp Plan Designation	Land Use
Existing	Mixed-Use (MU)	Mixed Use	Vacant
Proposed	Mixed-Use (MU)	Mixed Use	Mixed-Use
North of site	Mixed-Use (MU)	Mixed Use	Amazon Falls No. 1

South of site	RUT (County)	Mixed Use	Agricultural/Residential
East of site	Mixed-Use (MU)	Mixed Use	Amazon Falls No. 2 & 3
West of site	Commercial (C-2)	Mixed Use	Vacant

CODE DEFINITIONS / COMPREHENSIVE PLAN

UNIFIED DEVELOPMENT CODE:

8-3A-1: ZONING DISTRICTS AND PURPOSE ESTABLISHED:

(MU) MIXED USE DISTRICT: To provide for a mixture of uses which may, at the sole discretion of the Council, include office, commercial, and/or residential depending upon the specific comprehensive plan area designated as Mixed Use. Development within this zone is to proceed through the PUD process unless a development agreement has already been executed for the particular property. Identifying areas for mixed-use development has two objectives. The first objective is to give the city a better tool to manage the type of developments through the planned unit development and/or the Development Agreement process. The second objective is that this zone may allow the development community to be more innovative in design and placement of structures subject to Council review and approval. Rezoning within this land use designation is to be strictly monitored by the city to assure that the Mixed-Use areas are not being used simply to justify high density residential use. Residential uses may be part of an overall mixed-use development that includes a non-residential component and may not exceed 30% of the overall size of the development.

DA DEVELOPMENT AGREEMENT: This designation, following any zoning designation noted on the official zoning map of the city (i.e., C-2-DA), indicates that the zoning was approved by the city with a development agreement, with specific conditions of zoning.

8-3A-3: USES WITHIN ZONING DISTRICTS

The following table lists principal permitted (P), accessory uses (A), conditional (C), or prohibited (N) uses.



ZONING DISTRICT USES

Section 7, Item B.

USES	MU
Accessory structure - Residential or Commercial	C/P
Adult business/adult entertainment	N
Agriculture, forestry, fishing	N
Airport	N
Animal care facility ¹	C
Artist studio ¹	P
Arts, entertainment, recreation facility ¹	C
Asphalt plant ¹	N
Auction facility	C
Automated Teller Machine (ATM) ¹	A
Automotive hobby ¹	A
Automotive mechanical/electrical repair and maintenance	C
Bakery- Retail or Manufacturing	P/C
Bar/tavern/lounge/drinking establishment	C
Barbershop/styling salon	P
Bed and breakfast	C
Beverage bottling plant	N
Boarding house	C
Brewery/Distillery	C
Brewpub/Wine Tasting	C
Building material, garden equipment	C

and supplies	
Campground/RV park 1	C
Caretaker Unit 1	A
Cement or clay products manufacturing	N
Cemetery 1	N
Chemical manufacturing plant 1	N
Child Care center (more than 12) 1	C
Child Care family (6 or fewer) 1	A
Child Care group (7-12) 1	C
Child Care-Preschool/Early Learning1	C
Church or place of religious worship1	P
Civic, social or fraternal organizations	C
	<u>MU</u>
Concrete batch plant 1	N
Conference/convention center	C
Contractor's yard or shop 1	N
Convenience store	C
Dairy farm	N
Drive-through establishment/drive-up service window 1	C
Dwelling:	
Multi-family 1	C
Secondary 1	C

Single-family attached	C
Single-family detached	C
Two-family duplex	C
Live/Work Multi-Use 1	C
<u>Horizontal Apartments or Build to Rent Communities 1</u>	<u>C</u>
Educational institution, private	C
Educational institution, public	C
Equipment rental, sales, and services	C
Events Center, public or private (indoor/outdoor)	C
Fabrication shop	N
Farm	N
Farmers' or Saturday market	C
Feedlot	N
Financial institution	C
Fireworks Stands	P
Flammable substance storage	N
Flex Space	C
Food products processing	N
Fracking	N
Gasoline, Fueling & Charging station with or without convenience store 1	C
Golf course/Driving Range	C
Government office	C

Greenhouse, private	A
Greenhouse, commercial	C
Guesthouse/granny flat	C
Healthcare and social services	C
Heliport	N
Home occupation ¹	A
Hospital	C
Hotel/motel	C
Ice manufacturing plant	N
Industry, information	C
Institution	C
Junkyard	N
Kennel	C
Laboratory	C
Laboratory, medical	C
Lagoon	N
Laundromat	P
Laundry and dry cleaning	C
Library	N
Manufactured home ¹	C
Manufactured home park ¹	N
Manufacturing plant	N
Meatpacking plant	N
Medical clinic	P

Mining, Pit or Quarry (excluding accessory pit) ₁	N
Mining, Pit or Quarry (for accessory pit) ₁	A
Mortuary	C
Museum	P
Nursery, garden center and farm supply	C
Nursing or residential care facility ₁	C
Office security facility	C
Parking lot/parking garage (commercial)	C
Parks, public and private	P
Pawnshop	P
Personal and professional services	P
Pharmacy	P
Photographic studio	P
Portable classroom/modular building (for private & public Educational Institutions)	C
Power plant	N
Processing plant	N
Professional offices	C
Public infrastructure; Public utility major, minor and yard ₁	C
Public utility yard	N

Recreational vehicle dump station	A
Recycling center	N
Research activities	C
Restaurant	C
Retail store/retail services	C
Retirement home	C
Riding Arena or Stable, Private/ Commercial	N
Salvage yard	N
Sand and gravel yard	N
Service building	C
Shooting range (<u>Indoor/Outdoor</u>)	C/N
Shopping center	C
Short Term Rentals ₁	A
Solid waste transfer station	N
Storage facility, outdoor (commercial) ₁	C
Storage facility, self-service (commercial) ₁	C
Swimming pool, commercial/public	P
Television station	C
Temporary living quarters ₁	N
Terminal, freight or truck ₁	N
Truck stop	C
Turf farm	N

Vehicle emission testing ₁	C
Vehicle impound yard ₁	N
Vehicle repair, major ₁	C
Vehicle repair, minor ₁	C
Vehicle sales or rental and service ₁	C
Vehicle washing facility ₁	C
Vehicle wrecking, junk or salvage yard ₁	N
Veterinarian office	C
Vineyard	C
Warehouse and storage	C
Wholesale sales	C
Winery	C
Wireless communication facility ₁	C
Woodworking shop	N

8-3A-4: ZONING DISTRICT DIMENSIONAL STANDARDS:

Zoning District	Maximum Height Note Conditions	Minimum Yard Setbacks Note Conditions			
		Front(1)	Rear	Interior Side	Street Side
MU	35'	For MU and CBD - Unless otherwise approved by the Council as a part of a PUD or development agreement, all residential buildings shall follow the residential setbacks shown in this table based upon the project density and all other buildings shall follow setbacks for the C-2 zone ⁽³⁾ .			

Notes:

1. Front yard setback shall be measured from the face of the garage to the face of the sidewalk, allowing for 20' of parking on the driveway without overhang onto the sidewalk.
2. Zero-Lot-Line and reduced front and rear setback waivers may be requested through the Development Agreement process. All other side yard setback requests for detached structures shall not be granted waivers, unless as part of a Planned Unit Development.
3. All setbacks in the CBD, C-1, C-2, LO, IL, PS, RC and M-U zone shall maintain a minimum 15' when adjacent to a residential use or zone.
4. As approved by the Fire District.

COMPREHENSIVE PLAN:

8.2.3 Land Use Map Designations:

Mixed Use:

Generally suitable for a mixture of uses which may, at the sole discretion of the Council, include office, commercial, light industrial, and/or residential depending upon the specific area designated as Mixed Use. See Mixed Use Implementation Policies for specific criteria. Development within this land use designation is to proceed through the PUD and/or development agreement process.

Identifying areas for mixed-use development has two objectives. The first objective is to give the city a better tool to manage the type of developments through the planned unit development and/or the Development Agreement process. The second objective is that this land use designation will allow the development community to be more innovative in design and placement of structures. Development design guidelines should also be established to guide development within mixed-use areas. Rezoning within this land use designation is to be strictly monitored by the city to assure that the Mixed-Use areas are not being used simply to justify high density residential use.

8.3 Goal:

Encourage the development of a diverse community that provides a mix of land uses, housing types, and a variety of employment options, social and recreational opportunities, and where possible, an assortment of amenities within walking distance of residential development.

8.4 Objectives:

- Manage urban sprawl in order to minimize costs of urban services and to protect rural areas.

- Retain and encourage rural areas where it will not result in increased costs for urban service.
- Encourage land uses that are in harmony with existing resources, scenic areas, natural wildlife areas, and surrounding land uses.

8.5.3 Policies Related Mostly to the Urban Residential Planning Areas:

A. The Neighborhood Residential Land Use is to encourage urban style development densities to limit urban sprawl.

B. Low densities within the Neighborhood Residential Land Use are to be designed within the floodplain, ridgeline developable areas, hillside developable areas and where new residential lots are proposed adjacent to existing residential lots of one acre and larger where those existing larger lots are not likely to be subdivided in the future.

8.5.9 Additional Land Use Component Policies:

- Encourage flexibility in site design and innovative land uses.
- Encourage landscaping to enhance the appearance of subdivisions, structures, and parking areas.
- Require more open space and trees in subdivisions.
- Work with Ada County Highway District (ACHD), Canyon Highway District #4 (CHD4), and Idaho Department of Transportation (ITD) for better coordination of roadway and access needs.
- Support well-planned, pedestrian-friendly developments.
- Dark sky provision should be adopted within the code to assure down style lighting in all developments and Star should consider joining the International Dark Sky Association.
- The City should utilize the 2018 Treasure Valley Tree Selection Guide when requiring trees within developments.

18.4 Implementation Policies:

E. Development Agreements allow the city to enter into a contract with a developer upon rezoning. The Development Agreement may provide the city and the developer with certain assurances regarding the proposed development upon rezoning.

PROJECT OVERVIEW

PRELIMINARY PLAT:

Junction Crossing No. 2 consists of three large commercial building lots (Lots 2, 3, 6) totaling a potential ground floor square footage of ~ 80,000 sq ft. Applicant is requesting a height exemption to 50' for the phase. The height exemption will allow the developer and potential users flexibility in designing future commercial and mixed-use buildings. We foresee Lot 6 being a large restaurant site with 2nd story patio dining or a rooftop feature. Lots 2 and 3 will be standalone commercial buildings along Highway 44. Lots 7-9 are mixed use buildings that allow for ground floor commercial space with the 2nd and 3rd floors offering condo or apartment living. Lots 7&8 would have 8 condo/apartments and Lot 9 would have 16 condo/apartments. Total number of residential units for the phase would be 32 condo/apartments. Having livable units within the mixed-use buildings has many benefits, such as a built-in customer base, safety/self-policing and adds to fabric of a mixed-use development.

The main access to the site is Short Rd. off W. State Street (Hwy 44). A future connection of Amazon Dr will eventually connect to Hamlin Rd. An emergency access if needed can be accommodated along Highway 44. All utilities are stubbed to the site and the main ditch has been piped and relocated along the south and west sides of the property with a license agreement and approval from the appropriate jurisdictions.

The applicant states that an eye catching, landscaped promenade will flow south with a mix of heavy landscaping, outdoor fireplaces, seating and commercial patios to a common lot. The meandering stamped promenade connects with the main common lot that will hold the Junction Crossing Amphitheatre. The amphitheater space is designed to have a Stage, a green-scaped pocket park and common areas that welcome visitors, residents, and businesses. The goal is to create a park on Lot 5 that can be dedicated to the City of Star. Future residential connections to the north and east will allow residents to walk or bike to the development. During events the private drive (East/West Dr.) could be blocked to through traffic in order to have larger events.

ADDITIONAL DEVELOPMENT FEATURES:

- Sidewalks
Sidewalks are proposed at five-foot (5') widths and will be attached throughout the overall subdivision. **This does not meet the requirements of the Unified Development Code Section 8-4A-17.**
- Lighting
Streetlights shall reflect the "Dark Sky" criteria with all lighting. The same streetlight design shall continue throughout the entire development. The applicant has submitted a streetlight plan, indicating location of lights, but has not submitted a

street light design. A condition of approval will be required to receive staff approval of streetlights prior to final plat approval.

- Landscaping - As required by the Unified Development Code, Chapter 8, Section 8-8C-2-M (2) Street Trees; A minimum of one street tree shall be planted for every thirty-five (35) linear feet of street frontage. The applicant shall use "Treasure Valley Tree Selection Guide", as adopted by the Unified Development Code.
- Mailbox Clusters – Applicant has requested approval from the Eagle Postmaster and has not yet received a response, documentation is in the file. This approval will be required before signing the final plat.
- Streets – Applicant is proposing 25-foot-wide driveway widths from back of curb to back of curb for the internal circulation. Because these are private drive aisle, they should be approved by the Fire District.

DEVELOPMENT AGREEMENT

Through the Development Agreement process, the applicant is proposing to work with the City to provide further insurances that the development will be built as presented and/or modified by the Council through the review process. Items that should be considered by the applicant and Council include the following:

- Density
- Emergency Access
- Acceptance of donated park space
- Height exception

The applicant is asking for the following considerations to be included in the Development Agreement.

1. A height variance to allow the commercial building/s to exceed the height requirement to 58' feet maximum. Located along a highway and near other commercial, parking lot and high density residential the requests will not negatively impact neighboring developments and allow us the opportunity to market to larger employers and destination commercial users
2. Request that a landscape plan, CCRS and building plans be submitted with a CZC (Certificate of Zoning Compliance) if the current application is approved. Applicant to hold preapplication with City, SSWD, Star Fire prior to CZC submittal. Within the application the city will find examples that the owner has designed with an architect to show the type of buildings they can fit the area, look great and match some of the existing multi-family developments currently under construction.

- 3. A reduction in the commercial parking requirement by 10%. The property will be served by 5 large parking areas. With the current design on the preliminary plat, we are 6% under the requirement. Justification for reduction would be proximity of residences and walkability/bike ability.
- 4. In order to ensure some flexibility, the owner requests that Lot 10 or Lot 11 be available for future commercial build site.
- 5. Final construction drawings to be provided after architectural drawings are complete and applicants meet with city for pre application of the CZC.

AGENCY RESPONSES

Drainage District No. 2

September 14, 2022

PUBLIC RESPONSES

No public comments have been received.

STAFF ANALYSIS & RECOMMENDATIONS

Staff is supportive of the design, layout and density of the development application, with the proposed conditions of approval. The preliminary plat matches the overall concept that was approved by Council as part of the annexation.

Based upon the information provided to staff in the applications and agency comments received to date, staff finds that the proposed preliminary plat meets the requirements, standards and intent for development as they relate to the Unified Development Code and the Comprehensive Plan. The Council should consider the entire record and testimony presented at their scheduled public hearing prior to rendering its decision on the matter. Should the Council vote to approve the applications, either as presented or with added conditions of approval, Council shall direct staff to draft findings of fact and conclusions of law for the Council to consider at a future date.

FINDINGS

The Council may **approve, conditionally approve, deny** or **table** this request. In order to approve these applications, the Unified Development Code requires that Council must find the following:

PRELIMINARY PLAT FINDINGS:

- 1. The plat is in compliance with the Comprehensive Plan.

The City must find that this Plat follows designations, spirit and intent of the Comprehensive Plan regarding residential development and meets several of the objectives of the Comprehensive Plan such as:

- 1. Designing development projects that minimize impacts on existing adjacent properties, and*
- 2. Managing urban sprawl to protect outlying rural areas.*

- 2. Public Services are available or can be made available and are adequate to accommodate the proposed development.

The City must find that Agencies having jurisdiction on this parcel were notified of this action, and that it has not received notice that public services are not available or cannot be made available for this development.

- 3. There is public financial capability of supporting services for the proposed development; *The City must find that they have not been notified of any deficiencies in public financial capabilities to support this development.*

- 4. The development will not be detrimental to the public health, safety or general welfare; *The City must find that it has not been presented with any facts stating this Preliminary Plat will be materially detrimental to the public health, safety and welfare. Residential uses are a permitted use.*

- 5. The development preserves significant natural, scenic or historic features; *The City must find that there are no known natural, scenic, or historic features that have been identified within this Preliminary Plat.*

Upon granting approval or denial of the application, the Council shall specify:

- 1. The Ordinance and standards used in evaluating the application;
- 2. The reasons for recommending approval or denial; and
- 3. The actions, if any, that the applicant could take to obtain approval.

CONDITIONS OF APPROVAL

- 1. The approved Preliminary Plat for the Junction Crossing No. 2 shall comply with all statutory requirements of applicable agencies and districts having jurisdiction in the City of Star.
- 2. **The applicant shall enter into a Development Agreement with the City, agreeing to proportionate share assessment by ITD regarding impacts to the State Highway System. ITD has calculated the fees to be \$1,000.00 per residential lot. These fees will be collected by the City of Star, by phase, prior to final plat signature. The development agreement shall be signed and recorded as part of the ordinance for annexation and zoning and shall contain the details of the fees to be collected.**
- 3. **All drives shall meet the requirements of the Star Fire District.**

4. **All sidewalks shall be a minimum of 5 feet wide and detached as required by the Unified Development Code Section 8-4A-17, unless approved by Council.**
5. **Applicant shall meet all the setback requirements in the Unified Development Code Section 8-3A-4, unless a waiver is applied for and approved by the council.**
6. Streetlights shall comply with the Star City Code and shall be of the same design throughout the entire subdivision and shall be maintained by the Homeowners Association. Streetlights shall be installed prior to any building occupancy. Design shall follow Code with requirements for light trespass and "Dark Skies" lighting. **Applicant/Owner shall submit a streetlight design prior to Final Plat approval. Streetlights shall comply with the Star City Code regarding light trespass and "Dark Sky" initiative.**
7. Street trees shall be installed per Chapter 8, including Section 8-8C-2-M(2) Street Trees including one (1) tree per thirty-five (35) linear feet.
8. All signed Irrigation District Agreements with the Irrigation Districts shall be provided to the City of Star with each subsequent Final Plat application.
9. The property with the approved Preliminary Plat shall be satisfactorily weed abated, preventing a public nuisance, per Star City Code.
10. The property associated with this approved Final Plat, in addition to the property of all future phases shall be properly maintained throughout the construction process to include trash picked up and trash receptacles emptied with regular frequency, streets swept and cleaned weekly, including any streets used to access the property and all debris shall be prevented from accumulating on any adjacent property or public right of way and shall remove all debris from public way at least daily.
11. Pressurized irrigation systems shall comply with the Irrigation District(s) and the City of Star Codes. Plans for pressurized irrigation systems shall be submitted to, and approved by the City of Star Engineer, prior to installation.
12. A plat note supporting the "Right to Farm Act" as per Idaho Code Title 22, Chapter 45, shall be shown on the Final Plat.
13. A copy of the CC&R's shall be submitted to the City of Star at Final Plat.
14. **A letter from the US Postal Service shall be given to the City at Final Plat stating the subdivision is in compliance with the Postal Service and indicating the location of the mailbox cluster(s).**
15. A form signed by the Star Sewer & Water District shall be submitted to the City prior to the signature of the Final Plat stating that all conditions of the District have been met, including annexation into the District.
16. A plat note shall state that development standards for residential development shall comply with the effective building and zoning requirements at time of building permit issuance, unless amended in the Development Agreement or CUP conditions.
17. Development standards for single family residential units shall comply with effective building and zoning requirements at time of building permit issuance, or as approved through the Development Agreement or as stated herein.
18. All common areas shall be owned and maintained by the Homeowners Association.
19. The applicant shall provide a sign, to be located at all construction entrances, indicating the rules for all contractors that will be working on the property starting at grading and running through home sales that addresses items including but not limited to dust, music, dogs,

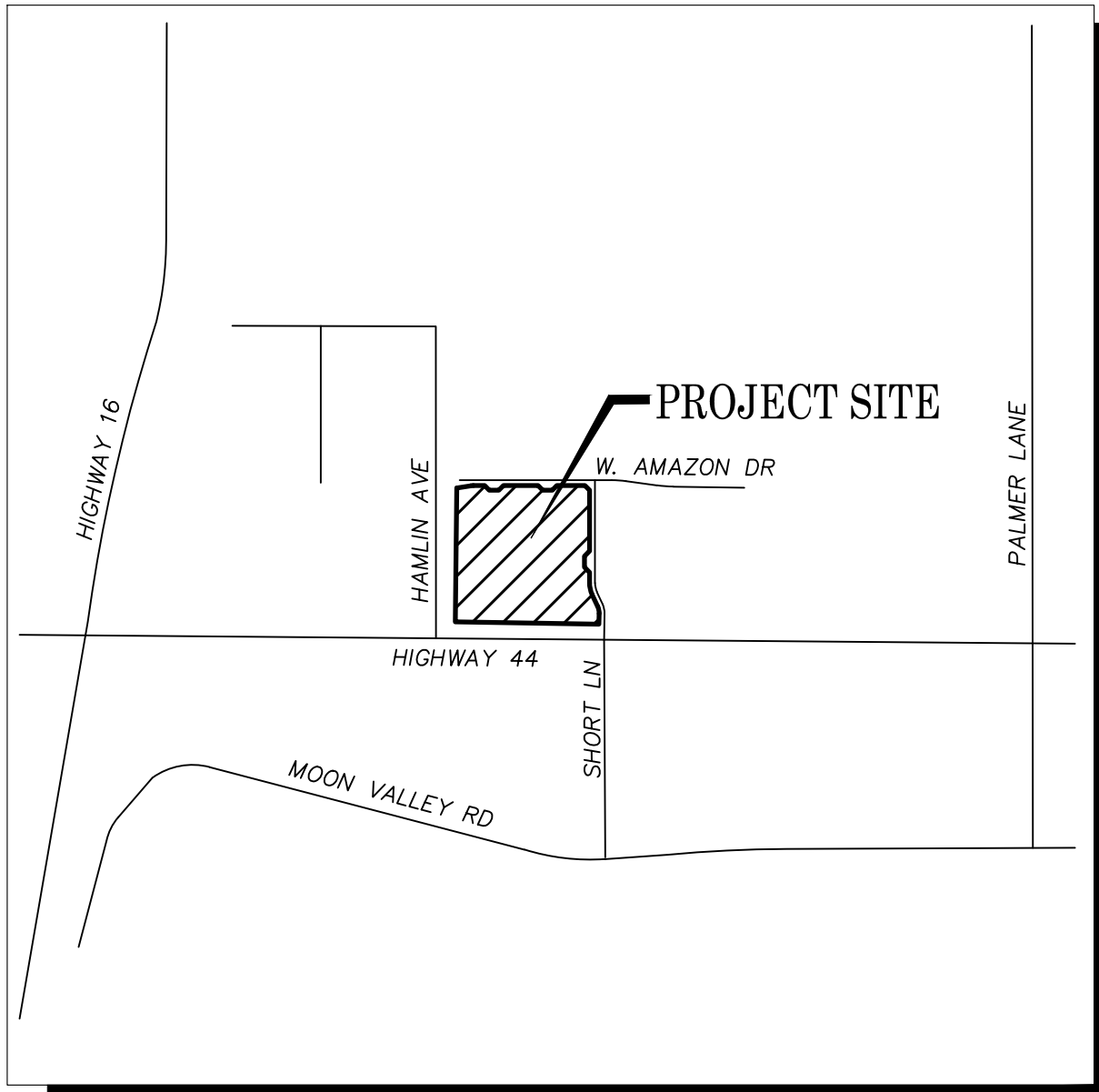
starting/stopping hours for contractors (7a.m. start time). **Sign shall be approved by the City prior to start of construction.**

20. A sign application is required for any subdivision signs.

21. Any additional Condition of Approval as required by Staff and City Council.

COUNCIL DECISION

The Star City Council _____ File #PP-22-08 for Junction Crossing No. 2 on _____, 2022.



VICINITY MAP
1"= 800'

JUNCTION CROSSING SUBDIVISION NO. 2
 BEING LOT 2 AND A PORTION OF LOT 1 OF R.L. HON SUBDIVISION
 LOCATED IN THE SW 1/4, SW 1/4 OF SECTION 10 T.4N, R.1W
 BOISE MERIDIAN, ADA COUNTY, IDAHO

ROCK SOLID CIVIL
 Civil Engineering and Land Development Consulting
 270 North 27th Street, Boise, ID 83702
 Office Phone: 208.342.3277
 www.rocksolidcivil.com

City of Star Planning
 c/o Shawn Nickel
 10769 West State Street
 Star, Idaho 83669

June 30, 2022

**Subject Property- Junction Crossing Phase II
 previously known as (Amazon Falls Phase IV)
 Application for PUD(Preliminary Plat) and Development Agreement**

Dear Mr. Nickel,

On behalf of the owners, we are excited to continue with the build out of the approved Amazon Falls Development located at 7672/7884 W State St Star ID 83669. The parcel #'s for this application are R3720000226, R3720000247 and is approximately 8.5 acres. The site is located on the NW corner of Short Rd and Highway 44(State St) Star, ID 83669, approximately 1/3mile from the Highway 16/44 intersection. The entire Amazon Falls site was previously approved (annexation/zoning) for 316 total residential units and commercial development. Currently Phase 1 consists of 184 townhome styled apartments to the north of the site. Full build out is slated for January 2023. Phase II consisting of approximately 90 townhomes with garages has commenced site construction. Junction Crossing Phase I (Amazon III) commercial development is working toward the completion of their certificate of zoning application for commercial development and has started horizontal improvements. This application is for Junction Crossing II (Amazon IV). Through multiple pre application meetings, review of previous approvals and site analysis we are excited to bring forth this plan to tie all the phases together and complete the site.

Junction Crossing Phase II will be a great commercial destination for the City of Star. The Focal Point of this phase is the center of the site that will be designed and landscaped to mimic a boulevard or promenade style walkway. The site exceeds the city's open space requirements for mixed use/commercial zones. The eye catching, landscaped promenade will flow south with a mix of heavy landscaping, outdoor fireplaces, seating and commercial patios to a common lot. The meandering stamped promenade connects with the main common lot that will hold the Junction Crossing Amphitheatre. The amphitheater space is designed to have a Stage, a greenscaped pocket park and common areas that welcome visitors, residents, and businesses. The goal is to create a park on Lot 5 that can be dedicated to the City of Star. We see this area as a focal point of Junction Crossing, Amazon Falls and the whole area, where residents can enjoy live music, theatre performances, movie nights, farmers markets or just enjoy passive/active entertainment in a beautiful setting next to where they live. Future residential connections to the north and east will allow residents to walk or bike to the development. During events the private drive (East/West Dr.) could be blocked to through traffic in order to have larger events.

The landscape plan is a great reference to the aspiration that we are trying to accomplish. To the west of the amphitheater there will be an active play area with seating. Our goal was to create a mix that we see as successful at other destinations in the valley. The stage at Indian Creek Plaza (Caldwell), the walkability of the Village in Meridian and the business makeup of Bowns Crossing are great local examples. Junction Crossing will offer Star a destination and all valley residents nearby, the opportunity to walk and bike to entertainment, a variety of dining options, local shopping along with opportunities for work and play!

Junction Crossing Phase II consists of three large commercial building lots (Lots 2, 3, 6) totaling a potential ground floor square footage of ~ 80,000 sq ft. We are asking the city for a height exemption to 50' for the phase. The height exemption will allow the developer and potential users flexibility in designing future commercial and mixed-use buildings. We foresee Lot 6 being a large restaurant site with 2nd story patio dining or a rooftop feature. Lots 2 and 3 will be standalone commercial buildings along Highway 44. Lots 7-9 are mixed use buildings that allow for ground floor commercial space with the 2nd and 3rd floors offering condo or apartment living. Lots 7&8 would have 8 condo/apartments and Lot 9 would have 16 condo/apartments. Total number of residential units for the phase would be 32 condo/apartments. This is 10 units less than the approval allowed for the entire project. Having livable units within the mixed-use buildings has many benefits, such as a built-in customer base, safety/self-policing and adds to fabric of a mixed use development.

The main access to the site is Short Rd. off Highway 444(State St) A future connection of Amazon Dr will connect Hamlin Rd. A emergency access if needed can be accommodated along Highway 44. All utilities are stubbed to the site and the main ditch has been piped and relocated along the south and west sides of the property with a license agreement and approval from the appropriate jurisdictions.

This proposed development meets the criteria and goals of the City's comprehensive plan, the current Development Agreement for the project, while diversifying the city's tax base with a large inflow of commercial property. Along with creating economic development this project at buildout will offer space for businesses to grow, relocate, expand or start in the Star area. The location being near two major road corridors that are slated for significant expansion over the next 5 years benefits the businesses that will locate at the property along with the customers, clients, employees and city at large that visit the property. We are actively engaged with all jurisdictional agencies with a presence on or near the site including ITD, ACHD, SSWD, ID Power, Intermountain Gas, Middleton Mill and DD#4.

With this application we have asked for a Development Agreement with the City of Star. This tool will assist us and protect the city with measures put in place to make sure the owner, future owners and their teams perform. Within the Development Agreement we are asking for the following:

1. A height variance to allow the commercial building/s to exceed the height requirement to 58' feet maximum. Located along a highway and near other commercial, parking lot and high density residential the requests will not negatively impact neighboring developments and allow us the opportunity to market to larger employers and destination commercial users
2. Request that a landscape plan, CCRS and building plans be submitted with a CZC (Certificate of Zoning Compliance) if the current application is approved. Applicant to hold preapplication with City, SSWD, Star Fire prior to CZC submittal. Within the application the city will find examples that the owner has designed with an architect to show the type of buildings the can fit the area, look great and match some of the existing multi-family developments currently under construction.
3. A reduction in the commercial parking requirement by 10%. The property will be served by 5 large parking areas. With the current design on the preliminary plat we are 6% under the requirement. Justification for reduction would be proximity of residences and walkability/bikability.
4. In order to ensure some flexibility the owner requests that Lot 10 or Lot 11 be available for future commercial build site.

5. Final construction drawings to be provided after architectural drawings are complete and applicants meet with city for pre application of the CZC.

Thank you for your time, look forward to presenting and please contact me with any questions.

*Chris Todd
Owner
Green Mountain Resources and Planning LLC
12537 W Goldcrest St Star ID 83669
Star, ID 83669*





PRELIMINARY PLAT APPLICATION

***All information must be filled out to be processed.

FILE NO.: _____
 Date Application Received: _____ Fee Paid: _____
 Processed by: City: _____

Applicant Information:

PRIMARY CONTACT IS: Applicant ___ Owner ___ Representative ___

Applicant Name: John Browning
 Applicant Address: 880 E Hubbard Rd., Kuna, ID Zip: 83634
 Phone: 208.850.4044 Email: firstservicegroup@gmail.com

Owner Name: John Browning
 Owner Address: 880 E Hubbard Rd., Kuna, ID Zip: 83634
 Phone: 208.850.4044 Email: firstservicegroup@gmail.com

Representative (e.g., architect, engineer, developer):
 Contact: Chris Todd Firm Name: First Service Group
 Address: 53 N Plummer Road, Star, ID Zip: 83669
 Phone: 208.899.0451 Email: chris@firstservicegroup.com

Property Information:

Subdivision Name: Junction Crossing No. 2
 Site Location: 7884 W State Street, Star, ID 83616
 Approved Zoning Designation of Site: Mixed Use (MU)
 Parcel Number(s): R3720000247 & R3720000226

Zoning Designations:

	Zoning Designation	Comp Plan Designation	Land Use
Existing	MU		Mixed Use
Proposed	MU		Mixed Use
North of site	MU		Residential
South of site			Public Street (S.H.44)
East of site			Public Street (Short Rd.)
West of site			Public Street (Hamlin Ave.)

SITE DATA:

Total Acreage of Site - 8.84 Acres Acreages for Cutting Edge, LLC & Robert Charles Owen Trust

Breakdown of Acreage of Land in Contiguous Ownership - _____

Total Acreage of Site in Special Flood Hazard Area - N/A

Dwelling Units per Gross Acre - 6 Bldgs per 8.84 AC = 0.68 Bldgs/ac

Minimum Lot Size - 14,114 SF (Lots 7 & 8)

Minimum Lot Width - +/-85'

Total Number of Lots - 11

Residential - 3 MU (Lots 7, 8 & 9)

Commercial - 3 Commercial (Lots 2, 3 & 6)

~~Industrial~~ - Future Buildable - 3 (Lots 4, 10 & 11)

Common - 2 (Lots 1 & 5)

Total Number of Units - 32 Apartments

Single-family - _____

Duplex - _____

Multi-family - 32 Apartments

Percent of Site and Total Acreage of Common Area - 27%(2.39/8.84)% / 2.39 acres

Percent of Common Space to be used for drainage - 19% (Lot 5 0.46 ac/ Common area 2.39 ac)

Describe Common Space Areas (amenities, landscaping, structures, etc.) - _____
Amphitheater, terraced seating, outdoor plaza & pavilion, perimeter landscape buffers, fire pit, bike storage facility and other amenities.

Proposed Dedicated Lots & Acreage (school, parks, etc): _____
Lot 5 (0.46 ac) for outdoor stage & seating.

Public Streets - _____ Private Streets - Proposed private streets.

Describe Pedestrian Walkways (location, width, material) - _____
+/-30' wide plaza/walk provides central connectivity for MU and commercial buildings. Materials TBD.

Describe Bike Paths (location, width, material) - _____
4-ft wide bike paths are proposed via private streets. Bike storage facilities are proposed throughout development.

FLOOD ZONE DATA: (This Info Must Be Filled Out Completely Prior to Acceptance):

Total Acreage of Site in Special Flood Hazard Area - N/A

- a. A note must be provided on the final plat documenting the current flood zone in which the property or properties are located. The boundary line must be drawn on the plat in situations where two or more flood zones intersect over the property or properties being surveyed.
- b. FEMA FIRM panel(s): #160xxxxxxC, 160xxxxxxE, etc.: 16001C0130H
 FIRM effective date(s): mm/dd/year Revised 2/19/2003
 Flood Zone(s): Zone X, Zone A, Zone AE, Zone AH, etc.: Outside of 0.2% annual floodplain.
 Base Flood Elevation(s): AE ____ .0 ft., etc.: No BFEs.
- c. Flood Zones are subject to change by FEMA and all land within a floodplain is regulated by Chapter 10 of the Star City Code.

- d. Please see link for help with FEMA information <https://msc.fema.gov/portal/search>.
- e. All maps will delineate flood plain lines.

PUBLIC SERVICES (Describe what services are available and agency providing service):

Potable Water - SSWD
 Irrigation Water- Private PI & Little Pioneer surface irrigation supply
 Sanitary Sewer- SSWD
 Fire Protection - Star Fire Protection District
 Schools - West Ada School District.
 Roads - ACHD

SPECIAL ON-SITE FEATURES (Yes or No – If yes explain in your narrative):

Areas of Critical Environmental Concern - No Floodplain - No
 Evidence of Erosion - No Fish Habitat - No
 Historical Assets - No Mature Trees - No
 Riparian Vegetation - No Steep Slopes - No
 Stream/Creek - No Unstable Soils - No
 Unique Animal Life - No Unique Plant Life - No

Application Requirements:

*(Applications are required to contain one copy of the following unless otherwise noted. **When combining with other applications (Annexation, CUP, etc.) please include one paper copy for all applications**)*

Applicant (√)	Description	Staff (√)
	Pre-application meeting with Planning Department required prior to neighborhood meeting.	
	Copy of neighborhood meeting notice sent to property owners within 300 feet and meeting sign-in sheet. (Please contact the City for addresses & labels) (Applicants are required to hold a neighborhood meeting to provide an opportunity for public review of the proposed project prior to the submittal of an application.)	
	Completed and signed Preliminary Plat Application	
	Fee: Please contact the City for current fee. Fees may be paid in person with check or electronically with credit card. Please call City for electronic payment. Additional service fee will apply to all electronic payments.	
	Narrative explaining the project. (must be signed by applicant)	
x	Legal description of the property (word.doc and pdf version with engineer's seal)	
x	Recorded warranty deed for the subject property	
	If the signature on this application is not the owner of the property, an original notarized statement (affidavit of legal interest) from the owner stating the applicant is authorized to submit this application.	
	Approval of the proposed subdivision name from Ada County Surveyor's office.	
x	One (1) 8½" X 11" copy and electronic copy in pdf. format of vicinity map showing the location of the subject property	
x	One (1) full-size copy and one (1) 11" X 17" copy of the Preliminary Plat	
x	Electronic copy in pdf. format of Preliminary Plat	
x	One (1) full-size copy and one (1) 11" X 17" copy of the landscape plan	
x	Electronic copy in pdf. format of landscape plan	
x	Electronic copy in pdf. format of preliminary site grading & drainage plans	
	Phasing plan shall be included in the application if the project is to be phased.	

	Letter of authorization from the local Post Office approving mailbox delivery to subdivision including location(s) of mailbox clusters. Locations shall be indicated on Preliminary Plat.	
See pre-plat	List of name(s) and addresses of all canal or irrigation ditches within or contiguous to the proposed development.	
	One (1) copy of names and addresses printed on address labels, of property owners within three hundred feet (300') of the external boundaries of the property being considered as shown on record in the County Assessor's office. Please contact the City to request addresses and labels.	
x	Site report of the highest seasonal groundwater elevation prepared by a registered soils scientist. (If requested by City Engineer)	
	Special Flood Information – Must be included on Preliminary Plat and Application form.	
x	One (1) 8½" X 11" copy and electronic copy in pdf format of streetlight design and location information. Streetlights shall meet all City "Dark Sky" requirements.	
	Written confirmation that a traffic impact study is not required and/or has been submitted for review to Ada County Highway District/Canyon Highway District No. 4/Idaho Transportation Department (if applicable).	
	One (1) copy of the Electronic versions of submitted application including neighborhood meeting information, signed application, narrative, legal description, warranty deed, vicinity map, preliminary plat, landscape plan, preliminary site grading & drainage plans, irrigation district information, streetlight design & location, confirmation of a traffic impact study shall be submitted in original pdf format (no scans for preliminary plat, landscape plans or grading and drainage plans) on a thumb drive only (no discs) with the files named with project name and plan type. We encourage you to also submit a colored version of the preliminary plat and/or landscape plan for presentation purposes prior to City Council.	
	Signed Certification of Posting with pictures. (see attached posting requirements and certification form) – To be completed by application after acceptance of application. Staff will notify applicant of hearing and posting date.	
	Property shall be annexed into Star Sewer and Water District prior to Final Plat approval. Please contact SSWD for details.	

FEE REQUIREMENT:

**** I have read and understand the above requirements. I further understand fees will be collected at the time of filing an application. I understand that there may be other fees associated with this application incurred by the City in obtaining reviews or referrals by architect, engineering, or other professionals necessary to enable the City to expedite this application. I understand that I, as the applicant, am responsible for all payments to the City of Star.**

Applicant/Representative Signature

Date



725 E 2nd St
Meridian, ID 83642
208.884.2824

CONSULTANT

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CLIENT: JOHN BROWNING
AMAZON FALLS PHASE 4
STAR IDAHO

PROFESSIONAL SEAL

NOT FOR PERMIT

NO.	DESCRIPTION	DATE
D	CUP	12.2.21
C	CUP	11.23.21
B	SCHEMATICS	11.5.21
A	SCHEMATICS	10.12.21

SITE PLAN

A-101

JOB NUMBER
DRAWN BY

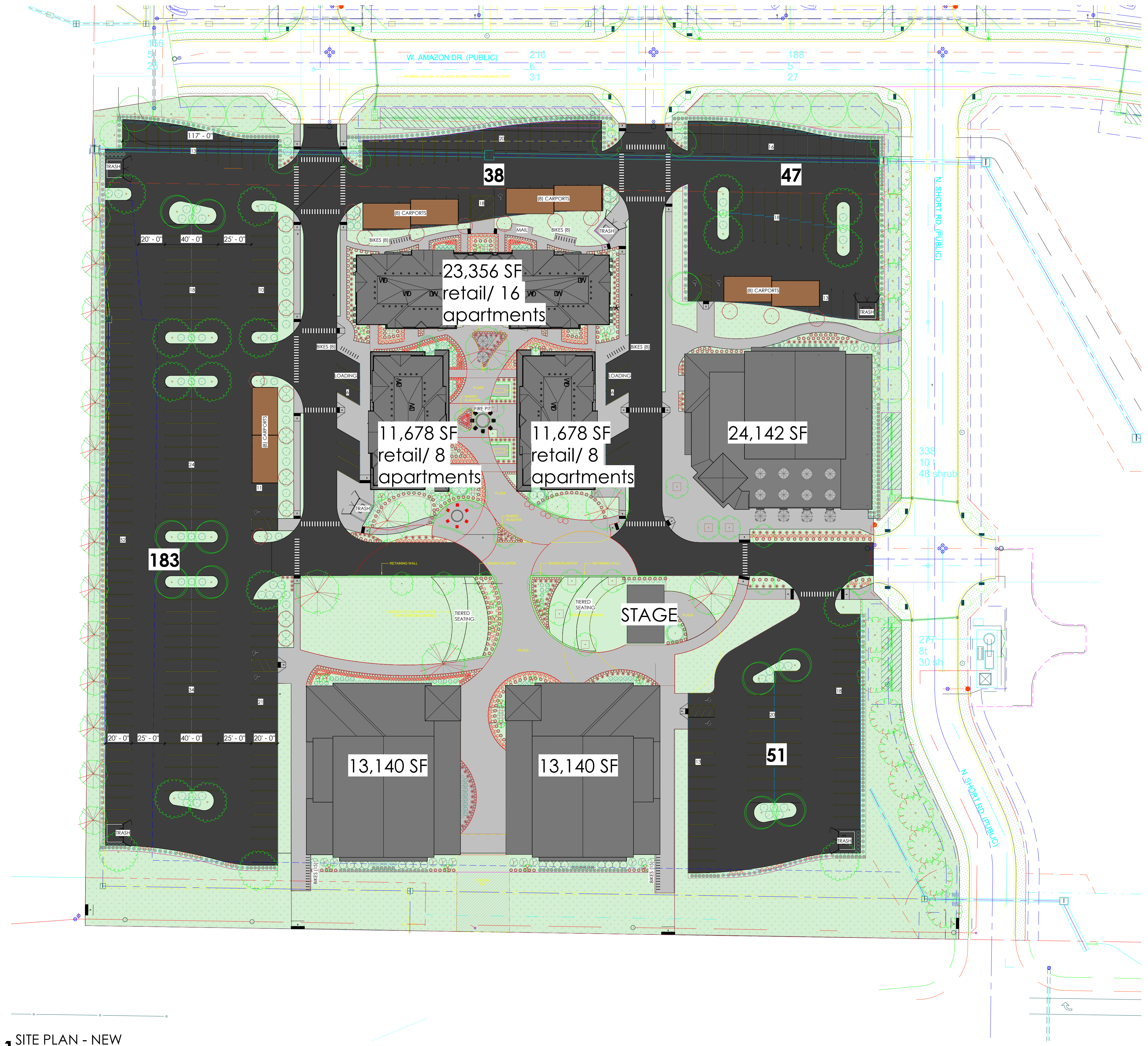
SITE CHARACTERISTICS
 ZONING DISTRICT: MU
 LOT AREA: 4.479 (S), 4.07 (N)
 BUILDING 1: 13,140 SF
 BUILDING 2: 13,140 SF
 BUILDING 3: 24,142 SF (10,006 SF RESTAURANT)
 MIXED USE:
 8-PLEX COMMERCIAL: 4075 SF X2 = 8150 SF
 8-PLEX SECOND FLOOR RESIDENTIAL 3902 SF X2 = 7804 SF
 8-PLEX THIRD FLOOR RESIDENTIAL: 3,888 SF X2 = 7776 SF
 8-PLEX TOTAL: 8150 SF COMMERCIAL/15580 SF RESIDENTIAL
 16-PLEX TOTAL: 16,300 SF COMMERCIAL/ 15,580 SF RESIDENTIAL

SITE ANALYSIS:
 BUILDING AREA: 74,872 SF COMMERCIAL/31,160 SF RESIDENTIAL (32 APARTMENTS)

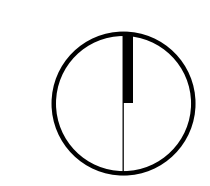
PARKING STALLS:
 (REFER TO CODE SECTION)
 CALCULATION: 74872/250 = 300 COMMERCIAL
 RESIDENTIAL PARKING: 1 BED: 1.5 (1 COVERED)
 2 BED: 2 (1 COVERED)
 GUEST: .25 PER UNIT
 RETAILS PARKING: 1 PER 250 SF
 RESTAURANTS: 1 PER 150 SF (10,066 SF RESTAURANT)
 REQUIRED STANDARD STALLS: 300 COMMERCIAL +64 RESIDENTIAL (32 COVERED) = 392
 REQUIRED ADA STALLS:
 PROVIDED STANDARD STALLS: 282
 PROVIDED ADA STALLS: 8
 TOTAL STALLS: 290(74% OF REQUIRED)



VICINITY MAP



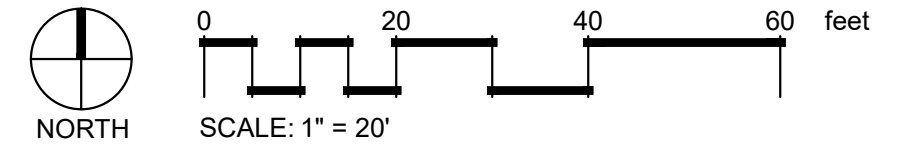
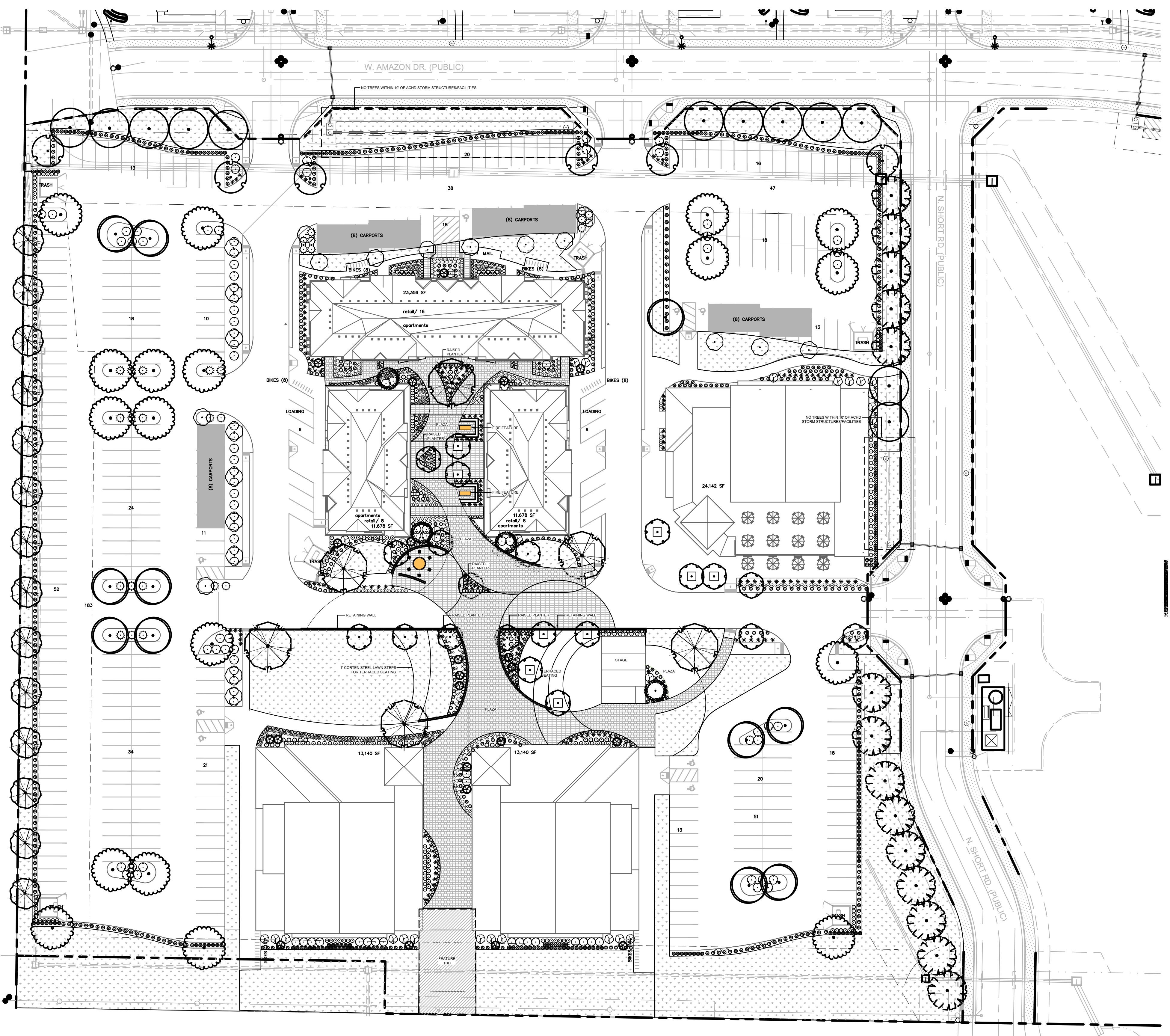
1 SITE PLAN - NEW
1" = 40'-0"



PLANT SCHEDULE

TREES	CODE	BOTANICAL / COMMON NAME	CONT	CAL	SIZE	QTY	REMARKS
	ACE GIN	Acer ginnala 'Flame' / Flame Amur Maple	B&B	2"		21	20' H x 20' W, CLASS I
	ACE PAR	Acer platanoides 'Parkway' / Norway Maple	B&B	2"		6	CLASS II, 25' H x 25' W
	BET CUL	Betula nigra 'Cully' TM / Heritage Birch	B&B	2.5"		6	50' H x 40' W
	FP	Fraxinus pennsylvanica 'Patmore' / 'Patmore' Green Ash	B&B	2"		11	40' h x 20' w Class II
	GLE SH2	Gleditsia triacanthos inermis 'Shademaster' TM / Shademaster Locust	B&B	2"		18	35' H x 35' W, CLASS II
	LS2	Liquidambar styraciflua 'Cherokee' / Cherokee Sweet Gum	B&B	2"		14	40' h x 27' w, Class II
	LIR FAS	Liriodendron tulipifera 'Fastigiata' / Tulip Tree	B&B	2"		22	50' H x 15' W, CLASS II
	PIC BUR	Picea omorika 'Bruns' / Bruns Spruce	B&B		7'-8'	22	30' H x 8' W
	PIN FLE	Pinus flexilis 'Vanderwolf's Pyramid' / Vanderwolf's Pyramid Pine	B&B		8' H MIN	4	20'-25' tall & 10'-15' wide
	TIL SEN	Tilia americana 'Sentry' / American Linden	B&B	2"		12	Class II, 45' H x 30' W
	TIL GRE	Tilia cordata 'Greenspire' / Greenspire Littleleaf Linden	B & B	2"		14	35' H x 25' W, Class II
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	CAL KAR	Calamagrostis acutiflora 'Karl Foerster' / Feather Reed Grass	2 gal			350	30" H x 3' W
	HEL BLU	Helictotrichon sempervirens 'Blue Oats' / Blue Oat Grass	2 gal			321	30" H x 30" W
	JUN W12	Juniperus horizontalis 'Wiltonii' / Blue Rug Juniper	5 gal			28	8" H x 8" W
	NAS PON	Nassella tenuissima 'Pony Tails' / Mexican Feathergrass	2 gal			426	2' H x 2' W
	PEN KAR	Pennisetum orientale 'Karley Rose' / Karley Rose Fountain Grass	2 gal			190	30" H x 30" W
	PHY D12	Physocarpus opulifolius 'Diablo' / Diablo Ninebark	5 gal			30	6' H x 8' W
	PIN BLU	Pinus strobus 'Blue Shag' / Blue Shag White Pine	5 gal			65	3' H x 4' W
	RHA RHA	Rhamnus frangula 'Fine Line' / Fine Line Buchthorn	5 gal			157	7' H x 3' W
	RHU GR3	Rhus trilobata 'Gro Low' / Skunkbush Sumac	5 gal			82	30" H x 8' W
	ROS FL5	Rosa x 'Flower Carpet Red' / Rose	3 gal			242	18" H x 3' W
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	VIB BUR	Viburnum x burkwoodii / Burkwood Viburnum	5 gal			16	6' H x 8' W
	YUC GOL	Yucca filamentosa 'Golden Sword' / Adam's Needle	3 gal			208	3' H x 4' W

- LAWN: TALL TURF-TYPE FESCUE
SODDED IN ROW, SEEDED ELSEWHERE
- PLAZA & FOUNDATION PLANTINGS: TBD
- PAVING INTEREST TYPE 1 (TBD)
- PAVING INTEREST TYPE 2 (TBD)



STACK ROCK GROUP
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 404 S 8th St. #154
 Boise, ID 83702
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WILLET C HOWARD, PLA
 OFFICE: (208) 345.0500 EMAIL:
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AMAZON FALLS 4

STAR, IDAHO

REVISIONS

MRK	DATE	Description
△	**	**

JOB NO: 21-2194
 DATE: 12.13.2021
 DRAWN BY: JB
 CHECKED BY: JB

DRAWING TITLE

LANDSCAPE PLAN OVERVIEW

SHEET NUMBER

L100

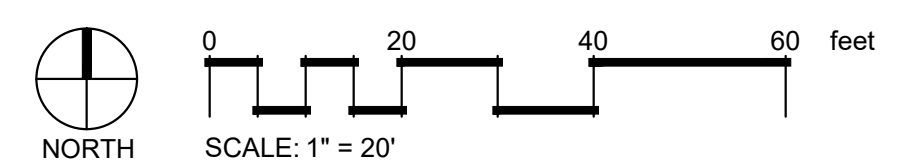
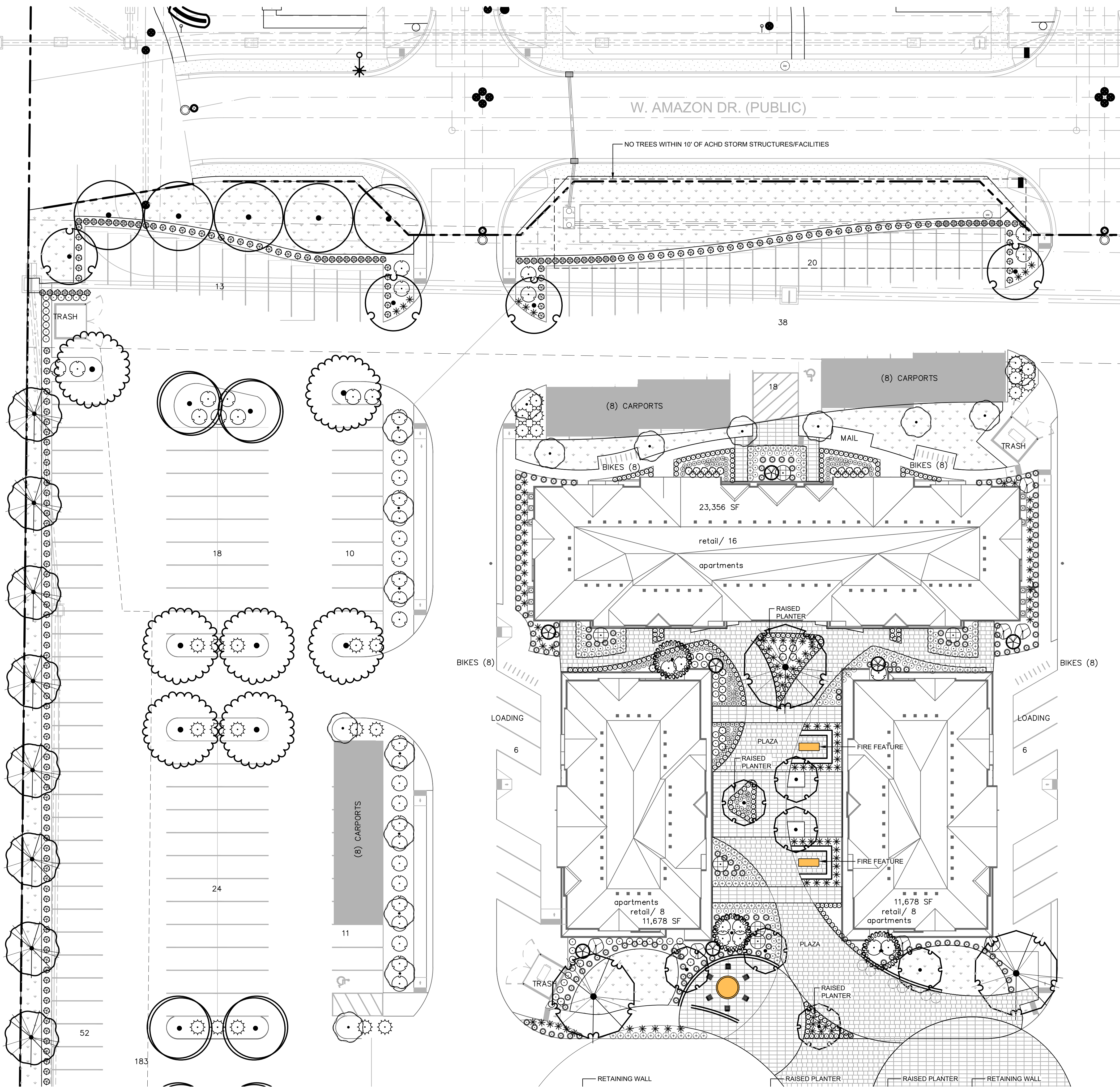
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STACK ROCK GROUP - CITY REVIEW SET

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	PIN FLE	Pinus flexilis 'Vanderwolf's Pyramid' / Vanderwolf's Pyramid Pine	B&B		8' H MIN	4	20'-25' tall & 10'-15' wide
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SODDED IN ROW, SEEDED ELSEWHERE
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- PAVING INTEREST TYPE 2 (TBD)



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AMAZON FALLS 4
 STAR, IDAHO

REVISIONS

MRK	DATE	Description
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JOB NO: 21-2194
 DATE: 12.13.2021
 DRAWN BY: JB
 CHECKED BY: JB

DRAWING TITLE

LANDSCAPE PLAN - AREA 1

SHEET NUMBER
L101

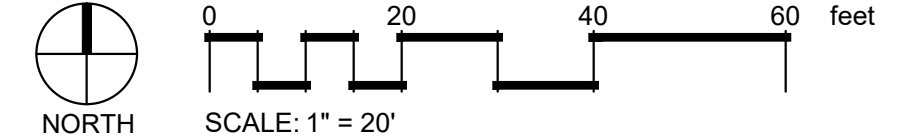
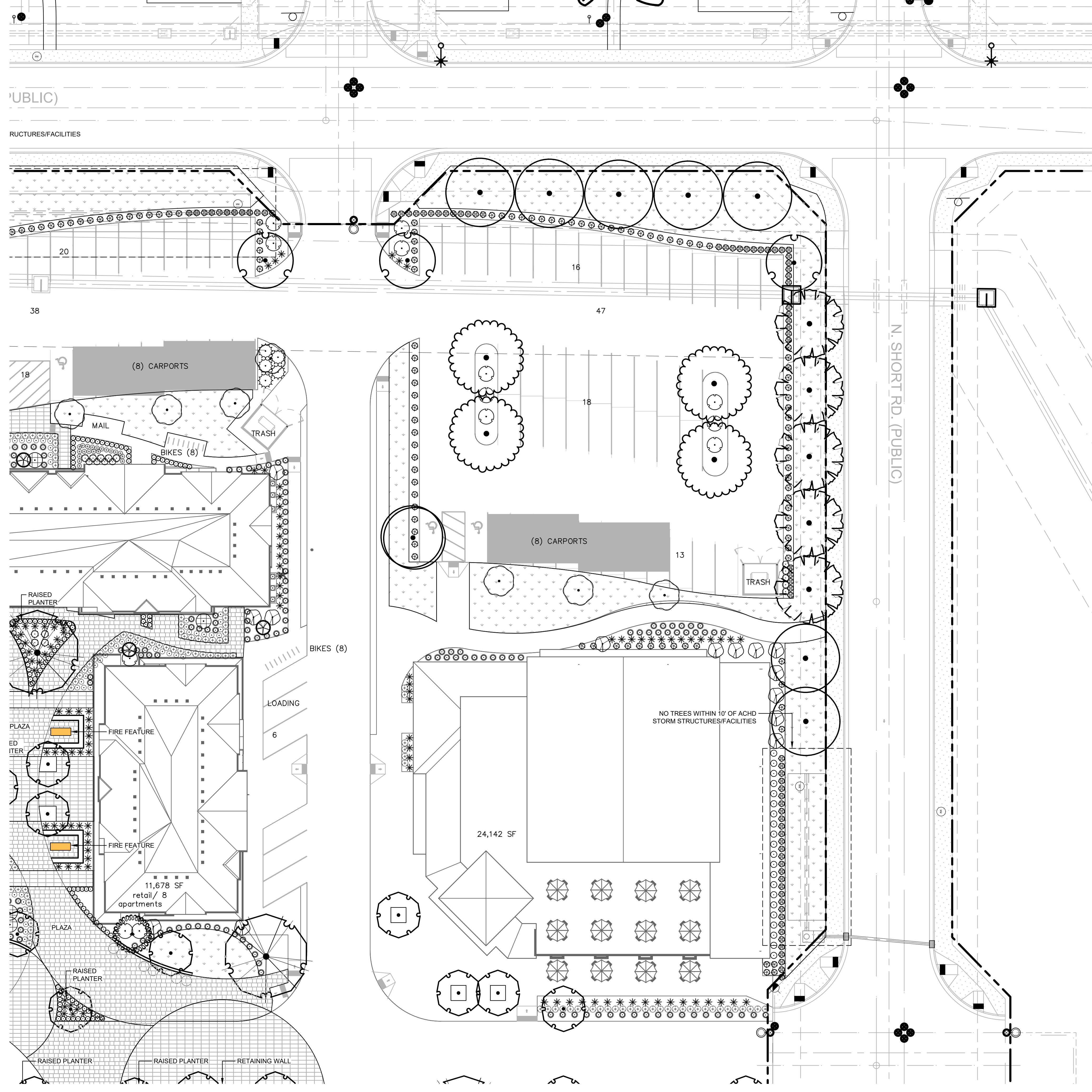
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STACK ROCK GROUP - CITY REVIEW SET

PLANT SCHEDULE

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	RHU GR3	Rhus trilobata 'Gro Low' / Skunkbush Sumac	5 gal			82	30"H x 8' W
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AMAZON FALLS 4
 STAR, IDAHO

REVISIONS

MRK	DATE	Description
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JOB NO: 21-2194
 DATE: 12.13.2021
 DRAWN BY: JB
 CHECKED BY: JB

DRAWING TITLE

LANDSCAPE PLAN - AREA 2

SHEET NUMBER
L102

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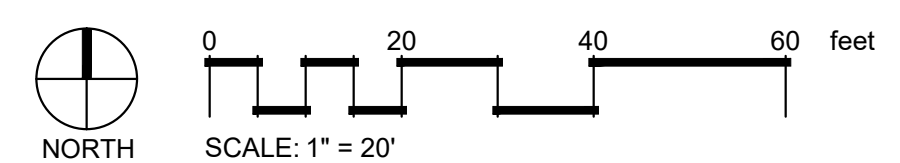
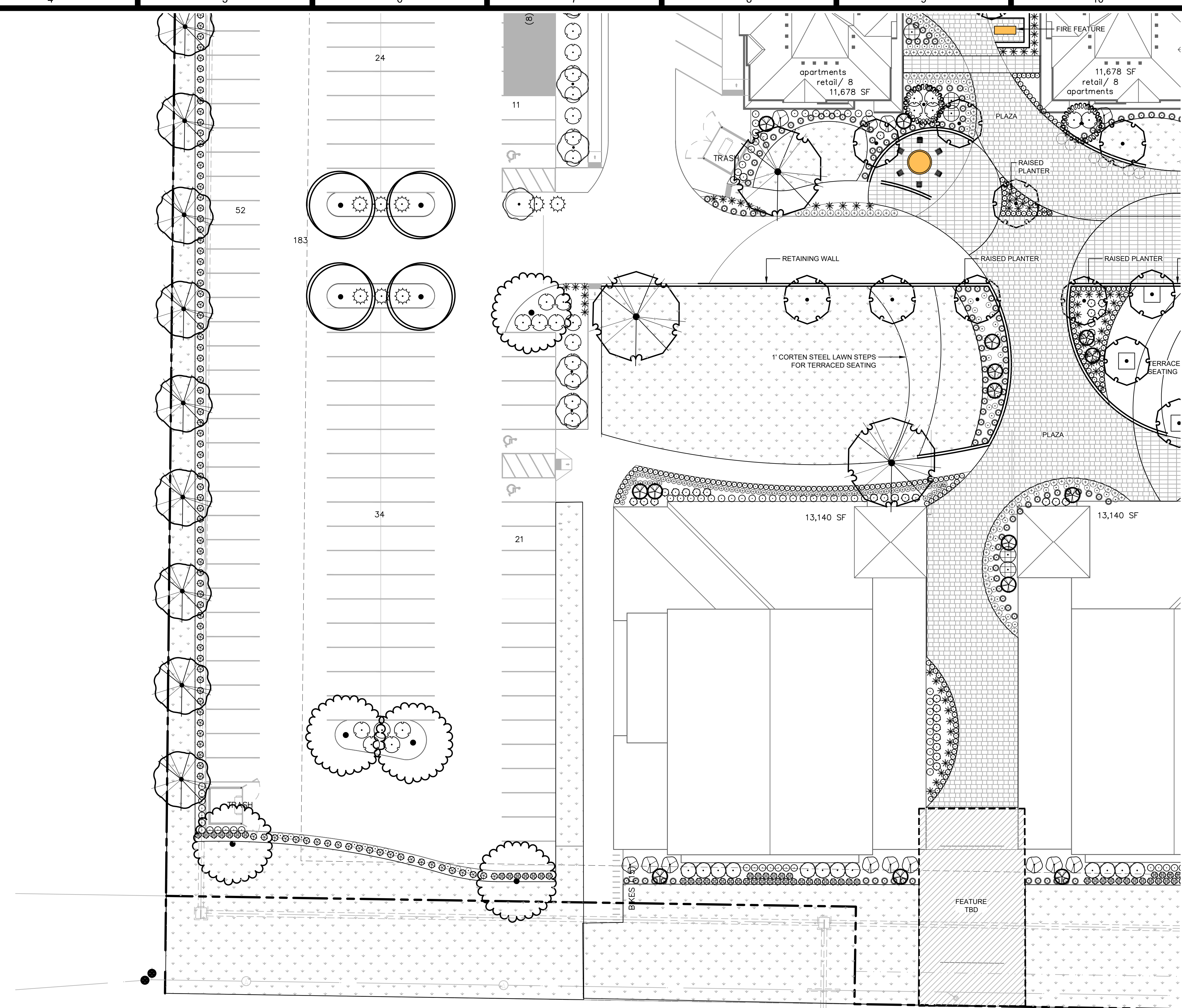
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	YUC GOL	Yucca filamentosa 'Golden Sword' / Adam's Needle	3 gal			208	3'H x 4'W

- LAWN: TALL TURF-TYPE FESCUE
SODDED IN ROW, SEEDED ELSEWHERE
- PLAZA & FOUNDATION PLANTINGS: TBD
- PAVING INTEREST TYPE 1 (TBD)
- PAVING INTEREST TYPE 2 (TBD)



Section 7, Item B.

STACK ROCK GROUP
LANDSCAPE ARCHITECTURE & MASTER PLANNING

(208) 345-0500
404 S 8th St. #154
Boise, ID 83702
StackRockGroup.com

WILLET C HOWARD, PLA OFFICE: (208) 345.0500 EMAIL: WILLET@STACKROCKGROUP.COM WWW.STACKROCKGROUP.COM

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Scale PRELIMINARY

NOT FOR CONSTRUCTION

AMAZON FALLS 4

STAR, IDAHO

REVISIONS

MRK	DATE	Description
△	**	**

JOB NO: 21-2194
DATE: 12.13.2021
DRAWN BY: JB
CHECKED BY: JB

DRAWING TITLE

LANDSCAPE PLAN - AREA 4

SHEET NUMBER

L104

STACK ROCK GROUP - CITY REVIEW SET



STACK ROCK GROUP
 LANDSCAPE ARCHITECTURE & MASTER PLANNING
 (208) 345-0500
 404 S 8th St. #154
 Boise, ID 83702
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AMAZON FALLS 4

STAR, IDAHO

REVISIONS

MRK	DATE	Description
△	**	**

JOB NO: 21-2194
 DATE: 12.13.2021
 DRAWN BY: JB
 CHECKED BY: JB

DRAWING TITLE

LANDSCAPE DETAILS

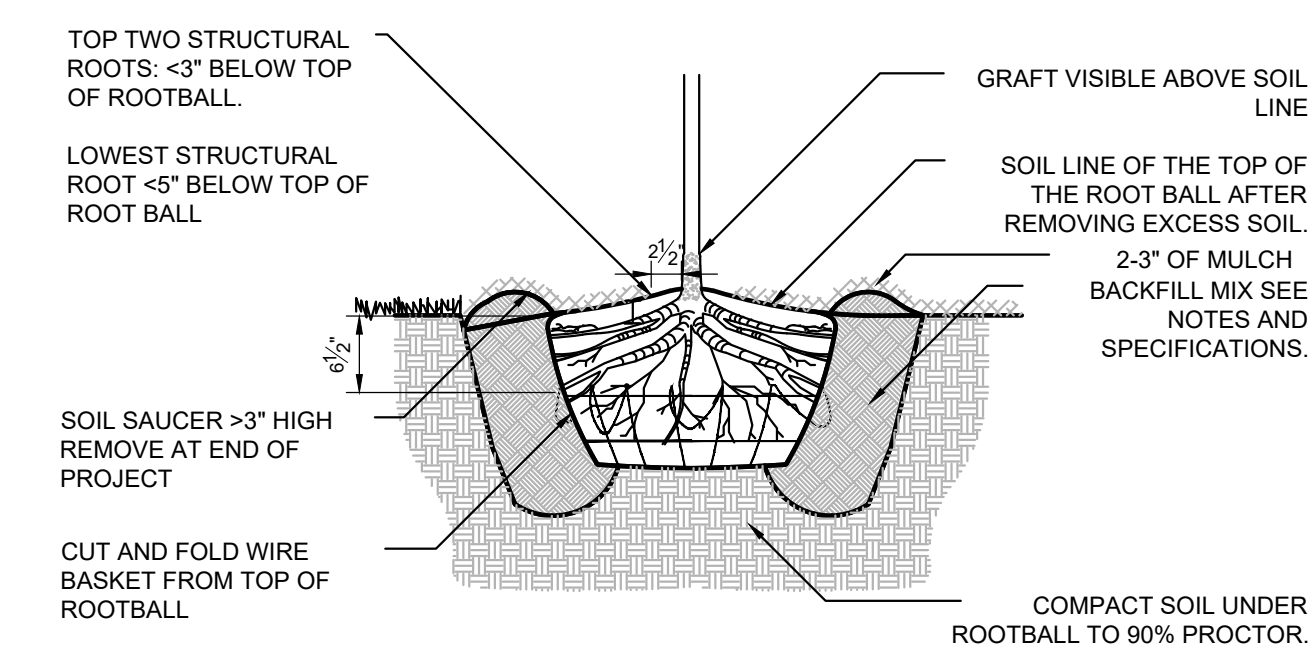
SHEET NUMBER

L150

STACK ROCK GROUP - CITY REVIEW SET

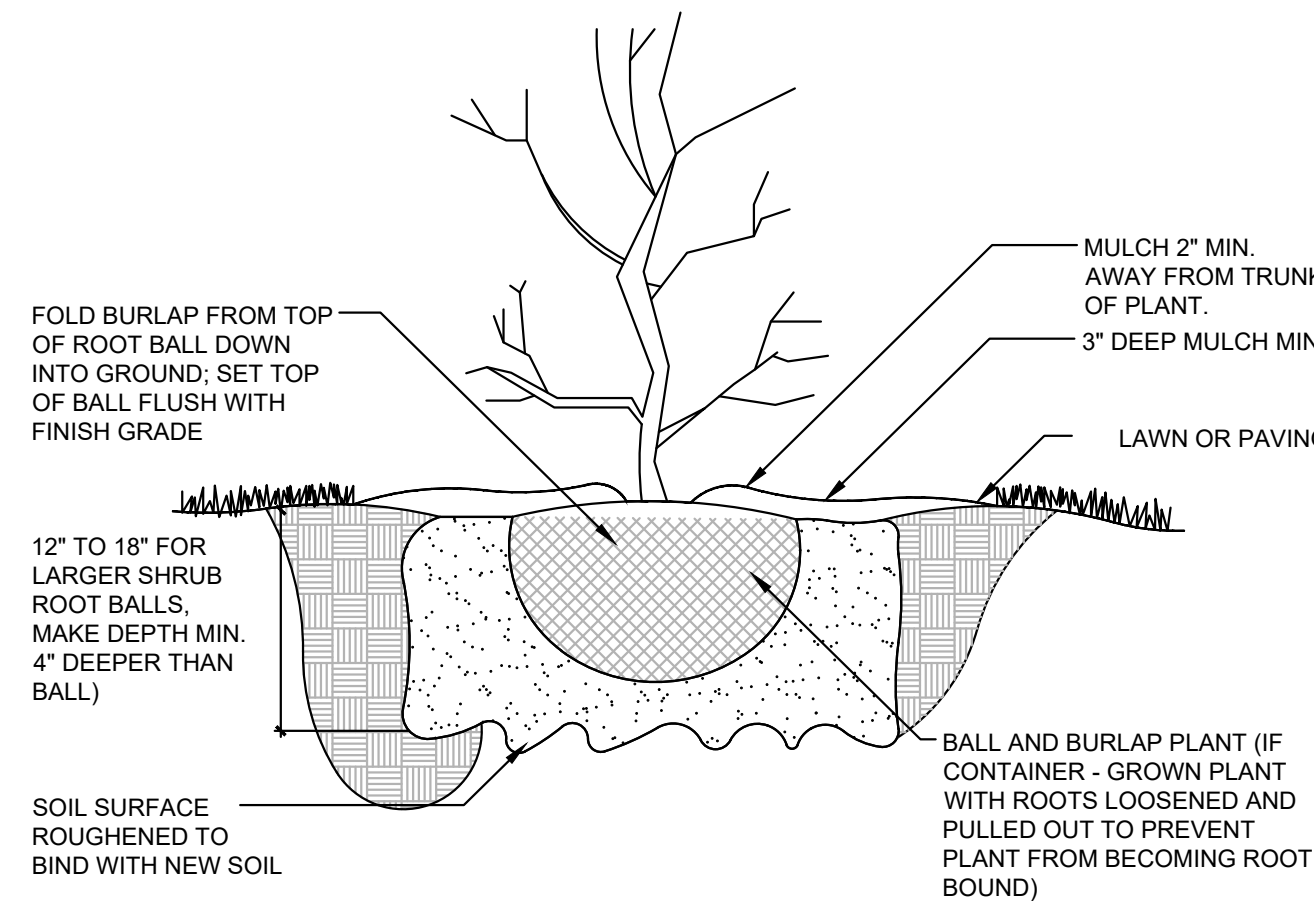
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- NOTES:**
- DO NOT DAMAGE OR CUT LEADER
 - DO NOT DISTURB ROOT OR DAMAGE ROOT BALL WHEN INSTALLING TREE OR TREE STAKES.
 - TREE STAKING SHALL BE AT THE DISCRETION OF CONTRACTOR. HOWEVER ANY TREES DISTURBED FROM PLUMB DURING THE PLANT WARRANTY PERIOD WILL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE.
 - WATER PLANTS THOROUGHLY IMMEDIATELY AFTER INSTALLATION.
 - REMOVE ALL BURLAP, TWINE, ROPE, OR MATERIAL FROM THE TOP 1/3 OF THE ROOTBALL.
 - 5" DIAMETER PLANTER BED/MULCH RING AROUND THE TRUNK OF THE TREE. 3" OF MULCH MIN. DO NOT PLACE MULCH WITHIN 2" OF TRUNK OF TREE.



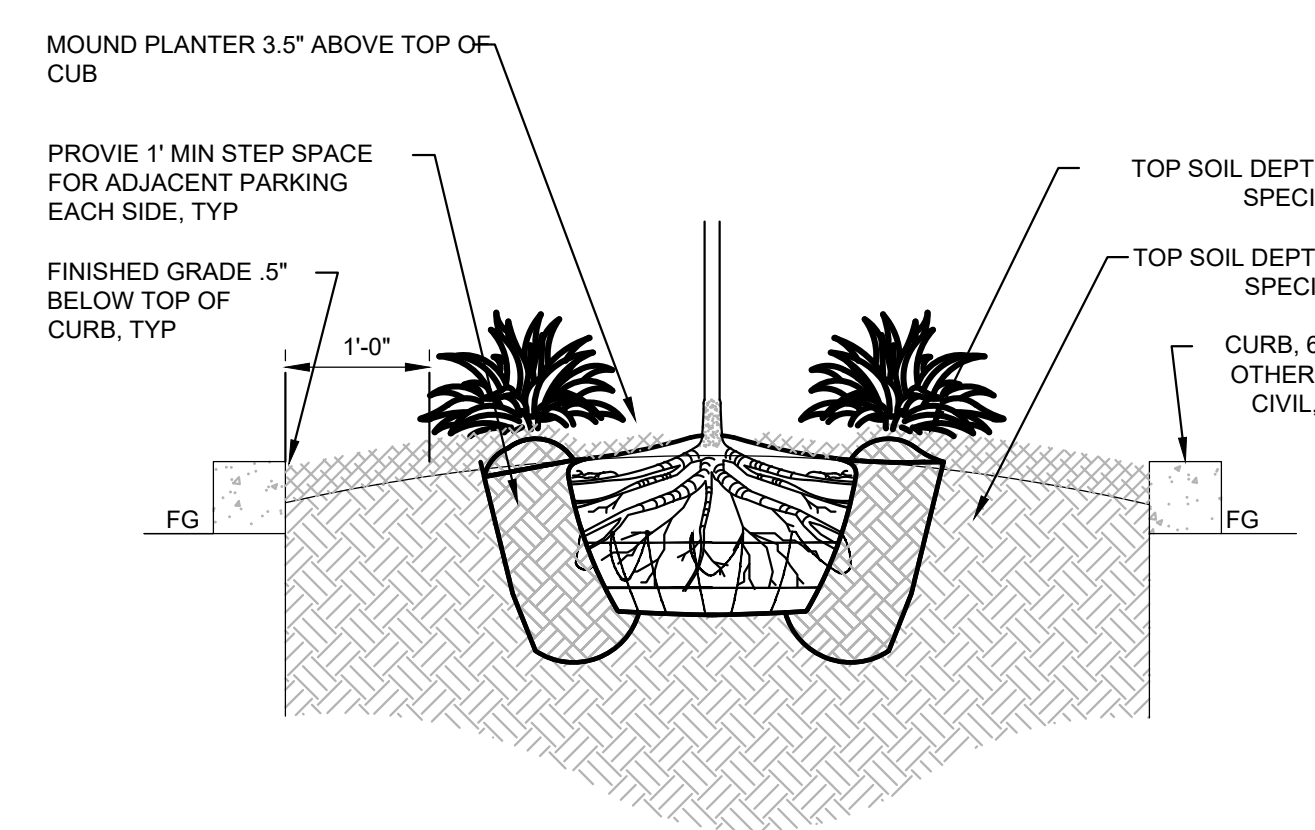
1 BALL & BURLAP TREE PLANTING
 3/4" = 1'-0" 3293-01

- NOTE:**
- REMOVE ALL TAGS, TWINE OR OTHER NON BIODEGRADABLE MATERIALS ATTACHED TO PLANT OR ROOT MASS.
- BACKFILL SHALL BE 100% TOPSOIL. WATER SETTLE ALL PLANTINGS TO ENSURE PLANT ROOTBALL MAINTAINS 1/2\"/>**

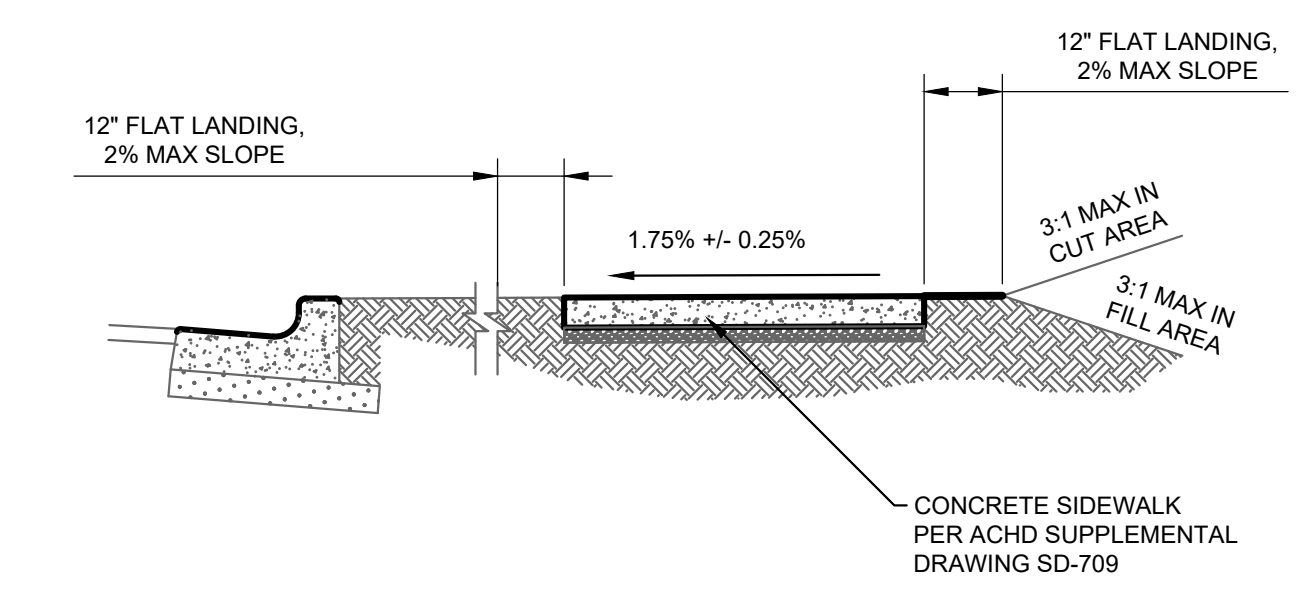


2 SHRUB PLANTING
 1" = 1'-0" 329333-03

- NOTE:**
- *CURB & ADJACENT PAVEMENT PER CIVIL OR HARDSCAPE PLANS
 - *TREE & SHRUB TO BE INSTALLED PER RESPECTIVE DETAILS
 - *PLANTS & MULCH PER PLAN



3 PLANTER ISLAND DETAIL
 3/4" = 1'-0" P-CO-01



NOTE: REFERENCE ACHD SUPPLEMENTAL DRAWING SD-709 & CIVIL DRAWINGS

4 CONCRETE SIDEWALKS ADJ LANDING-12\"/>

CONSULTANT

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AUTHORIZATION.
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CLIENT:
JOHN BROWNING
AMAZON FALLS PHASE 4
STAR IDAHO

PROFESSIONAL SEAL

NOT FOR PERMIT

NO.	DESCRIPTION	DATE
B	CUP	11.23.21
A	SCHEMATICS	11.5.21

RENDERINGS

A-901



2 3D View 2



1 3D View 1

Boise Office
1101 W. River St.
Suite 110
Boise, Idaho 83702
Tel. (208) 629-7447

Challis Office
1301 E. Main Ave.
P.O. Box 36
Challis, Idaho 83226
Tel. (208) 879-4488

Twin Falls Office
213 Canyon Crest Drive
Suite 200
Twin Falls, Idaho 83301
Tel. (208) 969-9585

Fax (all offices)
(208) 629-7559



SAWTOOTH LAW OFFICES, PLLC

September 14, 2022

RECEIVED
9/19/22
Jmac

D. [unclear]
S. Bryce Farris
Evan T. Roth
Daniel V. Steenson
Andrew J. Waldera
Brian A. Faria
Patxi Larrocea-Phillips
John A. Richards
Matthew A. Sturzen
Katie L. Vandenberg-Van Vliet
James R. Bennetts (retired)

City of Star
Attn: Shawn Nickel
P.O. Box 130
Star, Idaho 83669

Re: File #: PP-22-08 (Preliminary Plat) - **Junction Crossing Subdivision**

Dear Mr. Nickel:

Drainage District #2 has a drainage ditch and easement that runs through or abuts this property. The easement is 100 feet, 50 feet each side of the centerline, for open drains and 50 feet, 25 feet each side of the centerline for piped or closed drains. The above named development currently has piped drains that are part of a entered into License Agreement with the District for the development of Amazon Falls Subdivision that will need to be complied with. The developer/owner must contact the District's attorney's, Sawtooth Law Offices, PLLC, for approval before any new encroachments, change of easement, or drainage discharge into the District's facilities occurs. The District must review drainage plans and construction plans prior to any approval.

The District generally requires a License Agreement prior to any approval for the following reasons:

1. Relocation of a District facility which would also require a new easement and relinquishment of the old easement once the relocation has been completed.
2. Piping of District facility.
3. Encroachment on a District facility with gas, water and sewer lines, utility lines, roadways, bridges or any other structures.
4. Drainage discharges into District facilities.

Also, please be advised that the District does not approve of trees within the District's easement. Therefore, any existing trees within the District's easement will need to be removed. On occasion, the District may make exceptions on a case by case basis, which requires the developers/owners to obtain written permission from the District for existing trees to remain.

Please contact me if you have any questions.

Yours very truly,

S. Bryce Farris

www.sawtoothlaw.com

SBF:krk
cc:

Attorneys licensed in Idaho, Montana, Oregon and Washington

DD#2 Board of Directors

LEGAL NOTICE PUBLIC HEARING

Notice is hereby given that the Star City Council will hold a Public Hearing on **October 4, 2022** at the Star City Hall, 10769 W. State Street, Star, Idaho at 7:00 pm, or as soon thereafter as the matter may be heard.

Application: The Quarry at River Park Estates Subdivision
Files #'s AZ-22-13 Annexation-Zoning
DA-22-13 Development Agreement

Applicant/Representative: Todd Tucker, Boise Hunter Homes

Owner: H5 Land Holdings 6, LLC & School House Ranch, LLC

Action: The Applicant is seeking approval of an Annexation and Zoning (Residential R-3 & Mixed-Use MU) and a Development Agreement for a proposed future residential development. The property is located at 21339 Blessinger Road in Star, Idaho, and consists of 185.93 acres.

Property Location: The subject property is generally located on the south side of State Hwy 44, west of Blessinger Road and east of Trigger Ranch Lane. Canyon County Parcel No. R340490000.

Information/Comments: A complete copy of the applications are available at City Hall for public review. The City invites all interested parties to attend the meeting and provide public testimony. Written comments will be accepted by the City up to 2 days prior to the date of the public hearing.

Services for persons with disabilities may be made available if notice is received in advance of the meeting by calling Star City Hall at (208) 286-7247.

Shawn L. Nickel
Planning Director and Zoning Administrator
snickel@staridaho.org



CITY OF STAR

LAND USE STAFF REPORT

TO: Mayor & Council

FROM: City of Star – Planning & Zoning Department *Shen T. Muth*

MEETING DATE: **October 4, 2022 – PUBLIC HEARING**

FILE(S) #: AZ-22-12 Annexation and Zoning – The Quarry at River Park
DA-22-13 Development Agreement

OWNER/APPLICANT/REPRESENTATIVE

Applicant:

Todd Tucker
Boise Hunter Homes
923 S. Bridgeway Place
Eagle, Idaho 83616

Applicant/Property Owner:

H5 Land Holdings, LLC
School House Ranch, LLC
923 S Bridgeway Place
Eagle, Idaho 83616

REQUEST

Request: The Applicant is seeking approval of an Annexation and Zoning (Residential R-3 & Mixed-Use MU) and a Development Agreement for a proposed future residential development. The property is located at 21339 Blessinger Road in Star, Idaho, and consists of 185.93 acres.

PROPERTY INFORMATION

Property Location: The subject property is generally located on the south side of State Hwy 44, west of Blessinger Road and east of Trigger Ranch Lane. County Parcel No. R3404900000.

Surrounding Land Use/Designations:

	Zoning Designation	Comp Plan Designation	Land Use
Existing	AG (Canyon County)	Estate Urban Residential/Commercial/Industrial Corridor	Agricultural/Residential
Proposed	Residential (R-3-DA)/Mixed Use (MU)	Estate Urban Residential/Commercial/Industrial Corridor	Single-Family Residential/Mixed Use
North of site	AG (Canyon County)	Commercial/Industrial Corridor	Agricultural/Single-Family Residential
South of site	AG (County)	Estate Urban Residential/Floodway	Agricultural/Vacant
East of site	Residential (R-2)	Estate Urban Residential	Single-Family Residential River Park Subdivision
West of site	Rural Residential (Canyon County)	Rural Residential with Special Transition Overlay Area	Single-Family Residential - Leighton Lakes Estates

Existing Site Characteristics: The property currently has a single-family residential home with outbuildings, two large lakes and vacant ground.

Irrigation/Drainage District(s): Canyon County Water Company, Ltd
P.O. Box 11
Star, Idaho 86916

Flood Zone: This property is located in a Special Flood Hazard Area.
Flood Zone: Zone AE
FEMA FIRM Panel Number: 16027C0266G
Effective Date: 6/7/2019

Special On-Site Features:

- ✪ Areas of Critical Environmental Concern – No known areas.
- ✪ Evidence of Erosion – No evidence.
- ✪ Fish Habitat – Yes, in the lakes and Boise River.
- ✪ Floodplain – Yes.
- ✪ Mature Trees – Yes.
- ✪ Riparian Vegetation – Yes.
- ✪ Steep Slopes – None.
- ✪ Stream/Creek – Lawrence Kennedy & Canyon Canal.
- ✪ Unique Animal Life – No unique animal life has been identified.
- ✪ Unique Plant Life – No unique plant life has been identified.

- ✪ Unstable Soils – No known issues.
- ✪ Historical Assets – No historical assets have been observed.
- ✪ Wildlife Habitat – Yes.

APPLICATION REQUIREMENTS

Pre-Application Meeting Held	March 24, 2022
Neighborhood Meeting Held	May 16, 2022
Application Submitted & Fees Paid	August 30, 2021
Application Accepted	September 8, 2022
Residents within 300' Notified	September 13, 2022
Agencies Notified	September 7, 2022
Legal Notice Published	September 16, 2022
Property Posted	September 21, 2022

HISTORY

This property does not have any history of land use applications within the City of Star.

CODE DEFINITIONS / COMPREHENSIVE PLAN

UNIFIED DEVELOPMENT CODE:

8-1B-1: ANNEXATION AND ZONING; REZONE:

B. Standards:

1. The subject property shall meet the minimum dimensional standards of the proper district.
2. The city may require a development agreement in conjunction with the annexation and zoning, or rezone, pursuant to Idaho Code section 67-6511A, which may include a concept plan. In addition to other processes permitted by city and state code, exceptions or waivers of standards, other than use, may be permitted through execution of a development agreement. A development agreement and concept plan shall be required for any rezone to a mixed-use zone, high density zone or land which includes steep slope (land over 25%) or floodway.
3. The termination of a development agreement shall result in the reversal of the official zoning map amendment approval and applicable development approval for any undeveloped portion of property subject to the development agreement. The undeveloped property subject to the development agreement shall be rezoned to the district classification as designated by the development agreement. When no designation is provided, the property shall revert to its original zoning or, if the original designation no longer exists, to the closest current equivalent zoning as determined by the current Comprehensive Plan Land Use Map designation.

4. An amendment or termination of a previously recorded development agreement shall be recorded in the office of the county recorder by the clerk.

5. An approved development agreement must be executed within ninety (90) days of the meeting at which the development agreement is approved by the city council. A one-time administrative extension of maximum thirty (30) days may be granted by the zoning administrator. Additional extensions may be approved by majority vote of the city council. Failure to execute the development agreement within the required timeframe will result in the denial of all related applications.

C. Required Findings: The council shall review the application at the public hearing. In order to grant an annexation and zoning or rezone, the council shall make the following findings:

1. The map amendment complies with the applicable provisions of the comprehensive plan;
2. The map amendment complies with the regulations outlined for the proposed district;
3. The map amendment shall not be materially detrimental to the public health, safety, and welfare; and
4. The map amendment shall not result in an adverse impact upon the delivery of services by any political subdivision providing public services within the city.
5. The annexation (as applicable) is in the best interest of city.

8-3A-1: ZONING DISTRICTS AND PURPOSE ESTABLISHED:

R RESIDENTIAL DISTRICT: To provide regulations and districts for various residential neighborhoods. Gross density in a Residential (R) district shall be determined according to the numeral following the R. The numeral designates the maximum number of dwelling units per acre. In zoning designations of R-1, R-2, R-3, R-4 and R-5, housing shall be single family detached unless approved with a PUD or development agreement. Connection to municipal water and sewer facilities are required for all subdivision and lot split applications submitted after the effective date hereof in all districts exceeding one dwelling unit per acre. Wells and septic systems may be permitted for larger lots in this land use designation that are not adjacent to municipal services, as determined by the Sewer District, and if approved by the applicable Health Department. Private streets may be approved in this district for access to newly subdivided or split property. This district does allow for some non-residential uses as specified in 8-3A-3.

(MU) MIXED USE DISTRICT: To provide for a mixture of uses which may, at the sole discretion of the Council, include office, commercial, and/or residential depending upon the specific comprehensive plan area designated as Mixed Use. Development within this zone is to proceed through the PUD process unless a development agreement has already been executed for the particular property. Identifying areas for mixed-use development has two objectives. The first objective is to give the city a better tool to manage the type of developments through the

planned unit development and/or the Development Agreement process. The second objective is that this zone may allow the development community to be more innovative in design and placement of structures subject to Council review and approval. Rezoning within this land use designation is to be strictly monitored by the city to assure that the Mixed-Use areas are not being used simply to justify high density residential use. Residential uses may be part of an overall mixed-use development that includes a non-residential component and may not exceed 30% of the overall size of the development.

(C-1) NEIGHBORHOOD BUSINESS DISTRICT: To provide for the establishment of convenience business uses which tend to meet the daily needs of the residents of an immediate neighborhood while establishing development standards that prevent adverse effects on residential uses adjoining a C-1 district. Such districts are typically appropriate for small shopping clusters or integrated shopping centers located within residential neighborhoods, where compatible.

(C-2) GENERAL BUSINESS DISTRICT: To provide for the establishment of areas for commercial uses allowed in other commercial zones and commercial uses which are more intensive than those permitted in other commercial zones, and typically located adjacent to arterial roadways and not immediately adjacent to residential, including the establishment of areas for travel related services such as hotels, motels, service stations, drive-in restaurants, offices, limited warehousing, commercial services and retail sales.

DA DEVELOPMENT AGREEMENT: This designation, following any zoning designation noted on the official zoning map of the city (i.e., C-2-DA), indicates that the zoning was approved by the city with a development agreement, with specific conditions of zoning.

8-3A-3: USES WITHIN ZONING DISTRICTS:

The following table lists principal permitted (P), accessory uses (A), conditional (C), or prohibited (N) uses.

ZONING DISTRICT USES				
USES	R	C-1	C-2	MU
Accessory structure - Residential or Commercial	A	A	A	C/P
Adult business/adult entertainment	N	N	N	N
Agriculture, forestry, fishing	N	N	N	N
Airport	N	N	N	N
Animal care facility ₁	N	P	P	C
Artist studio ₁	N	P	P	P
Arts, entertainment, recreation facility ₁	N	C	P	C
Asphalt plant ₁	N	N	N	N
Auction facility	N	N	C	C
Automated Teller Machine (ATM) ₁	N	A	A	A
Automotive hobby ₁	A	N	N	A
Automotive mechanical/electrical repair and maintenance	N	C	P	C
Bakery- Retail or Manufacturing	N	P	P	P/C
Bar/tavern/lounge/drinking establishment	N	C	P	C
Barbershop/styling salon	N	P	P	P
Bed and breakfast	N	P	P	C
Beverage bottling plant	N	N	N	N
Boarding house	C	N	N	C
Brewery/Distillery	N	C	P	C

Brewpub/Wine Tasting	N	C	P	C
Building material, garden equipment and supplies	N	C	P	C
Campground/RV park ₁	N	N	N	C
Caretaker Unit ₁	A	A	A	A
Cement or clay products manufacturing	N	N	N	N
Cemetery ₁	N	N	N	N
Chemical manufacturing plant ₁	N	N	N	N
Child Care center (more than 12) ₁	N	C	C	C
Child Care family (6 or fewer) ₁	A	A	A	A
Child Care group (7-12) ₁	C	C	C	C
Child Care-Preschool/Early Learning ₁	C	C	C	C
Church or place of religious worship ₁	C	C	C	C
Civic, social or fraternal organizations	N	P	P	C
Concrete batch plant ₁	N	N	N	N
Conference/convention center	N	P	P	C
Contractor's yard or shop ₁	N	N	N	N
Convenience store	N	C	P	C
Dairy farm	N	N	N	N
Drive-through establishment/drive-up service window ₁	N	C	C	C
Dwelling:				
Multi-family ₁	C	N	N	C

Secondary ¹	A	N	N	C
Single-family attached	P	N	N	C
Single-family detached	P	N	N	C
Two-family duplex ¹	P	N	N	C
Live/Work Multi-Use ¹	N	N	N	C
Educational institution, private	C	C	C	C
Educational institution, public	C	C	C	C
Equipment rental, sales, and services	N	C	P	C
Events Center, public or private (indoor/outdoor)	N	C	C	C
Fabrication shop	N	N	P	N
Farm	N	N	N	N
Farmers' or Saturday market	N	C	C	C
Feedlot	N	N	N	N
Financial institution	N	P	P	C
Fireworks Stands	N	P	P	P
Flammable substance storage	N	N	N	N
Flex Space	N	C	P	C
Food products processing	N	C	C	N
Fracking	N	N	N	N
Gasoline, Fueling & Charging station with or without convenience store ¹	N	C	P	C
Golf course/Driving Range	C	C	C	C

Government office	N	P	P	C
Greenhouse, private	A	N	N	A
Greenhouse, commercial	N	C	P	C
Guesthouse/granny flat	C	N	N	C
Healthcare and social services	N	P	P	C
Heliport	N	N	N	N
Home occupation ₁	A	N	N	A
Hospital	N	C	P	C
Hotel/motel	N	C	P	C
Ice manufacturing plant	N	N	N	N
Institution	N	C	P	C
Junkyard	N	N	N	N
Kennel	N	N	C	C
Laboratory	N	P	P	C
Laboratory, medical	N	P	P	C
Lagoon	N	N	N	N
Laundromat	N	P	P	P
Laundry and dry cleaning	N	P	P	C
Library	N	P	P	N
Manufactured home ₁	P	N	N	C
Manufactured home park ₁	C	N	N	N
Manufacturing plant	N	N	C	N
Meatpacking plant	N	N	N	N

Medical clinic	N	P	P	P
Mining, Pit or Quarry (excluding accessory pit) ¹	N	N	N	N
Mining, Pit or Quarry (for accessory pit) ¹	A	A	A	A
Mortuary	N	C	P	C
Museum	N	P	P	P
Nursery, garden center and farm supply	N	P	P	C
Nursing or residential care facility ¹	C	P	P	C
Office security facility	N	P	P	C
Parking lot/parking garage (commercial)	N	C	C	C
Parks, public and private	P	P	P	P
Pawnshop	N	P	P	P
Personal and professional services	N	P	P	P
Pharmacy	N	P	P	P
Photographic studio	N	P	P	P
Portable classroom/modular building (for private & public Educational Institutions) ¹	P	P	P	P
Power plant	N	N	N	N
Processing plant	N	N	N	N
Professional offices	N	P	P	C

Public infrastructure; Public utility major, minor and yard ¹	C	C	C	C
Public utility yard	N	C	C	N
Recreational vehicle dump station	N	C	C	A
Recycling center	N	C	C	N
Research activities	N	P	P	C
Restaurant	N	C	P	C
Retail store/retail services	N	C	P	C
Retirement home	C	C	N	C
Riding Arena or Stable, Private/ Commercial	C/N	N	N	N
Salvage yard	N	N	N	N
Sand and gravel yard	N	N	N	N
Service building	N	P	P	C
Shooting range <u>(Indoor/Outdoor)</u>	N	C/N	C/N	C/N
Shopping center	N	C	P	C
Short Term Rentals ¹	A	N	N	A
Solid waste transfer station	N	N	N	N
Storage facility, outdoor (commercial) ¹	N	C	C	C
Storage facility, self-service (commercial) ¹	N	C	C	C
Swimming pool, commercial/public	N	P	P	P
Television station	N	N	C	C

Uses

Temporary living quarters ¹	C	N	N	N
Terminal, freight or truck ¹	N	N	C	N
Truck stop	N	N	C	C
Turf farm	N	N	N	N
Vehicle emission testing ¹	N	P	P	C
Vehicle impound yard ¹	N	N	N	N
Vehicle repair, major ¹	N	C	P	C
Vehicle repair, minor ¹	N	C	P	C
Vehicle sales or rental and service ¹	N	C	P	C
Vehicle washing facility ¹	N	C	P	C
Vehicle wrecking, junk or salvage yard ¹	N	N	N	N
Veterinarian office	N	P	P	C
Vineyard	N	N	N	C
Warehouse and storage	N	N	P	C
Wholesale sales	N	P	P	C
Winery	N	N	C	C
Wireless communication facility ¹	C	C	C	C
Woodworking shop	N	N	P	N

Permitted

8-3A-4: ZONING DISTRICT DIMENSIONAL STANDARDS:

Zoning District	Maximum Height Note Conditions	Minimum Yard Setbacks Note Conditions			
		Front ⁽¹⁾	Rear	Interior Side	Street Side
R-2	35'	20'	20'	10'	20'
R-3	35'	15' to living area/side load garage 20' to garage face	15'	7.5' ⁽²⁾	20'

C-1	35'	20'	5'	0' ⁴	20'
C-2	35'	20'	5'	0' ⁴	20'
MU	35'	For MU and CBD - Unless otherwise approved by the Council as a part of a PUD or development agreement, all residential buildings shall follow the residential setbacks shown in this table based upon the project density and all other buildings shall follow setbacks for the C-2 zone ⁽³⁾ .			

Notes:

1. Front yard setback shall be measured from the face of the garage to the face of the sidewalk, allowing for 20' of parking on the driveway without overhang onto the sidewalk.
2. Zero-Lot-Line and reduced front and rear setback waivers may be requested through the Development Agreement process. All other side yard setback requests for detached structures shall not be granted waivers, unless as part of a Planned Unit Development.
3. All setbacks in the CBD, C-1, C-2, LO, IL, PS, RC and M-U zone shall maintain a minimum 15' when adjacent to a residential use or zone.
4. As approved by the Fire District.

8-3B-3: RESIDENTIAL DISTRICTS:

- A. Comply with Section 8-3A-1: ZONING DISTRICTS AND PURPOSE ESTABLISHED.
- B. When development is planned with lots that directly abut existing lots within a Rural

Residential area, or "Special Transition Overlay Area" as shown on the Comprehensive Plan Land Use map, an appropriate transition shall be provided for the two abutting residential lot types. A transition shall take into consideration site constraints that may exist and may include clustering of the urban lots in order to provide an open space area avoiding urban lots directly abutting rural residential lots, or may include the provision of a buffer strip avoiding urban lots directly abutting rural residential lots, or may include setbacks within the urban lots similar to the rural residential lots directly abutting, or may include the provision of one half to one acre size lots directly abutting the rural residential lots.

- C. Urban style development, as guided by provisions within the comprehensive plan and this Title, is required to limit urban sprawl, however, densities of no more than 1 to 2 dwelling units per acre are to be designed within the floodplain, ridgeline developable areas and hillside developable areas (both as defined within the comprehensive plan).
- D. Housing developments with densities of R-11 and higher shall be designed to limit height, increase setbacks and/or provide additional landscaping along the perimeter of the development, if determined by the council, where abutting areas are planned for lower densities.
- E. Rezoning to R-11 and higher shall not be allowed unless adequate ingress/egress to major transportation corridors is assured.
- F. All new residential, accessory uses or additions/remodels within the residential zones shall pave all unpaved driveways to the home.
- G. Spite strips, common lots, unreasonable development phasing, or other means of any type purposely or unintentional that may result in the blocking of services or development, including but not limited to sewer, water, streets, or utilities are prohibited in any zoning district within the City of Star.
- H. In any development that requires a traffic signal as part of the approval process, the developer shall be responsible for providing an Emergency Opticom System to the intersection.
- I. Transitional Lots. For proposed residential developments located adjacent to a Special Transition Area only, as determined on the current Comprehensive Plan Land Use Map, transitional standards listed below shall be required if reasonable evidence is presented that adjacent properties will not be further subdivided in the future. This shall be through a legal encumbrance that prevents the adjacent land from being further subdivided. These encumbrances shall include:
 - a. Property with a Future Comprehensive Plan Land Use Map designation that does not allow future redevelopment to densities lower than one dwelling unit per acre.
 - b. Subdivision CC&R's preventing further redevelopment;
 - c. Easements granted to municipal or other political entities, voluntary development easements granted to conservation land trusts, or other, legal encumbrances conserving the property in perpetuity, such as deed restrictions.

This specifically excludes statements from landowners regarding future intent

without proof of legal encumbrance.

The allowed Transitional Density for new development adjacent to Special Transition Areas, shall be as follows:

Existing Transitional Lot Sizes	Allowed Immediately Adjacent Minimum Lot Size	Allowed Immediately Across the Road from Transitional Lot
Lots larger than 1.1-acre	1 acre lots	½ acre lots
Lots of 1 to 1.1-acre	½ acre lots	1/3 acre lots
Lots smaller than 1-acre	1/3 acre lots	R-3 density Maximum

IDAHO STATUTE FOR ANNEXATIONS:

TITLE 50
MUNICIPAL CORPORATIONS
CHAPTER 2

GENERAL PROVISIONS — GOVERNMENT — TERRITORY

50-222. ANNEXATION BY CITIES. (1) Legislative intent. The legislature hereby declares and determines that it is the policy of the state of Idaho that cities of the state should be able to annex lands which are reasonably necessary to assure the orderly development of Idaho's cities in order to allow efficient and economically viable provision of tax-supported and fee-supported municipal services, to enable the orderly development of private lands which benefit from the cost-effective availability of municipal services in urbanizing areas and to equitably allocate the costs of public services in management of development on the urban fringe.

(2) General authority. Cities have the authority to annex land into a city upon compliance with the procedures required in this section. In any annexation proceeding, all portions of highways lying wholly or partially within an area to be annexed shall be included within the area annexed unless expressly agreed between the annexing city and the governing board of the highway agency providing road maintenance at the time of annexation. Provided further, that said city council shall not have the power to declare such land, lots or blocks a part of said city if they will be connected to such city only by a shoestring or strip of land which comprises a railroad or highway right-of-way.

(3) Annexation classifications. Annexations shall be classified and processed according to the standards for each respective category set forth herein. The three (3) categories of annexation are:

(a) Category A: Annexations wherein:

(i) All private landowners have consented to annexation. Annexation where all landowners have consented may extend beyond the city area of impact provided that the land is contiguous to the city and that the comprehensive plan includes the area of annexation;

(ii) Any residential enclaved lands of less than one hundred (100) privately owned parcels, irrespective of surface area, which are surrounded on all sides by land within a city or which are bounded on all sides by lands within a city and by the boundary of the city's area of impact; or

(iii) The lands are those for which owner approval must be given pursuant to subsection (5)(b)(v) of this section.

(b) Category B: Annexations wherein:

(i) The subject lands contain less than one hundred (100) separate private ownerships and platted lots of record and where not all such landowners have consented to annexation; or

(ii) The subject lands contain more than one hundred (100) separate private ownerships and platted lots of record and where landowners owning more than fifty percent (50%) of the area of the subject private lands have consented to annexation prior to the commencement of the annexation process; or

(iii) The lands are the subject of a development moratorium or a water or sewer connection restriction imposed by state or local health or environmental agencies; provided such lands shall not be counted for purposes of determining the number of separate private ownerships and platted lots of record aggregated to determine the appropriate category.

(c) Category C: Annexations wherein the subject lands contain more than one hundred (100) separate private ownerships and platted lots of record and where landowners owning more than fifty percent (50%) of the area of the subject private lands have not consented to annexation prior to commencement of the annexation process.

(4) (a) Evidence of consent to annexation. For purposes of this section, and unless excepted in paragraph (b) of this subsection, consent to annex shall be valid only when evidenced by written instrument consenting to annexation executed by the owner or the owner's authorized agent. Written consent to annex lands must be recorded in the county recorder's office to be binding upon subsequent purchasers, heirs, or assigns of lands addressed in the consent. Lands need not be contiguous or adjacent to the city limits at the time the landowner consents to annexation for the property to be subject to a valid consent to annex; provided however, no annexation of lands shall occur, irrespective of consent, until such land becomes contiguous or adjacent to such city.

(b) Exceptions to the requirement of written consent to annexation. The following exceptions apply to the requirement of written consent to annexation provided for in paragraph (a) of this subsection:

(i) Enclaved lands: In category A annexations, no consent is necessary for enclaved lands meeting the requirements of subsection (3)(a)(ii) of this section;

(ii) Implied consent: In category B and C annexations, valid consent to annex is implied for the area of all lands connected to a water or wastewater collection system operated by the city if the connection was requested in writing by the owner, or the owner's authorized agent, or completed before July 1, 2008.

(5) Annexation procedures. Annexation of lands into a city shall follow the procedures applicable to the category of lands as established by this section. The implementation of any annexation proposal wherein the city council determines that annexation is appropriate shall be concluded with the passage of an ordinance of annexation.

(a) Procedures for category A annexations: Lands lying contiguous or adjacent to any city in the state of Idaho may be annexed by the city if the proposed annexation meets the requirements of category A. Upon determining that a proposed annexation meets such requirements, a city may initiate the planning and zoning procedures set forth in [chapter 65, title 67](#), Idaho Code, to establish the comprehensive planning policies, where necessary, and zoning classification of the lands to be annexed.

(b) Procedures for category B annexations: A city may annex lands that would qualify under the requirements of category B annexation if the following requirements are met:

- (i) The lands are contiguous or adjacent to the city and lie within the city's area of city impact;
- (ii) The land is laid off into lots or blocks containing not more than five (5) acres of land each, whether the same shall have been or shall be laid off, subdivided or platted in accordance with any statute of this state or otherwise, or whenever the owner or proprietor or any person by or with his authority has sold or begun to sell off such contiguous or adjacent lands by metes and bounds in tracts not exceeding five (5) acres, or whenever the land is surrounded by the city. Splits of ownership which occurred prior to January 1, 1975, and which were the result of placement of public utilities, public roads or highways, or railroad lines through the property shall not be considered as evidence of an intent to develop such land and shall not be sufficient evidence that the land has been laid off or subdivided in lots or blocks. A single sale after January 1, 1975, of five (5) acres or less to a family member of the owner for the purpose of constructing a residence shall not constitute a sale within the meaning of this section. For purposes of this section, "family member" means a natural person or the spouse of a natural person who is related to the owner by blood, adoption or marriage within the first degree of consanguinity;
- (iii) Preparation and publication of a written annexation plan, appropriate to the scale of the annexation contemplated, which includes, at a minimum, the following elements:
 - (A) The manner of providing tax-supported municipal services to the lands proposed to be annexed;
 - (B) The changes in taxation and other costs, using examples, which would result if the subject lands were to be annexed;
 - (C) The means of providing fee-supported municipal services, if any, to the lands proposed to be annexed;
 - (D) A brief analysis of the potential effects of annexation upon other units of local government which currently provide tax-supported or fee-supported services to the lands proposed to be annexed; and
 - (E) The proposed future land use plan and zoning designation or designations, subject to public hearing, for the lands proposed to be annexed;
- (iv) Compliance with the notice and hearing procedures governing a zoning district boundary change as set forth in section [67-6511](#), Idaho Code, on the question of whether the property should be annexed and, if annexed, the zoning designation to be applied thereto; provided however, the initial notice of public hearing concerning the question of annexation and zoning shall be published in the official newspaper of the city and mailed by first class mail to every property owner with lands included in such annexation proposal not less than twenty-eight (28) days prior to the initial public hearing. All public hearing notices shall establish a time

and procedure by which comments concerning the proposed annexation may be received in writing and heard and, additionally, public hearing notices delivered by mail shall include a one (1) page summary of the contents of the city's proposed annexation plan and shall provide information regarding where the annexation plan may be obtained without charge by any property owner whose property would be subject to the annexation proposal.

(v) In addition to the standards set forth elsewhere in this section, annexation of the following lands must meet the following requirements:

(A) Property owned by a county or any entity within the county that is used as a fairgrounds area under the provisions of [chapter 8, title 31](#), Idaho Code, or [chapter 2, title 22](#), Idaho Code, must have the consent of a majority of the board of county commissioners of the county in which the property lies;

(B) Property owned by a nongovernmental entity that is used to provide outdoor recreational activities to the public, and that has been designated as a planned unit development of fifty (50) acres or more and does not require or utilize any city services, must have the express written permission of the nongovernmental entity owner;

(C) Land, if five (5) acres or greater, actively devoted to agriculture, as defined in section [63-604\(1\)](#), Idaho Code, regardless of whether it is surrounded or bounded on all sides by lands within a city, must have the express written permission of the owner; and

(D) Land, if five (5) acres or greater, actively devoted to forest land, as defined in section [63-1701](#), Idaho Code, regardless of whether it is surrounded or bounded on all sides by lands within a city, must have the express written permission of the owner.

(vi) After considering the written and oral comments of property owners whose land would be annexed and other affected persons, the city council may proceed with the enactment of an ordinance of annexation and zoning. In the course of the consideration of any such ordinance, the city must make express findings, to be set forth in the minutes of the city council meeting at which the annexation is approved, as follows:

(A) The land to be annexed meets the applicable requirements of this section and does not fall within the exceptions or conditional exceptions contained in this section;

(B) The annexation would be consistent with the public purposes addressed in the annexation plan prepared by the city;

(C) The annexation is reasonably necessary for the orderly development of the city;

(vii) Notwithstanding any other provision of this section, railroad right-of-way property may be annexed pursuant to this section only when property within the city adjoins or will adjoin both sides of the right-of-way.

(c) Procedures for category C annexations: A city may annex lands that would qualify under the requirements of category C annexation if the following requirements are met:

(i) Compliance with the procedures governing category B annexations; and

(ii) Evidence of consent to annexation based upon the following procedures:

(A) Following completion of all procedures required for consideration of a category B annexation, but prior to enactment of an annexation ordinance and upon an affirmative action by the city council, the city shall mail notice to all private landowners owning lands within the area to be annexed, exclusive of the owners of lands that are subject to a consent to annex which complies with subsection (4)(a) of this section defining consent. Such notice shall invite

property owners to give written consent to the annexation, include a description of how that consent can be made and where it can be filed, and inform the landowners where the entire record of the subject annexation may be examined. Such mailed notice shall also include a legal description of the lands proposed for annexation and a simple map depicting the location of the subject lands.

(B) Each landowner desiring to consent to the proposed annexation must submit the consent in writing to the city clerk by a date specified in the notice, which date shall not be later than forty-five (45) days after the date of the mailing of such notice.

(C) After the date specified in the notice for receipt of written consent, the city clerk shall compile and present to the city council a report setting forth: (i) the total physical area sought to be annexed, and (ii) the total physical area of the lands, as expressed in acres or square feet, whose owners have newly consented in writing to the annexation, plus the area of all lands subject to a prior consent to annex which complies with subsection (4)(a) of this section defining consent. The clerk shall immediately report the results to the city council.

(D) Upon receiving such report, the city council shall review the results and may thereafter confirm whether consent was received from the owners of a majority of the land. The results of the report shall be reflected in the minutes of the city council. If the report as accepted by the city council confirms that owners of a majority of the land area have consented to annexation, the city council may enact an ordinance of annexation, which thereafter shall be published and become effective according to the terms of the ordinance. If the report confirms that owners of a majority of the land area have not consented to the annexation, the category C annexation shall not be authorized.

(6) The decision of a city council to annex and zone lands as a category B or category C annexation shall be subject to judicial review in accordance with the procedures provided in [chapter 52, title 67](#), Idaho Code, and pursuant to the standards set forth in section [67-5279](#), Idaho Code. Any such appeal shall be filed by an affected person in the appropriate district court no later than twenty-eight (28) days after the date of publication of the annexation ordinance. All cases in which there may arise a question of the validity of any annexation under this section shall be advanced as a matter of immediate public interest and concern and shall be heard by the district court at the earliest practicable time.

(7) Annexation of noncontiguous municipal airfield. A city may annex land that is not contiguous to the city and is occupied by a municipally owned or operated airport or landing field. However, a city may not annex any other land adjacent to such noncontiguous facilities which is not otherwise annexable pursuant to this section.

History:

[50-222, added 2002, ch. 333, sec. 2, p. 939; am. 2008, ch. 118, sec. 1, p. 327; am. 2009, ch. 53, sec. 1, p. 145; am. 2019, ch. 22, sec. 1, p. 22; am. 2020, ch. 240, sec. 1, p. 702.]

COMPREHENSIVE PLAN:

8.2.3 Land Use Map Designations:

Estate Residential:

Suitable primarily for single family residential use. Densities in this land use area are to range from 1 unit per acre to 3 units per acre. Densities not exceeding 1 to 2 units per acre are to be encouraged in areas of the floodplain, ridgeline developable areas, hillside developable areas, and where new residential lots are proposed adjacent to existing residential lots of one acre and larger where those existing larger lots are not likely to be subdivided in the future. Clustering is encouraged to preserve open space. A density bonus may be considered if open space is preserved, and land of at least 40% of additional preserved open space is developable.

Mixed-Use:

Generally suitable for a mixture of uses which may, at the sole discretion of the Council, include office, commercial, light industrial, and/or residential depending upon the specific area designated as Mixed Use. See Mixed Use Implementation Policies for specific criteria. Development within this land use designation is to proceed through the PUD and/or development agreement process.

Identifying areas for mixed-use development has two objectives. The first objective is to give the city a better tool to manage the type of developments through the planned unit development and/or the Development Agreement process. The second objective is that this land use designation will allow the development community to be more innovative in design and placement of structures. Development design guidelines should also be established to guide development within mixed-use areas. Rezoning within this land use designation is to be strictly monitored by the city to assure that the Mixed-Use areas are not being used simply to justify high density residential use.

Commercial:

Suitable primarily for the development of a wide range of commercial activities including offices, retail, and service establishments. Rezoning to this designation should not be allowed unless adequate ingress/egress to major transportation corridors are assured. Light industrial uses may be considered at the discretion of the City Council without amending this plan

8.3 Goal:

Encourage the development of a diverse community that provides a mix of land uses, housing types, and a variety of employment options, social and recreational opportunities, and where possible, an assortment of amenities within walking distance of residential development.

8.4 Objectives:

- Implement the Land Use Map and associated policies as the official guide for development.
- Manage urban sprawl in order to minimize costs of urban services and to protect rural areas.
- Encourage land uses that are in harmony with existing resources, scenic areas, natural wildlife areas, and surrounding land uses.

8.5.3 Policies Related Mostly to the Urban Residential Planning Areas:

- A. The Neighborhood Residential Land Use is to encourage urban style development densities to limit urban sprawl.
- B. Low densities within the Neighborhood Residential Land Use are to be designed within the floodplain, ridgeline developable areas, hillside developable areas and where new residential lots are proposed adjacent to existing residential lots of one acre and larger where those existing larger lots are not likely to be subdivided in the future.

8.5.9 Additional Land Use Component Policies:

- Encourage flexibility in site design and innovative land uses.
- Work with Ada County Highway District (ACHD), Canyon Highway District #4 (CHD4), and Idaho Department of Transportation (ITD) for better coordination of roadway and access needs.
- Support well-planned, pedestrian-friendly developments.
- Dark sky provision should be adopted within the code to assure down style lighting in all developments and Star should consider joining the International Dark Sky Association.

18.4 Implementation Policies:

- F. Development Agreements allow the city to enter into a contract with a developer upon rezoning. The Development Agreement may provide the city and the developer with certain assurances regarding the proposed development upon rezoning.

PROJECT OVERVIEW

ANNEXATION & REZONE:

The applicant is requesting approval of an annexation and zoning application with a zoning designation of Residential & Mixed Use (R-3-DA & MU-DA) on 185.93 acres. This zoning district would allow for a maximum residential density of 3 dwelling unit per acre and future non-residential mixed-use. The submitted conceptual plan and applicants statement indicates that the overall residential density proposed would be 1.2 dwelling units per acre. This meets the intent of the 1-3 du/acre allowed within the Estate Urban Residential designation on the Future Land Use Map. Due to the density proposed, Staff would recommend the Council approve an R-2 zoning designation rather than R-3. The property is located in an area that will be serviceable with central sewer and water provided by Star Sewer and Water District in the near future. The property will be accessed from Blessinger Road, as it is today, along with a new access off Highway 44. The applicant has submitted a conceptual site plan illustrating the proposed development layout. While the conceptual plan does not indicate specific lot sizes, lots adjacent to the Special Transition Overlay Area must meet Section 8-3B-3 of the Unified Development Code. Specially, lots along the Overlay Area shall be a minimum of 1-acre in size. The applicant recognizes this in his submitted narrative.

The applicant is proposing a Mixed-Use zoning designation for the property located adjacent to Hwy 44. The Star Comprehensive Plan Future Land Use Map designates this area as Commercial /Industrial Corridor. Therefore, to meet the intent of the Comp Plan, Staff recommends that the Council approve the area as either Commercial C-1 or Commercial C-2. C-1 may be better compatible with existing and future residential uses immediately adjacent.

Although Staff is recommending the Council approve the application with an R-2 zoning designation, it recognizes that the smaller lots clustered adjacent to the lakes need some relief from the required R-2 setbacks. Therefore, Staff would recommend that the larger one-acre lots adjacent to the Special Transition Overlay Area be approved with R-2 setbacks, and R-3 setbacks be approved for the residential lots throughout the remainder of the development. The applicant is proposing a side yard setback waiver for residential uses. The newly approved Unified Development Code requires 7.5' side yard setbacks in the R-3 zone. Council should consider the applicants request for reduced side yard setbacks when rendering its decision on the application and place a condition of approval in the development agreement.

DEVELOPMENT AGREEMENT

Through the Development Agreement process, the applicant is proposing to work with the City to provide further insurances that the development will be built as presented and/or modified by the Council through the review process. Items that should be considered by the applicant and Council include the following:

- Conceptual Site Plan/Future Development
- Minimum lot sizes adjacent to Special Transition Overlay Area
- Emergency Access
- ITD Proportionate Share
- Home Elevations
- Zoning designation for residential (proposed R-3 vs requested R-2)
- Zoning designation of non-residential property (C-1/C-2 vs proposed MU)
- Allowable Uses in the non-residential zone
- Proposed residential setback waivers

AGENCY RESPONSES

Middleton School District	September 9, 2022
COMPASS	September 28, 2022
Canyon Highway District #4 Email	August 22, 2022
City Engineer	September 29, 2022
Drainage District No. 2	September 14, 2022
ITD	September 29, 2022
Star Fire District	September 28, 2022

PUBLIC RESPONSES

Email from Neighbors within the Leighton Lake Estates & Leighton Ranch

STAFF ANALYSIS AND RECOMMENDATION

Based upon the information provided to staff in the applications and agency comments received to date, the proposed annexation and zoning request, with Staff recommendations, meets the requirements, standards, and intent for development as they relate to the Comprehensive Plan and Unified Development Code. The proposed density of 1.2 dwelling unit per acre is within the maximum allowed density in the Estate Urban Residential Comprehensive Plan Future Land Use Map designation.

The Council should consider the entire record and testimony presented at their scheduled public hearing prior to rendering its decision on the matter. Should the Council vote to approve the application, either as presented or with added or revised conditions of approval, Council shall direct staff to draft findings of fact and conclusions of law for the Council to consider at a future date. A development agreement will also be brought back to the Council for review of proposed Conditions of Approval for the rezone.

FINDINGS

The Council may **approve, conditionally approve, deny** or **table** this request. In order to approve these applications, the Unified Development Code requires that Council must find the following:

ANNEXATION/REZONE FINDINGS:

- 1. The map amendment complies with the applicable provisions of the Comprehensive Plan.

The purpose of the Star Comprehensive Plan is to promote the health, safety, and general welfare of the people of the City of Star and its Impact Area. Some of the prime objectives of the Comprehensive Plan include:

 - ✓ *Protection of property rights.*
 - ✓ *Adequate public facilities and services are provided to the people at reasonable cost.*
 - ✓ *Ensure the local economy is protected.*
 - ✓ *Encourage urban and urban-type development and overcrowding of land.*
 - ✓ *Ensure development is commensurate with the physical characteristics of the land.*

The goal of the Comprehensive Plan for Land Use is to encourage the development of a diverse community that provides a mixture of land uses, housing types, and a variety of employment options, social and recreational opportunities, and where possible provides an assortment of amenities within walking distance of a residential development. The Council must find compliance with the Comprehensive Plan.

- 2. The map amendment complies with the regulations outlined for the proposed district, specifically, the purposes statement.

The Council must find that the proposal complies with the proposed district and purpose statement. The purpose of the residential districts is to provide regulations and districts for various residential neighborhoods with gross densities in compliance with the intent of the Comprehensive Plan designation. Housing shall be single family detached unless approved with a PUD or development agreement. Connection to municipal water and sewer facilities are required for all subdivision and lot split applications in all districts exceeding one dwelling unit per acre. Private streets may be approved in this district for access to newly subdivided or split property.

- 3. The map amendment shall not be materially detrimental to the public health, safety, and welfare; and

The Council must find that there is no indication from the material submitted by any political agency stating that this annexation and zoning of this property will be materially detrimental to the public health, safety or welfare.

- 4. The map amendment shall not result in an adverse impact upon the delivery of services by

any political subdivision providing public services within the city including, but not limited to, school districts.

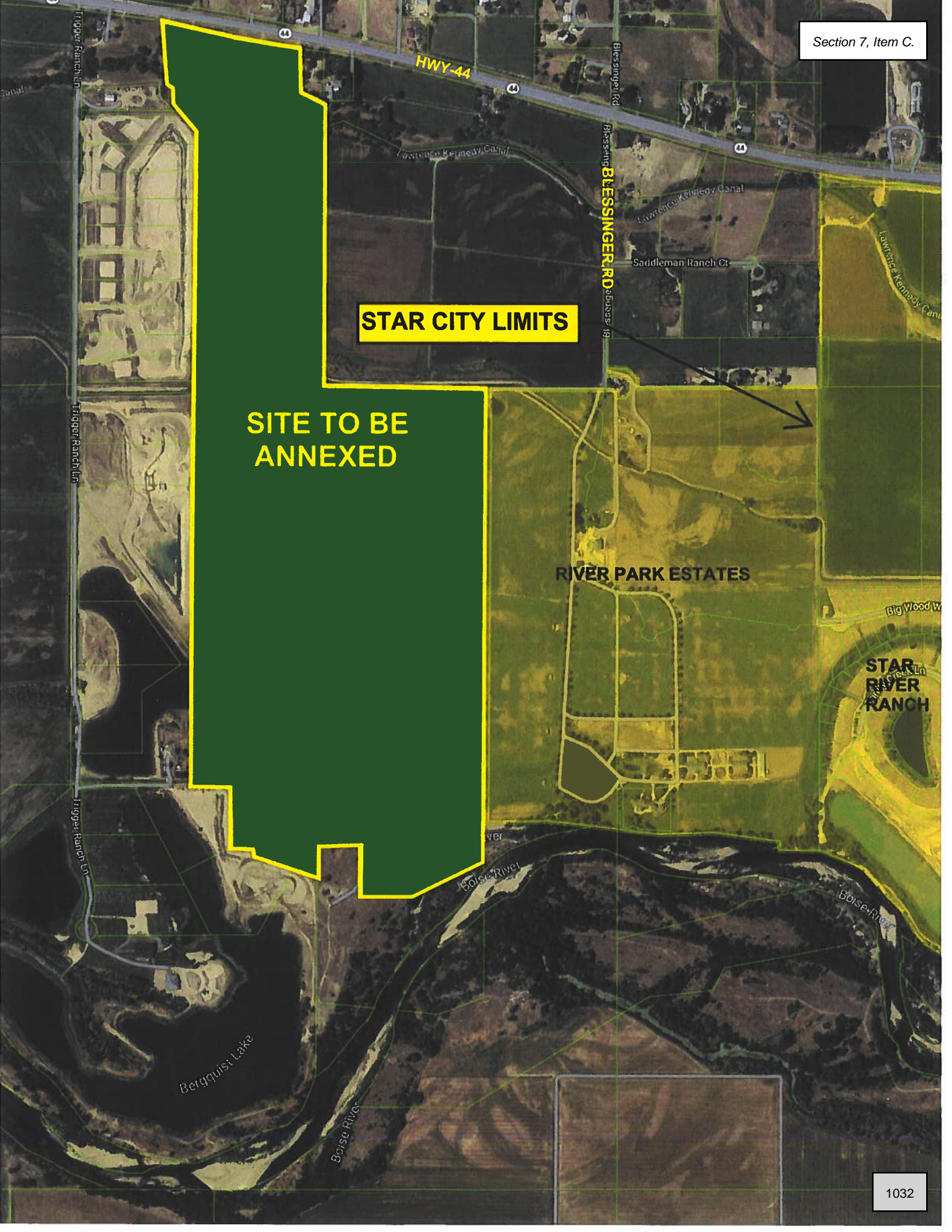
The Council must find that it has not been presented with any information from agencies having jurisdiction that public services will be adversely impacted other than traffic, which will continue to be impacted as the City grows.

5. The annexation is in the best interest of the city.

The Council must find that this annexation is reasonably necessary for the orderly development of the City.

COUNCIL DECISION

The Star City Council _____ File Number AZ-22-12/DA-22-13 for the Quarry at River Park property on _____, 2022.



STAR CITY LIMITS

SITE TO BE ANNEXED

RIVER PARK ESTATES

STAR RIVER RANCH

HWY-44

Blessinger Rd

Lawrence Kennedy Canal

Lawrence Kennedy Canal

Saddleman Ranch Ct

Lawrence Kennedy Canal

Big Wood Way

Bergquist Lake

Boise River

Boise River

Boise River

BOISE HUNTER HOMES

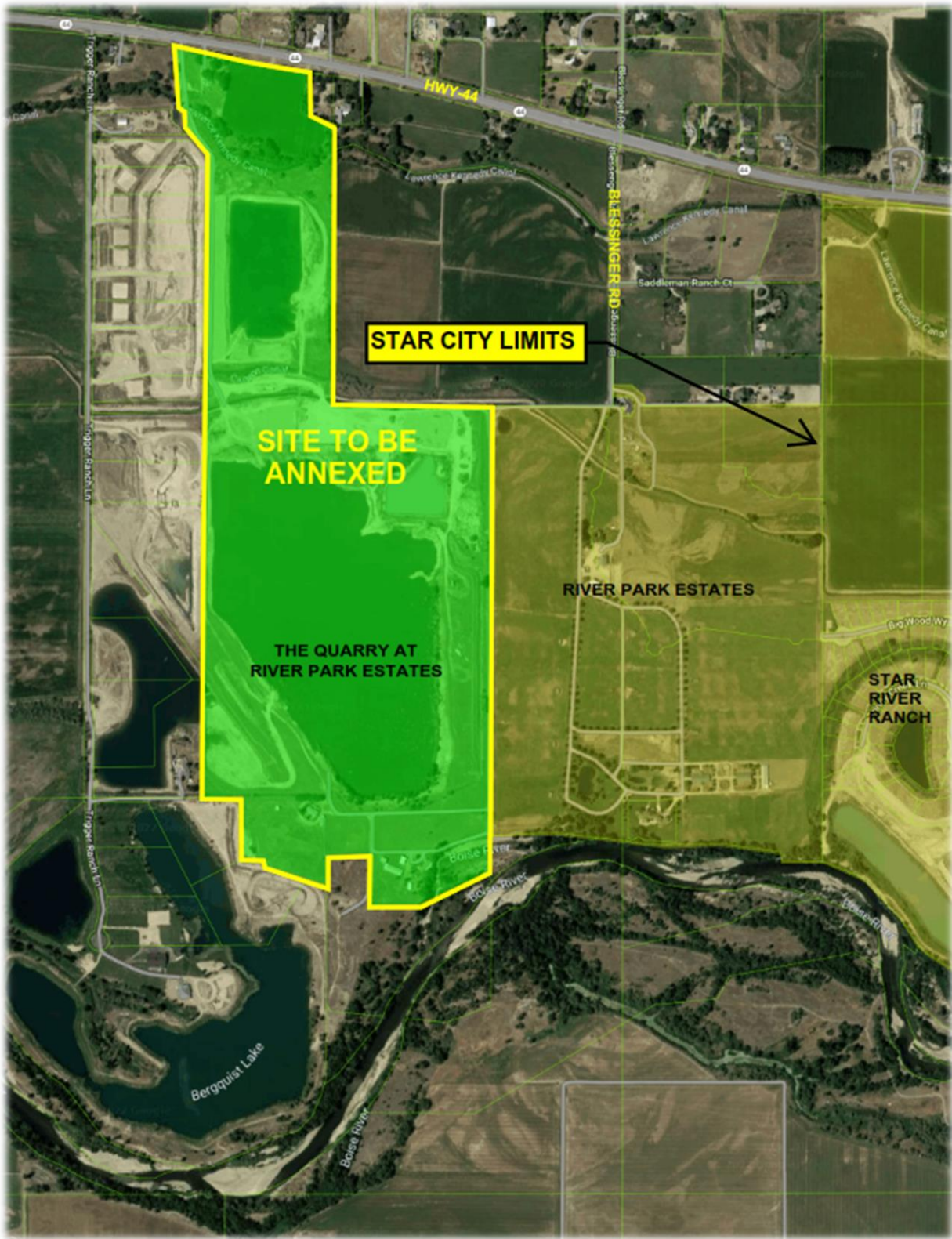
The Quarry at River Park Estates Annexation & Zoning



H5 Land Holdings 6, LLC and School House Ranch, LLC are pleased to submit the following application for annexation into the City of Star. We are requesting approval of an Annexation with a Development Agreement and a Conceptual Development Plan.

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Site Location and Existing Uses

The subject property is a 185.93-acre parcel of land located on the south side of State Highway 44 between Trigger Ranch Lane and Blessinger Road. The property is a mined-out gravel quarry with aggregate on the surface and little topsoil existing. The property is currently improved with a single-family home and contains two large lakes and 2 small ponds totaling ±80 acres.

Annexation and Zoning

The property is located within the City of Star's Comprehensive Plan and Future Land Use Map. The property abuts the city limits of Star along the eastern property line. Annexation of this property will fulfill the City of Star's desire for orderly development.

The property has three land use designations on the Future Land Use Map. The portion of the property that abuts State Highway 44 is Commercial/Industrial. The middle section is Neighborhood Residential, and the southern portion is Estate Residential.

The Star Comprehensive Plan anticipates single-family residential homes as the primary use within the Estate Residential Land Use Designation. The density range is one to three units per acre with properties in the floodplain to be one to two units per acre.

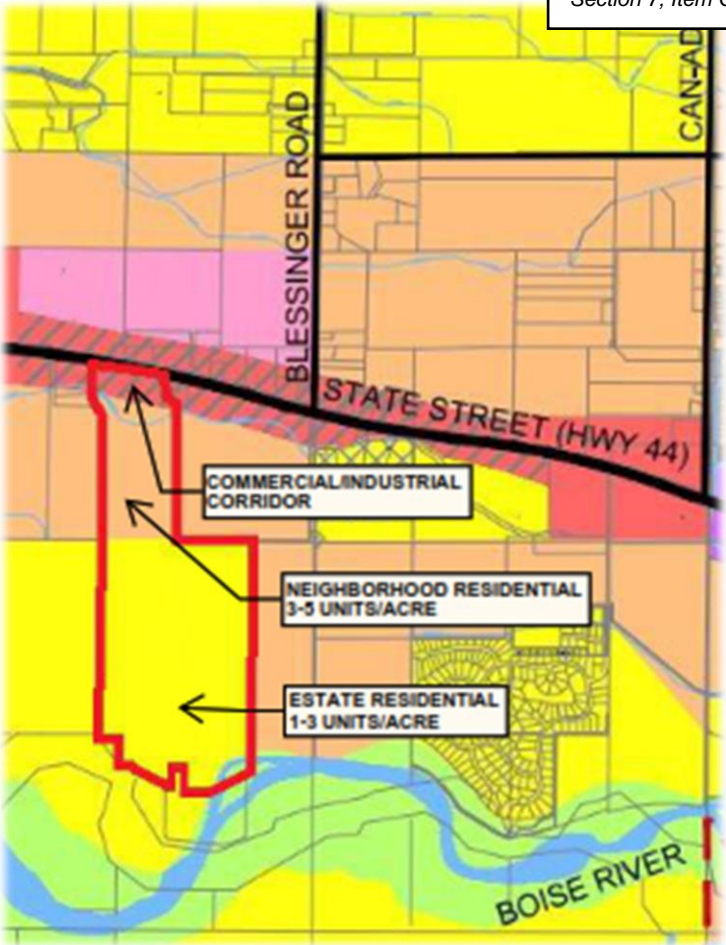
The Star Comprehensive Plan recognizes the Neighborhood Residential land use as suitable primarily for single-family residential uses. It anticipates developments that will provide densities between three and five units per acre with densities not exceeding 1 – 2 dwelling units per acre within the floodplain. The Zoning Compatibility Matrix shows the residential zones R-1 through R-5 as appropriate for the Neighborhood Residential land use.

Finally, the Star Comprehensive Plan states that a wide range of commercial and light industrial activities are suitable for the Commercial / Industrial Corridor Land Use Designation located along Highway 44.

We are requesting the majority of the property (approximately 179.02 Acres) be zoned R-3 with a small portion (6.91 acres) along Highway 44 to be zoned MU (Mixed Use District). In addition, a development agreement will be established for the property. The overall residential density of the subdivision is 1.2 dwelling units per acre. This is consistent with the Land Use descriptions for Estate Residential and Neighborhood Residential found in the Comprehensive Plan.

Conceptual Development Plan

The conceptual development plan for the Quarry at River Park subdivision includes 228 single-family lots. Three different lot sizes are provided within the subdivision. The largest lots are at least one acre in size. These lots are located along the western perimeter of the subdivision as a transition to the larger lots on the west. The next largest lots are 81 feet wide and the smallest lots are 65 feet wide. This provides a mix of lots that can accommodate a variety of home sizes. We are proposing the street network within the subdivision be comprised of private streets.



Development Statistics

Total Area	185.93 acres
Residential Area	179.02 acres
Commercial Area	6.91 acres
Commercial Lots	3
Residential Lots	228
Residential Density	1.2 DU/AC
Estate Acre Lots	11 (5 %)
81' Wide Lots	71 (31 %)
65' Wide Lots	132 (58 %)
Common Lots	18
Total Open Space (AC)	± 86
Total Open Space (%)	± 46
Useable Open Space (AC)	± 43
Useable Open Space (%)	± 23

Architecture

One of the items that sets Boise Hunter Homes apart from the other home builders in the Treasure Valley is our world class architecture. The majority of our beautiful homes are designed by architect Michael Woodley, AIA, who is one of the most prolific architects in homebuilding, and he exclusively works with Boise Hunter Homes in Idaho. In 2015, Michael was inducted into the Homebuilding Hall of Fame. And in 2020 at the Gold Nugget Grand Awards, the top awards show in homebuilding, Michael and his firm were the recipients of the "Best Residential Detached Collection of the Year" and the "Best Interior of a Home". In designing our homes, Michael leads us through an extensive process to design floorplans and finishes that exceed buyer expectations and meet the high standard of functionality and style that sets us apart from the rest.



Development Agreement / Planned Unit Development

The newly approved Unified Development Code requires a 7.5 foot side yard setback for homes within the R-3 zone. The vast majority of our prospective buyers typically want a larger home, views, and bigger backyards. We accomplish each of these priorities through our award-winning architecture, which is modulated to avoid a box-like look, and instead is functional and aesthetically pleasing from every angle. We build homes that create modulation in the roofline of the home which produces a more visually appealing front façade.

As previously noted, Boise Hunter Homes produces gorgeous homes with stellar architecture designed by world class architect Mike Woodley who has won numerous Golden Nugget awards at the Pacific Coast Builders Conference and International Builders Conference.

Our homes are designed with varying roof lines that provide visual interest on all four achieved by modulating the façade, so the homes do not appear “boxy”. In addition, the sides of our homes are articulated so there is not a solid wall plane. This reduces the wall mass on the sides of the homes which reduces the amount of the second story that is near the adjacent homes. Finally, we provide an abundance of windows that create a welcoming feel to the home.



The recently approved Unified Development Code requires a Planned Unit Development when side yard setbacks are requested. We are in support of a development agreement with our annexation application to allow for a five-foot wide side yard setback for homes within the subdivision. This would establish the reduced setback. We plan on submitting a Planned Unit Development application in conjunction with the preliminary plat application at a later date, once the property has been annexed into Star City. Approval of this development agreement will allow Boise Hunter Homes to bring our world class architecture to the City of Star within this wonderful subdivision.

Open Space and Amenities

The Star Unified Development Code requires residential subdivisions provide a total of 15% open space with a minimum usable open space requirement of 10%. The residential portion of the Quarry at River Park Estates Subdivision is 179.02 acres requiring a total open space of 26.85 acres, and a usable open space requirement of 17.9 acres. We are providing more than three times the required open space with approximately 86 acres of open space. Approximately half of that is classified as usable open space under the new requirements found in the updated Unified Development Code.



Numerous amenities are provided throughout the subdivision for use by the residents. Most notable of these amenities are the two large lakes located within the interior the subdivision. These lakes provide abundant opportunities for recreation in the form of fishing, swimming, boating, kayaking, canoeing, and paddle boarding. There are also two smaller lakes located within the development. We anticipate improving the northeastern edge of the largest lake with a sandy beach with shade cabanas. In addition, there will be pedestrian access to all of the lakes. A fishing dock is provided on the northern lake and a boat launch on the southern lake.

Another amenity provided along the Boise River will be the extension of the greenbelt that abuts the property on the east side. This is consistent with the pathway shown on the City of Star Recreational & Alternate Transportation Plan. This greenbelt provides a wonderful recreational opportunity for subdivision residents as well as the general public.

Pathways will be provided along the two canals that traverse through the property. The Lawrence Kennedy Canal is located in the northern portion of the development while the Canyon County Canal runs through the center of the subdivision.

In addition to the open space, a community center is proposed at the northwest corner of the large southern lake.

Floodplain

The majority of the property is located within the Floodplain – AE Zone. The property will be developed in a manner to raise the developed lots and street improvements above the base flood elevation. A very small portion of the southeast corner of the property (3 acres) is located within the Floodway of the Boise River. No structures or grading are proposed within the Floodway. There is some riparian vegetation that is located along the Boise River at the southern end of the development that will remain undisturbed. A Floodplain Development Application will be submitted with the Preliminary Plat Application in the future.

Comprehensive Plan Compliance

As previously noted, this property has three land use designations on the Future Land Use Map for the City of Star. The portion of the property that abuts State Highway 44 is Commercial/Industrial. The middle section is Neighborhood Residential, and the southern portion is Estate Residential. The proposed project aligns very well with the goals and objectives identified in the Comprehensive Plan. Below is a list of goals and objectives that apply to this project and an explanation of how the development is in compliance with those goals and objectives:

7.4 Objectives

H – Develop a mixture of commercial, service, and residential developments that encourage walking.

The proposed development has a mixture of residential and commercial property. The two uses are located within close proximity to each other and connected by pedestrian access to provide a walkable community.

7.5 Implementation Policies

A – Concentrate appropriate commercial and office development onto relatively small amounts of land, in close proximity to housing and consumers for neighborhood commercial centers.

As previously noted, the proposed development has a commercial component located on a small portion of the land located along Highway 44. This commercial property is in close proximity to existing and proposed housing in the area.

8.3 Goal

Encourage the development of a diverse community that provides a mix of land uses, housing types, and a variety of employment options, social and recreational opportunities, and where possible, an assortment of amenities within walking distance of residential development.

The proposed subdivision provides a variety of lot sizes to accommodate various housing sizes. The lots range from approximately 7,500 square feet to over two acres in size. Numerous recreational opportunities are provided for the residents of the subdivision as well as a green belt along the Boise River for the greater community. In addition, a portion of the property along Highway 44 will be developed with commercial uses providing employment options.

8.4 Objectives

A – Preserve the family friendly feel of Star.

This subdivision is comprised primarily of single-family residential lots with home sizes to accommodate families of all sizes. With the community parks, lakes, and overall community design we are excited for the future HOA to bring together residents through a variety of events and neighborhood gatherings.

B – Implement the Land Use Map and associated policies as the official guide for development.

As previously noted, this property is located within the Commercial/Industrial Corridor, Neighborhood Residential, and Estate Residential land use areas. The proposed development was largely dictated by the uses and policies outlined by the Future Land Use map for this area.

C – Manage Urban sprawl in order to minimize costs of urban services and to protect rural areas.

The proposed subdivision is located adjacent to property that was recently annexed into the City of Star with an approved subdivision. Urban services will be provided to this property from the adjacent subdivision to the east.

8.5.3 Policies Related Mostly to the Urban Residential Planning Areas

A – The estate and Neighborhood Residential Land Use is to encourage urban style development densities to limit urban sprawl.

The proposed subdivision is located within both the Neighborhood Residential and Estate Residential land uses and is located between two residential subdivisions. The density of the proposed subdivision is 1.2 dwelling units per acre which is far below the 3-5 dwelling units per acre anticipated with the Neighborhood Residential land use and right in line with the 1-3 dwelling units per acre anticipated with the Estate Residential land use.

B – Low densities within the Estate and Neighborhood Residential Land Use are to be designed within the floodplain, ridgeline developable areas, hillside developable areas and where new residential lots are proposed adjacent to existing residential lot of one acre and larger where those existing larger lots are not likely to be subdivided in the future.

The property is located within both the Neighborhood Residential and Estate Residential land use and the floodplain. The subdivision will be graded in a way to raise the buildable lots and street infrastructure out of the floodplain. The property is not located adjacent to any land that is not likely to be subdivided in the future.

C – Site layout adjacent to and within the Special Transition Overlay Area shall provide for a transition in density and lot sizing.

Although this property is not located within the Special Transition Overlay Area, we are providing a transition in the lot sizing along the western border of the development. The residential subdivision located to the west is within Canyon County and has larger lots. We are building 14 homes along the 1 mile of adjacency of our neighbors to the west, where that have 17 homes in the 1 mil stretch. Most of these homes will be on 1-2 acre lots.

11.3 Goal

Coordinate with local agencies and providers to develop plans for energy services and public utility facilities for the long-term energy and utility needs of the City of Star.

We have worked with Star Sewer & Water to identify the preferred route for the sewer force main through this property. The annexation of this property into the City of Star will provide a crucial link between the existing sewer force main located within the River Park Estates subdivision to the east and the future regional lift station planned for the area to the north along State Highway 44.

11.4 Objectives

B – Work cooperatively with the Star Sewer & Water District to ensure that the District is equipped to meet the water demands and to provide wastewater collection services, necessary system expansions and upgrades to keep pace with and not impede new and orderly development within the city planning area as development occurs.

As previously noted, we have worked with Star Sewer & Water to coordinate the extension of the sewer main through this property to complete the connection to the future regional lift station located north of the subject property.

Transportation

As previously noted, we are proposing for the majority of the streets within the development to be private streets. All streets within the development are 36 feet wide from back-of-curb to back-of-curb. The sidewalks will be five feet wide and be a mixture of attached and detached.

The Landruff Lane Collector Road will be extended as a public street through the subdivision in conformance with the Master Street Map.

Conclusion

The proposed Annexation & Zoning application for the Quarry at River Park Estates development was created after carefully considering the Star Unified Development Code, Comprehensive Plan, site location, and surrounding neighborhoods. We look forward to discussing the application with you in greater detail. If you have any questions regarding this submittal, please contact me at 208-618-2157 or ttucker@boisehunterhomes.com.

Sincerely,



Todd Tucker
Planning and Entitlement Manager



ANNEXATION & ZONING - REZONE APPLICATION

***All information must be filled out to be processed.

FILE NO.: _____
Date Application Received: _____ Fee Paid: _____
Processed by: City: _____

Applicant Information:

PRIMARY CONTACT IS: Applicant Owner Representative

Applicant Name: Todd Tucker
 Applicant Address: 923 S. Bridgeway Place - Eagle, ID Zip: 83616
 Phone: 208-618-2157 Email: tucker@boisehunterhomes.com

Owner Name: H5 Land Holdings 6, LLC & School House Ranch, LLC (James H. Hunter)
 Owner Address: 923 S. Bridgeway Place - Eagle, ID Zip: 83616
 Phone: 208-557-5501 Email: jameshunter1@hotmail.com

Representative (e.g., architect, engineer, developer):
 Contact: Chad Kinkela, P.E. Firm Name: CK Engineering
 Address: 1300 E. State Street #102 - Eagle, ID Zip: 83616
 Phone: 208-639-1992 Email: chad@ck-engineers.com

Property Information:

Site Address: 21339 Blessinger Rd. - Star, ID 83669 Parcel Number: R3404900000
 Total Acreage of Site: 185.93 Acres
 Total Acreage of Site in Special Flood Hazard Area: 161
 Proposed Zoning Designation of Site: R-3 & MU

Zoning Designations:

	Zoning Designation	Comp Plan Designation	Land Use
Existing	AG (CANYON COUNTY) C1 (CANYON COUNTY)	ESTATE RES / NEIGHBORHOOD RES / COMMERCIAL/INDUSTRIAL CORRIDOR	RETIRED ROCK QUARRY SINGLE-FAMILY HOME
Proposed	MU (STAR) R-3 (STAR)	NO CHANGE	MIXED USE SUBDIVISION
North of site	AG (CANYON COUNTY)	COMMERCIAL/INDUSTRIAL CORRIDOR	HWY-44 THEN VACANT LAND
South of site	RR (CANYON COUNTY) AG (CANYON COUNTY)	FLOODWAY	BOISE RIVER
East of site	R-2 (STAR)	NEIGHBORHOOD RESIDENTIAL	SINGLE-FAMILY RESIDENTIAL SUBDIVISION
West of site	RR (CANYON COUNTY)	ESTATE RES / NEIGHBORHOOD RES / COMMERCIAL/INDUSTRIAL COORIDOR	SINGLE-FAMILY RESIDENTIAL SUBDIVISION

Special On-Site Features (Yes or No – If yes explain):

- Areas of Critical Environmental Concern - No
- Evidence of Erosion - No
- Fish Habitat - Yes, there are fish in the lakes and in the adjacent Boise River.
- Floodplain - Yes, the majority of the site is in the floodplain but will be elevated out with construction.
- Mature Trees - Yes, there are mature trees on the property along the Lawrence Kennedy Canal and the Boise River.
- Riparian Vegetation - Yes, down along the Boise River
- Steep Slopes - No
- Stream/Creek - Yes, the Lawrence Kennedy Canal and the Canyon Canal run through the property.
- Unique Animal Life - No
- Unique Plant Life - No
- Unstable Soils - No
- Wildlife Habitat - Yes, there are some wildlife that traverse through the property down by the river.
- Historical Assets - No

Application Requirements:

*(Applications are required to contain one copy of the following unless otherwise noted. **When combining with other applications (Prelim Plat, CUP, etc.) please include one paper copy for all applications**)*

Applicant (√)	Description	Staff (√)
✓	Pre-application meeting with the Planning Department required prior to neighborhood meeting.	
✓	Copy of neighborhood meeting notice sent to property owners within 300 feet and meeting sign-in sheet. (Please contact the City for addresses & labels) (Applicants are required to hold a neighborhood meeting to provide an opportunity for public review of the proposed project prior to the submittal of an application.)	
✓	Completed and signed Annexation & Zoning/Rezone Application	
✓	Fee: (Include Development Agreement Fee). Please contact the City for current fee. Fees may be paid in person with check or electronically with credit card. Please call City for electronic payment. Additional service fee will apply to all electronic payments.	
✓	Narrative fully describing the proposed project (must be signed by applicant)	
✓	Legal description of the property to be annexed and/or rezoned: <ul style="list-style-type: none"> • Include a metes & bounds description to the section line/centerline of all adjacent roadways, stamped and signed by a registered professional land surveyor, with a calculated closure sheet. • Scaled exhibit map showing the boundaries of the legal description in compliance w/the requirements of the Idaho State Tax Commission Property Tax Administrative Rules IDAPA 35.01.03.225.01h. • If requesting more than one zoning designation, include a legal description for each zone along with an overall annexation/rezone boundary description. Also include the boundaries of each different zone on the map. • Submit word.doc and pdf version with engineer's seal. 	
✓	Recorded warranty deed for the subject property	

✓	If the signature on this application is not the owner of the property, an original notarized statement (affidavit of legal interest) from the owner stating the applicant is authorized to submit this application.	
✓	One (1) 8½" X 11" copy and electronic copy in pdf. format of vicinity map showing the location of the subject property	
✓	One (1) full-size 24" X 36" copy and one (1) 11" X 17" copy of associated CUP/PUD Site Plan/Preliminary Plat. If this application is not accompanied by a plat or site plan, please submit conceptual development plan for the property.	
✓	Electronic copy in pdf. format of submitted plat, site or conceptual plan.	
✓	List of name(s) and address(es) of all canal or irrigation ditches within or contiguous to the proposed development.	
✓	One (1) copy of names and addresses printed on address labels, of property owners within three hundred feet (300') of the external boundaries of the property being considered as shown on record in the County Assessor's office. Please contact the City to request addresses and labels.	
✓	Two (2) copies of the Electronic versions of submitted application including neighborhood meeting information, signed application, narrative, legal description, warranty deed, vicinity map, preliminary plat/site plan, irrigation district information, <u>shall be submitted in original pdf format (no scans for preliminary plat/site plans) on two (2) thumb drives only (no discs) with the files named with project name and plan type.</u>	
✓	Signed Certification of Posting with pictures. (see attached posting requirements and certification form) – To be completed by application after acceptance of application. Staff will notify applicant of hearing and posting date.	
✓	*Applicant agrees to enter into a Development Agreement with this application. Applicant's Signature: <u>Jodd Lucher</u>	
✓	Property shall be annexed into Star Sewer and Water District prior to Final Plat approval, building permits. Please contact SSWD for details.	

FEE REQUIREMENT:

*** I have read and understand the above requirements. I further understand fees will be collected at the time of filing an application. I understand that there may be other fees associated with this application incurred by the City in obtaining reviews or referrals by architect, engineering, or other professionals necessary to enable the City to expedite this application. I understand that I, as the applicant, am responsible for all payments to the City of Star.*

Jodd Lucher
Applicant/Representative Signature

5 / 17 / 2022
Date

CONCEPTUAL DEVELOPMENT PLAN

LEGEND

- 1 Commercial Area
- 2 Fishing Docks
- 3 Open Space/ Park
- 4 Community Center
- 5 Boat Launch
- 6 Kiddie Play Pond
- 7 Beach
- 8 Native Open Space



















Middleton School District #134

Section 7, Item C.

Every Child Learning Every Day

Middleton School District #134

City of Star--Public Hearing Notice Response

Marc Gee
Superintendent

Lisa Pennington
Assistant Superintendent

General Response for All New Development

Middleton School District is currently experiencing significant growth in its student population. **Currently Middleton School District has 2 of our 3 elementary schools over capacity. Heights Elementary is at 134% of capacity with three portable units. Mill Creek Elementary is at 123% of capacity with 2 portables (soon to be 4).** We are nearing capacity, but have not superseded at this point, at our high school (94%) and middle school (85%). As it stands now there is a need for additional facilities in our school district, primarily at the elementary grades. We have significant concerns of the continued growth and our ability to meet the future facility needs of our district at the secondary level (Middleton Middle School and Middleton High School).

We have completed a demographic study performed for our school district boundaries and the data suggests for every new home we could expect between 0.5 and 0.7 (with an average of .559) students to come to our school. That is the factor/rate we use to make our projection of student impact for each development.

We encourage the city to be judicious in their approval process recognizing that each new development brings new students to our school and will increase the burden placed on taxpayers within the school district. New facilities, primarily an elementary school, are needed now, but additional students continue to increase that need.

The Quarry at River Park Estates Subdivision (Star)

Students living in the subdivision as planned would be in the attendance zones for Mill Creek Elementary, Middleton Middle School, and Middleton High School. With 228 total lots, we would anticipate, upon completion, an increase of 114-160 students between Mill Creek Elementary, Middleton Middle School, and Middleton High School. **To put this in perspective, that equates to approximately 5-6 classrooms of students (ave. 25 students).** Every classroom at Mill Creek Elementary currently has an initial cost of \$125,000 just for the portable unit that would be required to house the students. That amount does not include the costs of other materials required (ie desks, chairs, curricular materials, etc).

In addition to the increase in student population, based on the location, bussing would be provided for all school students. The increase in students has the potential to increase the number of routes the district provides, thus increasing cost to the district and taxpayers. Having not seen the design of the subdivision we would recommend the developers meet with the school district officials and school transportation officials to ensure adequate access for bussing to the area.

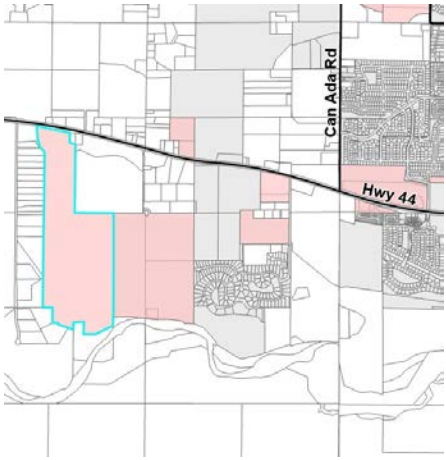
Questions, clarifications, or comments should be directed to:

Marc Gee, Superintendent. (mgee@msd134.org)

5 South Viking Avenue
Middleton, ID 83644
(208) 585-3027
msd134.org

Communities in Motion 2050 Development Checklist

The Community Planning Association of Southwest Idaho (COMPASS) is the metropolitan planning organization (MPO) for Ada and Canyon Counties. COMPASS has developed this review as a tool for local governments to evaluate whether land developments are consistent with the goals of Communities in Motion 2050 (CIM 2050), the regional long-range transportation plan for Ada and Canyon Counties. This checklist is not intended to be prescriptive, but rather a guidance document based on CIM 2050 goals.



Development Name: The Quarry at River Park Estates
CIM Vision Category: Future Neighborhood **New Jobs:** ±90
CIM Corridor: West State Street/State Highway 44 **New Households:** 228



Safety
 Level of Stress measures how safe and comfortable a bicyclist or pedestrian would feel on a corridor and considers multimodal infrastructure number of vehicle lanes and travel speeds.

- Pedestrian level of stress
- Bicycle level of stress



Economic Vitality
 These tools evaluate whether the location of the proposal supports economic vitality by growing near existing public services.

- Activity Center Access
- Farmland Preservation
- Net Fiscal Impact
- Within CIM Forecast



Convenience
 Residents who live or work less than 1/2 mile from critical services have more transportation choices, especially for vulnerable populations.

- Nearest bus stop
- Nearest public school
- Nearest public park



Quality of Life
 Checked boxes indicate that additional information is attached.

- Active Transportation
- Automobile Transportation
- Public Transportation
- Roadway Capacity



Improves performance



Does not improve or reduce performance



Reduces performance

Comments:
 The number of jobs included in this proposal exceeds growth forecasted for this area. Transportation infrastructure may not be able to support the new transportation demands.

Widening State Highway 44, Canyon Lane to Star Road to four travel lanes is the #3 unfunded state system priority in [Communities in Motion 2040 2.0](#). Also note that this development is nearby the Boise River's 100 year-floodplain.

Communities in Motion 2050
[2020 Change in Motion Report](#)
[Development Review Process](#)

Web: www.compassidaho.org
 Email: info@compassidaho.org



Fiscal Impact Analysis Supplemental for the Development Review Checklist

The purpose of the fiscal impact analysis is to better estimate expected revenues and costs to local governments as a result of new development so that the public, stakeholders, and the decision-makers can better manage growth. Capital and operating expenditures are determined by various factors that determine service and infrastructure needs, including persons per household, student generation rates, lot sizes, street frontages, vehicle trip and trip adjustment factors, average trip lengths, construction values, income, discretionary spending, and employment densities.

The COMPASS Development Checklist considers the level of fiscal benefits, how many public agencies benefit or are burdened by additional growth, and how long the proposal will take to achieve a fiscal break-even point, if at all.

More information about the COMPASS Fiscal Impact Tool is available at:

www.compassidaho.org/prodserv/fiscalimpact.htm

Overall Net Fiscal Impact Net Fiscal Impact by Agency



City



County



Highway District



n/a School District

Break Even: Doesn't Break Even

Shawn Nickel

From: Todd Tucker <ttucker@boisehunterhomes.com>
Sent: Tuesday, August 23, 2022 8:06 AM
To: Ryan Field
Cc: Shawn Nickel; Trevor Chadwick
Subject: FW: TIS without a preliminary plat

Ryan,
Please see Chris Hopper’s email below clarifying that they will not require a TIS for the annexation application with a conceptual development plan for our property next to the River Park Estates subdivision as this development does not constitute an extraordinary impact for traffic needs due to the relatively small size of the development. As such, our plan is to submit the annexation and zoning application (with a conceptual development plan) later this week. Let me know if you have any questions or need anything else from me.

Thanks,

Todd Tucker

Planning & Entitlement Manager

BOISE HUNTER
HOMES

923 S. Bridgeway Place
Eagle, ID 83616

Cell: 208-570-3626
Office: 208-618-2157

From: Chris Hopper <CHopper@canyonhd4.org>
Sent: Monday, August 22, 2022 3:14 PM
To: Todd Tucker <ttucker@boisehunterhomes.com>
Cc: Travis Hunter <THunter@boisehunterhomes.com>
Subject: RE: TIS without a preliminary plat

Todd-
Our policy does not speak to the need for a TIS at a particular phase in the development cycle, just that it may be required for review of applications for everything from annexations to access permits to planned unit developments. For ordinary development, that does not meet the “extraordinary impact” definition in the transportation impact fee ordinance adopted by Star and Canyon County, a TIS is not necessary to the highway district until approval of the preliminary plat when project-specific traffic mitigation(s) would be established. For those projects large enough or complex enough to require a TIS with annexation or comp plan amendment, or for specific conditional uses, CHD4 will identify to the city the need for a TIS (or preliminary TIS) when initial notice is provided.

The project you are referencing, the 186 acres west of River Park on Blessinger, does not constitute an extraordinary impact for traffic needs, and CHD4 would not require an approved TIS prior to the preliminary plat.

Respectfully,

Chris Hopper, P.E.
District Engineer



City of Star

P.O. Box 130
Star, Idaho 83669
208-286-7247
Fax 208-286-7569

www.staridaho.org

Mayor:
Trevor A. Chadwick

Council:
Kevin Nielsen
Jennifer Salmonsens
Kevan Wheelock
David Hershey

29 September 2022

Todd Tucker
Boise Hunter Homes
9232 S. Bridgeway Place
Eagle, ID 83616

Re: The Quarry at River Park – Annexation and Rezone Application

Dear Mr. Tucker

The City of Star Engineering Department has reviewed the Annexation and Rezone Application for the Quarry at River Park dated May 17, 2022. We reviewed the applicant's package to check conformance with the City's Subdivision Ordinance and coordinated our review with Shawn L. Nickel. We have the following comments and question based on our review.

1. Potable water cannot be used for irrigation purposes. A separate pressure irrigation system will be required. Construction plans for a subdivision-wide pressure irrigation system will be required for each final plat. Plan approvals and license agreements from the affected irrigation and/or canal companies will be required.
2. Street lighting shall be in accordance with ISPWC and the City of Star Supplementals. Cut sheet for lights and light poles shall be approved in writing by the City prior to installation.
3. Historic irrigation lateral, drain, and ditch flow patterns shall be maintained unless approved in writing by the local irrigation district or ditch company.
4. Finish grades at subdivision boundaries shall match existing finish grades. Runoff shall be maintained on subdivision property unless otherwise approved.
5. Easements for sewer/water facilities will be required where placed outside of public right of way.

We recommend that the application be APPROVED with the conditions listed above. Any variance or waivers to the City of Star standards, ordinances, or policies must be specifically approved in writing by the City. Approval of the above referenced preliminary plat does not relieve the Registered Professional Land Surveyor or the Registered Professional Engineer of those responsibilities.

If you have any questions, please do not hesitate to contact City Hall

Sincerely,



Ryan V. Morgan, P.E.
City Engineer

Enclosures

Boise Office
1101 W. River St.
Suite 110
Boise, Idaho 83702
Tel. (208) 629-7447

Challis Office
1301 E. Main Ave.
P.O. Box 36
Challis, Idaho 83226
Tel. (208) 879-4488

Twin Falls Office
213 Canyon Crest Drive
Suite 200
Twin Falls, Idaho 83301
Tel. (208) 969-9585

Fax (all offices)
(208) 629-7559



RECEIVED
9/19/22
Jnae

SAWTOOTH LAW OFFICES, PLLC

September 14, 2022

Section 7, Item C.

S. Bryce Farris

Evan T. Roth

Daniel V. Steenson

Andrew J. Waldera

Brian A. Faria

Patxi Larrocea-Phillips

John A. Richards

Matthew A. Sturzen

Katie L. Vandenberg-Van Vliet

James R. Bennetts (retired)

City of Star
Attn: Shawn Nickel
P.O. Box 130
Star, Idaho 83669

Re: File #'s: AZ-22-13 (Annexation-Zoning) and DA-22-13 (Development Agreement) -
The Quarry at River Park Estates Subdivision

Dear Mr. Nickel:

Drainage District #2 has a drainage ditch and easement that runs through or abuts this property. The easement is 100 feet, 50 feet each side of the centerline, for open drains and 50 feet, 25 feet each side of the centerline for piped or closed drains. The developer/owner must contact the District's attorney's, Sawtooth Law Offices, PLLC, for approval before any encroachment, change of easement, or drainage discharge into the District's facilities occurs. The District must review drainage plans and construction plans prior to any approval.

The District generally requires a License Agreement prior to any approval for the following reasons:

1. Relocation of a District facility which would also require a new easement and relinquishment of the old easement once the relocation has been completed.
2. Piping of District facility.
3. Encroachment on a District facility with gas, water and sewer lines, utility lines, roadways, bridges or any other structures.
4. Drainage discharges into District facilities.

Also, please be advised that the District does not approve of trees within the District's easement. Therefore, any existing trees within the District's easement will need to be removed. On occasion, the District may make exceptions on a case by case basis, which requires the developers/owners to obtain written permission from the District for existing trees to remain.

Please contact me if you have any questions.

Yours very truly,

S. Bryce Farris

SBF:krk

cc: DD#2 Board of Directors
www.sawtoothlaw.com
Attorneys licensed in Idaho, Montana, Oregon and Washington



**Your Safety • Your Mobility
Your Economic Opportunity**

IDAHO TRANSPORTATION DEPARTMENT

P.O. Box 8028 • Boise, ID 83707-2028
(208) 334-8300 • itd.idaho.gov

September 29, 2022

City of Star

Attn: Shawn L. Nickel, P&Z Administrator

PO Box 130

Star, ID 83669

snickel@staridaho.org

RE: The Quarry at River Park Estates, Case # AZ-22-13 and DA-22-13

Dear Mr. Nickel,

Idaho Transportation Department (ITD) has received application for case numbers AZ-22-13 and DA-22-13 for review located on the south side of State Highway 44, between Trigger Ranch Lane and west of Blessinger Road, Star, Idaho.

Traffic generation numbers were not provided with this application. Based off of the requested zoning and proximity to State Highway 44, a Transportation Impact Study (TIS) will be required. ITD requests that the applicant provide a TIS reflecting full build-out of the development. ITD needs more information on the trip generations to determine what mitigations, if any, that the applicant may be required to construct on the state highway system. Any necessary mitigation for traffic impacts identified by the TIS shall be the responsibility of the applicant to install.

Additionally, ITD is working on a corridor plan for this area of State Highway 44 that will need to be taken into consideration as the development progresses.

ITD reserves the right to make further comments upon review of any submitted traffic generation data or other documents.

Sincerely,

A handwritten signature in blue ink that reads 'Wendy I. Howell'.

Wendy I. Howell

ITD – District 3

Development Services Coordinator



MIDDLETON STAR FIRE DISTRICTS

Section 7, Item C.

Fire District Headquarters
11665 W. State St., Suite B
Star, Idaho 83669

Tel. No.: (208) 286-7772
Web: www.midstarfire.org
Email: permits@starfirerescue.org

DATE: September 28, 2022
TO: City of Star – Planning and Zoning
FROM: Victor Islas, Deputy Chief
SUBJECT: Fire District Comments
PROJECT NAME: The Quarry at River Park Estates Subdivision
Files: AZ-22-13 & DA-22-13

Fire District Summary Report:

1. **Overview** This development can be serviced by the Star Fire Protection District. This development shall comply with the 2018 International Fire Code (IFC) and any codes set forth by the City of Star, Idaho.
2. **Fire Response Time:** This development will be served by the Star Fire Protection District Station 52, located at 22585 Kingsbury Rd., Middleton, ID 83644. Station 52 is 0.7 miles with a travel time of 1 minutes under ideal driving conditions to the purposed entrance to the development off Hwy 44. Please note response times will change as roads are developed.
3. **Comments:** This project will require additional Fire Code Compliance review by the fire district as development applications are submitted.

Shawn Nickel

From: Kay Harwood <kay7226@yahoo.com>
Sent: Wednesday, September 28, 2022 10:02 AM
To: Shawn Nickel
Cc: Trevor Chadwick; Trace Leighton
Subject: Re: Boise Hunter Homes proposal 'The Quarry at River Park Estates' Subdivision - Annexation hearing, 10/4/22

Hello Mr. Nickel -

Below is the revised letter I referred to yesterday. Line item #9 is the only one revised to add an additional water/sewer stub.

Please kindly replace the prior letter with this one.

Thank you!
Kay Harwood

Sent from my iPad

On Sep 27, 2022, at 2:26 PM, Kay Harwood <kay7226@yahoo.com> wrote:

To: Shawn Nickel
City Planner & Zoning Administrator
City of Star

Dear Mr. Nickel -

To garner support for the proposed 'The Quarry at River Park Estates' Subdivision, the following requirements are provided by the neighborhoods of Leighton Lake Estates, and Leighton Ranch, totaling 24 households.

As there is no preliminary plat in place at this time, the following are requested to be included in the Development Agreement between the City of Star, and Owner.

- 1. Zoning maximum R2, and maximum number

of lots capped at 217, or less. Minimum lot sizes of 1 to 2 acres each, for those proposed to border Leighton Lake Estates and Leighton Ranch subdivisions.

2. We question whether an access of this size and this many homes is allowable on HW44 due to the proximity of Trigger Ranch Lane and Blessinger Road. If it is allowed, we are requesting that it be moved to the farthest eastern property boundary of the proposed subdivision by BHH.

3. Installation of a traffic light at the corner of HW44 and Blessinger.

4. Proposed Landuff lane extension to be moved to split the section line, to align with what other properties in the area have been required to do by the CCHD.

5. Setbacks, lot widths, street widths, density to follow current revised guidance approved by City of Star.

6. Eliminate 6 of 8 proposed lots bordering Leighton Lake Estates and the west side of the most northerly lake in 'The Quarry'. No more than 2 homes on said west side, on building lots not less than 1 to 2 acres in size, which

should have private driveway access, with no ingress/egress access road. This provides more land mass, and is offset by the dense number of homes proposed for the east side.

7. Single level homes only on lots bordering Leighton Lake Estates and Leighton Ranch subdivisions.

8. Move clubhouse to eastside of the proposed lake. Any buildable replacement lots created thereof to be 1 to 2 acres each, minimum.

9. Three Sewer/water stub locations: (1) the north side of Lawrence Kennedy canal, at the western edge of the commercial site; (2) at the westerly edge of proposed subdivision, located at edge of Landuff Road, adjacent to the Leighton Lake Estates property; and (3) at most southerly edge of proposed subdivision.

10. Perimeter fence commitment required in writing.

11. Developer proposed landscaping with berms and trees adjacent to Leighton Lake Estates and Leighton Ranch subdivisions required in writing.

12. Remove the electrical line poles, and bury the lines underground. These are the lines that border the subject proposed development, and the existing Leighton Lake Estates and Leighton Ranch subdivisions.

Thank you,

Kay Harwood, Representative, Leighton Lake Estates HOA
Trace Leighton, Representative, Leighton Ranch

	Leighton Lake Estates:	
LOT	ADDRESS	NAME

2	22318 Trigger Ranch Ln	John Flaherty
3	22282 Trigger Ranch Ln	John Flaherty
4	22244 Trigger Ranch Ln	Jeff and Jaimie Hererra
5	22202 Trigger Ranch Ln	Douglas & Heather Morris
6	22180 Trigger Ranch Ln	Ron and Tamara Brutsman
7	22154 Trigger Ranch Ln	Shane and Laura Proffitt
8	22138 Trigger Ranch Ln	Kirk and Kay Harwood
9	22104 Trigger Ranch Ln	Gregg and Lauren Herrera
10	22076 Trigger Ranch Ln	Jon and Deena Bondarczuk
11	22002 Trigger Ranch Ln	Larry and Debi Downs
13	21988 Trigger Ranch Ln	John and Shelby White
14	21934 Trigger Ranch Ln	Evan and Kandi Gines
15	21846 Trigger Ranch Ln	Mark and Tina Vucinich
16	21734 Trigger Ranch Ln	Darren and Kelsey Shank
17	21664 Trigger Ranch Ln	Christopher and Amanda Nichols
18	21604 Trigger Ranch Ln	Charles and Ryan Taylor-Teets
19	TBD Trigger Ranch Ln	Alan and Jessica Neighbors
	Leighton Ranch:	
	21270 Trigger Ranch Ln	Trace and Wendy Leighton
		Trace and Wendy represent a total of 7 properties

RESOLUTION TBD-2022 (Police and Fire Mitigation Fee)

A RESOLUTION OF THE CITY OF STAR, IDAHO WITHIN ADA AND CANYON COUNTIES, CREATING A POLICY FOR THE ISSUANCE OF MITIGATION FEES FOR STAR POLICE AND MID-STAR FIRE PERSONNEL ON RESIDENTIAL AND MULTI-FAMILY BUILDING PERMITS; EXPLAINING THE REASONS FOR THE ISSUANCE OF MITIGATION FEES; ENCOURAGING OTHER ENTITIES TO REPEAL AND REPLACE OR MODIFY HOUSE BILL 389 (2021) AND PROVIDING AN EFFECTIVE DATE

BE IT RESOLVED THAT THE CITY COUNCIL OF THE CITY OF STAR IDAHO WITHIN ADA AND CANYON COUNTIES WILL ISSUE MITIGATION FEES FOR STAR POLICE AND MID-STAR FIRE PERSONNEL IN THE FOLLOWING MANNER:

Whereas, the City Council and Mayor of the City of Star find:

- House Bill 389 (HB389), passed in the 2021 Idaho Legislative Session, has reduced the amount of new construction value to an extent that it harms the orderly growth of cities and districts such as Star throughout Idaho that rely on new construction market value to provide essential services (Police and Fire);
- 100% of the property taxes levied in the City of Star are used to pay for police services;
- Due to various government responses to COVID since 2020, Star has seen a large influx of new construction to accommodate the new citizens to the city;
- The City of Star enjoys low levy rates and as a policy does not raise taxes to recover Foregone amounts;
- The City of Star, through the Comprehensive Plan, requires the following metrics to be met for Police Public Safety:
 - The City of Star will operate under a proactive police model versus a reactive police model. The proactive police model allows for officers to get ahead of any criminal activity that may arise in the city which provides for greater safety for the residents and property in the city.
 - The City of Star will maintain a four (4) minute or less response time on all Code 3 calls. Code 3 calls are those calls which require an immediate emergency response.
 - The City of Star will maintain less than 18 crimes per 1,000 residents.
 - To achieve the above goals the City of Star will operate at a level of one (1) commissioned officer per 1,000 residents. Based on COMPASS numbers of an average of 2.7 residents per housing unit in Star; every 370 new residential units constructed will require a new officer.
- The City of Star for fiscal year 2022/2023 is operating at .80 commissioned officers per 1,000 residents; the COMPASS Population estimate is 15,230 residents and the city has 12 commissioned officers;
- The City of Star recognizes the need for an additional fire station for the Mid/Star Fire District due to the increase in call volume and the growth of the city; and
- Mid/Star Fire District is limited on hiring personnel to staff a new fire station due to HB389;

RESOLUTION TBD-2022 (Police and Fire Mitigation Fee)

Whereas, the Mayor and City Council of the City of Star encourages entities and other districts to request the modification, repeal and/or replacement of House Bill 389 to allow cities and other taxing entities to provide the essential services required by the citizens due to growth; and

Whereas, the Mayor and City Council of the City of Star and the Building Contractors Association of Southwestern Idaho, Inc. have worked together coming up with a mitigation fee to address the needs of public safety in the City of Star as follows:

- At the issuance of a building permit for single family residential and multi-family residential, the following mitigation fees will apply:
 - Police Mitigation Fee: \$ 1,120.00 per residential unit/door.
 - Fire Mitigation Fee: \$ 1,200.00 per residential unit/door.
 - Example for apartments: A 100-unit apartment complex would be assessed the following mitigation fee: $100 \times \$2,320.00 = \$232,000.00$.
- These mitigation fees are only to be used for the addition of personnel for each entity as outlined above;
- Every two (2) years the BCA and the City of Star will meet to discuss the continuation of the mitigation fees, beginning in April of 2024; and
- The BCA will work with the Idaho State Legislature to address the concerns of HB389 and the impacts of orderly growth addressing the concerns above.

Therefore, be it resolved the policy outlined above is hereby enacted.

PASSED and APPROVED by the Star City Council on September 20, 2022 and shall take effect and be in full force from this date forward.

DATED this _____ day of **September 2022**.

Trevor A Chadwick, Mayor

ATTEST: _____
Jacob M Qualls, City Clerk / Treasurer

6206 N. Discovery Way, Suite A,
Boise ID 83713
Phone (208) 377 3550
Membership@BCASWI.org
www.BCASWI.org



**BUILDING CONTRACTORS ASSOCIATION
OF SOUTHWESTERN IDAHO, Inc.**

"A Tradition of Building Excellence for Over 50 Years"

Section 7, Item D.



August 23, 2022

Mayor Chadwick, City Council Members and City Planning staff
10769 W. State Street
Star, ID. 83669

Dear Mayor Chadwick, City Council Members, and Planning and Zoning Administrator,

The Building Contractors Association of Southwestern Idaho (BCA) appreciates the positive working relationship we have with the City of Star. As the BCA represents approximately 400 builder and associate member companies and thousands of local employees in the local homebuilding industry, we strive to support responsible development in our community.

The BCA appreciates the City pausing the decision to restrict building permits and allowing industry time to more thoroughly review and consider other viable options. After several discussions with the City as well as internal discussions with several of our members, we have the following points to share:

1. We acknowledge this is a very difficult issue for all stakeholders involved and until either 1) there is a change in the legislation that caused this problem or 2) a sufficient market-induced slowdown in growth occurs, something needs to be done to ensure current levels of service for emergency services do not further deteriorate.
2. We are concerned that capping the number of building permits will expose the City to potential lawsuits. Some lot owners and other land owners could believe they are treated unfairly if they are not able to acquire a building permit on entitled property. We could not determine a fair formula with current (or future) entitled properties.
3. Based on inputs from the City, we will not oppose the following new fee charged to future building permits based on the following criteria:
 - a. Fee to be called "Emergency Services Temporary Mitigation Fee", or similar
 - b. There will be no cap on building permits
 - c. Fee will be charged to all permits (single-family, multi-family and commercial)
 - d. Based on expected reduced permits: Fire fee will not exceed \$1,200 per permit (depending on split with other permits and assuming \$1.2M need)
 - e. Police fee will not exceed \$1,120 per permit (depending on split with other permits)
 - f. Same fee charged for single family and multi family, and the City will determine the fee amount for commercial
 - g. Fee will be charged for one year with an automatic extension for an additional year if the legislation is not changed in 2023 (ie reduce the 8% cap on property tax collections, etc). After 2 years, City and BCA will reassess fee amounts recognizing based on assumptions from the City it appears there will be adequate fees collected for fire after 2 years and a reduced or different amount may be needed for police.

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BCA

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Section 7, Item D.



We believe this approach is the most equitable and reasonably fair solution as it enables current levels of service to be maintained, the costs are spread to all users of emergency services, and it avoids capping the number of building permits, which we strongly oppose. Again, trying to determine "fairly" who gets what percent of available building permits is not achievable in the eyes of all stakeholders (entitled or annexed property, final platted building lots, etc) and puts the City at risk of lawsuits. We do believe charging a temporary higher fee is the better approach to avoid as many future problems as possible and will achieve the financing necessary to maintain current levels of service.

The housing industry is starting to face economic headwinds and growth will not always be this strong. We look forward to continuing to work with the City in a positive way to continue providing the high quality of life that is offered to all the citizens of Star.

Sincerely,

A handwritten signature in black ink, appearing to be 'Lance Snyder', with a long horizontal line extending to the right.

Lance Snyder, President
Building Contractors Association of Southwestern Idaho