COMMUNITY DEVELOPMENT COMMITTEE & COMMITTEE OF THE WHOLE HYBRID MEETING

Monday, May 20, 2024, at 6:00 PM

Snoqualmie City Hall, 38624 SE River Street & Zoom

COMMITTEE MEMBERS
Chair: Louis Washington
Councilmembers: Jolyon Johnson and Rob Wotton

Join by Telephone at 6:00 PM: To listen to the meeting via telephone, please call **253.215.8782** and enter Webinar ID **860 6728 7531** and Password **1730040121** if prompted.
Press *9 to raise your hand to speak. Raising your hand signals the meeting moderator that you have a comment.
Press *6 to mute and unmute.

Join by Internet at 6:00 PM: To watch the meeting over the internet via your computer, follow these steps:
1) Click this **link**
2) If the Zoom app is not installed on your computer, you will be prompted to download it.
3) If prompted for Webinar ID, enter **860 6728 7531**; Enter Password **1730040121**
4) Please confirm that your audio works prior to participating.

This meeting will be conducted in person and remotely using teleconferencing technology provided by Zoom.

CALL TO ORDER & ROLL CALL

AGENDA APPROVAL

PUBLIC COMMENTS (online public comments will not be taken).

MINUTES

1. Approval of the minutes dated May 6, 2024

AGENDA BILLS

2. FEMA Annual Floodplain Management Plan and Repetitive Loss Area Analysis
   PROPOSED ACTION:

   I move to recommend City Council adoption of the 2024 Repetitive Loss Area Analysis (RLAA) Resolution at the meeting on May 28, 2024.

3. **AB24-067**: Climate Change Task Order for Services

DISCUSSION ITEMS

ADJOURNMENT

UPCOMING ITEMS
(The following items reference either upcoming projects or issues pertaining to matters of the Community Development Council Committee. There will be no discussion of these items unless there is a change in status.)

COMMUNITY DEVELOPMENT COMMITTEE MINUTES
REGULAR HYBRID MEETING
May 6, 2024

This meeting was conducted as a hybrid in-person and remote meeting; the in-person option was in the Council Chambers at Snoqualmie City Hall, and the remote participation option was using teleconferencing technology provided by Zoom.

CALL TO ORDER & ROLL CALL: Chair Washington called the meeting to order at 6:07 PM

Committee Members:
Chair Louis Washington, and Councilmember Rob Wotton were present.

City Staff:
Emily Arteche, Community Development Director; Mike Chambless, City Administrator; Ashley Wragge, Planning Technician; Andy Latham, IT Systems Support.

AGENDA APPROVAL
The agenda was approved.

PUBLIC COMMENTS
No comments.

MINUTES

1. Committee approved the minutes for April 1, 2024.

AGENDA BILLS

2. AB24-054 Text Amendments for House Bill 1220 Compliance
   Staff reviewed the proposed code text to bring the Snoqualmie Municipal Code into compliance with HB 1220. This bill covers emergency housing and services. Discussion ensued about the Mixed-Use zone would be code proposal as well as discussion about day sheltering.

3. AB24-062 MOU Meadowbrook Farm Docent Services
   This is the third document in a series of updated and established norms regarding Meadowbrook Farms. This document sets the parameters for docent services and is at the review stage. This document helps categorize services offered.

DISCUSSION ITEMS

4. SB 5290
   This bill is to regulate permit processing times and is being presented to show what is coming up for review. Staff overviewed new timelines and what penalties there are for failure to comply. Bigger cities are also obligated to report processing timelines.

ADJOURNMENT

Chair Washington adjourned the meeting at 6:39 PM

CITY OF SNOQUALMIE

Minutes by Ashley Wragge, Planning Technician

Recorded meeting audio is available on the City website after the meeting.

Minutes approved at the _____ Community Development Meeting.

BUSINESS OF THE CITY COUNCIL
CITY OF SNOQUALMIE

AB23-057
May 28, 2024
Committee Report

AGENDA BILL INFORMATION

TITLE:	FEMA Annual Floodplain Management Plan and Repetitive Loss Area Analysis	☐ Discussion Only ☒ Action Needed:
PROPOSED ACTION:	AB24-057 Adopt Resolution approving the 2024 FEMA Annual Floodplain Management Plan and Repetitive Loss Area Analysis	☐ Motion ☐ Ordinance ☒ Resolution

REVIEW:	Department Director	Emily Arteche	5/6/2024
	Finance	n/a	Click or tap to enter a date.
	Legal	David Linehan	5/16/2024
	City Administrator	Mike Chambless	Click or tap to enter a date.

DEPARTMENT:	Community Development	
STAFF:	Emily Arteche, Community Development Director	
COMMITTEE:	Community Development	**COMMITTEE DATE:** May 20, 2024
EXHIBITS:	1. Resolution with RLAA Final Draft Report	

AMOUNT OF EXPENDITURE	$ n/a
AMOUNT BUDGETED	$ n/a
APPROPRIATION REQUESTED	$ n/a

SUMMARY

INTRODUCTION
This agenda bill is to indicate completion of the City of Snoqualmie's 2024 Floodplain Management Plan and Repetitive Loss Area Analysis (RLAA) with adoption by resolution of the final Draft RLAA.

LEGISLATIVE HISTORY
A Resolution (Res 377) was approved on September 13, 1993. The City Progress Report and recertification documents, AB23-137 were provided to the Community Development Committee on November 20, 2023, and the City Council on November 27, 2023.

BACKGROUND
The Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management practices that exceed the minimum requirements of the National Flood Insurance Program (NFIP). Over 1,500 communities participate nationwide. In CRS communities, like the City of Snoqualmie, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community's efforts that address the three (3) goals of the program:

1. Reduce and avoid flood damage to insurable properties.
2. Strengthen and support the insurance aspects of the National Flood Insurance Program.
3. Foster comprehensive floodplain management.

The City must update the background information and the recommendations in its floodplain management plans and repetitive loss area analyses at least every five (5) years. The City of Snoqualmie is required by FEMA Community Rating System program to meet the credit criteria for a Category C Community.

ANALYSIS

The City is currently at a Class 5, under the CRS Credit Points, Classes, and Premium Discounts. Category C repetitive loss communities must conduct a Repetitive Loss Area Analysis. A Repetitive Loss Area Analysis has been completed to satisfy program prerequisites.

BUDGET IMPACTS

N/A

NEXT STEPS

Make a motion to recommend adoption of the 2024 Repetitive Loss Area Analysis (RLAA) at the City Council meeting on May 28, 2024.

PROPOSED ACTION

I move to recommend City Council adoption of the 2024 Repetitive Loss Area Analysis (RLAA) Resolution at the meeting on May 28, 2024.

DRAFT RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SNOQUALMIE, WASHINGTON, ADOPTING A REPETITIVE LOSS AREA ANALYSIS FOR THE PERIOD OF 2024-2029.

WHEREAS, the City of Snoqualmie is required by FEMA Community Rating System (CRS) program to meet the criteria for a Category C Community; and

WHEREAS, a Repetitive Loss Area Analysis has been completed to satisfy program prerequisites; and

WHEREAS, the analysis has been made available on the City's webpage for public input and to meet the publicity requirements of the CRS Activity;

Now, therefore, be it RESOLVED, by the City Council of the City of Snoqualmie, Washington, that the City of Snoqualmie 2024 Repetitive Loss Area Analysis set forth in Exhibit 1 attached hereto, is hereby approved and adopted.

PASSED by the City Council of the City of Snoqualmie, Washington, this 27th day of May, 2024.

_____
Kathrine Ross, Mayor

Attest:

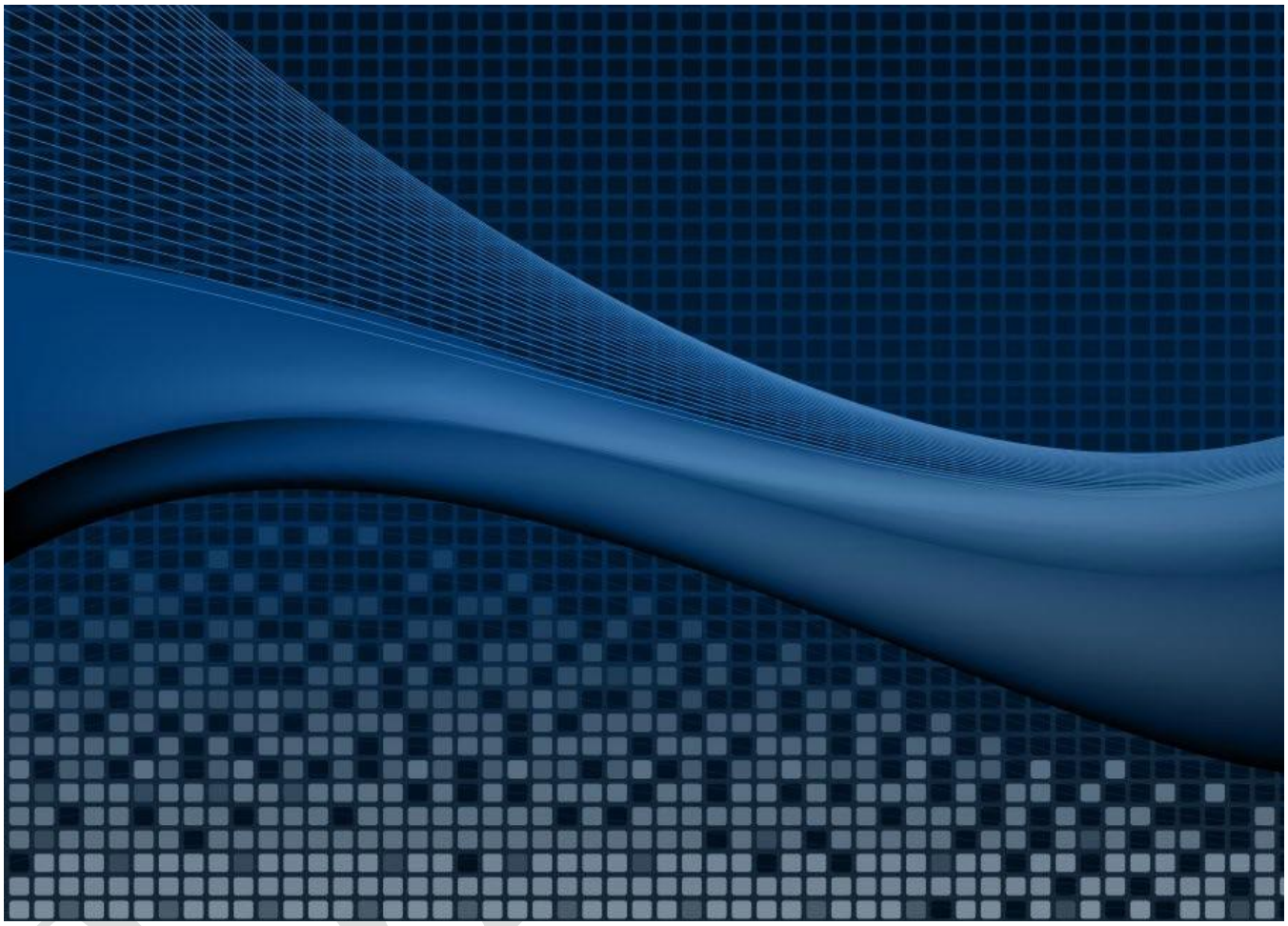
_____
Deana Dean, City Clerk

Approved as to form:

_____
David A. Linehan, Interim City Attorney

2024 Repetitive Loss Area Analysis

Public Document



May 1, 2024

TETRA TECH

City of Snoqualmie, Washington 2024 Repetitive Loss Area Analysis

May 1, 2024

PREPARED FOR

City of Snoqualmie
38624 SE River Street
Snoqualmie, Washington 98065

PREPARED BY

Tetra Tech, Inc.
415 Oak Street
Kansas City, Missouri 64106

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City of Snoqualmie, Washington Repetitive Loss Area Analysis

PART 1—PLANNING PROCESS AND PROJECT BACKGROUND

1. INTRODUCTION

1.1 REPETITIVE LOSS PROPERTIES AND THE COMMUNITY RATING SYSTEM

A repetitive loss property is defined by the Federal Emergency Management Agency (FEMA) as a property for which two or more National Flood Insurance Program (NFIP) losses of at least $1,000 each have been paid within any 10-year rolling period since 1978 (FEMA 2017). From 1978 through 2020, about a quarter of all claims paid under the NFIP nationwide were for repetitive loss properties, even though such properties make up fewer than 2 percent of all NFIP insurance policies (FEMA 2017).

Federal programs such as the Community Rating System (CRS) encourage communities to identify and mitigate the causes of repetitive losses. The first step is to map repetitive loss areas, which are contiguous areas that include one or more properties on FEMA's list of repetitive loss properties and all nearby properties with exposure to the same or similar flooding conditions. FEMA considers listed repetitive loss properties to be indicative of an overall repetitive loss problem that may affect other nearby properties. Designation of repetitive loss areas around listed repetitive loss properties allows an evaluation of actual or potential flooding problems at properties that may not have flood insurance or may have had only a single previous claim. This ensures that all properties with the same exposure to a flood risk are addressed equally.

1.1.1 Requirements for Category C Communities

The CRS, which provides for reduced flood insurance premiums in communities that carry out various flood mitigation activities, requires the following from participating communities with 50 or more repetitive loss properties (Category C communities):

- Prepare a map of repetitive loss areas.
- Review and describe each area's repetitive loss problem.
- Prepare a list of the addresses of all properties in the repetitive loss areas with insurable buildings, which are defined to include the following (FEMA 2020):
  - A structure that is affixed to a permanent site and has two or more outside rigid walls and a fully secured roof
  - A manufactured home (also known as a mobile home) built on a permanent chassis, transported to its site in one or more sections, and affixed to a permanent foundation
  - A travel trailer without wheels, built on a chassis and affixed to a permanent foundation, that is regulated under the community's floodplain management and building ordinances or laws.
- Undertake an annual outreach project to those addresses.
- Prepare a floodplain management plan or area analysis for the repetitive loss areas.

1.1.2 The Repetitive Loss Area Analysis

FEMA prescribes the following five-step process for conducting an area analysis for repetitive loss:

- Step 1—Advise all the property owners in the repetitive flood loss area that the analysis will be conducted.
- Step 2—Contact agencies or organizations that may have plans that could affect the cause or impacts of the flooding.
- Step 3—Collect data on the analysis area and each building in it to determine the causes of the repetitive damage.
- Step 4—Review alternative mitigation approaches and determine whether any property protection measures or drainage improvements are feasible.
- Step 5—Document the findings in a report.

As required under Step 5, it provides the following information:

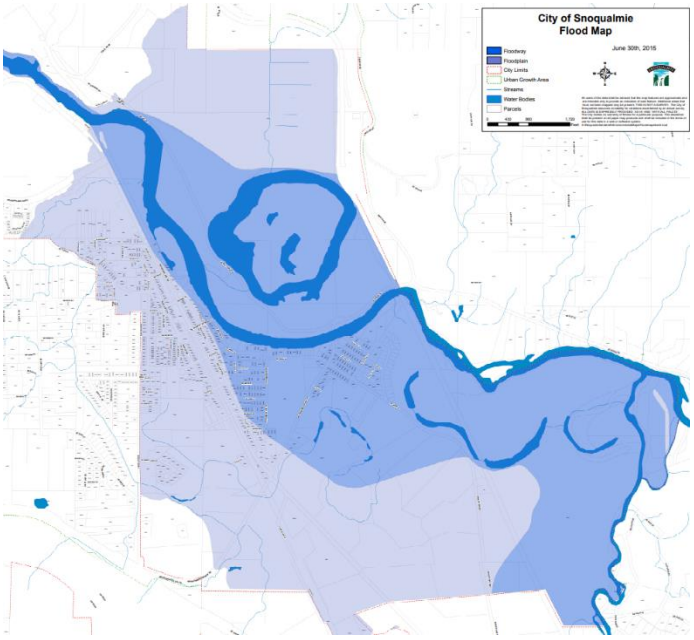
- A summary of the process followed
- Problem statements with maps for each area
- A table of basic information about each building in the area
- A description of alternative approaches considered to address the problem
- A set of recommended action items to address the problem

1.2 CITY OF SNOQUALMIE REPETITIVE LOSS AREA ANALYSIS

King County, Washington (County) prepared a King County Regional Hazard Mitigation Plan (RHMP) in 2020. The county in partnership with the City of Snoqualmie (City) along with local governments within the county, participated in the RHMP. The City of Snoqualmie, as a planner partner, is represented in Volume 2 of the RHMP. The plan addressed general flooding problems and identified possible solutions for individual homeowners. However, the plan did not include all required procedures for CRS Step 5c as outlined in the *2017 Community Rating System Coordinator's Manual*.

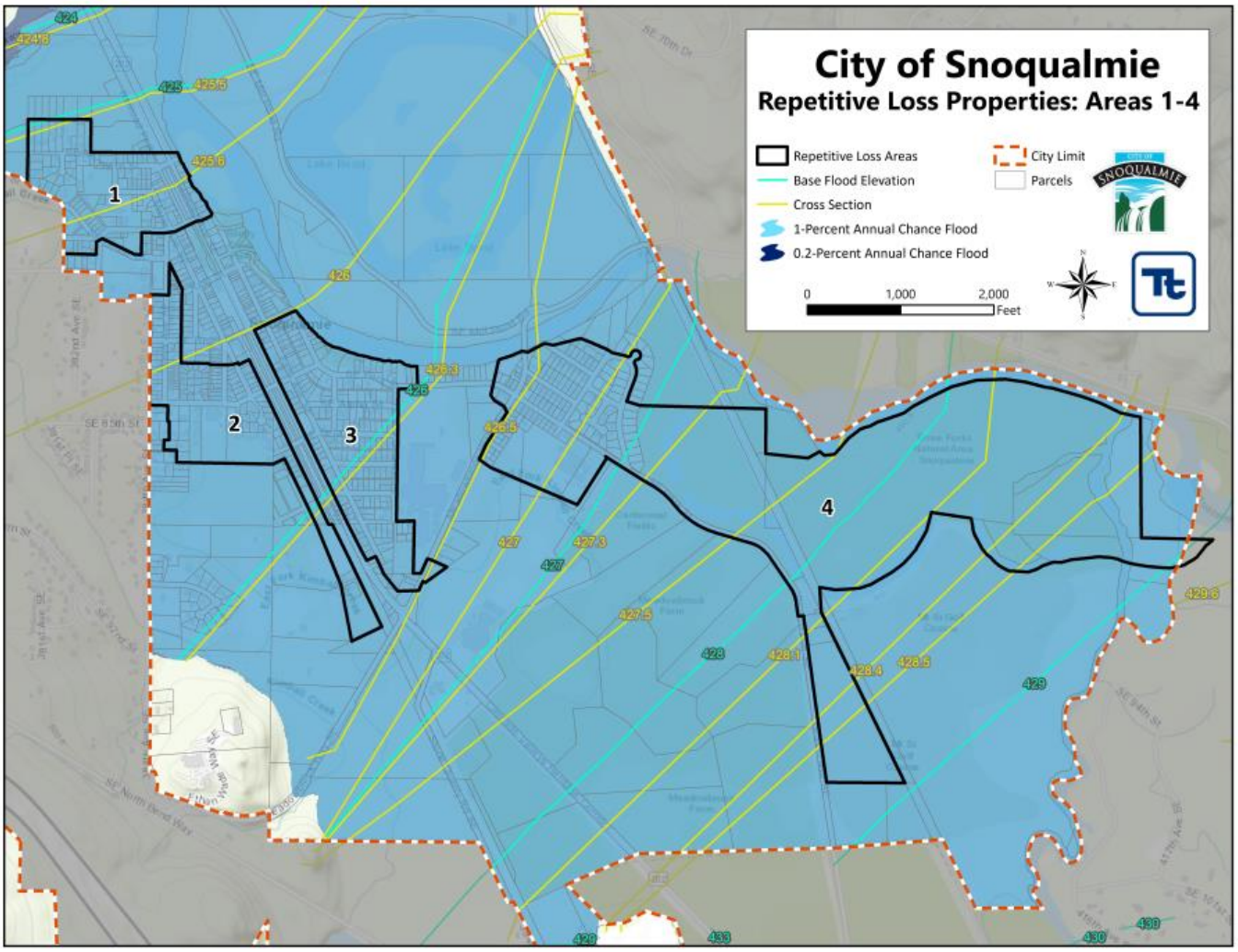
This report documents the fulfillment of the CRS requirements for Category C communities, following the five-step area-analysis process for a CRS Activity 510- Repetitive Loss Area Analysis (RLAA). It is the goal to include the RLAA under the City's RHMP Appendix in partnership with the King County 2024/2025 plan update.

Individual properties and structures are counted and described in the RLAA, but specific address information is withheld under the Federal Privacy Act of 1974. A separate document on file with the City for internal use only correlates the property ID numbers presented here with specific address information.



FEMA's last report on November 14, 2022, designated 198 repetitive loss properties (RLPs) within the City RL database. Upon review of each RL parcel, the following represents the current RL status:

- 198 repetitive loss properties identified from FEMA Region 10 CRS RL data.
- 38 repetitive loss properties are identified as "mitigated" from King County Tax Assessor's records by permitting demolition, new construction, and structural elevation.
- 22 addressed on the RL data are within King County corporate limits.



The updated RL properties have been remapped into 4 existing CRS program repetitive loss areas, and an analysis has been conducted for each area. Table 1-1 summarizes the total 198 properties, along with the dates of flooding events and the flood insurance claims filed for each since 1978. This includes RLP within the City's corporate limits and within neighboring King County. For reporting purposes, the King County RL data is for reference and represents the reach of the flooding sources within the area.

King County's RHMP summarizes the source of flooding associated with the large data set of claims based in 2006 and 2009.

> *Flooding is a prevalent threat during the fall and winter months due to atmospheric rivers, heavy rain, and king tides. Major floods occur on average every two to five years. Major river flooding has typically not caused fatalities, but rather significant property damage.* ***Flooding along multiple rivers in 2006 and 2009 were the most recent major floods to cause many millions of dollars in damage****. Flooding in 1990 is considered the largest flood of record for most of the county except for the Lower Snoqualmie and Tolt Rivers. There have been 28 flooding events since 1965 that have resulted in federal disaster declarations. At least minor flooding occurs every winter. Climate change is likely to have a significant effect in changing the patterns of flooding in the river basins.*

All of the RLPs suffered flooding damage at least twice in the defined CRS RL data provided by FEMA Region 10. Table 1-1, represents the total 198 RLPs represented in the 2022 RLP data. Specific to the RLPs data provided by FEMA, a majority of the date of losses coordinate with specific historical flood events 2006 and 2009 that impacted the City and County. FEMA Repetitive loss properties identification numbers were utilized in Table 1-1. These are unique identifiers to protect specific data under PII. The table represents the RL areas where parcels are located. Where an RL area is not identified, it is a parcel identified to be within the corporate limits of King County.

Table 1-1. 2022 Historical Repetitive Loss Properties Represented in the City of Snoqualmie's FEMA Data (City and County)

FEMA Repetitive Loss Property #	RLAA Area	Total Claims	Total Paid Building and/or Contents	NFIP Repetitive Loss	NFIP Severe Repetitive Loss	Foundation Type	Parcel Use Description
93570		2	9699.99	Y	N	Vacant	
183038	4	3	176096.13	Y	N	Crawl Space	Golf Course
185243	2	3	213951.57	Y	Y	Basement	Single Family(Res Use/Zone)
289011	3	2	55632.33	Y	N	Crawl Space	Single Family(Res Use/Zone)
56211		2	8174.28	Y	N	Basement	Single Family(Res Use/Zone)
7493	2	5	179364.51	Y	Y	Crawl Space	Single Family(Res Use/Zone)
82028	3	5	68654.56	Y	Y	Vacant	Single Family(Res Use/Zone)
184107	3	2	6637.87	Y	N	Basement	Single Family(Res Use/Zone)
183961	3	2	15031.66	Y	N	Vacant	Single Family(Res Use/Zone)
184618	3	2	86111.56	Y	N	Crawl Space	Single Family(Res Use/Zone)
184978	3	2	8482.9	Y	N	Crawl Space	Single Family(Res Use/Zone)
288598	3	2	24344.99	Y	N	Crawl Space	Single Family(Res Use/Zone)
184025	3	2	125216.12	Y	Y	Crawl Space	Single Family(Res Use/Zone)
185043		2	222183.11	Y	N	Basement	Single Family(Res Use/Zone)
184452	3	2	35255.05	Y	N	Crawl Space	Single Family(Res Use/Zone)
183863	3	2	47724.76	Y	N	Basement	Single Family(Res Use/Zone)
85770	3	4	58758.01	Y	N	Basement	Single Family(Res Use/Zone)
184924		2	121601.97	Y	N	Crawl Space	Single Family(Res Use/Zone)
85767	3	4	138359.85	Y	Y	Basement	Single Family(Res Use/Zone)
75578	3	4	93606.15	Y	N	Basement	Single Family(Res Use/Zone)
54726	3	6	89852.36	Y	Y	Basement	Single Family(Res Use/Zone)
73788		3	37149.7	Y	N	Vacant	Single Family(Res Use/Zone)
75560	3	4	22496.8	Y	N	Crawl Space	Single Family(Res Use/Zone)
75586	3	4	92948.54	Y	Y	Basement	Single Family(Res Use/Zone)
184083	3	2	88873.6	Y	N	Basement	Duplex
183520	3	2	55730.68	Y	N	Basement	Duplex
184053	3	2	120176.98	Y	N	Crawl Space	Single Family(Res Use/Zone)

FEMA Repetitive Loss Property #	RLAA Area	Total Claims	Total Paid Building and/or Contents	NFIP Repetitive Loss	NFIP Severe Repetitive Loss	Foundation Type	Parcel Use Description
83878		2	31013.62	Y	Y	Crawl Space	Single Family(Res Use/Zone)
184055	3	2	69462.85	Y	N	Crawl Space	Single Family(Res Use/Zone)
184387	3	2	79656.3	Y	N	Crawl Space	Single Family(Res Use/Zone)
183895	3	2	26573.42	Y	N	Crawl Space	Single Family(Res Use/Zone)
184439	3	2	188428.66	Y	Y	Basement	Single Family(Res Use/Zone)
169177		3	111281.22	Y	N	Basement	Single Family(Res Use/Zone)
69307	2	4	36491.01	Y	N	Basement	Single Family(Res Use/Zone)
185120	4	2	75922.6	Y	N	Basement	Single Family(Res Use/Zone)
169181		3	68045.24	Y	N	Basement	Single Family(Res Use/Zone)
168812	3	3	78510.36	Y	N	Crawl Space	Single Family(Res Use/Zone)
184056	3	2	70238.75	Y	N	Crawl Space	Single Family(Res Use/Zone)
184670	3	2	15174.05	Y	N	Basement	Single Family(Res Use/Zone)
296971		1	9171.69	N	Y	Basement	Single Family(Res Use/Zone)
184106	4	2	66247.41	Y	N	Crawl Space	Single Family(Res Use/Zone)
184478		3	120917.62	Y	N	Basement	Single Family(Res Use/Zone)
183003	4	3	17680.56	Y	N	Basement	Single Family(Res Use/Zone)
184571	2	2	31112.44	Y	N	Crawl Space	Single Family(Res Use/Zone)
69305	3	2	32993.85	Y	N	Vacant	4-Plex
184152	2	2	52664.6	Y	N	Crawl Space	Single Family(Res Use/Zone)
184029	3	2	75830.41	Y	N	Crawl Space	Single Family(Res Use/Zone)
182088	4	3	26148.03	Y	N	Basement	Single Family(Res Use/Zone)
184639	4	2	11337.79	Y	N	Crawl Space	Single Family(Res Use/Zone)
184447	4	2	159667.61	Y	N	Basement	Single Family(Res Use/Zone)
184103	2	2	47043.27	Y	N	Basement	Single Family(Res Use/Zone)
184390	4	3	11520.57	Y	N	Basement	Single Family(Res Use/Zone)
168822	4	3	137174.18	Y	N	Basement	Single Family(Res Use/Zone)
184620	2	2	103210.11	Y	N	Basement	Single Family(Res Use/Zone)
184641	4	2	16220.88	Y	N	Basement	Single Family(Res Use/Zone)

FEMA Repetitive Loss Property #	RLAA Area	Total Claims	Total Paid Building and/or Contents	NFIP Repetitive Loss	NFIP Severe Repetitive Loss	Foundation Type	Parcel Use Description
184051	2	2	34278.73	Y	N	Basement	Single Family(Res Use/Zone)
183869	2	3	92211.06	Y	N	Basement	Single Family(Res Use/Zone)
184603	3	2	39074.85	Y	N	Vacant	Daycare Center
80560	2	4	261976.45	Y	Y	Crawl Space	Single Family(Res Use/Zone)
11308		6	117008.07	Y	N	Basement	Single Family(Res Use/Zone)
184588	4	2	189309.11	Y	Y	Basement	Single Family(Res Use/Zone)
75567		2	34066.72	Y	N	Vacant	Vacant(Single-family)
81814		2	23519.13	Y	Y	Vacant	Vacant(Single-family)
184489		3	68571.52	Y	N	Basement	Single Family(Res Use/Zone)
183917		2	61500	Y	N	Crawl Space	Single Family(Res Use/Zone)
168523		3	99037.69	Y	N	Crawl Space	Single Family(Res Use/Zone)
168819	4	3	89611.41	Y	N	Basement	Single Family(Res Use/Zone)
80556	2	5	76557.85	Y	Y	Basement	Single Family(Res Use/Zone)
183320	4	3	22554.22	Y	N	Basement	Single Family(C/I Zone)
184964	2	3	35543.26	Y	N	Crawl Space	Single Family(Res Use/Zone)
84882	4	5	21651.29	Y	N	Basement	Single Family(Res Use/Zone)
85695	4	5	48903.63	Y	N	Basement	Single Family(Res Use/Zone)
184565	3	2	56649.34	Y	Y	Basement	Single Family(Res Use/Zone)
299493	3	2	65721.04	Y	N	Crawl Space	Single Family(C/I Use)
184945	3	2	54025.54	Y	N	Crawl Space	Single Family(Res Use/Zone)
168965	4	3	19265.09	Y	N	Crawl Space	Single Family(Res Use/Zone)
184094	3	2	221167.41	Y	N	Basement	Single Family(Res Use/Zone)
184145	2	2	36270.66	Y	N	Basement	Single Family(Res Use/Zone)
184388	3	2	46426.87	Y	N	Crawl Space	Single Family(Res Use/Zone)
182117	4	3	48475.17	Y	N	Basement	Single Family(Res Use/Zone)
183866	4	3	194528.36	Y	N	Basement	Single Family(Res Use/Zone)
307890	4	2	9985.75	Y	N	Basement	Single Family(Res Use/Zone)
82007	4	6	38638.07	Y	Y	Basement	Single Family(Res Use/Zone)

FEMA Repetitive Loss Property #	RLAA Area	Total Claims	Total Paid Building and/or Contents	NFIP Repetitive Loss	NFIP Severe Repetitive Loss	Foundation Type	Parcel Use Description
75579	4	3	21550.5	Y	N	Basement	Single Family(Res Use/Zone)
69312	3	3	129034.9	Y	N	Crawl Space	Single Family(Res Use/Zone)
316	3	4	69130.53	Y	Y	Basement	Single Family(Res Use/Zone)
73908	4	2	65509.18	Y	N	Basement	Single Family(Res Use/Zone)
184384	3	2	15253.13	Y	N	Crawl Space	Single Family(Res Use/Zone)
73839	4	5	25825.54	Y	N	Basement	Single Family(Res Use/Zone)
184987	2	2	18193.98	Y	N	Crawl Space	Single Family(Res Use/Zone)
80811	3	6	61100.52	Y	Y	Crawl Space	Single Family(Res Use/Zone)
77813	4	3	54991.56	Y	N	Basement	Single Family(Res Use/Zone)
183909	3	2	59314.73	Y	N	Basement	Single Family(Res Use/Zone)
184153	3	3	218225.39	Y	Y	Basement	Single Family(Res Use/Zone)
183910	2	2	4826.04	Y	N	Basement	Single Family(Res Use/Zone)
181128	4	4	31931.06	Y	N	Basement	Single Family(Res Use/Zone)
74189	3	4	104930.69	Y	N	Crawl Space	Single Family(Res Use/Zone)
186174	2	2	4510.22	Y	N	Basement	Single Family(Res Use/Zone)
184633	4	2	6785.22	Y	N	Basement	Single Family(Res Use/Zone)
184488		2	103794.3	Y	N	Basement	Single Family(Res Use/Zone)
184163	2	2	5149.71	Y	N	Crawl Space	Single Family(Res Use/Zone)
168945	3	3	64409.4	Y	N	Crawl Space	Single Family(Res Use/Zone)
88181	4	4	13337.36	Y	N	Basement	Single Family(Res Use/Zone)
184104	4	2	75185.75	Y	N	Crawl Space	Apartment(Mixed Use)
82350	3	4	554367.47	Y	Y	Crawl Space	Church/Welfare/Relig Srvc
184662	3	2	38711.93	Y	N	Crawl Space	Single Family(Res Use/Zone)
318100	3	2	25209.16	Y	Y	Vacant	Single Family(Res Use/Zone)
77839	3	5	174914.99	Y	Y	Basement	Single Family(Res Use/Zone)
80555	3	4	137059.18	Y	Y	Basement	Single Family(Res Use/Zone)
80652	4	6	352329.52	Y	Y	Basement	Single Family(Res Use/Zone)
80554	4	3	19210.42	Y	N	Vacant	Vacant(Commercial)
184065	4	2	60172.18	Y	N	Vacant	Vacant(Commercial)

FEMA Repetitive Loss Property #	RLAA Area	Total Claims	Total Paid Building and/or Contents	NFIP Repetitive Loss	NFIP Severe Repetitive Loss	Foundation Type	Parcel Use Description
184082	4	2	8885.37	Y	N	Basement	Single Family(Res Use/Zone)
83308	4	2	6842.2	Y	N	Basement	
28377	4	2	42440.18	Y	N	Basement	
48559	4	2	34485.55	Y	N	Vacant	
184627	4	2	16569.05	Y	N	Basement	Single Family(Res Use/Zone)
184033	2	2	12463.61	Y	N	Basement	Single Family(Res Use/Zone)
184385	4	2	10462.48	Y	N	Crawl Space	Single Family(Res Use/Zone)
56942	4	4	103813.26	Y	Y	Crawl Space	Single Family(Res Use/Zone)
184500	2	2	16500.64	Y	N	Basement	Single Family(Res Use/Zone)
69306	3	5	198553.39	Y	Y	Crawl Space	4-Plex
184982	4	2	33923.04	Y	N	Basement	Single Family(Res Use/Zone)
181347	2	3	54117.92	Y	N	Basement	Single Family(C/I Zone)
183039	3	5	35418.62	Y	N	Basement	Single Family(Res Use/Zone)
184671	3	2	29544.22	Y	N	Crawl Space	Single Family(Res Use/Zone)
184142	2	2	8942.49	Y	N	Crawl Space	Single Family(Res Use/Zone)
2457	4	3	58426.76	Y	N	Basement	Single Family(Res Use/Zone)
28378	4	5	53594.58	Y	N	Basement	Single Family(Res Use/Zone)
56990	4	3	48728.52	Y	N	Basement	Single Family(Res Use/Zone)
184164	4	2	28489.76	Y	N	Basement	Single Family(Res Use/Zone)
183897	2	2	73361.39	Y	N	Basement	Single Family(Res Use/Zone)
184157	4	2	36113.41	Y	N	Basement	Single Family(Res Use/Zone)
69310	4	10	96864.63	Y	Y	Crawl Space	Single Family(Res Use/Zone)
184134	4	2	13668.13	Y	N	Basement	Single Family(Res Use/Zone)
184440	4	2	17851.48	Y	N	Basement	Single Family(Res Use/Zone)
80558	4	5	18792.08	Y	N	Basement	Single Family(Res Use/Zone)
80913	4	2	9156.72	Y	N	Vacant	
184009	2	2	6502.6	Y	N	Crawl Space	Single Family(Res Use/Zone)
75589	4	2	2655.99	Y	N	Basement	Single Family(Res Use/Zone)

184802	4	2	163739.63	Y	N	Crawl Space	Single Family(Res Use/Zone)
286885	4	2	29316.23	Y	N	Basement	Single Family(Res Use/Zone)
73909	4	2	31902.72	Y	N	Basement	Single Family(Res Use/Zone)
88180	3	2	23983.48	Y	Y	Crawl Space	Park, Public(Zoo/Arbor)
184086	2	2	87801.9	Y	N	Basement	Single Family(Res Use/Zone)
74147	4	4	22419.09	Y	N	Basement	Single Family(Res Use/Zone)
183865	3	3	70240.92	Y	N	Crawl Space	Single Family(C/I Zone)
184227	2	2	73487.73	Y	N	Crawl Space	Single Family(Res Use/Zone)
183829	2	2	69270.88	Y	N	Basement	Single Family(Res Use/Zone)
183843	2	2	11245.28	Y	N	Crawl Space	Single Family(Res Use/Zone)
184389	3	2	113276.52	Y	N	Crawl Space	Apartment
184584	2	2	59208.24	Y	N	Basement	Single Family(Res Use/Zone)
75572		3	93461.07	Y	N	Basement	Single Family(Res Use/Zone)
184095	2	2	23045.51	Y	N	Basement	Single Family(Res Use/Zone)
184665	1	2	10890	Y	N	Basement	Single Family(Res Use/Zone)
28312	1	5	333910.35	Y	Y	Basement	Single Family(Res Use/Zone)
184117	1	2	11889.41	Y	N	Vacant	4-Plex
69311	1	4	52200.37	Y	N	Basement	Single Family(Res Use/Zone)
184144	1	2	74920.25	Y	N	Basement	Single Family(Res Use/Zone)
84746	1	2	34146.12	Y	Y	Basement	Single Family(Res Use/Zone)
7817	1	4	25803.03	Y	N	Basement	Duplex
184979	1	2	11546.23	Y	N	Basement	Single Family(Res Use/Zone)
184386	1	3	72226.42	Y	N	Basement	Single Family(Res Use/Zone)
184579	1	2	10639.38	Y	N	Crawl Space	Single Family(Res Use/Zone)
184049	1	2	36398.65	Y	N	Basement	Single Family(Res Use/Zone)
183874	1	2	48719.91	Y	N	Crawl Space	Single Family(Res Use/Zone)
184625	1	2	11577.49	Y	N	Crawl Space	Single Family(Res Use/Zone)
288603	1	2	13524.23	Y	N	Basement	Single Family(Res Use/Zone)
75559		2	13250.66	Y	N	Basement	
184951	1	2	73251.15	Y	N	Crawl Space	Single Family(Res Use/Zone)
183877	1	3	230795.95	Y	Y	Basement	Single Family(Res Use/Zone)
11316		2	30917.93	Y	N	Basement	Single Family(Res Use/Zone)
85753		3	129976.12	Y	N	Basement	Single Family(Res Use/Zone)

FEMA Repetitive Loss Property #	RLAA Area	Total Claims	Total Paid Building and/or Contents	NFIP Repetitive Loss	NFIP Severe Repetitive Loss	Foundation Type	Parcel Use Description
184068	1	2	42687.99	Y	N	Vacant	Daycare Center
316816	1	2	9724.24	Y	N	Vacant	Daycare Center
316857	1	2	9448.5	Y	N	Vacant	Daycare Center
75561	1	4	45171.92	Y	Y	Basement	Single Family(Res Use/Zone)
169180	1	3	123127.7	Y	N	Basement	Single Family(Res Use/Zone)
77182	1	2	17331.68	Y	Y	Basement	Single Family(Res Use/Zone)
85984	1	3	26565.59	Y	N	Basement	Single Family(Res Use/Zone)
184093	1	2	10350.4	Y	N	Basement	Single Family(Res Use/Zone)
185042	1	2	203999.45	Y	Y	Basement	Single Family(Res Use/Zone)
78064	1	5	32122.95	Y	N	Basement	Single Family(Res Use/Zone)
73802	1	4	193660.96	Y	Y	Crawl Space	Single Family(Res Use/Zone)
184605	1	2	5112.98	Y	N	Basement	Single Family(Res Use/Zone)
53181	1	6	132837.18	Y	Y	Crawl Space	Single Family(Res Use/Zone)
6958	1	5	30575.06	Y	N	Crawl Space	Single Family(Res Use/Zone)
183815	1	2	10331.62	Y	N	Crawl Space	Single Family(Res Use/Zone)
75558	1	3	84662.9	Y	N	Basement	Single Family(Res Use/Zone)
80557	1	2	27495.21	Y	N	Basement	Single Family(Res Use/Zone)
81804	1	4	81985.78	Y	N	Basement	Single Family(Res Use/Zone)
183831	1	2	89634.32	Y	N	Basement	Single Family(Res Use/Zone)
168524	1	3	147516.27	Y	N	Crawl Space	Single Family(Res Use/Zone)
184681	1	2	56077.39	Y	N	Basement	Single Family(Res Use/Zone)
184937	1	3	53952.44	Y	N	Crawl Space	Single Family(Res Use/Zone)
183789	1	2	47839.32	Y	N	Basement	Single Family(Res Use/Zone)
169025	1	3	25828.05	Y	N	Crawl Space	Single Family(Res Use/Zone)
184169	1	2	10407.09	Y	N	Crawl Space	Single Family(Res Use/Zone)
44463		2	21249.9	Y	N	Vacant	Vacant(Commercial)

2. REPETITIVE LOSS AREA ANALYSIS METHODOLOGY

2.1 BASIC REQUIREMENTS

There are two key sets of requirements to be met for a repetitive loss area analysis (RLAA):

- **Repetitive loss area mapping** requirements contained in Section 503 of the *CRS Coordinator's Manual* and in the supplemental publication, *Mapping Repetitive Loss Areas* (FEMA 2015).
- **Building data collection** requirements contained in Section 512.b of the CRS Coordinator's Manual (FEMA 2017):
  - Review each building in the repetitive loss area and collect basic data.
  - Collect data that is sufficient to make a preliminary determination of the cause of the repetitive flooding and of mitigation measures that would be appropriate to address the problem. This usually includes a review of drainage patterns around the building, the condition of the structure, and the condition and type of foundation.
  - The person conducting the review should not have to enter the property—adequate information should be collected from observations and other data.
  - Floor elevations or historical flood levels are not required, but can be helpful if available.
  - The date of each building's insurance claim can help identify the cause of flooding (e.g., rainfall, hurricane or overbank flooding). The amount of the claim can help determine the amount of damage. Every community should request repetitive loss data including its historical insurance claims. This includes single-claim properties.

More information on building data can be found in *Selecting Appropriate Mitigation Measures for Floodprone Structures* (FEMA-551).

2.2 REVERSE DAMAGE FUNCTION METHODOLOGY (INITIAL IDENTIFICATION)

Rationale for Alternative Approach

For the City's RLAA, building data collection requirements were met using an alternative to the approach outlined in the CRS Coordinator's Manual. The RLAA planning team selected the alternative approach—a "reverse damage function" methodology—for initial identification of repetitive loss areas for the following reasons:

- The City received a formal update of its repetitive loss data from FEMA in November 2022 from FEMA Region 10. This was the last official dataset available for this RLAA.
- A Level 2, user-defined flood model using Hazus-MH, version 6.1 was constructed using State data. The County Assessor's data provided key building attributes to model flood risk, such as date of construction, foundation type, occupancy class, and permit history. The detailed model data allowed the use of the selected alternative approach.

Description of Selected Approach

The selected reverse damage function approach used available data and capabilities to prepare the RLAA. The alternative approach achieves the same objectives as the approach prescribed in the 2017 CRS Coordinator's Manual (Section 512b), while providing the City a better protocol for maintaining data in the future to identify properties in a defined repetitive loss area and determine the cause of repetitive flooding. This data can then be used for possible grant opportunities.

The reverse damage function approach is a quantitative process. It uses an existing model to apply the principles of the "depth-damage function," which is the cornerstone of risk assessment in FEMA's Hazus-MH and Benefit-Cost Analysis programs. Both of these programs estimate damage using curves that show the percentage of asset value that will be damaged as a function of the depth of floodwaters. These depth-damage curves are well-established as a basis for estimating losses caused by flooding.

The reverse damage function methodology uses known values of damage from a flood event, based on filed claims, to estimate what the floodwater depth was for that event. The following protocol was followed:

- The City redefined their CRS Activity 503- Repetitive Loss Areas. The 4 previously identified RL areas remain with a reduction of parcels to each RL area inventory. The City has a proactive outreach program with social media efforts, mailers, and messaging. Updating the RLA inventory reduced the substantial cost of hard copy mailing. The City applied a 100' buffer to each RL parcel and captured the data within the buffer to create an updated RL inventory and updated RL mailing list.
- Each repetitive loss property from the FEMA 2022 data set was mapped in GIS to look for possible groupings based on proximity. The GIS mapping was based on the LiDAR-generated digital elevation model. This digital elevation model has a 3-foot resolution.
- The average loss for each repetitive-loss (RL) property was determined by taking the average of all claims for that property.
- Replacement cost for each structure was calculated by applying the size and construction class for each RL property to the construction-cost-per-square-foot tables in *2015 BNi Home Builder's Costbook* (Building News International, 2015).
- The percent damage "X" was calculated as:

  $X = Z \div Y$
  where:
  X is the percent damage (to be determined)
  Y is the replacement cost of the structure (based on assessor information)
  Z is the estimated loss (based on the flood insurance claim)
- Once the percent damage was determined, the corresponding flood depth was determined by looking at the U.S. Army Corps of Engineers 2003 *Generic Depth-Damage Relationships for Residential Structures* (see Appendix A). These are the same damage functions contained in FEMA's Hazus-MH and BCAR platforms. They represent projected flood depths above the top of the finished floor.
- The determined flood depth was applied to the repetitive loss structure. Using the foundation type determined using Google Street View Pro and assuming crawl space foundations for any structures not visible in that application, the depth was added to the top of the finished floor. For a structure with a slab foundation, the top of the finished floor was set at 8 inches above adjacent grade. For a structure with a crawlspace foundation, the finished floor was set at 24 inches above adjacent grade. These parameters are based on standard building practices.
- Once the depth was applied to the finished floor, it was extended across the digital elevation model until it ran to zero depth (high ground) and a boundary was delineated. These boundaries were projected north, south, east and west for each property. In areas with multiple RL properties, the property with the highest

depth above finished floor was used for this exercise.

- The boundary for each repetitive loss area was intersected with an ortho-photo and parcel boundary map. Each parcel with a structure within the delineated boundary was determined to be a property potentially subjected to repetitive flooding.
- Property condition assessments were included in existing assessor's data, which were used for this RLAA.

The final step was to determine the cause of flooding, considering the following findings from the initial identification, mapping, and historical flooding source. Utilizing this methodology and City guidance, 4 repetitive loss areas were reconfirmed. Water surface elevation 411.0 was identified as a common factor across the 4 repetitive loss areas. A combination of high annual precipitation and melting snow in the upper Snoqualmie River basin contributes to the potential for seasonal flooding. Floodwaters collect on the flat valley floor where Snoqualmie is located. Flooding is rooted at the main stem and the south fork of the Snoqualmie River and Kimball Creek. Downstream of the city, the main stem of the Snoqualmie River is forced through a narrow opening before discharging over Snoqualmie Falls. Kimball Creek, a tributary to the Snoqualmie River, runs through the city. Kimball Creek backs up and floods its drainage area as a result of the high water level in the river.

2.3 SECONDARY IDENTIFICATION

Once the initial identification of the repetitive loss areas was completed using the reverse-damage-function methodology, the planning team performed a secondary review of each repetitive loss area based on three questions about each area:

- Is there really a repetitive loss problem in this area, based on local knowledge?
- Does the list of properties make sense based on what we know about the area?
- Does the City have any additional qualifying data on the area to justify adding or removing properties?

This secondary review included the following aspects of each structure considered for inclusion in a repetitive loss area:

- **Structure condition**—To assess the condition of the structures in the repetitive loss areas, the planning team relied on the King County Assessor's data.
- **Foundation type**—There are generally four types of foundations (see Figure 2-1):
  - A slab foundation is usually concrete poured directly onto the ground. This type of foundation uses concrete rather than wood to help support the weight of the home.
  - A crawlspace, or raised foundation, is built above the ground, with just enough room to crawl underneath. There are stem walls on the perimeters, pierced in-between, with a girder system and floor joists on top of that. The foundation is high enough to leave at least 2 feet below to crawl into for access to the home's mechanical systems.
  - Basement, any area of the building having its floor subgrade (below ground level) on all sides.
  - Elevated structure supporting beams and columns with lowest floor above the FEMA elevation.
  - Elevated structure with enclosure (allowed based on zoning and enclosure size).

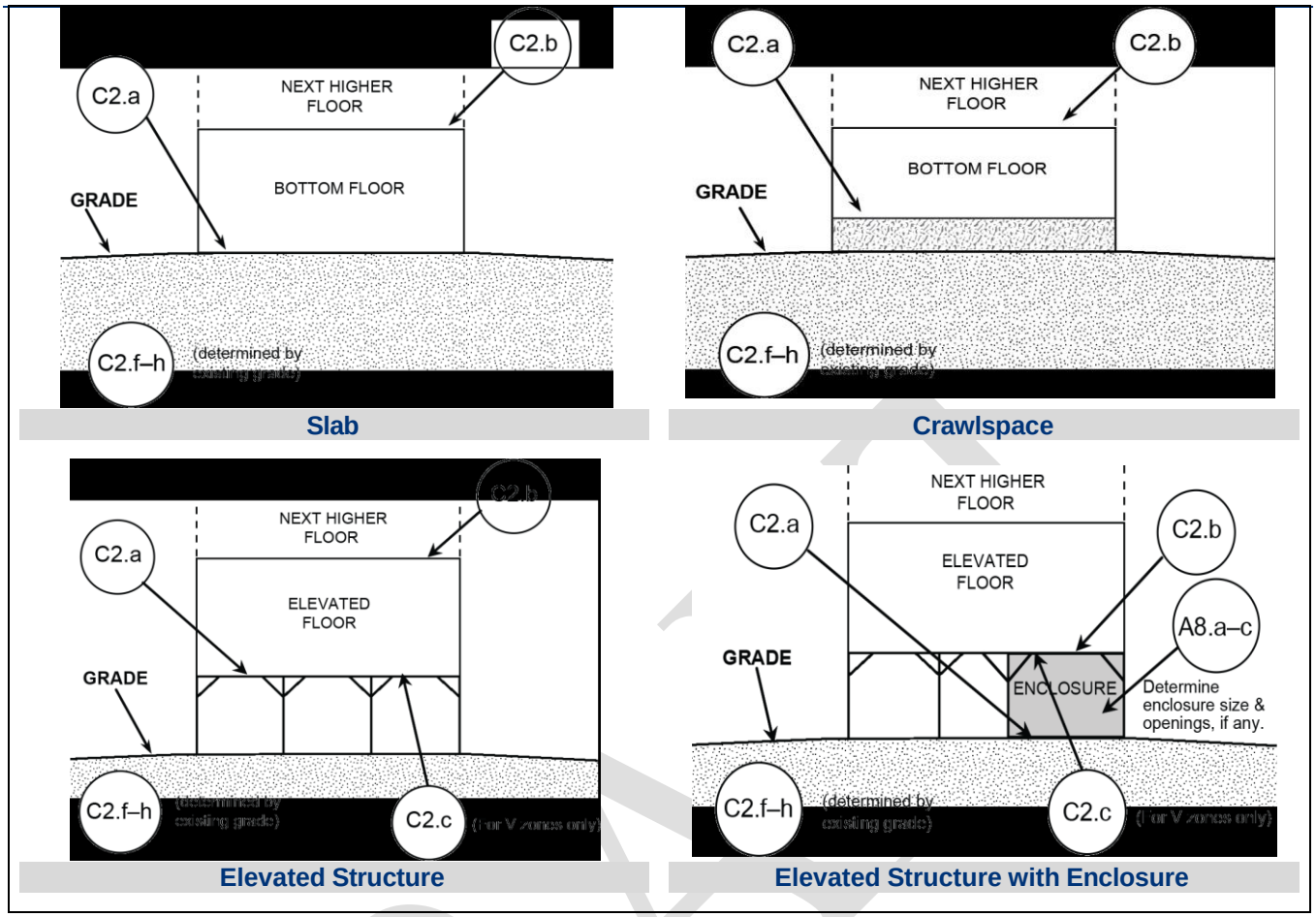


Figure 2-1. Foundation Types

Adjustments were made after applying this review to each repetitive loss area. Based on the analysis, there are **373 properties in 4 repetitive loss areas**. This became the final repetitive loss area mailing list for the City of Snoqualmie.

Many properties outside the special flood hazard area do not have flood insurance and are not required to do so. However, structures identified in the analysis as having conditions similar to those of FEMA-identified RL properties will be encouraged to seek insurance as part of the City outreach efforts.

3. REPETITIVE LOSS AREAS OUTREACH

3.1 CRS OUTREACH REQUIREMENTS FOR RLAA

RLAA Step 1 (2017 CRS Coordinator's Manual Section 512.b) requires notification that an analysis is being conducted to all properties in the repetitive loss areas, with a request for input on the hazard and recommended actions. The notice (or any public document) must not identify which properties are on FEMA's repetitive loss list. There are no restrictions on publicizing what properties are in repetitive loss areas that have more than one property and there are no restrictions on publishing aggregate data, such as how many properties received claims or the average value of those claims. Planning staff may share insurance claim information with the owner of a property but may not make it available to anyone else.

- The notice can be sent to owners OR residents, at the community's discretion, as long as a representative of each property is notified.
- The notice cannot be done via a newspaper or newsletter notice or article.
- The notice must advise the recipients when and how copies of the draft report can be obtained and ask for their comments on the draft.

Several methods were deployed to engage repetitive loss area property owners during the course of this RLAA process. This chapter highlights those efforts.

RLAA Step 2 requires contact with agencies or organizations that may have plans or studies that could affect the cause or impacts of the flooding. The analysis report must identify contacted agencies and organizations.

3.2 RLAA OUTREACH EFFORT

This Repetitive Loss Area Analysis is considered by the City of Snoqualmie to meet the prerequisite of the CRS. After consulting with ISO and the courtesy review of the hazard mitigation plan, it was determined the RLAA was required. Further discussion with the CRS contractor, Tetra Tech made a coordinated effort with properties within the 4 RLAs and the below-listed agencies for their input to satisfy RLAA Step 2. All precautions had been taken to observe and follow the Privacy Act.

Contact with Agencies and Organizations

The following agencies were identified as direct stakeholders within the planning area and were invited to participate in the planning process by providing studies or plans related to the Snoqualmie River Basin that may be pertinent to the RLAA development.

1. City of Snoqualmie Community Development Department
2. King County Flood Control District
3. King County Water and Land Resources Division
4. Haulie Insurance
5. Army Corp of Engineers, Seattle District
6. Salmon Recovery Manager, Snoqualmie Watershed Forum
7. Washington State Military Department, State Hazard Mitigation Officer

3.3 REPETITIVE LOSS AREA SPECIFIC OUTREACH

Properties identified within the redefined 4 repetitive loss areas were notified by RLA letter that upon the completion of a draft of this report, the City would make available the RLAA on the Community Development webpage. Residents in each repetitive loss area were informed where and how they would be able to review it, and where and how they might submit comments regarding it. Comments associated with the 2024 RLAA will be utilized in the annual progress report. In addition to the RLAA letter, the City utilized Survey Monkey to collect data from citizens, social media posting, and an RLAA information flier with the Survey Monkey link was made available at the library as static material. The communication document is shown in Appendix B.

4. RELEVANT PROGRAMS AND REGULATIONS

Existing laws, ordinances and plans at the federal, state and local level can support or impact hazard mitigation initiatives 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, as stated in 44 CFR, Section 201.6(b)(3). Pertinent federal, state, and local laws are described below.

4.1 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 4-1 and Table 4-2. The summary is not all-inclusive of State and Federal regulatory programs and regulations.

Table 4-1. Summary of Relevant Federal Agencies, Programs and Regulations

Agencies	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 Bureau 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.
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.

Agency, Program or Regulation	Hazard Mitigation Area Affected	Relevance
Federal Wildfire Management Policy and Healthy Forests Restoration Act	Wildfire Hazard	These documents mandate community-based collaboration to reduce risks from wildfire.
Hazard Mitigation Assistance Grant Programs	Action Plan Implementation	These programs are potential sources of funding for the implementation of mitigation actions recommended in this plan
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 property 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
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. 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 4-2. Summary of Relevant State Agencies, Programs and Regulations

Agency, Program or Regulation	Hazard Mitigation Area Affected	Relevance
State Building Code and Design Standards	Action Plan Implementation	Mitigation actions need to comply with all state building code requirements
State of Washington Hazard Mitigation Plan	Mitigation Plan development	The state hazard mitigation plan provides information that is useful in developing local hazard mitigation plans
Washington State Office of the Attorney General	Action Plan Implementation	Mitigation actions need to comply with all state land use requirements

4.2 LOCAL

4.2.1 Hazard Mitigation Planning and Plan Development

Hazard mitigation planning is the process that analyzes a community's risk from natural hazards, evaluates existing measure and identifies gaps, and implements actions to further reduce risks. Since November 1, 2003, local governments seeking Pre-Disaster Mitigation (PDM) funds through a state application must have an approved local mitigation plan prior to the approval of local mitigation project grants. Since November 1, 2004, states must also have an approved standard State Mitigation Plan in order to receive PDM funds for state or local mitigation projects. The standard State Mitigation Plan also is required for non-emergency assistance, including Public Assistance restoration of damaged facilities and Hazard Mitigation Grant Program (HMGP) funding. Therefore, state and local multi-hazard mitigation plans are keys to maintaining eligibility for future FEMA mitigation and disaster recovery funding. City plans must be updated every five years to continuously maintain funding eligibility. Figure 4-1 shows the planning process.

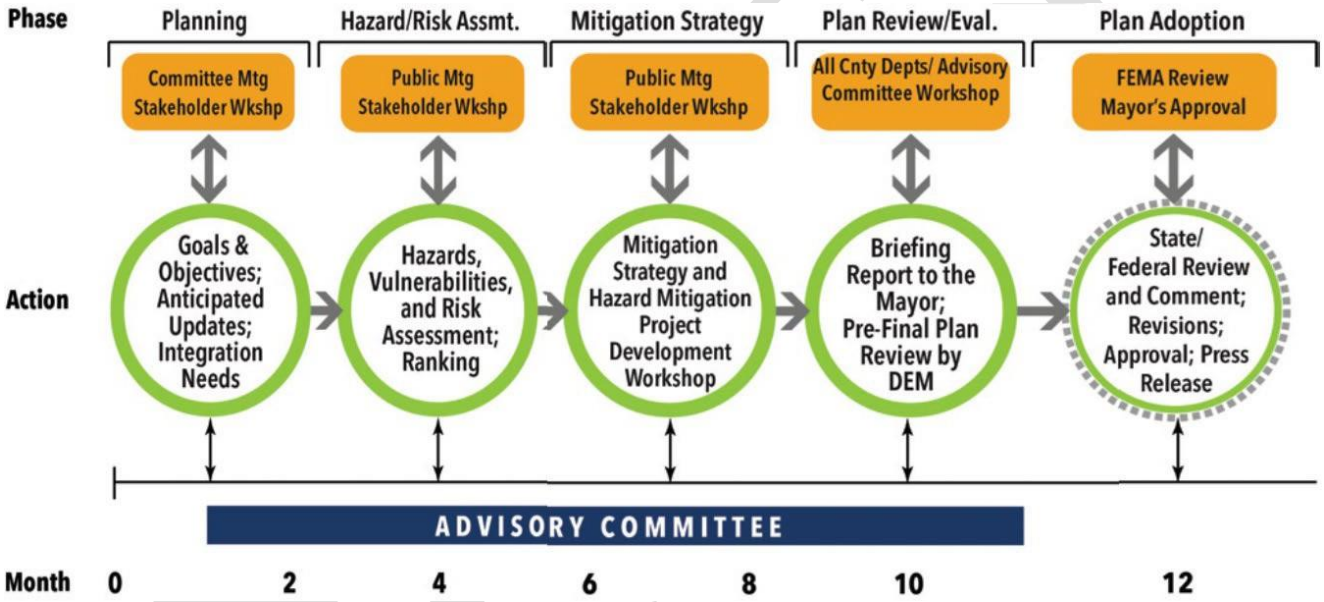


Figure 4-1. Hazard Mitigation Planning Process

Hazards are physical conditions or events that have the potential to cause fatalities, injuries, property damage, infrastructure damage, agricultural loss, damage to the environment, interruption of business, or other types of losses. The intent is to present the current state of knowledge of the following significant natural hazards within the City of Snoqualmie:

- Climate Change Effects
- Strong Winds
- Floods
- Earthquakes

- Landslides and Rockfalls
- Droughts
- Wildfire
- Hazardous Materials
- Dam Failures

Land Use Planning and Development in the City of Snoqualmie

The City guides and directs land use and growth through policies, planning principles, guidelines, and regulations. City goals and policies are organized into Comprehensive Plan elements, some of which are required by the Growth Management Act (GMA) in Washington State. Under the GMA, plans must address land use, housing, capital facilities, utilities, and transportation.

Snoqualmie Comprehensive Plan 2032 addresses those elements as well as elements for community character and the environment, with a separate Open Space Parks and Recreation plan and a separate Shoreline Master Program. The Comprehensive Plan also guides development regulations in the Snoqualmie Municipal Code, carrying out City policy and implementation programs.

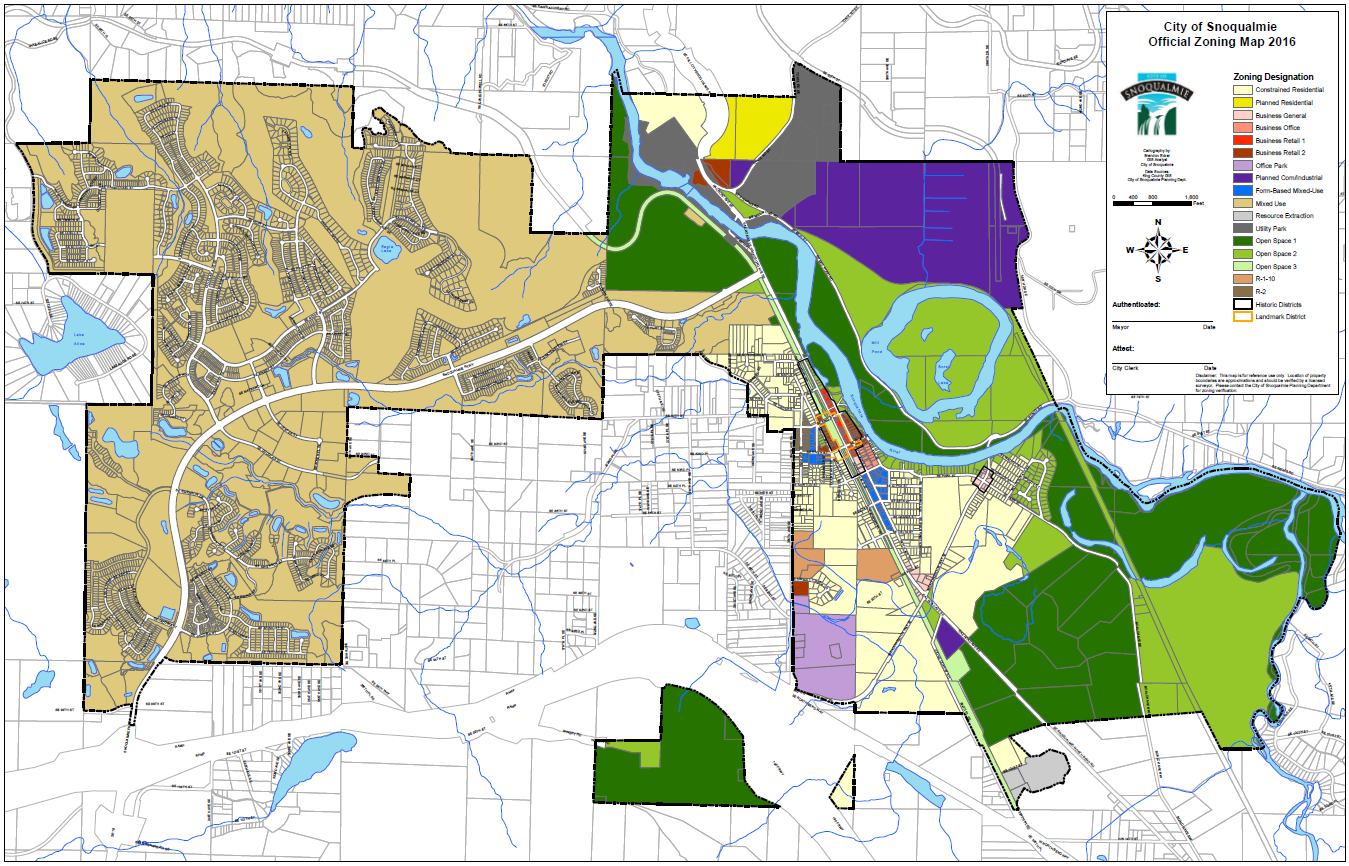


Figure 4-2. Zoning Districts

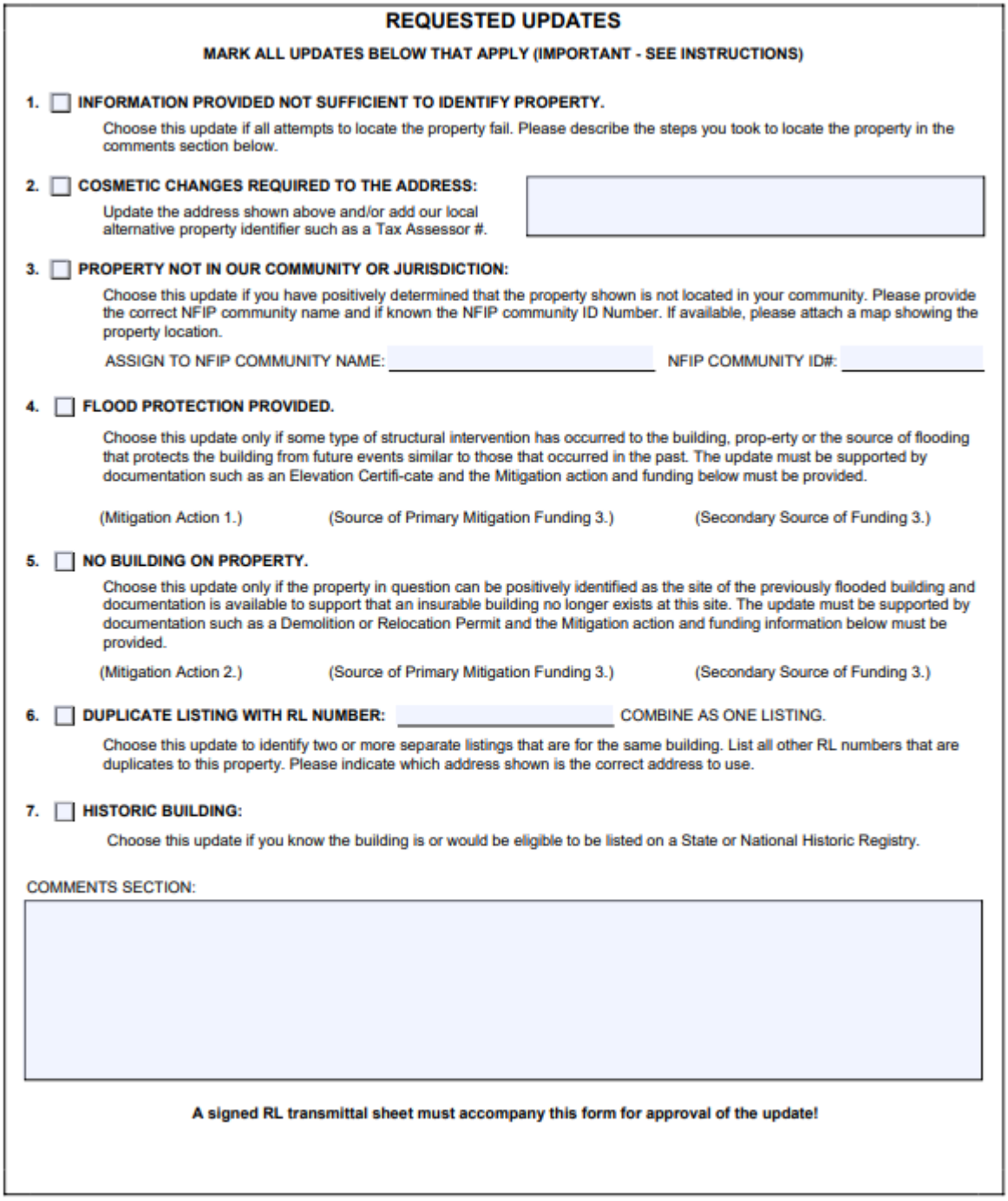
5. MITIGATED REPETITIVE LOSS PROPERTIES

5.1 REPETITIVE LOSS LIST CORRECTION

CRS-participating communities are required to review their lists of repetitive-loss properties for accuracy, for correct addresses, to determine whether the properties are actually in the community's corporate limits, and to determine whether the insured buildings have been removed, retrofitted, or otherwise protected from the cause of the repetitive flooding. The result of this review is recorded on a Repetitive Loss Update Worksheet (AW-501; see Figure 5-1). A community with repetitive losses must sign the Repetitive Loss List Community Certification (CC-RL), certifying that each address has been checked. If there are updates, the submittal must include corrected Repetitive Loss Update Worksheets with any required supporting documentation. The community must note the following situations in which the form should be updated:

1. The property is not located in the community's jurisdiction. The property may be outside the community's corporate limits, it may be in another city, or it may have been annexed by another community. If it can be determined in which community the property belongs, the property will be reassigned to the correct community. If a property is not in the community, it will not be reassigned unless the community in which the property does belong can be definitely identified.
2. There was an error in the repetitive loss data base, such as a duplicate listing or an incorrect address.
3. The property has subsequently been protected from the types of events that caused the losses. Buildings that have been acquired, relocated, retrofitted, or otherwise protected from the types of frequent floods that caused the past damage are not counted in determining the community's CRS requirements.
4. The property is protected from damage by the base flood shown on the current Flood Insurance Rate Map (FIRM). For example, the community may demonstrate that the building is elevated or flood-proofed above the base flood elevation but was flooded by a higher level. If the property is outside the Special Flood Hazard Area, the community may show that all of the repetitive losses were caused by events with recurrence intervals of over 100 years.

The City will reference current guidance to update the RLA list with qualifying factors as listed at www.CRSResources.org.



REQUESTED UPDATES

MARK ALL UPDATES BELOW THAT APPLY (IMPORTANT - SEE INSTRUCTIONS)

1. ☐ **INFORMATION PROVIDED NOT SUFFICIENT TO IDENTIFY PROPERTY.**

   Choose this update if all attempts to locate the property fail. Please describe the steps you took to locate the property in the comments section below.

2. ☐ **COSMETIC CHANGES REQUIRED TO THE ADDRESS:**

   Update the address shown above and/or add our local alternative property identifier such as a Tax Assessor #.

3. ☐ **PROPERTY NOT IN OUR COMMUNITY OR JURISDICTION:**

   Choose this update if you have positively determined that the property shown is not located in your community. Please provide the correct NFIP community name and if known the NFIP community ID Number. If available, please attach a map showing the property location.

   ASSIGN TO NFIP COMMUNITY NAME: _____ NFIP COMMUNITY ID#: _____

4. ☐ **FLOOD PROTECTION PROVIDED.**

   Choose this update only if some type of structural intervention has occurred to the building, prop-erty or the source of flooding that protects the building from future events similar to those that occurred in the past. The update must be supported by documentation such as an Elevation Certifi-cate and the Mitigation action and funding below must be provided.

   (Mitigation Action 1.) (Source of Primary Mitigation Funding 3.) (Secondary Source of Funding 3.)

5. ☐ **NO BUILDING ON PROPERTY.**

   Choose this update only if the property in question can be positively identified as the site of the previously flooded building and documentation is available to support that an insurable building no longer exists at this site. The update must be supported by documentation such as a Demolition or Relocation Permit and the Mitigation action and funding information below must be provided.

   (Mitigation Action 2.) (Source of Primary Mitigation Funding 3.) (Secondary Source of Funding 3.)

6. ☐ **DUPLICATE LISTING WITH RL NUMBER:** _____ COMBINE AS ONE LISTING.

   Choose this update to identify two or more separate listings that are for the same building. List all other RL numbers that are duplicates to this property. Please indicate which address shown is the correct address to use.

7. ☐ **HISTORIC BUILDING:**

   Choose this update if you know the building is or would be eligible to be listed on a State or National Historic Registry.

COMMENTS SECTION:

A signed RL transmittal sheet must accompany this form for approval of the update!

Figure 5-1. Example NFIP Update Form

5.2 MITIGATED REPETITIVE LOSS PROPERTIES

The City of Snoqualmie will submit the NFIP Repetitive Loss Update Form/ correction worksheet with supportive documentation for the following RL parcels summary based on the 2022 RL data list provided by FEMA:

- 38 structures with qualifying mitigation actions
- 21 parcels not within the corporate limits of the City
- 2 unable to determine location

These properties are proposed to be subsequently removed from FEMA's list of repetitive loss properties for the following reasons (see below example):

- Property not in Snoqualmie
- Structure demolished, vacant lot
- Structure demolished; post-firm structure built to current elevation
- Unable to determine location

6. MITIGATION ALTERNATIVES CONSIDERED

Although this report presents separate analyses for each identified repetitive loss area in the City of Snoqualmie, the list of potential mitigation measures to address repetitive flooding problems was the same for each area. This chapter summarizes the alternatives that were identified for consideration. These mitigation measures can be implemented by the City, the homeowner, or other entities. The selection of suitable measures for each at- risk property in the repetitive loss areas is described in the chapters presenting individual repetitive loss area analyses.

Many types of flood hazard mitigation exist, and there is not one mitigation measure that fits every case or even most cases. Successful mitigation often requires multiple strategies. The CRS Coordinator's Manual (FEMA 2017) breaks the primary types of mitigation down as follows:

- **Preventive** activities keep flood problems from getting worse. The use and development of flood-prone areas is limited through planning, land acquisition, or regulation. They are usually administered by building, zoning, planning, and/or code enforcement offices.
- **Property protection** activities are usually undertaken by property owners on a building-by- building or parcel basis.
- **Natural resource protection** activities preserve or restore natural areas or the natural functions of floodplain and watershed areas. They are implemented by a variety of agencies, primarily parks, recreation, or conservation agencies or organizations.
- **Emergency services** are measures taken during an emergency to minimize its impact. These measures are usually the responsibility of city or county emergency management staff and the owners or operators of major or critical facilities.
- **Structural projects** keep floodwaters away from an area with a levee, reservoir, or other flood control measure. They are usually designed by engineers and managed or maintained by public works staff.
- **Public information** activities advise property owners, potential property owners, and visitors about hazards and ways to protect people and property from them, as well as the natural and beneficial functions of local floodplains. They are usually implemented by a public information office.

6.1 PREVENTIVE

The City of Snoqualmie regulates residential and commercial development through its building code, planning and zoning requirements, stormwater management regulations, and floodplain management ordinances. Any project located in a floodplain, regardless of its size, requires a permit from the City.

6.2 PROPERTY PROTECTION

Property protection measures are generally performed by property owners or their agents. FEMA has published numerous manuals to help property owners determine appropriate property protection measures:

- FEMA 259, Engineering Principles and Practices of Retrofitting Floodprone Residential Structures
- FEMA 312, Homeowner's Guide to Retrofitting: Six Ways to Protect Your House from Flooding
- FEMA 551, Selecting Appropriate Mitigation Measures for Floodprone Structures
- FEMA 348, Protecting Building Utilities from Flood Damage
- FEMA 511, Reducing Damage from Localized Flooding
- FEMA 102, Floodproofing Non-Residential Structures
- FEMA 84, Answers to Questions about the NFIP
- FEMA 54, Elevated Residential Structures Book
- FEMA 268, Protecting Floodplain Resources: A Guidebook for Communities
- FEMA 347, Above the Flood: Elevating Your Floodprone House
- FEMA 85, Protecting Manufactured Homes from Floods and Other Hazards

The manuals listed above are available for review at FEMA's website. For a complete guide to retrofitting homes for flood protection, see FEMA P-312, *Homeowner's Guide to Retrofitting 3rd Edition* (FEMA 2014). The primary methods of property protection in the City are:

- Demolition/relocation.
- Elevation (structure or damage prone components such as furnace or AC unit)
- Dry flood-proof (so water cannot get in).
- Direct drainage away from the building.
- Drainage maintenance.
- Sewer Improvements.

Acquisition

One of the most effective approaches to preventing further flood damage to a building is the acquisition and relocation or clearing of the structure. The property would then serve as an open space or recreation area. Property owners retain the right to select this as a mitigation method. They may sell their property to a government agency or an agency dedicated to the preservation and management of local open space. The property owner can also relocate the building to another property. Alternatively, the building can be moved to another area of the same property, if that area is outside the flood hazard. The property owner can also take advantage of federal funding for such mitigation.

For the City of Snoqualmie's RLAA, it has been determined that acquisition would not be a cost-effective alternative for structures. "Cost-effective" means that the benefits of the action would equal or exceed the costs to implement the action. For this RLAA, a benefit is considered to be an avoided loss. The high value of property in the City of Snoqualmie makes it unlikely that acquisition projects can be cost-effective.

Home Elevation

Sometimes dry or wet flood-proofing are not enough and greater measures must be taken. For example, if the floodwaters are too high for dry flood-proofing and the inhabited area is too low for wet flood-proofing, it may be necessary to raise the structure. Whenever the floor of a home is below the 100-year flood elevation, physically elevating the structure is often recommended as it is one of the most effective means to prevent flood damage. Financial assistance may be available for floodproofing. The City requires all substantially improved residential buildings to have their lowest floor elevated 1 foot above the 100-year elevation.

Dry Flood-Proofing

Dry flood-proofing consists of completely sealing around the exterior of the building so that water cannot enter the building. Dry flood-proofing is not a good option for areas where floodwater is deep or flows quickly. The hydrostatic pressure and/or hydrodynamic force can structurally damage the building by causing the walls to collapse or causing the entire structure to float. However, in areas that have minimal velocity and low depth, dry flood-proofing can be a good option.

Many flood hazards can be mitigated with various forms of dry flood-proofing. Properties that do not have adequate protection of their low opening (window or basement door) can effectively raise the low opening height with a window well or a flood gate. The ultimate height of the low opening depends on several factors, such as: the level of flood protection desired, the appearance, and cost. The flood protection elevation could be set 1-foot higher than the existing low opening elevation, or it could be set to match the elevation of the lowest opening into a home that cannot be raised. This might be the elevation of the threshold of a door, for example.

The NFIP only allows dry flood-proofing for residential retrofits that are not classified as a substantial improvement. A substantial improvement is any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50% of the market value of the structure before the “start of construction” of the improvement.

Wet Flood-Proofing

Wet flood-proofing consists of modifying uninhabited portions of a home, such as a crawlspace, garage, or unfinished basement with flood-damage resistant materials, to allow floodwaters to enter the structure without causing damage (see Figure 6-1). Wet flood-proofing requires portions of the building to be cleared of valuable items and mechanical utilities. A key component of wet flood-proofing is providing openings large enough for the water to flow through the structure such that the elevation of the water in the structure is equal to the elevation of the water outside of the structure. This equilibrium of floodwater prevents hydrostatic pressure from damaging structural walls.

Source: FEMA P-312, June 30, 2014

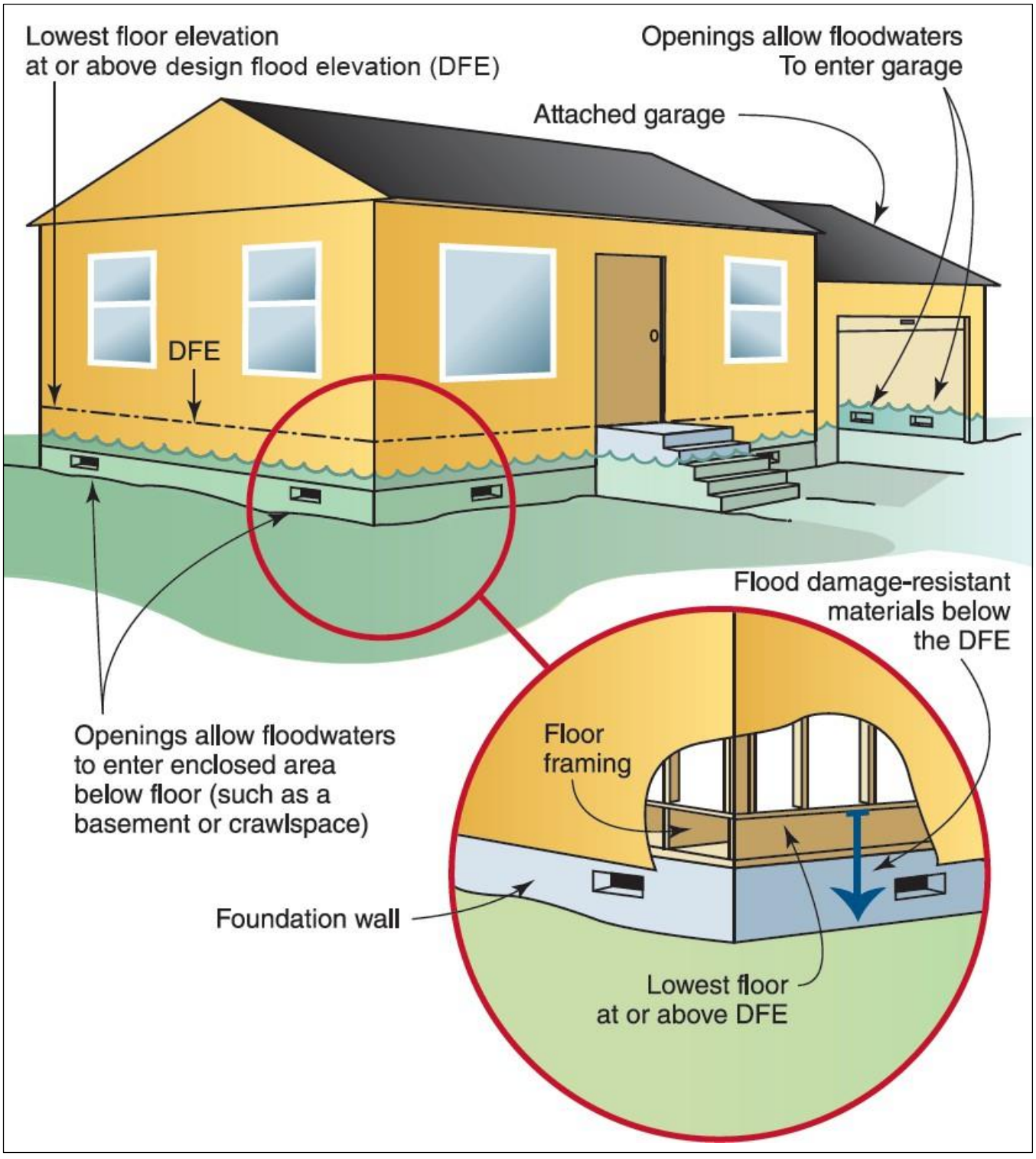


Figure 6-1. Wet Flood-Proofing Example

Direct Drainage Away from the Building

In some cases, there are activities that the property owner can do on-site such as directing shallow floodwater away from a flood-prone structure. Shallow flooding can often be kept away from a structure if some simple improvements are made to the yard. Sometimes structures are built at the bottom of a hill or in a natural drainage way or storage area, so that water naturally flows toward them.

One solution is to regrade the yard. If water flows toward the building; a new swale or wall can direct the flow to the street or a drainage way. Filling and grading next to the building can also direct shallow flooding away. Although water may remain in the yard temporarily, it is kept away from the structure. When these types of drainage modifications are made, care must be taken not to adversely affect the drainage patterns of adjacent properties. Over time, the swales along the lot lines or in the back yard may get filled in. Property owners build fences, garages, sheds, swimming pools, and other obstructions up to the lot line. These drainage problems can be fixed by removing the obstructions and restoring the swales so they will carry water away from the building.

Drainage Maintenance

Dumping into the drainage system is a violation under the City of Snoqualmie's Chapter 21 Code. Debris can accumulate and restrict the flow of stormwater, increasing the potential of localized flooding.

Heavy rains can saturate the soil and infiltrate the sanitary sewer system through leaky joints or cracks in the pipes. The inflow of stormwater floods the sanitary sewer system causing water to back-up into the home through lower level plumbing fixtures. This occurrence can be prevented by installing a sewer backflow preventer. A backflow preventer will allow the sanitary sewer water to flow freely from the home to the sewer, but restrict the reverse flow. Backflow preventers do require maintenance and can fail if debris in the sewer prevents the valve seating properly. An overhead sewer system pumps wastewater from basement level plumbing fixtures up to an elevation near the ground level, where it can drain by gravity into the sewer service line. This higher sewer makes it unlikely that water will back-up into the building.

Temporary Barriers

Several types of temporary barriers are available to address typical flooding problems. They work to direct drainage away from structures with the same principles as permanent barriers such as floodwalls or levees, but can be removed, stored, and reused in subsequent flood events.

6.3 NATURAL RESOURCE PROTECTION

Care should be taken to maintain the streams, wetlands and other natural resources within a floodplain or repetitive loss area. Removing debris from streams and channels prevents obstructions. Preserving and restoring natural areas provides flood protection, preserves water quality and provides natural habitat. King County and the City of Snoqualmie are proactive in natural resource protection and restoration.

6.4 EMERGENCY SERVICES

Advance identification of an impending storm is only the first part of an effective Flood Warning and Response Plan. To truly realize the benefit of an early flood warning system, the warning must be disseminated quickly to floodplain occupants, repetitive loss areas and critical facilities. Appropriate response activities must then be implemented, such as: road closures, directing evacuations, sandbagging, and moving building contents above flood levels. Finally, a community should take measures to protect public health and safety and facilitate

recovery. These measures may include: cleaning up debris and garbage, clearing streets, and ensuring that that citizens have shelter, food, and safe drinking water.

6.5 STRUCTURAL PROJECTS

Structural projects keep floodwaters away from an area with a levee, reservoir, or other flood control measure. They are usually designed by engineers and managed or maintained by appropriate staff. The City of Snoqualmie Department of Public Works develops and implements capital projects.

6.6 PUBLIC INFORMATION

One of the most important, and often overlooked, aspects of mitigation is public awareness. Awareness starts with recognition of the flood risk. FIRM panels, which designate areas of a community according to various levels of flood risk, can be viewed at www.FEMA.gov. Also, real estate transactions require disclosure of known flood hazards. The next level of awareness is related to flood hazard mitigation measures. Often homeowners can greatly reduce their risks with mitigation efforts if they are aware of the risks. For that reason, as part of this analysis, every resident in the repetitive loss area has been contacted and informed of the opportunity to review this Report. In addition, the City of Snoqualmie Floodplain Administrator sends an annual outreach letter to every resident in each repetitive loss area.

6.7 MITIGATION MEASURE GROUPINGS

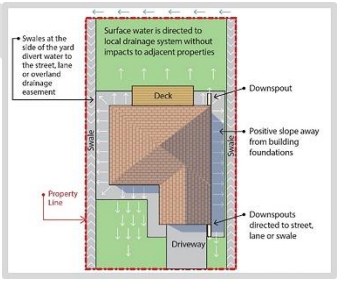
The 4 RL areas were reviewed by appropriate mitigation alternatives to provide a better understanding of current and future repetitive loss claims, options for outreach, and grant opportunities for residents. Based on the analysis performed for this report, three mitigation groupings were identified:

- Properties suitable for mitigation that includes drainage maintenance and/or elevation
- Properties identified for buyout and open space preservation under current Master Plans
- Properties where property owners are interested in elevation with a funding source

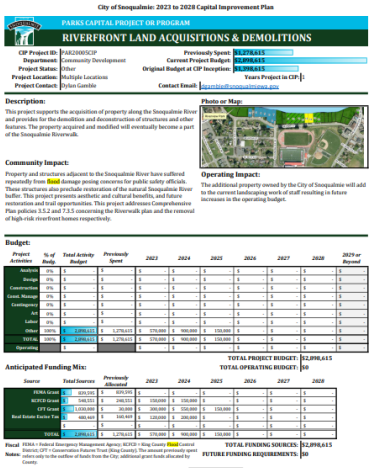
PART 2—ANALYSIS OF INDIVIDUAL REPETITIVE LOSS AREAS

7. DRAINAGE MAINTENANCE AND/OR ELEVATION, ACQUISITION

Mitigation actions such as drainage maintenance, elevation, and or acquisition align with the goals and plans of the City when addressing repetitive loss areas. In each of the 4 repetitive loss areas, property damage was determined to have contribution elements from low-lying/flat ground elevations, localized drainage, storm and snowmelt contributors, and the Snoqualmie River Basin. Mitigation for the RLA properties includes improved drainage maintenance to address increased run-off from new development or lack of capacity from underground storm sewer. Most structures would also benefit from elevation to recent FEMA mapping requirements or to levels determined by increased flood heights caused by recent development.



Where structural elevation is the primary recommendation for mitigation, structures with crawlspaces and/or basements, and where utilities such as HVAC, air conditioners, and water heaters are at the lowest elevation or at flood risk elevations, qualifying techniques such as wet floodproofing, elevating or relocating utilities, and or levels of dry floodproofing techniques may support reduced risks in limited capacities. Additional actions from property owners may include installing a backwater valve to prevent sewer water from entering if the city's lines are full. Property owners can consider adding additional fill around their foundation walls to enhance the slope (positive drainage) from their foundations, diverting the water away from the foundation wall. Considerations for diverting water from the structure may also include elongating downspouts and/or French drains.


City of Snoqualmie: 2023 to 2028 Capital Improvement Plan

PARKS CAPITAL PROJECT OR PROGRAM

RIVERFRONT LAND ACQUISITIONS & DEMOLITIONS

Description:

Photo or Map:

Community Impact:

Operating Impact:

Budget:

Anticipated Funding Mix:

Open space preservation efforts identified in the City's Master Plan and Capital Improvement Plan discuss the community impact of the Riverfront Land Acquisition and Demolitions project. Parcels identified on this buyout list include multiple RL parcels. The City remains proactive in applying for local, State, and Federal funding sources to support acquisition and demolition. In addition, the City actively pursues funding sources to support structural mitigation efforts for privately owned structures.

Citizens who have interests in structural elevation with a supportive funding source can elect to provide their contact information to the City. The City maintains the list and will contact the property owner if a funding source is available. There are multiple parcels on the RL list as a whole, where property owners have expressed interest in elevation with funding support.

Property owners are encouraged to contact the City to discuss potential mitigation efforts and building permit standards for development within the floodplain. For all properties in or out of the regulatory floodplain, flood insurance is recommended and continues to be promoted by the City. The City's strong floodplain management program has goals of improving their FEMA Community Rating System discount for NFIP flood insurance policyholders and active engagement with King County's Flood Control District.

Each section of this chapter describes the 4 repetitive loss areas, including a list of repetitive loss properties, a description of additional properties in the area, and a map of the repetitive loss areas. Maps are not included for single-property repetitive loss areas due to privacy concerns.

7.1 REPETITIVE LOSS AREA NO. 1

FEMA-Identified Repetitive Loss Properties

Table 7-1 lists the FEMA-designated repetitive loss property within this repetitive loss area 1.

FEMA Repetitive Loss Property #	RLAA Area	Total Claims	Total Paid Building and/or Contents	NFIP Repetitive Loss	NFIP Severe Repetitive Loss	Foundation Type	Parcel Use Description
184665	1	2	10890	Y	N	Basement	Single Family(Res Use/Zone)
28312	1	5	333910.4	Y	Y	Basement	Single Family(Res Use/Zone)
184117	1	2	11889.41	Y	N	Vacant	4-Plex
69311	1	4	52200.37	Y	N	Basement	Single Family(Res Use/Zone)
184144	1	2	74920.25	Y	N	Basement	Single Family(Res Use/Zone)
84746	1	2	34146.12	Y	Y	Basement	Single Family(Res Use/Zone)
7817	1	4	25803.03	Y	N	Basement	Duplex
184979	1	2	11546.23	Y	N	Basement	Single Family(Res Use/Zone)
184386	1	3	72226.42	Y	N	Basement	Single Family(Res Use/Zone)
184579	1	2	10639.38	Y	N	Crawl Space	Single Family(Res Use/Zone)
184049	1	2	36398.65	Y	N	Basement	Single Family(Res Use/Zone)
183874	1	2	48719.91	Y	N	Crawl Space	Single Family(Res Use/Zone)
184625	1	2	11577.49	Y	N	Crawl Space	Single Family(Res Use/Zone)
288603	1	2	13524.23	Y	N	Basement	Single Family(Res Use/Zone)
184951	1	2	73251.15	Y	N	Crawl Space	Single Family(Res Use/Zone)
183877	1	3	230796	Y	Y	Basement	Single Family(Res Use/Zone)

184068	1	2	42687.99	Y	N	Vacant	Daycare Center
316816	1	2	9724.24	Y	N	Vacant	Daycare Center
316857	1	2	9448.5	Y	N	Vacant	Daycare Center
75561	1	4	45171.92	Y	Y	Basement	Single Family(Res Use/Zone)
169180	1	3	123127.7	Y	N	Basement	Single Family(Res Use/Zone)
77182	1	2	17331.68	Y	Y	Basement	Single Family(Res Use/Zone)
85984	1	3	26565.59	Y	N	Basement	Single Family(Res Use/Zone)
184093	1	2	10350.4	Y	N	Basement	Single Family(Res Use/Zone)
185042	1	2	203999.5	Y	Y	Basement	Single Family(Res Use/Zone)
78064	1	5	32122.95	Y	N	Basement	Single Family(Res Use/Zone)
73802	1	4	193661	Y	Y	Crawl Space	Single Family(Res Use/Zone)
184605	1	2	5112.98	Y	N	Basement	Single Family(Res Use/Zone)
53181	1	6	132837.2	Y	Y	Crawl Space	Single Family(Res Use/Zone)
6958	1	5	30575.06	Y	N	Crawl Space	Single Family(Res Use/Zone)
183815	1	2	10331.62	Y	N	Crawl Space	Single Family(Res Use/Zone)
75558	1	3	84662.9	Y	N	Basement	Single Family(Res Use/Zone)
80557	1	2	27495.21	Y	N	Basement	Single Family(Res Use/Zone)
81804	1	4	81985.78	Y	N	Basement	Single Family(Res Use/Zone)
183831	1	2	89634.32	Y	N	Basement	Single Family(Res Use/Zone)
168524	1	3	147516.3	Y	N	Crawl Space	Single Family(Res Use/Zone)
184681	1	2	56077.39	Y	N	Basement	Single Family(Res Use/Zone)
184937	1	3	53952.44	Y	N	Crawl Space	Single Family(Res Use/Zone)

183789	1	2	47839.32	Y	N	Basement	Single Family(Res Use/Zone)
169025	1	3	25828.05	Y	N	Crawl Space	Single Family(Res Use/Zone)
184169	1	2	10407.09	Y	N	Crawl Space	Single Family(Res Use/Zone)

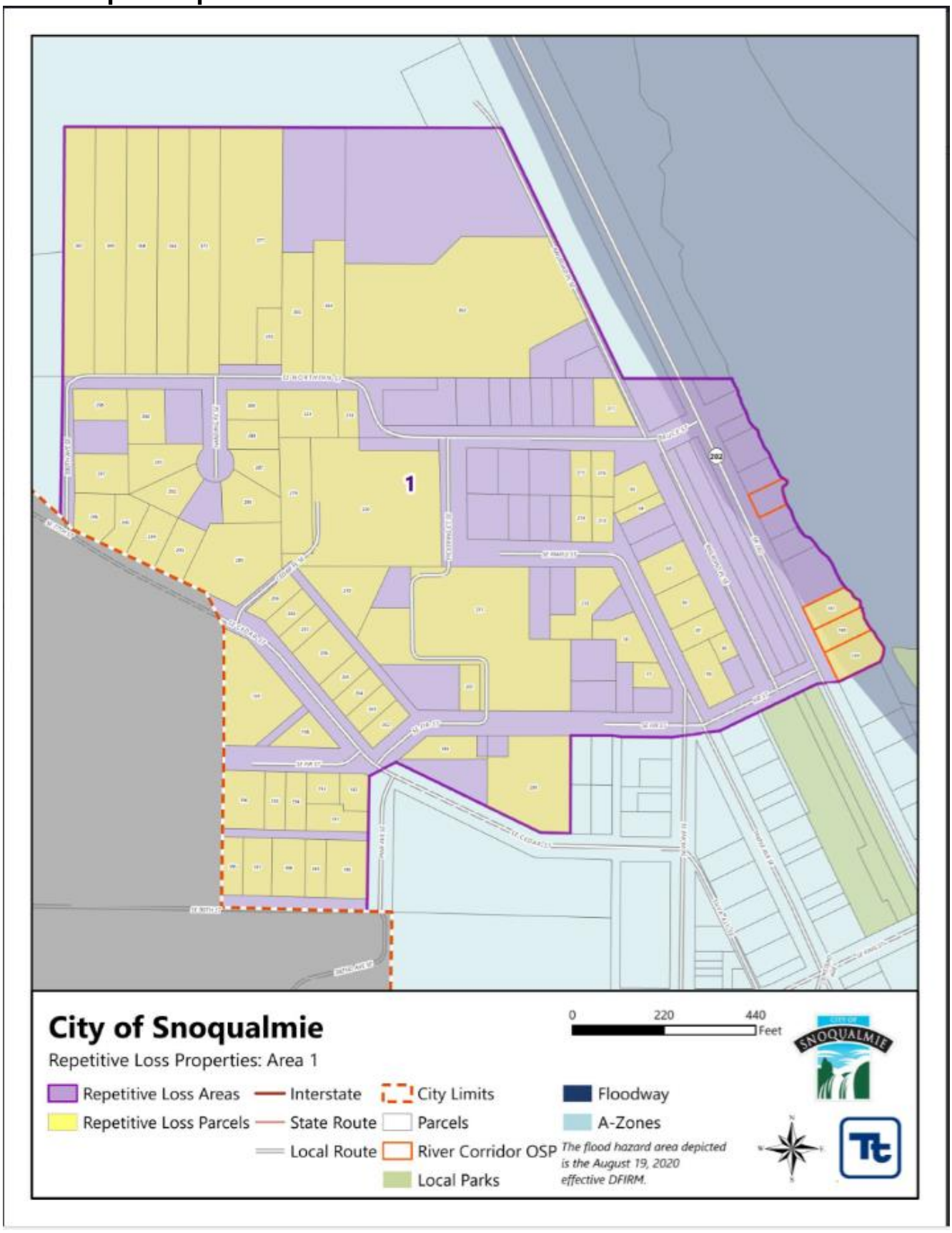
Probable Mitigation Measures- Repetitive Loss Area 1

Tetra Tech completed an assessment of each of the 373 properties within the 4 repetitive loss areas. King County Property Reports were last updated July 2022 and are considered the best available data for current parcel photos, present land use, condition assessment of structure, foundation type, and building data. All data was reviewed alongside aerial photography from Google Earth, King County Iparcel, and King County data sheets for site assessments.

Probable mitigation measures for the 373 properties within the 4 repetitive loss areas apply to RL-designated and non-RL-designated structures based on the identified sources of flooding.

Repetitive Loss Area 1 Summary		Probable Mitigation Measures
Foundation	ALL Structures in RLA1	
Crawlspace	Common foundation type in RLA1	Drainage maintenance and Elevation. Elevating the utilities of the property may support flood risk reduction. Levels of dry floodproofing may be an appropriate risk reduction technique. Enhanced levels of drainage improvements to reduce ponding along foundation walls and installing backwater valve are additional measures for property owners to take into consideration.
Slab	Foundation type not common in RLA1	Drainage maintenance and Elevation. Structural elevation to current freeboard standards or freeboard requirements based on funding source. Elevating the utilities of the property may support flood risk reduction. Levels of dry floodproofing may be an appropriate risk reduction technique. Enhanced levels of drainage improvements to reduce ponding along foundation walls and installing backwater valve are additional measures for property owners to take into consideration. Wet floodproofing techniques may be considered where allowed by regulations.
Basement	Common foundation type in RLA1	Drainage maintenance and Elevation. Elevation actions may include filling in the basement with an approved material to adjust the first-floor level for flood insurance and potential flood risk reduction. Elevating the utilities of the property may support flood risk reduction. Levels of dry floodproofing may be an appropriate risk reduction technique. Enhanced levels of drainage improvements to reduce ponding along foundation walls and installing backwater valve are additional measures for property owners to take into consideration.
	Acquisition and Demolition – River Corridor	3 identified parcels within RLA1 are identified for future acquisition and demolition mitigation actions. These 3 parcels within the River Corridor would become greenspace and serve as open space preservation.
	Acquisition and Demolition – Master Plan	1 parcel within RLA1 that is identified for future acquisition and demolition under the City's Master Plan. This parcel will remain under the ownership of the city and support greenspace efforts.
	Capital Improvement Plan	The City's maintained Capital Improvement Plan includes a drainage system maintenance and replacement program, stormwater pond improvement program, drainage improvement projects, riverbank restoration, and other stormwater management and floodplain management projects.

7.1.1 Map of Repetitive Loss Area



7.2 REPETITIVE LOSS AREA NO. 2

FEMA-Identified Repetitive Loss Properties

Table 7-2 lists the FEMA-designated repetitive loss properties within this repetitive loss area.

FEMA Repetitive Loss Property #	RLAA Area	Total Claims	Total Paid Building and/or Contents	NFIP Repetitive Loss	NFIP Severe Repetitive Loss	Foundation Type	Parcel Use Description
185243	2	3	213951.6	Y	Y	Basement	Single Family(Res Use/Zone)
7493	2	5	179364.5	Y	Y	Crawl Space	Single Family(Res Use/Zone)
69307	2	4	36491.01	Y	N	Basement	Single Family(Res Use/Zone)
184571	2	2	31112.44	Y	N	Crawl Space	Single Family(Res Use/Zone)
184152	2	2	52664.6	Y	N	Crawl Space	Single Family(Res Use/Zone)
184103	2	2	47043.27	Y	N	Basement	Single Family(Res Use/Zone)
184620	2	2	103210.1	Y	N	Basement	Single Family(Res Use/Zone)
184051	2	2	34278.73	Y	N	Basement	Single Family(Res Use/Zone)
183869	2	3	92211.06	Y	N	Basement	Single Family(Res Use/Zone)
80560	2	4	261976.5	Y	Y	Crawl Space	Single Family(Res Use/Zone)
80556	2	5	76557.85	Y	Y	Basement	Single Family(Res Use/Zone)
184964	2	3	35543.26	Y	N	Crawl Space	Single Family(Res Use/Zone)
184145	2	2	36270.66	Y	N	Basement	Single Family(Res Use/Zone)
184987	2	2	18193.98	Y	N	Crawl Space	Single Family(Res Use/Zone)
183910	2	2	4826.04	Y	N	Basement	Single Family(Res Use/Zone)
186174	2	2	4510.22	Y	N	Basement	Single Family(Res Use/Zone)

184163	2	2	5149.71	Y	N	Crawl Space	Single Family(Res Use/Zone)
184033	2	2	12463.61	Y	N	Basement	Single Family(Res Use/Zone)
184500	2	2	16500.64	Y	N	Basement	Single Family(Res Use/Zone)
181347	2	3	54117.92	Y	N	Basement	Single Family(C/I Zone)
184142	2	2	8942.49	Y	N	Crawl Space	Single Family(Res Use/Zone)
183897	2	2	73361.39	Y	N	Basement	Single Family(Res Use/Zone)
184009	2	2	6502.6	Y	N	Crawl Space	Single Family(Res Use/Zone)
184086	2	2	87801.9	Y	N	Basement	Single Family(Res Use/Zone)
184227	2	2	73487.73	Y	N	Crawl Space	Single Family(Res Use/Zone)
183829	2	2	69270.88	Y	N	Basement	Single Family(Res Use/Zone)
183843	2	2	11245.28	Y	N	Crawl Space	Single Family(Res Use/Zone)
184584	2	2	59208.24	Y	N	Basement	Single Family(Res Use/Zone)
184095	2	2	23045.51	Y	N	Basement	Single Family(Res Use/Zone)

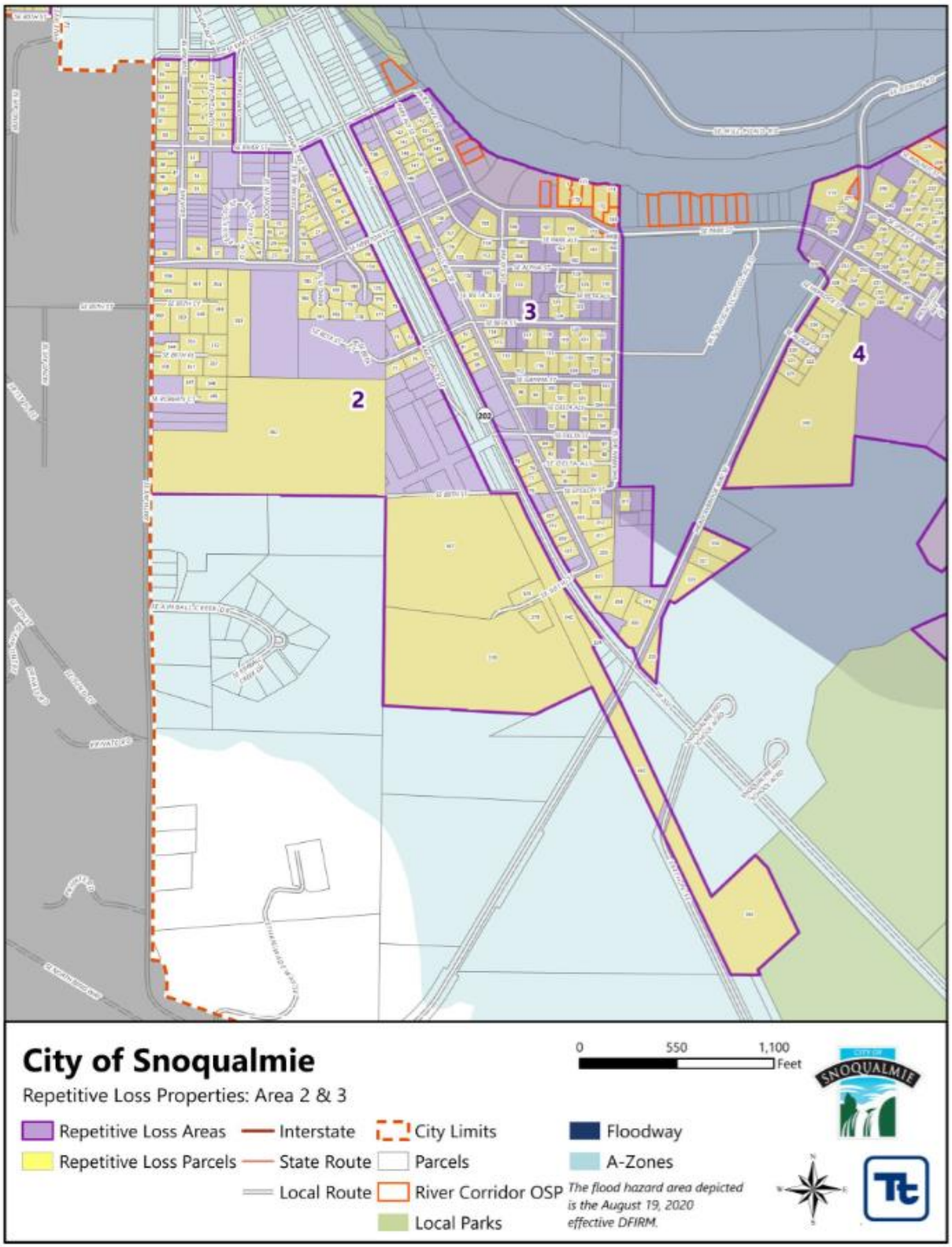
Additional Properties Included in Repetitive Loss Area

Tetra Tech completed an assessment of each of the 373 properties within the 4 repetitive loss areas. King County Property Reports were last updated July 2022 and are considered the best available data for current parcel photos, present land use, condition assessment of structure, foundation type, and building data. All data was reviewed alongside aerial photography from Google Earth, King County Iparcel, and King County data sheets for site assessments.

Probable mitigation measures for the 373 properties within the 4 repetitive loss areas apply to RL-designated and non-RL-designated structures based on the identified sources of flooding.

Repetitive Loss Area 2 Summary		
Foundation	**ALL Structures in RLA2**	**Probable Mitigation Measures**
Crawlspace	Common foundation type in RLA2	Drainage maintenance and Elevation. Elevating the utilities of the property may support flood risk reduction. Levels of dry floodproofing may be an appropriate risk reduction technique. Enhanced levels of drainage improvements to reduce ponding along foundation walls and installing backwater valve are additional measures for property owners to take into consideration.
Slab	Foundation type not common in RLA2	Drainage maintenance and Elevation. Structural elevation to current freeboard standards or freeboard requirements based on funding source. Elevating the utilities of the property may support flood risk reduction. Levels of dry floodproofing may be an appropriate risk reduction technique. Enhanced levels of drainage improvements to reduce ponding along foundation walls and installing backwater valve are additional measures for property owners to take into consideration. Wet floodproofing techniques may be considered where allowed by regulations.
Basement	Common foundation type in RLA2	Drainage maintenance and Elevation. Elevation actions may include filling in the basement with an approved material to adjust the first-floor level for flood insurance and potential flood risk reduction. Elevating the utilities of the property may support flood risk reduction. Levels of dry floodproofing may be an appropriate risk reduction technique. Enhanced levels of drainage improvements to reduce ponding along foundation walls and installing backwater valve are additional measures for property owners to take into consideration.
	Acquisition and Demolition – River Corridor	N/A
	Acquisition and Demolition – Master Plan	N/A
	Capital Improvement Plan	The City's maintained Capital Improvement Plan includes a drainage system maintenance and replacement program, stormwater pond improvement program, drainage improvement projects, riverbank restoration, and other stormwater management and floodplain management projects.

7.2.1 Map of Repetitive Loss Area



7.3 REPETITIVE LOSS AREA NO. 3

FEMA-Identified Repetitive Loss Properties

Table 7-3 lists the FEMA-designated repetitive loss properties within this repetitive loss area.

FEMA Repetitive Loss Property #	RLAA Area	Total Claims	Total Paid Building and/or Contents	NFIP Repetitive Loss	NFIP Severe Repetitive Loss	Foundation Type	Parcel Use Description
289011	3	2	55632.33	Y	N	Crawl Space	Single Family(Res Use/Zone)
82028	3	5	68654.56	Y	Y	Vacant	Single Family(Res Use/Zone)
184107	3	2	6637.87	Y	N	Basement	Single Family(Res Use/Zone)
183961	3	2	15031.66	Y	N	Vacant	Single Family(Res Use/Zone)
184618	3	2	86111.56	Y	N	Crawl Space	Single Family(Res Use/Zone)
184978	3	2	8482.9	Y	N	Crawl Space	Single Family(Res Use/Zone)
288598	3	2	24344.99	Y	N	Crawl Space	Single Family(Res Use/Zone)
184025	3	2	125216.1	Y	Y	Crawl Space	Single Family(Res Use/Zone)
184452	3	2	35255.05	Y	N	Crawl Space	Single Family(Res Use/Zone)
183863	3	2	47724.76	Y	N	Basement	Single Family(Res Use/Zone)
85770	3	4	58758.01	Y	N	Basement	Single Family(Res Use/Zone)
85767	3	4	138359.9	Y	Y	Basement	Single Family(Res Use/Zone)
75578	3	4	93606.15	Y	N	Basement	Single Family(Res Use/Zone)
54726	3	6	89852.36	Y	Y	Basement	Single Family(Res Use/Zone)
75560	3	4	22496.8	Y	N	Crawl Space	Single Family(Res Use/Zone)
75586	3	4	92948.54	Y	Y	Basement	Single Family(Res Use/Zone)

184083	3	2	88873.6	Y	N	Basement	Duplex
183520	3	2	55730.68	Y	N	Basement	Duplex
184053	3	2	120177	Y	N	Crawl Space	Single Family(Res Use/Zone)
184055	3	2	69462.85	Y	N	Crawl Space	Single Family(Res Use/Zone)
184387	3	2	79656.3	Y	N	Crawl Space	Single Family(Res Use/Zone)
183895	3	2	26573.42	Y	N	Crawl Space	Single Family(Res Use/Zone)
184439	3	2	188428.7	Y	Y	Basement	Single Family(Res Use/Zone)
168812	3	3	78510.36	Y	N	Crawl Space	Single Family(Res Use/Zone)
184056	3	2	70238.75	Y	N	Crawl Space	Single Family(Res Use/Zone)
184670	3	2	15174.05	Y	N	Basement	Single Family(Res Use/Zone)
69305	3	2	32993.85	Y	N	Vacant	4-Plex
184029	3	2	75830.41	Y	N	Crawl Space	Single Family(Res Use/Zone)
184603	3	2	39074.85	Y	N	Vacant	Daycare Center
184565	3	2	56649.34	Y	Y	Basement	Single Family(Res Use/Zone)
299493	3	2	65721.04	Y	N	Crawl Space	Single Family(C/I Use)
184945	3	2	54025.54	Y	N	Crawl Space	Single Family(Res Use/Zone)
184094	3	2	221167.4	Y	N	Basement	Single Family(Res Use/Zone)
184388	3	2	46426.87	Y	N	Crawl Space	Single Family(Res Use/Zone)
69312	3	3	129034.9	Y	N	Crawl Space	Single Family(Res Use/Zone)
316	3	4	69130.53	Y	Y	Basement	Single Family(Res Use/Zone)
184384	3	2	15253.13	Y	N	Crawl Space	Single Family(Res Use/Zone)
80811	3	6	61100.52	Y	Y	Crawl Space	Single Family(Res Use/Zone)

183909	3	2	59314.73	Y	N	Basement	Single Family(Res Use/Zone)
184153	3	3	218225.4	Y	Y	Basement	Single Family(Res Use/Zone)
74189	3	4	104930.7	Y	N	Crawl Space	Single Family(Res Use/Zone)
168945	3	3	64409.4	Y	N	Crawl Space	Single Family(Res Use/Zone)
82350	3	4	554367.5	Y	Y	Crawl Space	Church/Welfare/Relig Srvc
184662	3	2	38711.93	Y	N	Crawl Space	Single Family(Res Use/Zone)
318100	3	2	25209.16	Y	Y	Vacant	Single Family(Res Use/Zone)
77839	3	5	174915	Y	Y	Basement	Single Family(Res Use/Zone)
80555	3	4	137059.2	Y	Y	Basement	Single Family(Res Use/Zone)
69306	3	5	198553.4	Y	Y	Crawl Space	4-Plex
183039	3	5	35418.62	Y	N	Basement	Single Family(Res Use/Zone)
184671	3	2	29544.22	Y	N	Crawl Space	Single Family(Res Use/Zone)
88180	3	2	23983.48	Y	Y	Crawl Space	Park, Public(Zoo/Arbor)
183865	3	3	70240.92	Y	N	Crawl Space	Single Family(C/I Zone)
184389	3	2	113276.5	Y	N	Crawl Space	Apartment

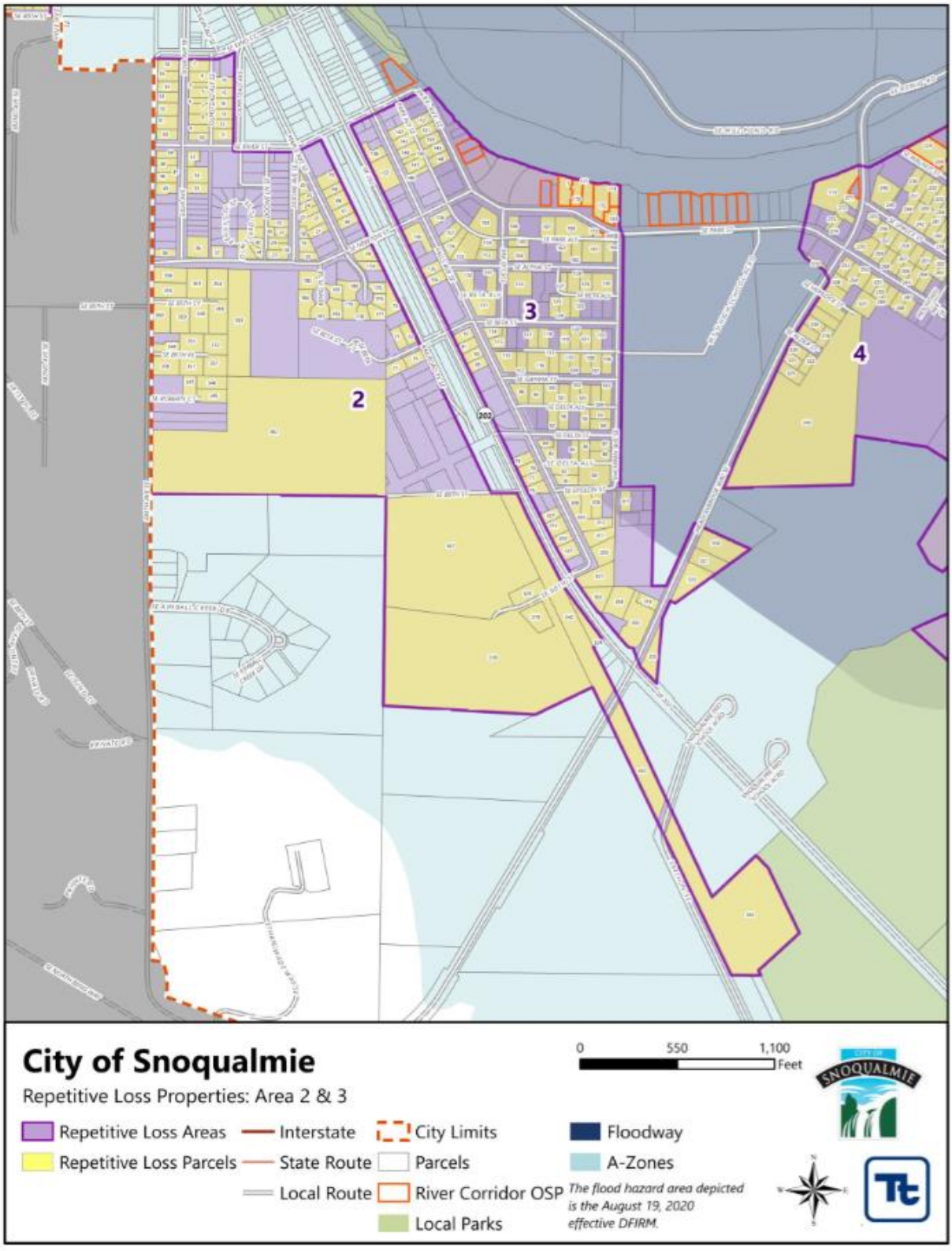
Additional Properties Included in Repetitive Loss Area

Tetra Tech completed an assessment of each of the 373 properties within the 4 repetitive loss areas. King County Property Reports were last updated July 2022 and are considered the best available data for current parcel photos, present land use, condition assessment of structure, foundation type, and building data. All data was reviewed alongside aerial photography from Google Earth, King County Iparcel, and King County data sheets for site assessments.

Probable mitigation measures for the 373 properties within the 4 repetitive loss areas apply to RL-designated and non-RL-designated structures based on the identified sources of flooding.

Repetitive Loss Area 3 Summary		
Foundation	**ALL Structures in RLA3**	**Probable Mitigation Measures**
Crawlspace	Common foundation type in RLA3	Drainage maintenance and Elevation. Elevating the utilities of the property may support flood risk reduction. Levels of dry floodproofing may be an appropriate risk reduction technique. Enhanced levels of drainage improvements to reduce ponding along foundation walls and installing backwater valve are additional measures for property owners to take into consideration.
Slab	Foundation type not common in RLA3	Drainage maintenance and Elevation. Structural elevation to current freeboard standards or freeboard requirements based on funding source. Elevating the utilities of the property may support flood risk reduction. Levels of dry floodproofing may be an appropriate risk reduction technique. Enhanced levels of drainage improvements to reduce ponding along foundation walls and installing backwater valve are additional measures for property owners to take into consideration. Wet floodproofing techniques may be considered where allowed by regulations.
Basement	Common foundation type in RLA3	Drainage maintenance and Elevation. Elevation actions may include filling in the basement with an approved material to adjust the first-floor level for flood insurance and potential flood risk reduction. Elevating the utilities of the property may support flood risk reduction. Levels of dry floodproofing may be an appropriate risk reduction technique. Enhanced levels of drainage improvements to reduce ponding along foundation walls and installing backwater valve are additional measures for property owners to take into consideration.
	Acquisition and Demolition – River Corridor	6 identified parcels within RLA3 are identified for future acquisition and demolition mitigation actions. These 6 parcels within the River Corridor would become greenspace and serve as open space preservation.
	Acquisition and Demolition – Master Plan	N/A
	Capital Improvement Plan	The City's maintained Capital Improvement Plan includes a drainage system maintenance and replacement program, stormwater pond improvement program, drainage improvement projects, riverbank restoration, and other stormwater management and floodplain management projects.

7.3.1 Map of Repetitive Loss Area



7.4 REPETITIVE LOSS AREA NO. 4

FEMA-Identified Repetitive Loss Properties

Table 7-4 lists the FEMA-designated repetitive loss properties within this repetitive loss area.

FEMA Repetitive Loss Property #	RLAA Area	Total Claims	Total Paid Building and/or Contents	NFIP Repetitive Loss	NFIP Severe Repetitive Loss	Foundation Type	Parcel Use Description
183038	4	3	176096.1	Y	N	Crawl Space	Golf Course
185120	4	2	75922.6	Y	N	Basement	Single Family(Res Use/Zone)
184106	4	2	66247.41	Y	N	Crawl Space	Single Family(Res Use/Zone)
183003	4	3	17680.56	Y	N	Basement	Single Family(Res Use/Zone)
182088	4	3	26148.03	Y	N	Basement	Single Family(Res Use/Zone)
184639	4	2	11337.79	Y	N	Crawl Space	Single Family(Res Use/Zone)
184447	4	2	159667.6	Y	N	Basement	Single Family(Res Use/Zone)
184390	4	3	11520.57	Y	N	Basement	Single Family(Res Use/Zone)
168822	4	3	137174.2	Y	N	Basement	Single Family(Res Use/Zone)
184641	4	2	16220.88	Y	N	Basement	Single Family(Res Use/Zone)
184588	4	2	189309.1	Y	Y	Basement	Single Family(Res Use/Zone)
168819	4	3	89611.41	Y	N	Basement	Single Family(Res Use/Zone)
183320	4	3	22554.22	Y	N	Basement	Single Family(C/I Zone)
84882	4	5	21651.29	Y	N	Basement	Single Family(Res Use/Zone)
85695	4	5	48903.63	Y	N	Basement	Single Family(Res Use/Zone)
168965	4	3	19265.09	Y	N	Crawl Space	Single Family(Res Use/Zone)

182117	4	3	48475.17	Y	N	Basement	Single Family(Res Use/Zone)
183866	4	3	194528.4	Y	N	Basement	Single Family(Res Use/Zone)
307890	4	2	9985.75	Y	N	Basement	Single Family(Res Use/Zone)
82007	4	6	38638.07	Y	Y	Basement	Single Family(Res Use/Zone)
75579	4	3	21550.5	Y	N	Basement	Single Family(Res Use/Zone)
73908	4	2	65509.18	Y	N	Basement	Single Family(Res Use/Zone)
73839	4	5	25825.54	Y	N	Basement	Single Family(Res Use/Zone)
77813	4	3	54991.56	Y	N	Basement	Single Family(Res Use/Zone)
181128	4	4	31931.06	Y	N	Basement	Single Family(Res Use/Zone)
184633	4	2	6785.22	Y	N	Basement	Single Family(Res Use/Zone)
88181	4	4	13337.36	Y	N	Basement	Single Family(Res Use/Zone)
184104	4	2	75185.75	Y	N	Crawl Space	Apartment(Mixed Use)
80652	4	6	352329.5	Y	Y	Basement	Single Family(Res Use/Zone)
80554	4	3	19210.42	Y	N	Vacant	Vacant(Commercial)
184065	4	2	60172.18	Y	N	Vacant	Vacant(Commercial)
184082	4	2	8885.37	Y	N	Basement	Single Family(Res Use/Zone)
83308	4	2	6842.2	Y	N	Basement	
28377	4	2	42440.18	Y	N	Basement	
48559	4	2	34485.55	Y	N	Vacant	
184627	4	2	16569.05	Y	N	Basement	Single Family(Res Use/Zone)
184385	4	2	10462.48	Y	N	Crawl Space	Single Family(Res Use/Zone)
56942	4	4	103813.3	Y	Y	Crawl Space	Single Family(Res Use/Zone)

184982	4	2	33923.04	Y	N	Basement	Single Family(Res Use/Zone)
2457	4	3	58426.76	Y	N	Basement	Single Family(Res Use/Zone)
28378	4	5	53594.58	Y	N	Basement	Single Family(Res Use/Zone)
56990	4	3	48728.52	Y	N	Basement	Single Family(Res Use/Zone)
184164	4	2	28489.76	Y	N	Basement	Single Family(Res Use/Zone)
184157	4	2	36113.41	Y	N	Basement	Single Family(Res Use/Zone)
69310	4	10	96864.63	Y	Y	Crawl Space	Single Family(Res Use/Zone)
184134	4	2	13668.13	Y	N	Basement	Single Family(Res Use/Zone)
184440	4	2	17851.48	Y	N	Basement	Single Family(Res Use/Zone)
80558	4	5	18792.08	Y	N	Basement	Single Family(Res Use/Zone)
80913	4	2	9156.72	Y	N	Vacant	
75589	4	2	2655.99	Y	N	Basement	Single Family(Res Use/Zone)
184802	4	2	163739.6	Y	N	Crawl Space	Single Family(Res Use/Zone)
286885	4	2	29316.23	Y	N	Basement	Single Family(Res Use/Zone)
73909	4	2	31902.72	Y	N	Basement	Single Family(Res Use/Zone)
74147	4	4	22419.09	Y	N	Basement	Single Family(Res Use/Zone)

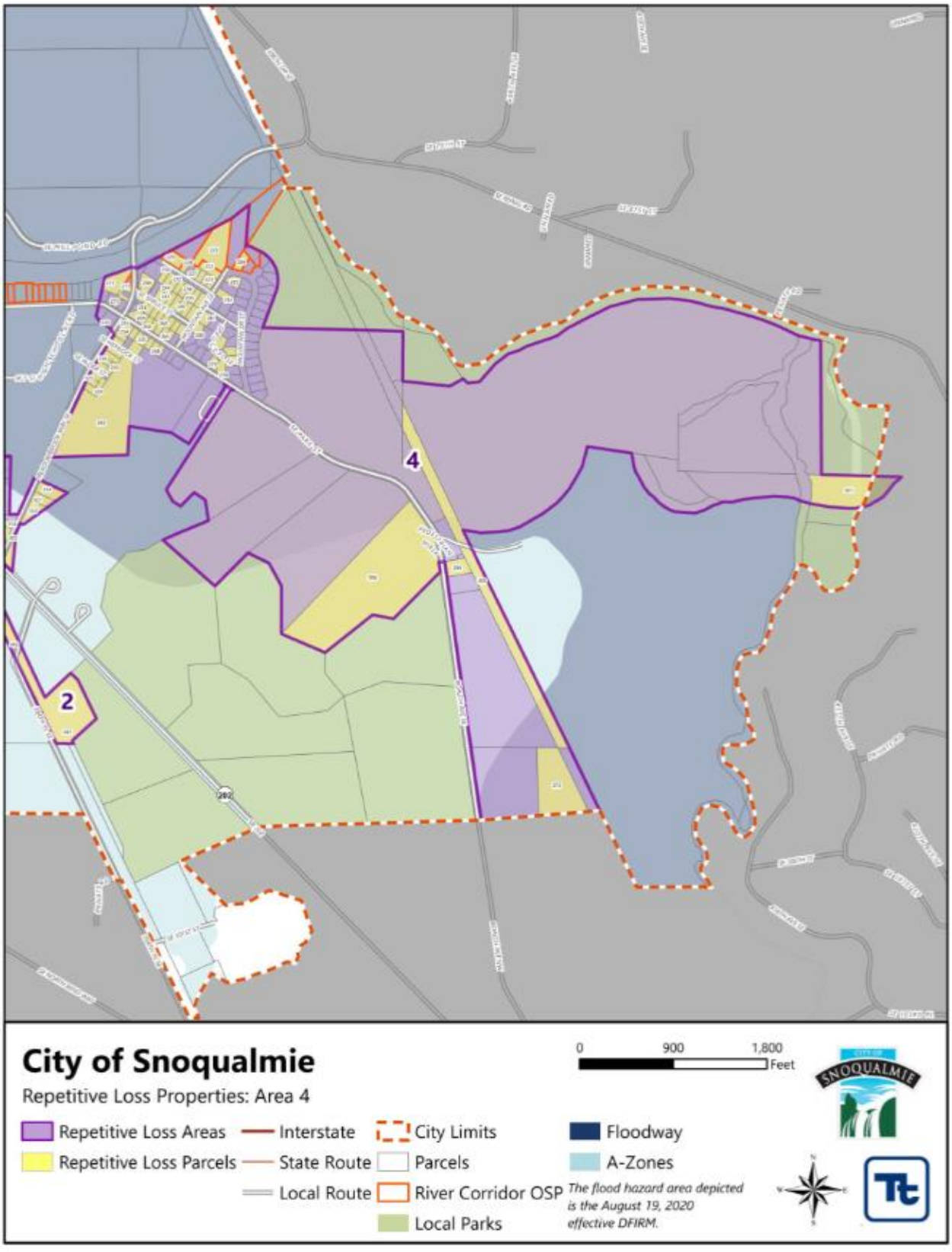
Additional Properties Included in Repetitive Loss Area

Tetra Tech completed an assessment of each of the 373 properties within the 4 repetitive loss areas. King County Property Reports were last updated July 2022 and are considered the best available data for current parcel photos, present land use, condition assessment of structure, foundation type, and building data. All data was reviewed alongside aerial photography from Google Earth, King County Iparcel, and King County data sheets for site assessments.

Probable mitigation measures for the 373 properties within the 4 repetitive loss areas apply to RL-designated and non-RL-designated structures based on the identified sources of flooding.

Repetitive Loss Area 4 Summary		
Foundation	**ALL Structures in RLA4**	**Probable Mitigation Measures**
Crawlspace	Common foundation type in RLA4	Drainage maintenance and Elevation. Elevating the utilities of the property may support flood risk reduction. Levels of dry floodproofing may be an appropriate risk reduction technique. Enhanced levels of drainage improvements to reduce ponding along foundation walls and installing backwater valve are additional measures for property owners to take into consideration.
Slab	Foundation type not common in RLA4	Drainage maintenance and Elevation. Structural elevation to current freeboard standards or freeboard requirements based on funding source. Elevating the utilities of the property may support flood risk reduction. Levels of dry floodproofing may be an appropriate risk reduction technique. Enhanced levels of drainage improvements to reduce ponding along foundation walls and installing backwater valve are additional measures for property owners to take into consideration. Wet floodproofing techniques may be considered where allowed by regulations.
Basement	Common foundation type in RLA4	Drainage maintenance and Elevation. Elevation actions may include filling in the basement with an approved material to adjust the first-floor level for flood insurance and potential flood risk reduction. Elevating the utilities of the property may support flood risk reduction. Levels of dry floodproofing may be an appropriate risk reduction technique. Enhanced levels of drainage improvements to reduce ponding along foundation walls and installing backwater valve are additional measures for property owners to take into consideration.
	Acquisition and Demolition – River Corridor	4 identified parcels within RLA4 are identified for future acquisition and demolition mitigation actions. These 4 parcels within the River Corridor would become greenspace and serve as open space preservation.
	Acquisition and Demolition – Master Plan	N/A
	Capital Improvement Plan	The City's maintained Capital Improvement Plan includes a drainage system maintenance and replacement program, stormwater pond improvement program, drainage improvement projects, riverbank restoration, and other stormwater management and floodplain management projects.

7.4.1 Map of Repetitive Loss Area



PART 3—REPETITIVE LOSS AREA ACTION PLAN

8. REPETITIVE LOSS AREA ANALYSIS

8.1 MITIGATION ACTIONS

This *City of Snoqualmie, Washington, Repetitive Loss Area Analysis* was created in accordance to the prerequisites for CRS participation. Mitigation Actions reviewed fall in the following categories:

- Preventive
- Property Protection
- Natural Resource Protection
- Emergency Services
- Structural Projects
- Public Information

Each repetitive loss property and similar property deemed to be adjacent were evaluated by the above six (6) actions. The decision that best fit the individual situation and was most feasible:

- Drainage Maintenance and/or,
- Elevation,
- Various levels of wet or dry floodproofing techniques where applicable

8.2 ANNUAL EVALUATION REPORT

The City will prepare an annual evaluation report for its area analyses to meet the credit criteria of CRS Activity 510- RLAA. The report will include a review of each action item, including a description of what was implemented or not implemented, and recommended changes to the actions items as appropriate. The report will be made available to the media and the public and will be submitted with the annual CRS recertification.

9. PLAN ADOPTION

The City of Snoqualmie governing board formally adopted the *City of Snoqualmie, Washington Repetitive Loss Area Analysis* on DATE – provided by Community. A copy of the resolution is provided in Appendix D.

REFERENCES

44 CFR Part 60, Section 60.3 https://www.law.cornell.edu/cfr/text/44/60.3 Accessed 2020

100RC Resilience Plan 100 Resilient Cities https://www.100resilientcities.org/ Accessed 2020

2021 BNi Home Builder's Costbook Building News International, 2021 BNi Building News Home Builders Costbook 2021 Estimating Guide (bnibooks.com)

Americans with Disabilities Act (ADA What is the Americans with Disabilities Act (ADA)? https://adata.org/learn-about-ada Accessed 2020

Disaster Mitigation Act (DMA) 2013 Disaster Mitigation Act of 2000 Disaster Mitigation Act of 2000 (fema.gov) accessed 2020

Endangered Species Act Laws & Regulations Summary of the Endangered Species Act 16 U.S.C. §1531 et seq. (1973) https://www.epa.gov/laws-regulations/summary-endangered-species-act Accessed 2020

FEMA Federal Emergency Management Agency https://www.fema.gov/ Accessed 2020

FEMA 2021 National Preparedness Report. National Preparedness: Additional Actions Needed to Address Gaps in the Nation's Emergency Management Capabilities (gao.gov) Accessed 2020

FEMA 2017 FEMA REFLECTS ON HISTORIC YEAR. https://www.fema.gov/news-release/2017/12/29/fema-reflects-historic-year Accessed 2020

FEMA. 2017 CRS Coordinator's Manual FIA-15/2017. https://www.fema.gov/media-library/assets/documents/8768 The CRS Coordinator's Manual - CRSresources Accessed 2020.

FEMA 551 March 2007 Selecting Appropriate Mitigation Measures for Floodprone Structures fema_551.pdf

FEMA and the Corps of Engineers U.S. Army Corps of Engineers - Coastal Partner https://www.fema.gov/us-army-corps-engineers-coastal-partner Accessed 2020

Flood Insurance Rate Map FIRM https://www.fema.gov/flood-insurance-rate-map-firm Accessed 2020

National Flood Insurance Program: Flood Insurance | FEMA.gov

National Incident Management System (NIMS) National Incident Management System | FEMA.gov Accessed 2020

RLAA Repetitive Loss Area Analysis *Mapping Repetitive Loss Areas* *https://crsresources.org/files/500/mapping_repetitive_loss_areas.pdf?_sm_vck=PrK7j5KPLTT5Mq0kTN56rbHZqJM0P4JHVqZGntJZZrSj5KV4n7Ln* Accessed 2020

U.S. Army Corps of Engineers 2003 *Generic Depth-Damage Relationships for Residential Structures March 2006* https://www.mvn.usace.army.mil/Portals/56/docs/PD/Donaldsv-Gulf.pdf Accessed 2020

TERMINOLOGY

ACRONYMS

CFR—Code of Federal Regulations CRS—

Community Rating System ESA—Endangered

Species Act

FEMA—Federal Emergency Management Agency FIRM—Flood Insurance Rate Map GIS—Geographic

Information System Hazus—MH—Hazards, United States-Multi Hazard NFIP—National Flood Insurance

Program NIMS—National Incident Management System RL—repetitive loss

RLAA—repetitive loss area analysis

DEFINITIONS

100-Year Flood: The flood that has a 1 percent chance of being equaled or exceeded in any given year. The 100-year flood does not necessarily occur once every 100 years. It is possible for a 100-year flood to occur more than once in a relatively short period of time.

Base Flood: Another term for the 100-year flood—the flood having a 1 percent chance of being equaled or exceeded in any given year. The base flood is used as a reference flood level to ensure that all properties subject to the National Flood Insurance Program are protected to the same degree against flooding.

Benefit-Cost Analysis: 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. For the purposes of benefit-cost analysis of proposed mitigation actions, benefits are limited to specific, measurable, risk reduction factors, including reduction in expected property losses (buildings, contents, and functions) and protection of human life.

Community Rating System (CRS): A voluntary program that provides flood insurance premium discounts to property owners in communities that exceed the minimum requirements of the National Flood Insurance Program and complete activities that reduce flood hazard risk.

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**.

Exposure: The number and dollar value of assets considered to be at risk during the occurrence of a specific hazard.

Flash Flood: A flood that occurs with little or no warning when water levels rise at an extremely fast rate.

Flood Insurance Rate Map (FIRM): The official map on which the Federal Emergency Management Agency delineates special flood hazard area for a given location.

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.

Goal: 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 floodplain management plan is measured by the degree to which its goals have been met (that is, by the benefits in terms of actual floodplain management).

Geographic Information System (GIS): A computer software application that relates data regarding physical and other features on the earth to a database for mapping and analysis.

Hazard: A source of potential danger or adverse condition that could harm people and/or cause property damage.

Hazard Mitigation Grant Program: A FEMA program that 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

Hazards U.S. Multi-Hazard (Hazus) Loss Estimation Program: A GIS-based program used to support the development of risk assessments. The Hazus software program assesses risk in a quantitative manner to estimate damage 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.

Inventory: A list of assets identified in a study region that could be lost when a disaster occurs and community resources are at risk. Assets include people, buildings, transportation, and other valued community resources.

Local Government: Any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments, 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.

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

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.

Objective: 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.

Preparedness: Actions that strengthen the capability of government, citizens, and communities to respond to disasters.

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 $1000.00; or
- Two paid flood losses in excess of $1000.00 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: 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.

Risk Assessment: 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.

Special Flood Hazard Area: The base floodplain delineated on a Flood Insurance Rate Map. This area is mapped as a Zone A in river situations and zone V in coastal situations. It 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 floodplain management.

Vulnerability: An asset's susceptibility to damage during a hazard event. Vulnerability depends on an asset's construction, contents, and the economic value of its functions.

Watershed: An area that drains down-gradient from areas of higher land to areas of lower land to the lowest point, a common drainage basin.

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

City of Snoqualmie, Washington Repetitive Loss Area Analysis

Appendix A. Generic Depth-Damage Relationships for Residential Structures

CECW-PG 10 October 2003

MEMORANDUM FOR: *SEE DISTRIBUTION*

SUBJECT: Economic Guidance Memorandum (EGM) 04-01, Generic Depth-DamageRelationships for Residential Structures with Basements.

1. Purpose. The purpose of this memorandum is to release, and provide guidance for theuse of, generic depth-damage curves for use in U.S. Army Corps of Engineers flood damage reduction studies.

2. Background. Proper planning and evaluation of flood damage reduction projects require knowledge of actual damage caused to various types of properties. The primary purpose of the Flood Damage Data Collection Program is to meet that requirement by providing Corps district offices with standardized relationships for estimating flood damage and other costs of flooding, based on actual losses from flood events. Under thisprogram, data have been collected from major flooding that occurred in various parts of the United States from 1996 through 2001. Damage data collected are based on comprehensive accounting of losses from flood victims' records. The generic functions developed and provided in this EGM represent a substantive improvement over other generalized depth-damage functions such as the Flood Insurance Administration (FIA) Rate Reviews.

3. Results. Generic damage functions are attached for one-story homes with basement,two or more story homes with basement, and split-level homes with basement. Genericdamage functions for similar structures without basements were published in 2000 andare included as enclosure 1 for ready reference.

a. Regression analysis was used to create the damage functions. While severalindependent variables, such as flood duration and flood warning lead-time, were examined in building the models, the models that were most efficient in explaining thepercent damage to structure and contents were quadratic and cubic forms with depth asthe only independent variable.

b. Content damage was modeled with the dependent variable being content damage as a percentage of structure value. This differs from the previous technique of first developing content valuations and then content damage relationships as a function ofcontent valuations. The generic content damage models are statistically significant and their use eliminates the need to establish content-to-structure ratios through surveys.

c. While the data collected include information on all aspects of National Economic Development (NED) losses, only results and recommendations related to thestructure and content damages for homes with basements are included in this EGM.

Direct costs for cleanup expenses, unpaid hours for cleanup and repair, emergency damage prevention actions, and other flood-related costs are not included in these damage functions. Information on other residential flood costs, beyond those included inthese damage functions will found the summary report, discussed in paragraph 5. These costs should be developed using site-specific historical information.

4. Application. The following paragraphs provide information on the application of thegeneric curves within the HEC-FDA damage calculation program.

a. The economic section of HEC-FDA divides the quantification of flood damages into a direct method and an indirect method. The direct method allows the userto directly enter a stage-damage relationship for any structure. This approach is commonly used for large or unique properties such as industrial or pubic buildings. Theindirect method quantifies the stage-damage relationship for a group of structures that have significant commonality. Typically damage to residential structures is calculated using the indirect method. The procedures described in the following paragraphs apply only when using the indirect method to determine the stage-damage relationship.

b. The traditional approach to quantifying damage to contents by the indirect method relies on three pieces of information: 1) structure value; 2) content-to-structure value ratio; and 3) the content depth-damage relationship. The content-to-structure valueratio and content depth-damage relationship are unique to the structure occupancy type towhich a structure is assigned. The content depth-damage relationship provides the estimate of content flood damage as a percentage of content value. Thus, to calculate a content stage-damage function for an individual structure, the structure value for an individual structure is first multiplied by the content-to-structure value ratio to provide anestimate of the content value. This content value is then multiplied by each percent damage value of the content depth-damage relationship.

c. The new content depth-damage functions provided herein are different from those used by the Corps in the past in one important aspect. The new functions calculatecontent damage as a percent of structure value rather than content value. Using these functions within HEC-FDA requires care in specifying a content-to-structure value ratio.To understand the requirements for using the new content depth-damage functions requires a basic understanding of how HEC-FDA calculates content damage.

(1). To calculate damages by the indirect method, each structure must be assigned to a structure occupancy type. For each structure occupancy type a content-to-structure value ratio and content depth-damage relationship are defined. These data for calculating content damage within HEC-FDA is entered on the “Study Structure Occupancy Type” screen. As long as a content value is not entered for a structure in theStructure Inventory Data, HEC-FDA calculates the content stage-damage by first calculating content using the structure value multiplied by the content-to-structure valueratio.

In some instances, however, analysts develop unique estimates of content values for a structure, which are entered for the individual structure on the Structure Inventory Data screen. For each structure that has a content value entered, calculating a content value byusing the content-to-structure value ratio is ignored and the user entered content value is used to calculate content damage.

(2). The new content depth-damage functions do not require this intermediate step of calculating content values. Therefore, the content-to-structure value ratio for eachstructure occupancy type using the new content depth-damage relationships must be set to one hundred percent (100). This forces the content depth-damage function to be multiplied by the structure value as required. Also, the “Error Associated with Content/Structure Value” on the “Study Structure Occupancy Type” screen

should be leftblank. This implies that the error in content-to-structure value ratio is part of the new content depth-damage relationship.

(3). Because entering a content value on the Structure Inventory Data window overrides the content-to-structure value ratio, the new content depth-damage relationshipsshould not be used for structures that have separately entered content values.

(4). Questions concerning the use of the generic curves within the HEC-FDA model can be addressed to Dr. David Moser, Institute of Water Resources (IWR), (703)428-8066.

5. Report. A report summarizing the data collection effort and analyses performed to derive these curves will shortly be available on the IWR website. More information maybe obtained by contacting the program's principal investigator, Stuart Davis, (703) 428- 7086.

6. Waiver to Policy. These curves are developed for nation-wide applicability in flood damage reduction studies. When using these curves, the requirement to develop site- specific depth-damage curves contained in ER 1105-2-100, E-19q.(2) is waived. Additionally, the requirement to develop content valuations and content-to-structure ratios based on site-specific or comparable floodplain information, ER 1005-2-100, E- 19q.(1)(a), is also waived. Note these waivers currently apply only to single-family homes with and without basements for which generic curves have been published, and not other categories of flood inundation damages for which no generic curves exist. Feasibility reports must state the generic curves are being used in the flood damage analysis for residential structures with and/or without basements. Use of these curves isoptional and analysts should always endeavor to use the best available information to accurately quantify the damages and benefits in inundation reduction studies.

7. Point of Contact. Administrators of the Flood Damage Data Collection Program continue to collect and analyze flood-related damages to both residential and commercial properties. The HQUSACE program monitor is Lillian Almodovar, (202) 761-4233, whocan address any questions concerning the program.

FOR THE COMMANDER:

/s/

Encl

WILLIAM R. DAWSON, P.E.

Chief, Planning and Policy DivisionDirectorate of Civil Works

DISTRIBUTION:

North Atlantic Division, ATTN: CENAD-ET-PSouth Atlantic Division, ATTN: CESAD-ET-P

Great Lakes/Ohio River Division: ATTN: CELRD-E-PNorthwestern Division, ATTN: CENWD-PNP-ET-P Pacific Ocean Division, ATTN: CEPOD-ET-E

South Pacific Division, ATTN: CESPD-ET-P Southwestern Division, ATTN: CESWD-ET-P Mississippi Valley Division: ATTN: CEMVD-PM

DAMAGE FUNCTIONS

FOR SINGLE FAMILY RESIDENTIALSTRUCTURES WITH BASEMENTS

Structure Depth-Damage

Table 1 Structure One Story, With Basement		
Depth	Mean of Damage	Standard Deviation of Damage
-8	0%	0
-7	0.7%	1.34
-6	0.8%	1.06
-5	2.4%	0.94
-4	5.2%	0.91
-3	9.0%	0.88
-2	13.8%	0.85
-1	19.4%	0.83
0	25.5%	0.85
1	32.0%	0.96
2	38.7%	1.14
3	45.5%	1.37
4	52.2%	1.63
5	58.6%	1.89
6	64.5%	2.14
7	69.8%	2.35
8	74.2%	2.52
9	77.7%	2.66
10	80.1%	2.77
11	81.1%	2.88
12	81.1%	2.88
13	81.1%	2.88
14	81.1%	2.88
15	81.1%	2.88
16	81.1%	2.88

Table 2 Structure Two or More Stories, With Basement		
Depth	Mean of Damage	Standard Deviation of Damage
-8	1.7%	2.70
-7	1.7%	2.70
-6	1.9%	2.11
-5	2.9%	1.80
-4	4.7%	1.66
-3	7.2%	1.56
-2	10.2%	1.47
-1	13.9%	1.37
0	17.9%	1.32
1	22.3%	1.35
2	27.0%	1.50
3	31.9%	1.75
4	36.9%	2.04
5	41.9%	2.34
6	46.9%	2.63
7	51.8%	2.89
8	56.4%	3.13
9	60.8%	3.38
10	64.8%	3.71
11	68.4%	4.22
12	71.4%	5.02
13	73.7%	6.19
14	75.4%	7.79
15	76.4%	9.84
16	76.4%	12.36

Table 3 Structure Split Level, With Basement		
Depth	Mean of Damage	Standard Deviation of Damage
-8		
-7		
-6	2.5%	1.8%
-5	3.1%	1.6%
-4	4.7%	1.5%
-3	7.2%	1.6%
-2	10.4%	1.6%
-1	14.2%	1.6%
0	18.5%	1.6%
1	23.2%	1.7%
2	28.2%	1.9%
3	33.4%	2.1%
4	38.6%	2.4%
5	43.8%	2.6%
6	48.8%	2.9%
7	53.5%	3.2%
8	57.8%	3.4%
9	61.6%	3.6%
10	64.8%	3.9%
11	67.2%	4.2%
12	68.8%	4.8%
13	69.3%	5.7%
14	69.3%	5.7%
15	69.3%	5.7%
16	69.3%	5.7%

Content Depth-Damage

Table 4 Content One Story, With Basement		
Depth	Mean of Damage	Standard Deviation of Damage
-8	0.1%	1.60
-7	0.8%	1.16
-6	2.1%	0.92
-5	3.7%	0.81
-4	5.7%	0.78
-3	8.0%	0.76
-2	10.5%	0.74
-1	13.2%	0.72
0	16.0%	0.74
1	18.9%	0.83
2	21.8%	0.98
3	24.7%	1.17
4	27.4%	1.39
5	30.0%	1.60
6	32.4%	1.81
7	34.5%	1.99
8	36.3%	2.13
9	37.7%	2.25
10	38.6%	2.35
11	39.1%	2.45
12	39.1%	2.45
13	39.1%	2.45
14	39.1%	2.45
15	39.1%	2.45
16	39.1%	2.45

Table 5 Content Two or More Stories-With Basement		
Depth	Mean of Damage	Standard Deviation of Damage
-8	0%	0
-7	1.0%	2.27
-6	2.3%	1.76
-5	3.7%	1.49
-4	5.2%	1.37
-3	6.8%	1.29
-2	8.4%	1.21
-1	10.1%	1.13
0	11.9%	1.09
1	13.8%	1.11
2	15.7%	1.23
3	17.7%	1.43
4	19.8%	1.67
5	22.0%	1.92
6	24.3%	2.15
7	26.7%	2.36
8	29.1%	2.56
9	31.7%	2.76
10	34.4%	3.04
11	37.2%	3.46
12	40.0%	4.12
13	43.0%	5.08
14	46.1%	6.39
15	49.3%	8.08
16	52.6%	10.15

Table 6 Content Split-Level-With Basement		
Depth	Mean of Damage	Standard Deviation of Damage
-8	0.6%	2.09
-7	0.7%	1.49
-6	1.4%	1.14
-5	2.4%	1.01
-4	3.8%	1.00
-3	5.4%	1.02
-2	7.3%	1.03
-1	9.4%	1.04
0	11.6%	1.06
1	13.8%	1.12
2	16.1%	1.23
3	18.2%	1.38
4	20.2%	1.57
5	22.1%	1.76
6	23.6%	1.95
7	24.9%	2.13
8	25.8%	2.28
9	26.3%	2.44
10	26.3%	2.44
11	26.3%	2.44
12	26.3%	2.44
13	26.3%	2.44
14	26.3%	2.44
15	26.3%	2.44
16	26.3%	2.44

ENCLOSURE DAMAGE FUNCTIONS

FOR SINGLE FAMILY RESIDENTIAL

STRUCTURES WITHOUT BASEMENTS

Structure One Story, No Basement		
Depth	**Mean of Damage**	**Standard Deviation of Damage**
-2	0%	0%
-1	2.5%	2.7%
0	13.4%	2.0%
1	23.3%	1.6%
2	32.1%	1.6%
3	40.1%	1.8%
4	47.1%	1.9%
5	53.2%	2.0%
6	58.6%	2.1%
7	63.2%	2.2%
8	67.2%	2.3%
9	70.5%	2.4%
10	73.2%	2.7%
11	75.4%	3.0%
12	77.2%	3.3%
13	78.5%	3.7%
14	79.5%	4.1%
15	80.2%	4.5%
16	80.7%	4.9%

Structure Two or More Stories-No Basement		
Depth	**Mean of Damage**	**Standard Deviation of Damage**
-2	0%	0%
-1	3.0%	4.1%
0	9.3%	3.4%
1	15.2%	3.0%
2	20.9%	2.8%
3	26.3%	2.9%
4	31.4%	3.2%
5	36.2%	3.4%
6	40.7%	3.7%
7	44.9%	3.9%
8	48.8%	4.0%
9	52.4%	4.1%
10	55.7%	4.2%
11	58.7%	4.2%
12	61.4%	4.2%
13	63.8%	4.2%
14	65.9%	4.3%
15	67.7%	4.6%
16	69.2%	5.0%

Structure Split-Level-No Basement		
Depth	**Mean of Damage**	**Standard Deviation of Damage**
-2	0%	0%
-1	6.4%	2.9%
0	7.2%	2.1%
1	9.4%	1.9%
2	12.9%	1.9%
3	17.4%	2.0%
4	22.8%	2.2%
5	28.9%	2.4%
6	35.5%	2.7%
7	42.3%	3.2%
8	49.2%	3.8%
9	56.1%	4.5%
10	62.6%	5.3%
11	68.6%	6.0%
12	73.9%	6.7%
13	78.4%	7.4%
14	81.7%	7.9%
15	83.8%	8.3%
16	84.4%	8.7%

Content One Story, No Basement		
Depth	Mean of Damage	Standard Deviation of Damage
-2	0%	0%
-1	2.4%	2.1%
0	8.1%	1.5%
1	13.3%	1.2%
2	17.9%	1.2%
3	22.0%	1.4%
4	25.7%	1.5%
5	28.8%	1.6%
6	31.5%	1.6%
7	33.8%	1.7%
8	35.7%	1.8%
9	37.2%	1.9%
10	38.4%	2.1%
11	39.2%	2.3%
12	39.7%	2.6%
13	40.0%	2.9%
14	40.0%	3.2%
15	40.0%	3.5%
16	40.0%	3.8%

Content Two or More Stories-No Basement		
Depth	Mean of Damage	Standard Deviation of Damage
-2	0%	0%
-1	1.0%	3.5%
0	5.0%	2.9%
1	8.7%	2.6%
2	12.2%	2.5%
3	15.5%	2.5%
4	18.5%	2.7%
5	21.3%	3.0%
6	23.9%	3.2%
7	26.3%	3.3%
8	28.4%	3.4%
9	30.3%	3.5%
10	32.0%	3.5%
11	33.4%	3.5%
12	34.7%	3.5%
13	35.6%	3.5%
14	36.4%	3.6%
15	36.9%	3.8%
16	37.2%	4.2%

Content Split-Level-No Basement		
Depth	**Mean of Damage**	**Standard Deviation of Damage**
-2	0%	0%
-1	2.2%	2.2%
0	2.9%	1.5%
1	4.7%	1.2%
2	7.5%	1.3%
3	11.1%	1.4%
4	15.3%	1.5%
5	20.1%	1.6%
6	25.2%	1.8%
7	30.5%	2.1%
8	35.7%	2.5%
9	40.9%	3.0%
10	45.8%	3.5%
11	50.2%	4.1%
12	54.1%	4.6%
13	57.2%	5.0%
14	59.4%	5.4%
15	60.5%	5.7%
16	60.5%	6.0%

City of Snoqualmie, Washington Repetitive Loss Area Analysis

Appendix B. Letter to Repetitive Loss Area Residents

C. Federal and State Agencies, Programs and Regulations

Existing laws, ordinances, plans and programs at the federal and state level can support or impact flood hazard mitigation actions identified in this plan. 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 recommended actions or has a nexus with a recommended action in this plan.

FEDERAL

National Flood Insurance Program

The NFIP makes federally backed flood insurance available to homeowners, renters, and business owners in participating communities that enact floodplain regulations. 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 100-year flood (or base flood) and the 500-year flood. Base flood elevations and the boundaries of the 100- and 500-year floodplains are shown on Flood Insurance Rate Maps (FIRMs), which are the principle tool for identifying the extent and location of the flood hazard. FIRMs are the most detailed and consistent data source available, and for many communities they represent the minimum area of oversight under their floodplain management program.

Participants in the NFIP must, at a minimum, regulate development in floodplain areas in accordance with NFIP criteria. Before issuing a permit to build in a flood-prone area, participating jurisdictions must, at a minimum, ensure that the project meets the following criteria (44 CFR Part 60, Section 60.3):

- Be designed (or modified) and adequately anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy,
- Be constructed with materials resistant to flood damage
- Be constructed by methods and practices that minimize flood damage
- Be constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

Additional criteria apply depending on the availability of information about the flood hazard.

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 to meet the CRS goals of reducing flood losses, facilitating accurate insurance rating and promoting awareness of flood insurance.

For participating communities, flood insurance premium rates are discounted in increments of 5 percent. For example, a Class 9 community would receive a 5 percent premium discount, a Class 8 community would receive a 10 percent premium discount, and so on, until reaching a 45 percent premium discount for a Class 1 community. (Class 10 communities are those that do not participate in the CRS; they receive no discount.) 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 federal Disaster Mitigation Act (DMA) of 2000 (Public Law 106-390) provides the legal basis for FEMA mitigation planning requirements for state, local and Indian tribal governments as a condition of mitigation grant assistance. The DMA replaced previous federal mitigation planning provisions with new requirements that emphasize the need for planning entities to coordinate mitigation planning and implementation efforts. The DMA established a new requirement for local mitigation plans and authorized up to 7 percent of Hazard Mitigation Grant Program funds to be available for development of state, local, and Indian tribal mitigation plans.

Biggert-Waters Flood Insurance Reform Act of 2012 and Homeowner Flood Insurance Affordability Act of 2014

The Biggert-Waters Flood Insurance Reform Act of 2012 authorized and funded a national mapping program. It also authorized insurance premium rate increases to ensure the fiscal soundness of the NFIP by transitioning the program from subsidized rates, also known as artificially low rates, to offer full actuarial rates reflective of risk.

The Homeowner Flood Insurance Affordability Act of 2014 repealed parts of Biggert-Waters, restoring grandfathering, putting limits on certain rate increases and updating the approach to ensuring the fiscal soundness of the fund by applying an annual surcharge to all policyholders.

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.

In some parts of the country, including the Pacific Northwest and the Sacramento-San Joaquin Delta area, court rulings have found that floodplain management measures can be in conflict with the goals of the endangered species act. Those rulings have required FEMA and local governments to engage in a consultation process with federal wildlife agencies (Section 7 of the ESA) as they work to develop certain floodplain management programs, plans and projects.

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, 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. A full array of 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.

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 floods and other 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 other instances, success depends on the involvement of multiple jurisdictions, levels of government, functional agencies, and emergency-responder disciplines. These instances necessitate coordination across this 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, terrorist activities, and other human-caused disasters) regardless of size or complexity.

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. The most recent amendments became effective in January 2009 (Public Law 110-325). 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 residents have any 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 visual alerts. Two stand-alone technical documents have been issued for shelter operators to meet the needs of people with disabilities. These documents address physical accessibility as well as medical needs and service animals.

The ADA also 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 residents. Local governments may be interested in implementing a special-needs registry to identify the home addresses, contact information, and needs for residents who may require more assistance.

Public Law 8499, Flood Control and Coastal Emergencies

Federal law that gives the U.S. Army Corps of Engineers the legal authority to conduct emergency preparation, response, and recovery activities and to supplement local efforts in the repair of flood damage reduction projects that have been damaged by floods. Under Public Law 8499, the Corps' Chief of Engineers is authorized to undertake activities including disaster preparedness, advance measures to prevent or reduce damage when there is an imminent threat of unusual flooding, emergency operations (flood response and post-flood response), rehabilitation of flood control works threatened or destroyed by flood, protection or repair of federally authorized shore protective works threatened or damaged by coastal storm, and provision of emergency water in the event of drought or contaminated source.

City of Snoqualmie, Washington, Repetitive Loss Area Analysis

Appendix D. RLAA Adoption Resolution

BUSINESS OF THE CITY COUNCIL
CITY OF SNOQUALMIE

AB24-067
May 28, 2024
Committee Report

AGENDA BILL INFORMATION

TITLE:	**AB24-067**: Climate Change Task Order for Services	☐ Discussion Only ☒ Action Needed:
PROPOSED ACTION:	A motion to approve the Otak Climate Change Task Order and authorize the Mayor to sign.	☒ Motion ☐ Ordinance ☐ Resolution

REVIEW:	Department Director	Emily Arteche	5/16/2024
	Finance	n/a	Click or tap to enter a date.
	Legal	David Linehan	5/16/2024
	City Administrator	Mike Chambless	Click or tap to enter a date.

DEPARTMENT:	Community Development	
STAFF:	Emily Arteche	
COMMITTEE:	Community Development	**COMMITTEE DATE:** May 20, 2024
EXHIBITS:	1. Otak Climate Change Task Order 2. Department of Commerce Awarded Grant Climate Change	

AMOUNT OF EXPENDITURE	$ n/a
AMOUNT BUDGETED	$ n/a
APPROPRIATION REQUESTED	$ n/a

SUMMARY

INTRODUCTION
The Climate Change Task Order for Services (see Exhibit 1) between the City of Snoqualmie and Otak establishes a Scope of Work and Budget for producing a 'Climate Change Element' to the City's Comprehensive Plan.

LEGISLATIVE HISTORY
N/A

BACKGROUND

Planning for climate change and resiliency was added as the 14th goal to the GMA in 2023, by adoption of House Bill 1181 (Chapter 228, Laws of 2023). The GMA now requires local comprehensive plans to have sub-elements with climate resilience and greenhouse gas emissions reduction: The Greenhouse Gas (GHG) Emission sub-element — with goals and policies to reduce GHG emissions and vehicle miles traveled — is mandatory for the state's 11 largest counties and for cities located within those counties that have a

population size greater than 6,000. The Resilience sub-element — with goals and polices to improve climate preparedness, response and recovery efforts — is mandatory for all fully planning counties and cities under the GMA and is encouraged for others.

ANALYSIS
The total Otak Task Order is $ $333,900. The monies to be expended on the Task Order are reimbursable with the $500,000 grant monies provided by the State of Washington, Department of Commerce, (see Exhibit 2).

BUDGET IMPACTS
N/A

NEXT STEPS
Make a motion to recommend the Council approve the Otak Climate Change Task Order and authorize the Mayor to sign on May 28, 2024.

PROPOSED ACTION

I move to recommend the Council approve the Otak Climate Change Task Order and authorize the Mayor to sign on May 28, 2024.

Otak

Snoqualmie Comprehensive Plan Climate Change Element

Climate and Resilience Sub-Element

Task Order #21

Otak Project No. 32703.W00

May 2, 2024

Description of Project

Otak is currently assisting the City of Snoqualmie ("City") with project management, coordination, and document development and assembly in support of the City's 2024 Comprehensive Plan periodic review. House Bill 1181, passed in 2023, amended Washington's Growth Management Act (RCW 36.70A) to include provisions associated with Climate Change and Climate Resilience. These changes require the City to update its Comprehensive Plan based on the new Climate Element requirements. As a city based in King County, Snoqualmie will need to adopt a Climate Element that includes a Climate Resilience Sub-Element and Greenhouse Gas (GHG) Emissions Reduction Sub-Element by 2029.

The City will begin Climate Resilience planning in 2024, funded by a grant from the Washington Department of Commerce. This proposal focuses on the development of a Climate Element with Climate Resilience and Greenhouse Gas Emissions Reduction Sub-Elements, leading to the adoption of the new element by June 2025. The following scope incorporates the general project approach described by Climate Element Planning Guidance (Intermediate Version) published by Washington Department of Commerce in December 2023, as well as insights from similar planning processes and projects.

Equitable community engagement, with a focus on vulnerable populations and overburdened communities is emphasized in HB 1181 and guidance from Department of Commerce. Task 2.1 envisions the collaborative development of a Community Engagement Plan and Strategy by City staff and Otak. Following completion of the Community Engagement Plan, specific tasks based on outreach methods, events, and strategies described in the Community Engagement Plan and Strategy can be added or refined by an amendment to this task order.

Scope of Work

1. Task 001 – Project Initiation; Ongoing Management and Coordination

Otak will perform project management duties and client coordination to support development of the Climate Resilience Element. Tasks shall include client coordination, invoicing, and scheduling. Other subtasks include:

- One (1) two-hour project kickoff meeting.

- Monthly check-in meetings with City staff and consultant team (15 total)
- Twice monthly half-hour check-in calls (30 hours are included for this task)
- Developing and maintaining project schedule

Otak Deliverables:

- Project outline and timeline
- Kickoff meeting notes

2. Task 002 – Community Engagement

2.1 Create community engagement plan

- Otak will develop a comprehensive community engagement plan outlining objectives, target audiences, and outreach methods, including opportunities to broaden engagement by supporting community participants. Based on consultation with city staff, the plan will identify key stakeholders, including community groups, vulnerable populations, and overburdened communities. The community engagement plan will support the City's intent to provide early and continuous opportunities for public engagement through the planning process, fulfilling the requirements of RCW 36.70A.140.
- The plan will serve as the basis for Subtasks 2.2 – 2.7, in which Otak will provide support for engagement implementation tasks such as advisory committee meetings, development of survey and outreach materials, and outreach conducted online, in-person, or in conjunction with community events.
- Update the plan if needed based on feedback and evolving project requirements.

Otak Deliverables:

- Community engagement plan and up to one (1) update.

Subtasks 2.2 – 2.7 represent general tasks supporting an anticipated approach to community engagement. The following subtasks are expected to be refined or modified through an amendment to the task order based on the adopted Community Engagement Plan completed in Task 2.1. Due to the performance-based structure of the City's contract with Department of Commerce, certain subtasks may be moved to other task headings following the adoption of the Community Engagement Plan, in order to better align with the sequencing of completed project phases.

2.2 Identify Vulnerable Communities and Environmental Health Disparities

Otak will conduct a comprehensive demographic and equity analysis to inform the engagement plan and identify communities that are currently or may experience disproportionately negative health impacts that can be exacerbated by climate change. This analysis will consider socio-economic factors, health outcomes, geographic vulnerabilities, and historic inequities.

2.3 Stakeholder Interviews

Otak will plan, conduct, and document interviews with key stakeholders (up to 6) identified through an assessment of past engagement practices and the analysis conducted in Task 2.2. These interviews will introduce the project, gather insights on climate-related hazards and climate justice concerns, and initiate contact that will continue throughout the project.

2.3 Climate Policy Advisory Team/Steering Committee Meetings

- Convene meetings with the Climate Policy Advisory Team or Steering Committee to provide guidance and input on the Climate Resilience Element development process. Tentatively, two of these meetings would take place during Task 3, two during Task 4, one during Task 5, and one during Task 6.

2.4 Develop Engagement Materials

- Create written content, maps, and a simplified version of the project schedule for publication on the City's website. Additionally, draft similar content for distribution via newsletters to citywide or project-specific contact lists. Update contact lists with information gathered from project outreach efforts.
- Develop up to three (3) flyers tailored to different project phases, engagement activities, received input, and climate planning priorities and concerns.
- Adapt information from ongoing analysis and engagement for use in public communications and outreach in the form of slides for use by City staff at community briefings, City Council, and commissions and committees as appropriate.
- Coordinate with language translation vendor to provide in-language materials. Assumes four major materials each translated into one language.

2.4 In-Person Public Workshops

- Provide support for organizing and facilitating two (2) in-person open house/workshop event in Snoqualmie. This support includes delivering presentations, creating handouts, and having staff available to assist with discussions and address questions.

2.5 Online Public Workshops

- Host up to three (3) online events where community members can participate in discussions about climate impacts and proposed policies. These events will utilize presentations and live polling or other interactive tools to encourage participation.

2.6 Community Engagement Tracking and Reporting

- Prepare a public engagement report summarizing input received through engagement activities.

Otak Deliverables:

- Web content with up to two major updates. Content for two newsletter or email messages delivered by the City.
- Vulnerable communities and climate justice summary memo.
- Stakeholder interview summary.
- Contact list updates (up to 3)
- Project flyers with up to two (2) major updates
- Presentation with up to two (2) major updates
- Translated engagement materials (up to 4)
- Online open house and survey platform with up to one (1) major revision.
- Community engagement report and findings (draft and final)

3. Task 003 – Climate Resilience Sub-Element

Otak will prepare a Climate Resilience Sub-Element using methodology based on Climate Planning Element Guidance published by Department of Commerce and meeting the requirements of RCW 36.70A.070(9). The element will include at least one goal and supportive policy for each hazard identified in Tasks 3.3 and 3.4, and prioritized in Task 3.5. Informed by community engagement and the analysis conducted in Task 2.2, goals and policies for this sub-element will prioritize actions that benefit overburdened communities most impacted by climate change, and meet minimum requirements to:

- Address climate-exacerbated natural hazards;
- Identify, protect, and enhance natural areas; and
- Identify, protect, and enhance community resilience, including social, economic, and built-environment factors that support climate adaptation consistent with environmental justice.

3.1 Audit Plans and Policies

Review existing plans, policies, and regulations to assess their alignment with climate resilience objectives. Identify gaps and opportunities for integrating climate considerations into planning documents.

3.2 Identify Community Assets

Coordinate with community members and agency staff to identify and catalog critical community assets, including infrastructure, natural resources, and social systems. Otak will develop a matrix identifying assets within each of the eleven sectors identified in Intermediate Guidance published by Department of Commerce.

3.3 Explore Climate Impacts and Assess Vulnerability

Identify climate change impacts, including changes in temperature, precipitation, and extreme weather events. Evaluate the vulnerability of community assets and populations to these impacts. Coordinate with the King County Regional Hazard Mitigation Plan update process, including identification of impacts and

vulnerability assessment to support the 2020 City of Snoqualmie Hazard Mitigation Plan Jurisdictional Annex. Includes attendance at up to one (1) in-person and two (2) virtual technical workshops or other events conducted for the Regional Hazard Mitigation Plan update process.

3.4 Pair Assets and Hazards and Describe Exposure and Consequences

Using information gathered from the plan and policy audit conducted in Task 4.1, community input, feedback department and agency staff, and summarized information from statewide and regional reports, Otak will analyze the intersection of climate hazards and community assets to assess exposure and potential consequences.

3.5 Identify Priority Climate Hazards

In coordination with technical and community advisory groups, Otak will develop a matrix recommending priority climate hazards to address in the planning process based on their likelihood, severity, and potential impacts on community resilience.

Otak Deliverables:

- Preliminary analysis conducted in Tasks 3.2-3.5 presented in matrix format, as adapted from the Climate Element Workbook, Appendix B to Climate Element Planning Guidance, Intermediate Version, published by Washington Department of Commerce.
- Memorandum outlining current policy gaps and opportunities.
- Memo summarizing potential climate impacts/risks/vulnerabilities.

4. Task 004 – GHG Emissions Reduction Sub-Element

Otak will prepare a Greenhouse Gas Emissions Reduction Sub-Element using methodology based on Climate Planning Element Guidance published by Department of Commerce and meeting the requirements of RCW 36.70A.070(9). The element will set incremental targets to achieve net zero emissions by 2050, including goals and policies for the building and energy, transportation, and zoning and development sectors. Goals and policies for this sub-element, initiated in Task 004 and refined and adopted in Task 5.1, will meet minimum requirements to reduce GHG emissions generated by transportation and land use, reduce vehicle miles traveled, and prioritize reductions that benefit overburdened communities and maximize the co-benefits of reduced air pollution and environmental justice.

4.1 Inventory Scoping and Setup

- Conduct a comprehensive assessment of the city's emissions sources, including municipal operations, transportation, energy consumption, waste management, and other relevant sectors.
- Define the boundaries of the inventory in accordance with HB 1181 requirements.

4.2 GHG Emissions Inventory and Report

- Prepare a comprehensive summary encompassing inventory protocols, scope, methodology, data collection processes, and the chosen inventory platform (1-2 pages), detailing activity data, emissions factors, data sources, potential gaps, and key details.

- Gather information related to activity data, emissions factors, data sources, and key contacts for each emissions sector, including general information for developing key performance indicators and normalizing data across inventory years.
- Prepare a GHG Inventory Report Outline in collaboration with City staff, including bulleted, high-level summaries of content for each section.
- Draft and finalize the GHG Inventory Report, including both draft and final versions.
- Develop a GHG emissions inventory management plan for ongoing monitoring of inventory data, including protocols for data quality management, testing inventory assumptions, and sharing results with the community.

Otak Deliverables:

- Summary document encompassing inventory protocols, scope, methodology, data collection processes, and chosen inventory platform.
- Gathered information related to activity data, emissions factors, data sources, and key contacts.
- GHG Inventory Report Outline.
- Draft and final GHG Inventory Reports.
- Draft and final GHG emissions inventory management plan.

4.3 Adopt Reduction Targets and Implementation Plan

- Work with advisory group and City Council to develop GHG emissions reduction targets by sector, ensuring alignment with community and legislative requirements.
- Support the development of proposed measures to achieve adopted targets, meeting the minimum requirements of HB 1181, based on technical analysis, community and agency input, and the Menu of Measures adopted by the Department of Commerce.

Otak Deliverables:

- GHG emissions reduction targets document, including sector-specific targets, presented in matrix form.
- Proposed measures document detailing strategies to achieve adopted targets, presented in matrix form.

5. Task 005 – Climate Element Integration and Implementation

5.1 Develop Draft Goals and Policies

- Draft goals and policies aimed at implementing climate resilience and greenhouse gas emissions reduction measures in the Comprehensive Plan. Ensure alignment with state requirements for Climate Elements under the Growth Management Act as amended by HB 1181.
- Prepare draft Climate Element, including Climate Resilience and Greenhouse Gas Emissions Reduction sub-elements, supporting documentation in Comprehensive Plan Volume II, and ensuring consistency and cross-referencing with related policies in other plan elements.

- Present draft element and gather feedback from Planning Commission at three (3) workshops, with at least one Otak team member attending in-person.

- Incorporate feedback from staff, stakeholders, public comments, and the Planning Commission into a revised draft element.

5.2 Draft SEPA Checklist

- Prepare a draft State Environmental Policy Act (SEPA) checklist to assess potential environmental impacts of the element and proposed policies.

5.2 Support Element Adoption Process

- Following Planning Commission recommendation, present proposed element at one (1) City Council committee meeting and two (2) City Council meetings.

- Incorporate feedback from City Council into final draft Climate Element.

5.3 Integrate Element into Comprehensive Plan

- Otak will prepare a revised Comprehensive Plan document that incorporates the Climate Element consistent with the format, style, and policy content of the Comprehensive Plan document, as revised during the 2024 periodic update process.

5.4 Implementation Plan

- Based on the approved Climate Element, Otak will develop an implementation plan outlining potential actions, including policy or regulation changes to implement new policies.

5.5 Prepare Implementation Progress Reporting

- Otak will prepare an outline-level template for five-year progress implementation reporting that will be required in 2029 by RCW 36.70A.130, with an emphasis on greenhouse gas emission and vehicle miles traveled (VMT) reduction reporting specified in HB 1181.

Otak Deliverables by May 30, 2025:

- Draft goals and policies and one (1) full round of revisions based on staff, public, and Planning Commission feedback received during Task 5.1.

- Summary memo and PowerPoint presentations for three (3) Planning Commission workshops, one (1) City Council committee meeting, and two (2) City Council meetings.

- Non-project action SEPA checklist describing the policy changes under consideration and potential impacts.

- Final draft of goals and policies, and supporting information for Comprehensive Plan Volume II, and one (1) full round of revisions based on feedback received during Task 5.2.

- Revised Comprehensive Plan document that incorporates the adopted Climate Element.

- Report outlining options to implement new policies, including recommendations for implementation projects and potential funding sources.
- An outline template for five-year progress implementation reporting, with an emphasis on GHG emissions reduction reporting requirements.

6. Task 006 – Contingent Tasks

6.1 Additional Project Team Meetings

- As needed, convene up to four (4) additional meetings with City or agency staff to coordinate and plan project activities, or review deliverables.

6.2 Additional Climate Policy Advisory Team/Steering Committee Meetings

- As needed, convene up to four (4) additional meetings with the Climate Policy Advisory Team or Steering Committee to provide guidance and input on the Climate Resilience Element development process.

6.3 Five Year Implementation Progress Report

- Prepare the five year implementation progress report detailing the progress the City has achieved in implementing the City comprehensive plan five years after the review and revision of the Snoqualmie Comprehensive Plan as required by state law, HB1181. Otak estimates 84 hours to complete this task, with subtask scope and budget to be confirmed prior to initiating the reporting process in July 2028.

Otak Deliverables:

- Five year implementation progress report.

Project Assumptions and Exclusions

- All meetings and presentations to be held virtually unless otherwise noted.
- Client is responsible for coordinating the plan adoption process, including notification and legislative review.
- The fee includes anticipated expenses for travel, materials, and translation services to support Subtasks 2.4, 2.6, and 5.1. Additional expenses to support process participants, such as food and childcare will be identified in the Community Engagement Plan completed in Subtask 2.1.
- The need for additional subconsultants may be identified during the completion of the Community Engagement Plan (Task 2.1) and the Inventory Scoping and Setup for the Greenhouse Gas Emissions Inventory (Task 4.1). These contingent tasks can be added through an amendment to this task order once specific subtasks and cost estimates have been defined.
- The current cost estimate for contingent Task 6.3, to be conducted in 2029, is based on an estimated 84 hours of effort based on current rates and requirements. If contingent Task 6.3 is needed, Otak will

provide an updated scope and budget estimate, to include documentation of recalculated hourly rates and description of any changes to reporting requirements impacting the level of effort estimated.

Project Budget Estimate

To support flexibility within the task order for performing work as necessary, we recommend a Time and Materials, not to exceed, contract for the sum of $308,000 to perform the identified efforts noted for the initial project work in Tasks 001 through 005, and up to $25,000 for the contingency tasks identified in Task 006. If acceptable, Otak will develop a Professional Services Agreement to contract this initial scope of work and compensation.

Task 001 – Project Initiation; Ongoing Management and Coordination	$21,100
Task 002 – Community Engagement	$75,900
Task 003 – Climate Resilience Sub-Element	$60,300
Task 004 – GHG Emissions Reduction Sub-Element	$98,400
Task 005 – Climate Resilience Element Integration and Implementation	$52,300
SUBTOTAL ESTIMATE	**$308,000**
Task 006 – Contingent Tasks	$25,000
TOTAL BUDGET ESTIMATE	**$333,900**

In Witness Whereof, the parties hereto have executed this Agreement effective as of the day and year first above written.

City of Snoqualmie

Signature: _____

Name: _____

Title: _____

Date: _____

Otak

Signature: 

Name: Amanda (Mandi) C. Roberts

Title: Senior VP/Practice Leader

Date: May 3, 2024

City of Snoqualmie

Signature: _____

Name: _____

Title: _____

Date: _____

Attested: _____
City Clerk, Deana Dean

Washington State Department of Commerce

Interagency Agreement with

City of Snoqualmie

through

Growth Management Services

Contract Number:
24-63610-224

For

2023-2025 Climate Planning Grant

Dated: Date of Execution

Table of Contents

Washington State Department of Commerce

Face Sheet

Contract Number: 24-63610-224

Local Government Division
Growth Management Services
2023-2025 Climate Planning Grant

1. Contractor City of Snoqualmie 38624 SE River Street Snoqualmie, WA 98065		**2. Contractor Doing Business As (as applicable)** N/A	
3. Contractor Representative Ashley Wragge awragge@snoqualmiewa.gov		**4. COMMERCE Representative** Noelle Madera Climate Operations Team Lead 509-818-1040 noelle.madera@commerce.wa.gov PO Box 42525 1011 Plum St. SE Olympia, WA 98504	
5. Contract Amount $500,000	**6. Funding Source** **Federal:** ☐ **State:** ☒ **Other:** ☐ **N/A:** ☐	**7. Start Date** Date of Execution	**8. End Date** June 30, 2025
9. Federal Funds (as applicable) N/A	**Federal Agency:** N/A	**ALN** N/A	
10. Tax ID # N/A	**11. SWV #** 0007167-00	**12. UBI #** 179-000-205	**13. UEI #** N/A

14. Contract Purpose
For the development of the Growth Management Act (GMA) climate change and resiliency element requirements related to the implementation of HB 1181.

COMMERCE, defined as the Department of Commerce, and the Contractor, as defined above, acknowledge and accept the terms of this Contract and Attachments and have executed this Contract on the date below and warrant they are authorized to bind their respective agencies. The rights and obligations of both parties to this Contract are governed by this Contract and the following documents incorporated by reference: Contractor Terms and Conditions including Attachment "A" – Scope of Work and Attachment "B" Budget

FOR CONTRACTOR	**FOR COMMERCE**
DocuSigned by: Ashley Wragge 6C3142714DBF47F...	DocuSigned by: Mark Barkley 80312B04865C458...
Ashley Wragge, Planning Technician City of Snoqualmie	Mark K. Barkley, Assistant Director Local Government Division
4/2/2024 | 3:28 PM PDT Date	4/8/2024 | 7:47 AM PDT Date
	APPROVED AS TO FORM ONLY **BY ASSISTANT ATTORNEY GENERAL** **APPROVAL ON FILE**

Special Terms and Conditions

1. AUTHORITY

COMMERCE and Contractor enter into this Contract pursuant to the authority granted by Chapter 39.34 RCW.

2. CONTRACT MANAGEMENT

The Representative for each of the parties shall be responsible for and shall be the contact person for all communications and billings regarding the performance of this Contract.

The Representative for COMMERCE and their contact information are identified on the Face Sheet of this Contract.

The Representative for the Contractor and their contact information are identified on the Face Sheet of this Contract.

3. COMPENSATION

COMMERCE shall pay an amount not to exceed **$500,000**, for the performance of all things necessary for or incidental to the performance of work under this Contract as set forth in the attached Scope of Work and Budget.

4. BILLING PROCEDURES AND PAYMENT

COMMERCE will pay Contractor upon acceptance of services provided and receipt of properly completed invoices, which shall be submitted to the Representative for COMMERCE not more often than monthly nor less than quarterly.

The invoices shall describe and document, to COMMERCE's satisfaction, a description of the work performed, the progress of the project, and fees. The invoice shall include the Contract Number 24-63610-224. A receipt must accompany any single expenses in the amount of $50.00 or more in order to receive reimbursement.

Payment shall be considered timely if made by COMMERCE within thirty (30) calendar days after receipt of properly completed invoices. Payment shall be sent to the address designated by the Contractor.

COMMERCE may, in its sole discretion, terminate the Contract or withhold payments claimed by the Contractor for services rendered if the Contractor fails to satisfactorily comply with any term or condition of this Contract.

No payments in advance or in anticipation of services or supplies to be provided under this Agreement shall be made by COMMERCE.

Grant Start Date
COMMERCE will pay the Contractor for costs incurred beginning July 1, 2023, for services and deliverables described under this Agreement.

State Fiscal Year Payments
COMMERCE will reimburse Contractor for State Fiscal Year 2024 (July 1, 2023-June 30, 2024), and State Fiscal Year 2025 (July 1, 2024-June 30, 2025), based on the expenses incurred under this Contract.

Invoices and End of Fiscal Year
Invoices are due at a minimum of June 15, 2024 and 2025, if not submitted at more frequent intervals.

Final invoices for a state fiscal year may be due sooner than the 15th of June and Commerce will provide notification of the end of fiscal year due date.

The Contractor must invoice for all expenses from the beginning of the contract through June 30, regardless of the contract start and end date.

Duplication of Billed Costs

The Contractor shall not bill COMMERCE for services performed under this Agreement, and COMMERCE shall not pay the Contractor, if the Contractor is entitled to payment or has been or will be paid by any other source, including grants, for that service.

Disallowed Costs

The Contractor is responsible for any audit exceptions or disallowed costs incurred by its own organization or that of its subcontractors.

Line Item Modification of Budget

A. Notwithstanding any other provision of this contract, the Contractor may, at its discretion, make modifications to line items in the Budget, hereof, that will not increase the line item by more than fifteen percent (15%).

B. The Contractor shall notify COMMERCE in writing (by email or regular mail) when proposing any budget modification or modifications to a line item in the Budget (Attachments B) hereof, that would increase the line item by more than fifteen percent (15%). Conversely, COMMERCE may initiate the budget modification approval process if presented with a request for payment under this contract that would cause one or more budget line items to exceed the 15 percent (15%) threshold increase described above.

C. Any such budget modification or modifications as described above shall require the written approval of COMMERCE (by email or regular mail), and such written approval shall amend the Project Budget. Each party to this contract will retain and make any and all documents related to such budget modifications a part of their respective contract file.

D. Nothing in this section shall be construed to permit an increase in the amount of funds available for the Project, as set forth in Section 3 of this contract, nor does this section allow any proposed changes to the Scope of Work, include Tasks/Work Items and Deliverables under Attachment A, without specific written approval from COMMERCE by amendment to this contract.

5. SUBCONTRACTOR DATA COLLECTION

Contractor will submit reports, in a form and format to be provided by Commerce and at intervals as agreed by the parties, regarding work under this Contract performed by subcontractors and the portion of Contract funds expended for work performed by subcontractors, including but not necessarily limited to minority-owned, woman-owned, and veteran-owned business subcontractors. "Subcontractors" shall mean subcontractors of any tier.

6. ENSURE COORDINATED CLIMATE COMMITMENT ACT BRANDING

COMMERCE received funding from Washington's Climate Commitment Act (CCA). To strengthen public awareness of how CCA funding is used, the Office of the Governor is directing state agencies that administer funding or manage a CCA-supported program to ensure consistent branding and funding acknowledgments are used in all communications and included in funding agreements and contracts. The "Climate Commitment Act" logo and funding acknowledgment make it easy for consumers and the public to see how the state is using CCA funds to reduce climate pollution, create jobs, and improve public health and the environment, particularly for low-income and overburdened populations.

The following provisions apply to all contractors, subcontractors, service providers and others who assist CONTRACTOR in implementing the climate planning grant.

Logo requirements. The CCA logo must be used in the following circumstances, consistent with the branding guidelines posted at climate.wa.gov/brandtoolkit.

- Any WA Department of Commerce climate planning grant website or webpage that includes logos from other funding partners.
- Any WA Department of Commerce climate planning grant media or public information materials that include logos from other funding partners.

Funding source acknowledgement. This standard funding language must be used on websites and included in announcements, press releases and publications used for media-related activities, publicity and public outreach.

"The WA Department of Commerce climate planning grant is supported with funding from Washington's Climate Commitment Act. The CCA supports Washington's climate action efforts by putting cap-and-invest dollars to work reducing climate pollution, creating jobs, and improving public health. Information about the CCA is available at www.climate.wa.gov."

7. INSURANCE

Each party certifies that it is self-insured under the State's or local government self-insurance liability program, and shall be responsible for losses for which it is found liable.

8. FRAUD AND OTHER LOSS REPORTING

Contractor shall report in writing all known or suspected fraud or other loss of any funds or other property furnished under this Contract immediately or as soon as practicable to the Commerce Representative identified on the Face Sheet.

9. ORDER OF PRECEDENCE

In the event of an inconsistency in this Contract, the inconsistency shall be resolved by giving precedence in the following order:

- Applicable federal and state of Washington statutes and regulations
- Special Terms and Conditions
- General Terms and Conditions
- Attachment A – Scope of Work
- Attachment B – Budget

Washington State Department of Commerce

General Terms and Conditions

1. DEFINITIONS

As used throughout this Contract, the following terms shall have the meaning set forth below:

A. "Authorized Representative" shall mean the Director and/or the designee authorized in writing to act on the Director's behalf.

B. "COMMERCE" shall mean the Washington Department of Commerce.

C. "Contract" or "Agreement" or "Grant" means the entire written agreement between COMMERCE and the Contractor, including any Attachments, documents, or materials incorporated by reference. E-mail or Facsimile transmission of a signed copy of this contract shall be the same as delivery of an original.

D. "Contractor" or "Grantee" shall mean the entity identified on the face sheet performing service(s) under this Contract, and shall include all employees and agents of the Contractor.

E. "Personal Information" shall mean information identifiable to any person, including, but not limited to, information that relates to a person's name, health, finances, education, business, use or receipt of governmental services or other activities, addresses, telephone numbers, social security numbers, driver license numbers, other identifying numbers, and any financial identifiers, and "Protected Health Information" under the federal Health Insurance Portability and Accountability Act of 1996 (HIPAA).

F. "State" shall mean the state of Washington.

G. "Subcontractor" shall mean one not in the employment of the Contractor, who is performing all or part of those services under this Contract under a separate contract with the Contractor. The terms "subcontractor" and "subcontractors" mean subcontractor(s) in any tier.

2. ALL WRITINGS CONTAINED HEREIN

This Contract contains all the terms and conditions agreed upon by the parties. No other understandings, oral or otherwise, regarding the subject matter of this Contract shall be deemed to exist or to bind any of the parties hereto.

3. AMENDMENTS

This Contract may be amended by mutual agreement of the parties. Such amendments shall not be binding unless they are in writing and signed by personnel authorized to bind each of the parties.

4. ASSIGNMENT

Neither this Contract, work thereunder, nor any claim arising under this Contract, shall be transferred or assigned by the Contractor without prior written consent of COMMERCE.

5. CONFIDENTIALITY AND SAFEGUARDING OF INFORMATION

A. "Confidential Information" as used in this section includes:

i. All material provided to the Contractor by COMMERCE that is designated as "confidential" by COMMERCE;

ii. All material produced by the Contractor that is designated as "confidential" by COMMERCE; and

iii. All Personal Information in the possession of the Contractor that may not be disclosed under state or federal law.

B. The Contractor shall comply with all state and federal laws related to the use, sharing, transfer, sale, or disclosure of Confidential Information. The Contractor shall use Confidential Information solely for the purposes of this Contract and shall not use, share, transfer, sell or disclose any Confidential Information to any third party except with the prior written consent of COMMERCE or as may be required by law. The Contractor shall take all necessary steps to assure that Confidential Information is safeguarded to prevent unauthorized use, sharing, transfer, sale or disclosure of Confidential Information or violation of any state or federal laws related thereto. Upon request, the Contractor shall provide COMMERCE with its policies and procedures on confidentiality. COMMERCE may require changes to such policies and procedures as they apply to this Contract whenever COMMERCE reasonably determines that changes are necessary to prevent unauthorized disclosures. The Contractor shall make the changes within the time period specified by COMMERCE. Upon request, the Contractor shall immediately return to COMMERCE any Confidential Information that COMMERCE reasonably determines has not been adequately protected by the Contractor against unauthorized disclosure.

C. Unauthorized Use or Disclosure. The Contractor shall notify COMMERCE within five (5) working days of any unauthorized use or disclosure of any confidential information, and shall take necessary steps to mitigate the harmful effects of such use or disclosure.

6. COPYRIGHT

Unless otherwise provided, all Materials produced under this Contract shall be considered "works for hire" as defined by the U.S. Copyright Act and shall be owned by COMMERCE. COMMERCE shall be considered the author of such Materials. In the event the Materials are not considered "works for hire" under the U.S. Copyright laws, the Contractor hereby irrevocably assigns all right, title, and interest in all Materials, including all intellectual property rights, moral rights, and rights of publicity to COMMERCE effective from the moment of creation of such Materials.

"Materials" means all items in any format and includes, but is not limited to, data, reports, documents, pamphlets, advertisements, books, magazines, surveys, studies, computer programs, films, tapes, and/or sound reproductions. "Ownership" includes the right to copyright, patent, register and the ability to transfer these rights.

For Materials that are delivered under the Contract, but that incorporate pre-existing materials not produced under the Contract, the Contractor hereby grants to COMMERCE a nonexclusive, royalty-free, irrevocable license (with rights to sublicense to others) in such Materials to translate, reproduce, distribute, prepare derivative works, publicly perform, and publicly display. The Contractor warrants and represents that the Contractor has all rights and permissions, including intellectual property rights, moral rights and rights of publicity, necessary to grant such a license to COMMERCE.

The Contractor shall exert all reasonable effort to advise COMMERCE, at the time of delivery of Materials furnished under this Contract, of all known or potential invasions of privacy contained therein and of any portion of such document which was not produced in the performance of this Contract. The Contractor shall provide COMMERCE with prompt written notice of each notice or claim of infringement received by the Contractor with respect to any Materials delivered under this Contract. COMMERCE shall have the right to modify or remove any restrictive markings placed upon the Materials by the Contractor.

7. DISPUTES

In the event that a dispute arises under this Agreement, it shall be determined by a Dispute Board in the following manner: Each party to this Agreement shall appoint one member to the Dispute Board. The members so appointed shall jointly appoint an additional member to the Dispute Board. The Dispute Board shall review the facts, Agreement terms and applicable statutes and rules and make a determination of the dispute. The Dispute Board shall thereafter decide the dispute with the majority

Washington State Department of Commerce

prevailing. The determination of the Dispute Board shall be final and binding on the parties hereto. As an alternative to this process, either of the parties may request intervention by the Governor, as provided by RCW 43.17.330, in which event the Governor's process will control.

8. GOVERNING LAW AND VENUE

This Contract shall be construed and interpreted in accordance with the laws of the state of Washington, and the venue of any action brought hereunder shall be in the Superior Court for Thurston County.

9. INDEMNIFICATION

Each party shall be solely responsible for the acts of its employees, officers, and agents.

10. LICENSING, ACCREDITATION AND REGISTRATION

The Contractor shall comply with all applicable local, state, and federal licensing, accreditation and registration requirements or standards necessary for the performance of this Contract.

11. RECAPTURE

In the event that the Contractor fails to perform this Contract in accordance with state laws, federal laws, and/or the provisions of this Contract, COMMERCE reserves the right to recapture funds in an amount to compensate COMMERCE for the noncompliance in addition to any other remedies available at law or in equity.

Repayment by the Contractor of funds under this recapture provision shall occur within the time period specified by COMMERCE. In the alternative, COMMERCE may recapture such funds from payments due under this Contract.

12. RECORDS MAINTENANCE

The Contractor shall maintain books, records, documents, data and other evidence relating to this contract and performance of the services described herein, including but not limited to accounting procedures and practices that sufficiently and properly reflect all direct and indirect costs of any nature expended in the performance of this contract.

The Contractor shall retain such records for a period of six years following the date of final payment. At no additional cost, these records, including materials generated under the contract, shall be subject at all reasonable times to inspection, review or audit by COMMERCE, personnel duly authorized by COMMERCE, the Office of the State Auditor, and federal and state officials so authorized by law, regulation or agreement.

If any litigation, claim or audit is started before the expiration of the six (6) year period, the records shall be retained until all litigation, claims, or audit findings involving the records have been resolved.

13. SAVINGS

In the event funding from state, federal, or other sources is withdrawn, reduced, or limited in any way after the effective date of this Contract and prior to normal completion, COMMERCE may suspend or terminate the Contract under the "Termination for Convenience" clause, without the ten calendar day notice requirement. In lieu of termination, the Contract may be amended to reflect the new funding limitations and conditions.

14. SEVERABILITY

The provisions of this contract are intended to be severable. If any term or provision is illegal or invalid for any reason whatsoever, such illegality or invalidity shall not affect the validity of the remainder of the contract.

15. SUBCONTRACTING

The Contractor may only subcontract work contemplated under this Contract if it obtains the prior written approval of COMMERCE.

If COMMERCE approves subcontracting, the Contractor shall maintain written procedures related to subcontracting, as well as copies of all subcontracts and records related to subcontracts. For cause, COMMERCE in writing may: (a) require the Contractor to amend its subcontracting procedures as they relate to this Contract; (b) prohibit the Contractor from subcontracting with a particular person or entity; or (c) require the Contractor to rescind or amend a subcontract.

Every subcontract shall bind the Subcontractor to follow all applicable terms of this Contract. The Contractor is responsible to COMMERCE if the Subcontractor fails to comply with any applicable term or condition of this Contract. The Contractor shall appropriately monitor the activities of the Subcontractor to assure fiscal conditions of this Contract. In no event shall the existence of a subcontract operate to release or reduce the liability of the Contractor to COMMERCE for any breach in the performance of the Contractor's duties.

Every subcontract shall include a term that COMMERCE and the State of Washington are not liable for claims or damages arising from a Subcontractor's performance of the subcontract.

16. SURVIVAL

The terms, conditions, and warranties contained in this Contract that by their sense and context are intended to survive the completion of the performance, cancellation or termination of this Contract shall so survive.

17. TERMINATION FOR CAUSE

In the event COMMERCE determines the Contractor has failed to comply with the conditions of this contract in a timely manner, COMMERCE has the right to suspend or terminate this contract. Before suspending or terminating the contract, COMMERCE shall notify the Contractor in writing of the need to take corrective action. If corrective action is not taken within 30 calendar days, the contract may be terminated or suspended.

In the event of termination or suspension, the Contractor shall be liable for damages as authorized by law including, but not limited to, any cost difference between the original contract and the replacement or cover contract and all administrative costs directly related to the replacement contract, e.g., cost of the competitive bidding, mailing, advertising and staff time.

COMMERCE reserves the right to suspend all or part of the contract, withhold further payments, or prohibit the Contractor from incurring additional obligations of funds during investigation of the alleged compliance breach and pending corrective action by the Contractor or a decision by COMMERCE to terminate the contract. A termination shall be deemed a "Termination for Convenience" if it is determined that the Contractor: (1) was not in default; or (2) failure to perform was outside of his or her control, fault or negligence.

The rights and remedies of COMMERCE provided in this contract are not exclusive and are, in addition to any other rights and remedies, provided by law.

18. TERMINATION FOR CONVENIENCE

Except as otherwise provided in this Contract, COMMERCE may, by ten (10) business days' written notice, beginning on the second day after the mailing, terminate this Contract, in whole or in part. If this Contract is so terminated, COMMERCE shall be liable only for payment required under the terms of this Contract for services rendered or goods delivered prior to the effective date of termination.

19. TERMINATION PROCEDURES

Upon termination of this contract, COMMERCE, in addition to any other rights provided in this contract, may require the Contractor to deliver to COMMERCE any property specifically produced or acquired for the performance of such part of this contract as has been terminated. The provisions of the "Treatment of Assets" clause shall apply in such property transfer.

COMMERCE shall pay to the Contractor the agreed upon price, if separately stated, for completed work and services accepted by COMMERCE, and the amount agreed upon by the Contractor and COMMERCE for (i) completed work and services for which no separate price is stated, (ii) partially completed work and services, (iii) other property or services that are accepted by COMMERCE, and (iv) the protection and preservation of property, unless the termination is for default, in which case the Authorized Representative shall determine the extent of the liability of COMMERCE. Failure to agree with such determination shall be a dispute within the meaning of the "Disputes" clause of this contract. COMMERCE may withhold from any amounts due the Contractor such sum as the Authorized Representative determines to be necessary to protect COMMERCE against potential loss or liability.

The rights and remedies of COMMERCE provided in this section shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

After receipt of a notice of termination, and except as otherwise directed by the Authorized Representative, the Contractor shall:

A. Stop work under the contract on the date, and to the extent specified, in the notice;

B. Place no further orders or subcontracts for materials, services, or facilities except as may be necessary for completion of such portion of the work under the contract that is not terminated;

C. Assign to COMMERCE, in the manner, at the times, and to the extent directed by the Authorized Representative, all of the rights, title, and interest of the Contractor under the orders and subcontracts so terminated, in which case COMMERCE has the right, at its discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts;

D. Settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts, with the approval or ratification of the Authorized Representative to the extent the Authorized Representative may require, which approval or ratification shall be final for all the purposes of this clause;

E. Transfer title to COMMERCE and deliver in the manner, at the times, and to the extent directed by the Authorized Representative any property which, if the contract had been completed, would have been required to be furnished to COMMERCE;

F. Complete performance of such part of the work as shall not have been terminated by the Authorized Representative; and

G. Take such action as may be necessary, or as the Authorized Representative may direct, for the protection and preservation of the property related to this contract, which is in the possession of the Contractor and in which COMMERCE has or may acquire an interest.

20. TREATMENT OF ASSETS

Title to all property furnished by COMMERCE shall remain in COMMERCE. Title to all property furnished by the Contractor, for the cost of which the Contractor is entitled to be reimbursed as a direct item of cost under this contract, shall pass to and vest in COMMERCE upon delivery of such property by the Contractor. Title to other property, the cost of which is reimbursable to the Contractor under this contract, shall pass to and vest in COMMERCE upon (i) issuance for use of such property in the performance of this contract, or (ii) commencement of use of such property in the performance of this contract, or (iii) reimbursement of the cost thereof by COMMERCE in whole or in part, whichever first occurs.

A. Any property of COMMERCE furnished to the Contractor shall, unless otherwise provided herein or approved by COMMERCE, be used only for the performance of this contract.

B. The Contractor shall be responsible for any loss or damage to property of COMMERCE that results from the negligence of the Contractor or which results from the failure on the part of the Contractor to maintain and administer that property in accordance with sound management

practices.

C. If any COMMERCE property is lost, destroyed or damaged, the Contractor shall immediately notify COMMERCE and shall take all reasonable steps to protect the property from further damage.

D. The Contractor shall surrender to COMMERCE all property of COMMERCE prior to settlement upon completion, termination or cancellation of this contract.

E. All reference to the Contractor under this clause shall also include Contractor's employees, agents or Subcontractors.

21. WAIVER

Waiver of any default or breach shall not be deemed to be a waiver of any subsequent default or breach. Any waiver shall not be construed to be a modification of the terms of this Contract unless stated to be such in writing and signed by Authorized Representative of COMMERCE.

Washington State Department of Commerce

Attachment A: Scope of Work

Task 1	Initialize project	April-May 2024
	• Project kickoff meeting • Develop an outline of the project, nexus to comprehensive plan update, roles, responsibilities, timelines, project risks/risk mitigation. • Research	
Deliverable 1	Outline and Timeline Kickoff meeting notes	May 31, 2024
Task 2	Community engagement plan and community engagement	June-October 2024
	• Create community engagement strategy and plan. Ensure it links to comprehensive plan process. • Utilize a toolbox of tactics to engagement the community both remotely and in person. Engagement will include a strong focus on communities most impacted by climate change. This section includes broader public involvement/communications (e.g., ongoing updates to inform about the process, public comment periods, etc.). • Execute community engagement activities including necessary staff to assist in logistics and execution of conducting and presenting Information for public engagement.	
Deliverable 2	Community engagement plan and strategy Community engagement report and findings	October 31, 2024
Section 3	Critical Area and Best Available Science Review for Code Consistency and Comprehensive Plan Updates	April-September 2024
	• Complete a BAS review to identify amendments necessary for updates • Review of Environmental Element draft goals and policy • Identify existing regulations in the 2016 Snoqualmie Municipal Code (SMC) Chapter 19.12 (Critical Areas) that need to be amended. • Identify existing regulations in the 2016 Snoqualmie Municipal Code (SMC) Chapter 15.12	

	flood hazard regulations that need to be amended Consistency Review with HB1181 • Staff preparing documentation and presentations of information for planning commission review. • Consistency Review with HB1181	
Deliverable 3	• Critical Areas Checklist from the DOC • Riparian Management Zone Checklist for Critical Areas Ordinances and BAS Review • Technical Memorandum covering review of the city code review and proposed vision, goals, and policies for the Environment Element of the Comprehensive Plan. • Crossover Spreadsheet documenting proposed code updates from Code consistency review. • Draft SEPA Checklist	October 30, 2024
Task 4	GHG Emission sources and reduction goals	August - December 2024
	• Define jurisdiction/study area and completed a demographic and historical profile of the jurisdiction/study area • Select Pathway 1-4 for meeting GHG reduction sub-element requirements. Based on Pathway selected, completed data analysis and develop GHG or GHG/VMT reductions goals. May include both GHG inventories and wedge modeling to assess how proposed goals/policies will help the County achieve emissions reduction goals.	
Deliverable 4	Memorandum identifying GHG or GHG/VMT reduction goals based upon outcomes from Pathway 1-4	January 3, 2025
Task 5	Climate Resilient sub-element	January-March 2025
	• Audit existing plans and policies to develop a baseline and understand current gaps and opportunities • Identify community assets - social, economic, and environmental assets that your community members value and want to protect • Explore how future hazards based on potential changes to the climate in the future, including coordination with King County Hazard Mitigation Plan as needed. • Pair assets and hazards and describe exposure and consequences	

Washington State Department of Commerce

	• Prioritize issues	
Deliverable 5	A memorandum outlining current policy gaps and opportunities A memo summarizing potential climate impacts/ risks/vulnerabilities and potential opportunities Draft SEPA Checklist	March 31, 2025
Task 6	Draft Climate Element with GHG and Resilience Sub-elements	March- May 2025
	Based upon the findings and information from Section 2 and 3: • Create new comprehensive plan element with GHG and Resilience Sub-elements • Develop new and revised policies • Ensure new and revised policies cross-reference other comprehensive plan elements. As an example, policies in this element could impact transportation, housing, land use, parks, etc. • Review and analyze public comments and input from public engagement efforts • Work through legislative process to develop draft goals and policies • Make recommendations City Council	
Deliverable 6	Draft Climate Change Element meeting the requirements of HB 1181	May 31, 2025
Task 7	Final Climate Element with GHG and Resilience Sub-elements	May 31, 2025
	Based upon the findings and information from Section 2 and 3: • Update comprehensive plan element with GHG and Resilience Sub-elements based on community input	
Deliverable 7	New Climate Change Element meeting the requirements of HB 1181	May 31, 2025
Task 8	Integration Plan	June 2025
	• Based upon approved policies, create short integration plan that fits into the draft Comprehensive Plan outlining policy or regulation changes to implement new policies.	

Deliverable 8	Short report outlining options to implement new policies. This can be utilized when additional grant funds are sought.	June 15, 2025

Washington State Department of Commerce

Attachment B: Budget

Grant Sections	Grant Amount
Section 1 – Initialize project	$40,000
Section 2 – Community engagement plan and community engagement	$75,000
Section 3 – Critical Area and Best Available Science Review for Code Consistency	$25,000
Section 4 – GHG Emission sources and reduction goals	$100,000
Section 5 – Climate Resilient sub-element	$75,000
Section 6 – Draft Climate Element with GHG and Resilience Sub-elements	$65,000
Section 7 – Final Climate Element with GHG and Resilience Sub-elements	$20,000
Section 8 – Integration Plan	$100,000
Contact Total	**$500,000**

Internal routing form. Will be deleted after contract fully signed.

Commerce GMS programs - Contract review and routing form

Reviewer	Name	Initials and Date
Budget Analyst	Corina Campbell	DS CC 4/2/2024 | 1:16 PM PDT
GMS Managing Director	Dave Andersen	DS DA 4/2/2024 | 1:54 PM PDT
Deputy Assistant Director – LGD	Tony Hanson	DS TH 4/8/2024 | 7:21 AM PDT

DocuSign

Certificate Of Completion

Envelope Id: 32396DC785E8428394FE4EA8DD6D9711
Subject: Complete with DocuSign: Snoqualmie Climate Planning
Division:
Local Government
Program: Climate
ContractNumber: 24-63610-224.
DocumentType: Contract
Source Envelope:
Document Pages: 18
Certificate Pages: 5
AutoNav: Enabled
EnvelopeId Stamping: Enabled
Time Zone: (UTC-08:00) Pacific Time (US & Canada)

Signatures: 2
Initials: 3

Status: Completed

Envelope Originator:
Ashley Murphy
1011 Plum Street SE
MS 42525
Olympia, WA 98504-2525
ashley.murphy@commerce.wa.gov
IP Address: 198.239.10.135

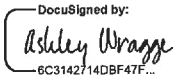
Record Tracking

Status: Original
3/28/2024 3:52:00 PM
Security Appliance Status: Connected
Storage Appliance Status: Connected

Holder: Ashley Murphy
ashley.murphy@commerce.wa.gov
Pool: StateLocal
Pool: Washington State Department of Commerce

Location: DocuSign

Location: DocuSign

Signer Events	Signature	Timestamp
Corina Campbell corina.campbell@commerce.wa.gov Security Level: Email, Account Authentication (None)	DS  Signature Adoption: Pre-selected Style Using IP Address: 198.238.6.167	Sent: 3/28/2024 3:54:38 PM Viewed: 4/2/2024 1:16:52 PM Signed: 4/2/2024 1:16:59 PM
Electronic Record and Signature Disclosure: Not Offered via DocuSign		
Dave Andersen dave.andersen@commerce.wa.gov Security Level: Email, Account Authentication (None)	DS  Signature Adoption: Pre-selected Style Using IP Address: 198.238.29.35	Sent: 4/2/2024 1:17:01 PM Viewed: 4/2/2024 1:54:12 PM Signed: 4/2/2024 1:54:17 PM
Electronic Record and Signature Disclosure: Not Offered via DocuSign		
Ashley Wragge awragge@snoqualmiewa.gov Security Level: Email, Account Authentication (None)	DocuSigned by:  6C3142714DBF47F... Signature Adoption: Pre-selected Style Using IP Address: 146.129.248.34	Sent: 4/2/2024 1:54:19 PM Viewed: 4/2/2024 3:28:22 PM Signed: 4/2/2024 3:28:42 PM
Electronic Record and Signature Disclosure: Accepted: 4/2/2024 3:28:22 PM ID: 7b193752-6075-4fe7-9e47-904ebdf1a511		

Signer Events	Signature	Timestamp
Tony Hanson tony.hanson@commerce.wa.gov Washington State Department of Commerce Security Level: Email, Account Authentication (None)	DS TH Signature Adoption: Pre-selected Style Using IP Address: 198.239.10.134	Sent: 4/2/2024 3:28:44 PM Viewed: 4/8/2024 7:21:04 AM Signed: 4/8/2024 7:21:12 AM
Electronic Record and Signature Disclosure: Not Offered via DocuSign		
Mark Barkley mark.barkley@commerce.wa.gov Assistant Director Washington State Department of Commerce Security Level: Email, Account Authentication (None)	DocuSigned by: Mark Barkley 80312B04865C458... Signature Adoption: Pre-selected Style Using IP Address: 198.239.10.237	Sent: 4/8/2024 7:21:15 AM Viewed: 4/8/2024 7:47:36 AM Signed: 4/8/2024 7:47:41 AM
Electronic Record and Signature Disclosure: Not Offered via DocuSign		

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp
Paul Johnson paul.johnson@commerce.wa.gov Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	COPIED	Sent: 3/28/2024 3:54:38 PM
Noelle Madera noelle.madera@commerce.wa.gov Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	COPIED	Sent: 4/2/2024 1:54:19 PM

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	3/28/2024 3:54:38 PM
Envelope Updated	Security Checked	3/28/2024 4:05:00 PM
Certified Delivered	Security Checked	4/8/2024 7:47:36 AM
Signing Complete	Security Checked	4/8/2024 7:47:41 AM
Completed	Security Checked	4/8/2024 7:47:41 AM

Payment Events	Status	Timestamps

Electronic Record and Signature Disclosure

ELECTRONIC RECORD AND SIGNATURE DISCLOSURE

From time to time, Washington State Department of Commerce (we, us or Company) may be required by law to provide to you certain written notices or disclosures. Described below are the terms and conditions for providing to you such notices and disclosures electronically through the DocuSign system. Please read the information below carefully and thoroughly, and if you can access this information electronically to your satisfaction and agree to this Electronic Record and Signature Disclosure (ERSD), please confirm your agreement by selecting the check-box next to 'I agree to use electronic records and signatures' before clicking 'CONTINUE' within the DocuSign system.

Getting paper copies

At any time, you may request from us a paper copy of any record provided or made available electronically to you by us. You will have the ability to download and print documents we send to you through the DocuSign system during and immediately after the signing session and, if you elect to create a DocuSign account, you may access the documents for a limited period of time (usually 30 days) after such documents are first sent to you. After such time, if you wish for us to send you paper copies of any such documents from our office to you, you will be charged a $0.15 per-page fee. You may request delivery of such paper copies from us by following the procedure described below.

Withdrawing your consent

If you decide to receive notices and disclosures from us electronically, you may at any time change your mind and tell us that thereafter you want to receive required notices and disclosures only in paper format. How you must inform us of your decision to receive future notices and disclosure in paper format and withdraw your consent to receive notices and disclosures electronically is described below.

Consequences of changing your mind

If you elect to receive required notices and disclosures only in paper format, it will slow the speed at which we can complete certain steps in transactions with you and delivering services to you because we will need first to send the required notices or disclosures to you in paper format, and then wait until we receive back from you your acknowledgment of your receipt of such paper notices or disclosures. Further, you will no longer be able to use the DocuSign system to receive required notices and consents electronically from us or to sign electronically documents from us.

All notices and disclosures will be sent to you electronically

Unless you tell us otherwise in accordance with the procedures described herein, we will provide electronically to you through the DocuSign system all required notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you during the course of our relationship with you. To reduce the chance of you inadvertently not receiving any notice or disclosure, we prefer to provide all of the required notices and disclosures to you by the same method and to the same address that you have given us. Thus, you can receive all the disclosures and notices electronically or in paper format through the paper mail delivery system. If you do not agree with this process, please let us know as described below. Please also see the paragraph immediately above that describes the consequences of your electing not to receive delivery of the notices and disclosures electronically from us.

How to contact Washington State Department of Commerce:

You may contact us to let us know of your changes as to how we may contact you electronically, to request paper copies of certain information from us, and to withdraw your prior consent to receive notices and disclosures electronically as follows:
To contact us by email send messages to: docusign@commerce.wa.gov

To advise Washington State Department of Commerce of your new email address

To let us know of a change in your email address where we should send notices and disclosures electronically to you, you must send an email message to us at docusign@commerce.wa.gov and in the body of such request you must state: your previous email address, your new email address. We do not require any other information from you to change your email address.

If you created a DocuSign account, you may update it with your new email address through your account preferences.

To request paper copies from Washington State Department of Commerce

To request delivery from us of paper copies of the notices and disclosures previously provided by us to you electronically, you must send us an email to docusign@commerce.wa.gov and in the body of such request you must state your email address, full name, mailing address, and telephone number. We will bill you for any fees at that time, if any.

To withdraw your consent with Washington State Department of Commerce

To inform us that you no longer wish to receive future notices and disclosures in electronic format you may:

i. decline to sign a document from within your signing session, and on the subsequent page, select the check-box indicating you wish to withdraw your consent, or you may;

ii. send us an email to docusign@commerce.wa.gov and in the body of such request you must state your email, full name, mailing address, and telephone number. We do not need any other information from you to withdraw consent.. The consequences of your withdrawing consent for online documents will be that transactions may take a longer time to process..

Required hardware and software

The minimum system requirements for using the DocuSign system may change over time. The current system requirements are found here: https://support.docusign.com/guides/signer-guide-signing-system-requirements.

Acknowledging your access and consent to receive and sign documents electronically

To confirm to us that you can access this information electronically, which will be similar to other electronic notices and disclosures that we will provide to you, please confirm that you have read this ERSD, and (i) that you are able to print on paper or electronically save this ERSD for your future reference and access; or (ii) that you are able to email this ERSD to an email address where you will be able to print on paper or save it for your future reference and access. Further, if you consent to receiving notices and disclosures exclusively in electronic format as described herein, then select the check-box next to 'I agree to use electronic records and signatures' before clicking 'CONTINUE' within the DocuSign system.

By selecting the check-box next to 'I agree to use electronic records and signatures', you confirm that:

- You can access and read this Electronic Record and Signature Disclosure; and
- You can print on paper this Electronic Record and Signature Disclosure, or save or send this Electronic Record and Disclosure to a location where you can print it, for future reference and access; and
- Until or unless you notify Washington State Department of Commerce as described above, you consent to receive exclusively through electronic means all notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you by Washington State Department of Commerce during the course of your relationship with Washington State Department of Commerce.

Amendment

Washington State Department of Commerce

Contract Number: 24-63
Amendment Number: 1

Local Government Division
Growth Management Services
2023-2025 Climate Planning Grant

1. Contractor City of Snoqualmie 38624 SE River Street Snoqualmie, WA 98065	**2. Contractor Doing Business As (optional)** N/A
3. Contractor Representative (only if updated) Ashley Wragge awragge@snoqualmiewa.gov	**4. COMMERCE Representative (only if updated)** Noelle Madera Climate Operations Team Lead 509-818-1040 noelle.madera@commerce.wa.gov PO Box 42525 1011 Plum St SE Olympia, WA 98504-2525

5. Original Contract Amount (and any previous amendments)	**6. Amendment Amount**	**7. New Contract Amount**
$500,000	No Change	$500,000

8. Amendment Funding Source	**9. Amendment Start Date**	**10. Amendment End Date**
Federal: **State: X Other:** **N/A:**	Date of Execution	June 30, 2025

11. Federal Funds (as applicable):	**Federal Agency:**	**ALN:**
N/A	N/A	N/A

12. Amendment Purpose:
Amending the jurisdiction signatory. There are no other changes to the Scope of Work or Budget. This contract is for the development of the Growth Management Act (GMA) climate change and resiliency element requirements related to the implementation of HB 1181.

COMMERCE, defined as the Department of Commerce, and the Contractor, as defined above, acknowledge and accept the terms of this Contract As Amended and attachments and have executed this Contract Amendment on the date below to start as of the date and year referenced above. The rights and obligations of both parties to this Contract As Amended are governed by this Contract Amendment and the following other documents incorporated by reference: Contractor Terms and Conditions. Any reference in the original Contract to the "Contract" shall mean the "Contract as Amended".

FOR CONTRACTOR

DocuSigned by:
Katherine Ross
63E7ECF372034E9...

Katherine Ross, Mayor
City of Snoqualmie

4/11/2024 | 9:42 AM PDT
Date

FOR COMMERCE

DocuSigned by:
Mark Barkley
80312B04865C458...

Mark K. Barkley, Assistant Director
Local Government Division

4/15/2024 | 8:22 AM PDT
Date

APPROVED AS TO FORM ONLY

Sandra Adix
Assistant Attorney General

3/20/2014
Date

Amendment

This Contract is **amended** as follows:

- Amending the jurisdictions signatory.
- There are not further changes to the Scope of Work or Budget.

ALL OTHER TERMS AND CONDITIONS OF THIS CONTRACT REMAIN IN FULL FORCE AND EFFECT.