CITY OF KETCHUM, IDAHO
CITY COUNCIL
Monday, December 05, 2022, 4:00 PM
191 5th Street West, Ketchum, Idaho 83340

AGENDA

PUBLIC PARTICIPATION INFORMATION
Public information on this meeting is posted outside City Hall.

We welcome you to watch Council Meetings via live stream.
You will find this option on our website at www.ketchumidaho.org/meetings.

If you would like to comment on a public hearing agenda item, please select the best option for your participation:

1. Join us via Zoom *(please mute your device until called upon)*.
   Join the Webinar: https://ketchumidaho-org.zoom.us/j/86425477219
   Webinar ID: 864 2547 7219

2. Address the Council in person at City Hall.

3. Submit your comments in writing at participate@ketchumidaho.org *(by noon the day of the meeting)*.

This agenda is subject to revisions. All revisions will be underlined.

CALL TO ORDER: By Mayor Neil Bradshaw
ROLL CALL:
Pursuant to Idaho Code Section 74-204(4), all agenda items are action items, and a vote may be taken on these items.
COMMUNICATIONS FROM MAYOR AND COUNCILORS:
1. Public comments submitted
CONSENT AGENDA:
Note re: ALL ACTION ITEMS - The Council is asked to approve the following listed items by a single vote, except for any items that a Councilmember asks to be removed from the Consent Agenda and considered separately.
2. Recommendation to approve minutes of November 21, 2022 – City Clerk Trent Donat
3. Recommendation to approve Special, Joint meeting of the City Council and Planning and Zoning Commission minutes of November 15, 2022 – City Clerk Trent Donat
4. Authorization and approval of the payroll register – Treasurer Shellie Gallagher

5. Authorization and approval of the disbursement of funds from the City's treasury for the payment of bills – Treasurer Shellie Gallagher
6. Recommendation to approve Purchase Order 23046 for snow hauling contract with Apollo Construction, LLC – Director of Streets and Facilities Brian Christiansen
7. Recommendation to approve Purchase Order 23047 for the purchase of three Dell laptops for ambulances – Fire Chief Bill McLaughlin
8. Recommendation to approve Resolution 22-038 establishing 2023 Planning and Zoning Commission meeting dates – Planning Technician & Office Administrator Heather Nicolai
9. Recommendation to approve Resolution 22-039 establishing 2023 Historic Preservation Commission meeting dates – Planning Technician & Office Administrator Heather Nicolai
10. Recommendation to approve Resolution 22-040 establishing 2023 City Council meeting dates – City Clerk Trent Donat
11. Recommendation to approve Task Order #4 with Superbloom Landscape Architects for professional services to advance the Warm Springs Preserve Master Plan

PUBLIC HEARING:

NEW BUSINESS:

12. Recommendation to hold first reading of Ordinance #1243 amending Chapter 13.04.080 (BUILDING SEWERS and SERVICE CONNECTIONS) of the Ketchum Municipal Code – Wastewater Division Supervisor Mick Mummert
13. Recommendation to receive and file the Audited FY 22 Financial Statements as submitted by City Administrator Jade Riley and Brady Workman, CPA
14. Review final reports for Warm Springs Road and Main Street transportation improvements – City Administrator Jade Riley
15. Housing update and discussion on possible purchase of Park Units for temporary housing – Housing Director Carissa Connelly
16. Review proposed high priority 2023 sidewalk projects – City Administrator Jade Riley

EXECUTIVE SESSION:

ADJOURNMENT:

Lisa Enourato

From: Thia Konig <thiakonig@gmail.com>
Sent: Thursday, December 1, 2022 10:49 AM
To: Participate
Subject: re: Perry's building

Hello,

This letter, and perspective, is in regards to 'The Perry's Project' and the gentrification of Ketchum.

Life and soul are being sucked out of Ketchum at an alarming rate.
Is the Perry's building Ketchum's last gasp? The new building proposed is part of the problem, not part of the solution. Increasing the supply of luxury homes exacerbates the affordable housing crisis.

Visually, the proposed building would turn 4th St into a luxury retail glass and steel gauntlet.
The proposed Perry's building would also diminish the vibrancy within the town core, because it would help turn Ketchum into a ghost town most of the year. Those 'market rate' retail spaces? No local can afford to rent - or shop in them. Do we need more banks? Gucci, Dolce & Gabbana, and other corporate brands that are so large they can operate at a loss (rent too high for anyone to actually run a business and feed a family and afford to live here) just in order to have a 'brand' presence in a resort town. Those retail spaces (in ALL the new buildings going up in Ketchum!!!!) will be for rich tourists, perhaps staying in Airbnb's in all these 'market rate' units? 'Market rate' units will only be affordable to the wealthy out-of-towners looking for a second home (then they Airbnb it out most of the year so it will 'pencil in' for their wealth management). 'Market rate' units are really luxury units, and we should call them as such. The proposed Perry's building sets the wealthy out–of–towners at an advantage - and the locals at an unfair disadvantage. Increasing supply of luxury homes exacerbates the affordable housing crisis.

In light of the devastating tragedy at the Limelight condos, where 23 units burned - "where will those locals go?" was my first thought - it seems that displacing 11 local businesses for the sake of only 7 work-force housing units is a bandaid on this housing crisis. We need a lot more than 7 affordable units. What we DON'T need any more of in this town is 'market rate' luxury condos, and 'market rate' luxury retail. This out–of–town money storm has blown the market out of local reach. Who will be shopping at those retail stores? Not me. Not the people that went to Perry's for lunch, or who got their hair cut with Lisa, or who got their computers fixed with Marco, or who got alterations upstairs with Aurora. Those were local businesses for locals. The Perry's building is a crappy building - I get it. But it added character to the funky, charming vibe that used to be Ketchum. There are no other crappy buildings left in town, so there is nowhere else where these local businesses can afford to relocate.

I have had a front row seat to this gentrification that is happening. I am Thia Konig, a 30-year local photographer - I own Photos Do Not Bend Gallery - a small, underground photography studio in the present Perry's building. I own my own condo in Ketchum (whew! I got into the market 20 years ago), but now will be forced to close my studio and gallery, because there is nowhere affordable left for small local businesses to rent. Why can't the new owners build some 'affordable studio/retail space'? What about the locals who have a place to live, but now don't have a place to work??

That said, I know this building has to come down someday. But because the new owners are overly ambitious, the unrealistic timeline is causing unnecessary stress on the existing business located in the Perry's building. Four of these businesses have leases through 2023. –The new owners are trying to buy them out, but they are finding out, indeed, that there is nowhere comparable. Since when is it ok for landlords not to honor leases? Leases are to behold tenants to landlords, but not the other way around? I only have a month-to-month lease (because when I renewed my lease the building was pending a sale that didn't go through), so the new owners

don't care about helping me find a new spot. They only 'care' about the businesses with leases that they want to break.

If we are getting kicked out for the sake of 'progress', then the building should be at least beneficial to the community – to help the community, not harm it. At least make ALL of the residential units work-force housing. And how about SOME affordable studio/retail for locals?

Palmer is quoted in the *Mountain Express* saying "We need affordable housing now". But his first proposal had only 2 affordable units! Clearly he is hiding under the guise of philanthropy for the sake of profit. They are just dabbling in affordable units to get the 4th–story penthouse allowance. Carson Palmer is worth $90 million (from Google), can someone ask him if he could just donate the building, and make it all affordable space for locals? That would be a true act of philanthropy.

I liked the original idea. Build on the empty lot - (maybe even create a walkthrough!) and repair and spruce up the existing building, and let the tenants live out their leases. Maybe in 5 - 7 years, then start to work on the 'second phase'. When it was first sold to Palmer and Smith, we were assured this was the plan, as it was worked into the agreement on the sale of the building.

In development - timing is everything. These new owners are late to the game, (in my opinion), and the skyrocketing costs of construction and materials will be reflected in the inflated price of 'market rate' luxury condos - again exacerbating the affordable housing crisis.

I would like to see a building that benefits the community more, not sucks the life out of it.

> how about something with a set back? Trees and greenery? What about a patio with a breakfast joint that locals can afford? How about a community pathway with steps and some art (and tables and chairs like Town Square?). How about affordable local retail? How about something that adds to the town, not takes it away? Access to rooftop hangout with hammocks and coin operated telescopes?

The life-blood (locals) - and soul (character) are being sucked out of Ketchum at an alarming rate. Will the proposed Perry's building be Ketchum's last gasp, or will it be something iconic that also benefits the community?

Thia Konig
30 year local

--

http://www.thiakonig.com
http://becauselifeisbeautiful.com

Lisa Enourato

From: H Boyle <Boylehp@yahoo.com>
Sent: Saturday, December 3, 2022 6:25 AM
To: Participate
Subject: Fwd: Housing funds

For public comment

Begin forwarded message:

> **From:** Aly Swindley <aswindley@ketchumidaho.org>
> **Date:** December 2, 2022 at 2:35:07 PM EST
> **To:** H Boyle <Boylehp@yahoo.com>
> **Subject: RE: Housing funds**
>
> Afternoon, Mr. Boyle - thank you for your note - would you like me to forward it to participate@ketchumidaho.org so it is filed under public comment?
>
> ALY SWINDLEY | CITY OF KETCHUM
> Management and Communications Analyst
> P.O. Box 2315 | 191 5th Street West | Ketchum, ID 83340
> o: 208.727.5081 | f: 208.726.7812
> aswindley@ketchumidaho.org | www.ketchumidaho.org
>
> -----Original Message-----
> From: H Boyle <Boylehp@yahoo.com>
> Sent: Thursday, December 1, 2022 11:17 PM
> To: Aly Swindley <aswindley@ketchumidaho.org>
> Subject: Housing funds
>
> From the Mayor's Missive it looks like the City of Ketchum wants the 1% for Air to be renewed, but maybe not at 1%.
>
> There has been no transparency on 1%, which is particularly disappointing given that Councillor Breen sits on the board of the FSVA.
>
> If this administration pushes for 1% for Air, it will have a spillover impact that will impede its ability to get LOT for housing.
>
> To the average resident, 1% is either not helping us, or making our challenges worse. Airfares for SUN are very high compared to BOI, so what is the subsidy getting us? And half of it has been going to promote tourism via VSV. Even VSV realizes that what is has done has no support from locals. Tourism is what is driving our housing crisis.
>
> The City screwed up the LOT last May by increasing the tax on residents. If that's the strategy for next year, it won't pass. Residents aren't creating the problem, tourism is. It's supposed to be a tourist tax. The fact that only 30% of it is paid by residents isn't relevant. That any percent of it is paid by residents is wrong.

So if the City is good to tax residents for a tourism subsidy and a housing subsidy, it's not going to pass. By all means raise the LOT—-on tourists.

And while you are at it, why are AirBNB units assesses and taxed as residences instead of hotels? Tax them like the commercial businesses they are and put that money to housing. And take a shot at limiting the number of STRs in a neighborhood. So what of you get sued. At least you tried to save the town.

You are going to have a problem raising revenue for housing as people figure out Bluebird. The City has never revealed its locals preference—why not? The City has never given any transparency on Northwood Place and it's impact on the workforce housing situation. Why not? Unless you can show that the Bluebird tenants are locals working in local businesses you will have an uphill battle. People now know that the Mayor lied when he said it is housing for teachers and first responders.

And the Mayor's Missive this week is an admission of corruption of in subsidized housing, with the forced sale of four units. How many of the deed restricted rental units are illegally occupied? If you want to raise money for housing you have to build confidence that the system isn't being abused. Get the enforcement done so all the units are in compliance with their deeds, and set up an audit system with teeth.
With Bluebird and Washington lots as highly visible public housing on top of the KETCH fiasco, you need to identify locations for where the money you plan to raise will be spent ahead of the vote. People won't just trust the City anymore. If it's for more low income housing apartment complexes in the retail core, a LOT increase won't pass. Much better locations for it on other City owned lots.

The smartest thing the City has done is partner with WRHT. Unlike Bluebird or Northwood, their model is true workforce housing. Like ARCH is doing with BCSD and STL.

Bottom line: repeating the last LOT referendum will be a loser and will set back workforce housing in Ketchum. Someone needs to carefully think this through and offer the voters a real plan for workforce housing, not just low income housing. The "trust us" route is a loser.

Perry Boyle
Ketchum

Lisa Enourato

From: Pamela Doucette <pameladoucette@gmail.com>
Sent: Monday, December 5, 2022 9:25 AM
To: Participate
Subject: Resorce place for odd job helpers,

Resource place for odd job helpers, like shoveling, helping with yard work (temporary), or anything that could pay someone needing work and able to do it. There used to be a "job bank" in Ketchum that folks could leave notices of what they would be willing to help with. Now it is hit or miss on bulletin boards- most of which are monitored and swept clean often!. This would be a great service for our new residents from Peru too!

--

Pamela Doucette
208-928-7400
cell 208-720-3066

CALL TO ORDER: *(00:00:23 in video)*
Mayor Bradshaw called the meeting of the Ketchum City Council to order at 4:00 p.m.

Roll Call:
Mayor Neil Bradshaw
Michael David (via teleconference)
Jim Slanetz
Amanda Breen
Courtney Hamilton (via teleconference)

Also Present:
Jade Riley - City Administrator
Trent Donat – City Clerk & Business Manager
Lisa Enourato – Public Affairs & Administrative Services Manager

COMMUNICATIONS FROM MAYOR AND COUNCILORS: *(00:00:40 in video)*
No comments

CONSENT AGENDA: *(00:01:10 in video)*
Items 6, 7 9 & 10 requested for discussion

- Courtney Hamilton recused herself from Item 2
- Amanda Breen commented on items 6 & 7

Mayor Neil Bradshaw introduced items 9 & 10 and asked for guidance from the council.

DISCUSSION AND COMMENTS BY COUNCIL *(00:07:10 in video)*

- After discussion, Mayor Neil Bradshaw tabled item 9

Motion to approve consent agenda items 3-8, 10-16 *(00:20:40 in video)*
Motion made by: Amanda Breen
Seconded by: Jim Slanetz
Ayes: Amanda Breen, Michael David, Jim Slanetz, Courtney Hamilton
Nayes: None

Motion to approve consent agenda item 2 *(00:21:20 in video)*
Motion made by: Jim Slanetz
Seconded by: Courtney Hamilton
Ayes: Amanda Breen, Michael David, Jim Slanetz,
Nayes: None
Recused: Courtney Hamilton

PUBLIC HEARING *(00:21:42 in video)*
17. Recommendation to hold a public hearing, review, and approve a Lot Line Shift, Townhouse Preliminary Plat, and associated Phased Development Agreement #22812 for the Sapp Townhomes at 780 N 4th Ave. - Senior Planner Morgan Landers

No Public Comment
Public Hearing Closed *(00:22:31 in video)*

Motion to approve a lot line shift final PLAT for the consolidation of lot 5 and the north half of lot 6 as conditioned and adopt the findings of fact, conclusions of law and decision *(00:23:35 in video)*
Motion made by: Amanda Breen
Seconded by: Jim Slanetz
Ayes: Amanda Breen, Michael David, Jim Slanetz, Courtney Hamilton
Nayes: None

Motion to approve the Townhouse Preliminary Plat for the SAPP Townhomes at 780 N 4th Ave. as conditioned and adopt the Findings of Fact, Conclusions of Law and Decision to approve the associated Phased Development Agreement #22812 *(00:24:10 in video)*
Motion made by: Amanda Breen
Seconded by: Jim Slanetz
Ayes: Amanda Breen, Michael David, Jim Slanetz, Courtney Hamilton
Nayes: None

NEW BUSINESS: *(00:24:45 in video)*
18. Blaine County Sustainability Program Update, Clean Energy Modeling & Feasibility Analysis – Sustainability - Manager Lynne Barker

Mayor Neil Bradshaw shared points from a letter received from community *(00:41:52 in video)*

Council members commented and asked questions: *(00:44:50 in video)*

ADJOURNMENT:
Motion to adjourn at 4:53 p.m.
Motion made by Jim Slanetz; Seconded by Amanda Breen
Ayes: Michael David, Amanda Breen, Jim Slanetz, Courtney Hamilton
Nays: None

_____
Neil Bradshaw, Mayor

ATTEST:

_____
Trent Donat, City Clerk

CITY OF KETCHUM
SPECIAL MEETING MINUTES OF THE
CITY COUNCIL AND PLANNING AND ZONING COMMISSION
Tuesday, November 15, 2022

CALL TO ORDER: *(00:00:30 in video)*
Mayor Bradshaw called the Special Meeting of the Ketchum City Council and Planning and Zoning Commission to order at 4:30 p.m.

Roll Call:
Mayor Neil Bradshaw
Michael David (via teleconference)
Jim Slanetz
Amanda Breen
Neil Morrow
Courtney Hamilton - absent
Brenda Moczygemba
Tim Carter
Spencer Cordovano
Susan Passovoy - absent

Also Present:
Jade Riley - City Administrator
Trent Donat – City Clerk & Business Manager
Lisa Enourato – Public Affairs & Administrative Services Manager
Rob Richardson –- Rio
Stacey Passmore – Superbloom
Diana Lipovsky – Superbloom
Morgan Landers – Senior Planner
Abby Rivin – Senior Planner
Adam Crutcher – Associate Planner
Tripp Hutchinson – Intern
Ryan Santos – Wood River Trust

COMMUNICATIONS FROM MAYOR AND COUNCILORS:
Mayor Neil Bradshaw mentioned the Warm Springs Preserve Open House, and did an introduction of Rob Richardson from Rio, Stacy Passmore from Superbloom, and Diane Lipovsky from Superbloom.

NEW BUSINESS:
2. Warm Springs Preserve Master Plan *(00:02:00 in video)*
   Presented by Rob Richardson, Stacy Passmore, and Diana Lipovsky

3. Presentation by Superbloom and Rio ASE regarding update concept design and summary of November 14th open house results

-Jade Riley informed commissioners and council of public positive feedback regarding concept design as well as other feedback from the open house held on 11.14.22 *(00:41:30 in video)*
-Mayor Neil Bradshaw made clarification of a change in the upper fairway *(00:42:33 in video)*

4. Questions from City Council and Planning and Zoning Commission
Amanda Breen *(00:43:20 in video)*
Neil Morrow *(00:44:45 in video)*
Mayor Neil Bradshaw *(00:45:24 in video)*

5. PUBLIC COMMENT

Claire Swanger *(00:47:24 in video)*
Tripp Hutchinson *(00:53:07 in video)*
Public Comment Closed *(00:53:48 in video)*

Mayor Neil Bradshaw responded to the public comments *(00:53:51 in video)*

6. Direction from City Council and Planning & Zoning Commission regarding update concept and next steps.

COUNCIL – COMMISSION COMMENTS

Courtney Hamilton *(01:29:14 in video)*
Spencer Cordovano *(01:09:47 in video)*
Amanda Breen *(01:03:02 in video)*
Neil Morrow *(01:00:01 in video)*
Tim Carter *(01:05:35 in video)*
Jim Slanetz *(01:24:51 in video)*
Brenda Moczygemba *(01:18:42 in video)*
Michael David *(01:09:10 in video)*

ADJOURNMENT:
Motion to adjourn at 6:05 p.m.
Motion made by: Neil Morrow; Seconded by Jim Slanetz
Ayes: Amanda Breen, Michael David, Courtney Hamilton, Jim Slanetz, Brenda Moczygemba, Tim Carter, Spencer Cordovano.
Nays: None

_____

Mayor Neil Bradshaw

_____

Neil Morrow, Planning & Zoning Chair

_____

Trent Donat, City Clerk

Report Criteria:
Invoices with totals above $0 included.
Paid and unpaid invoices included.
[Report].GL Account Number = "0110000000"-"9648008200","9910000000"-"9911810000"
Invoice Detail.Voided = No,Yes

Vendor Name	Invoice Number	Description	Net Invoice Amount	Purchase Order Number
GENERAL FUND				
01-3700-3600 REFUNDS & REIMBURSEMENTS				
NORTHSTREAM CONSTRUCTIO	R 112322	REFUND FLOODPLAIN DEVELOP FEE	250.00	
FINEGAN, CARMEN	R 112322	BUILDING PERMIT FEE RETURN	1,823.00	
Total :			2,073.00	
LEGISLATIVE & EXECUTIVE				
01-4110-4200 PROFESSIONAL SERVICES				
WORKMAN AND COMPANY	112122	Audited Financial Statement	8,600.00	
Total LEGISLATIVE & EXECUTIVE:			8,600.00	
ADMINISTRATIVE SERVICES				
01-4150-3100 OFFICE SUPPLIES & POSTAGE				
COPY & PRINT, L.L.C.	124733	POS-8993: POSTITS, FOLDERS	133.77	
COPY & PRINT, L.L.C.	124755	POS 9061: NOTEBOOKS	28.76	
01-4150-4200 PROFESSIONAL SERVICES				
GALENA ENGINEERING, INC.	1318.188 11012	1318.188/MP/KETCHUM W1/2 LOTS 5 &6 BLK 46 STAKE POWER EASEMENT	567.67	
BD CONSULTING LLC	KET 2023-02	GENERAL DISCUSSIONS, IMPACT FEES	320.00	
DONAT, TRENT	R 112822	MOVING ALLOWANCE PER HIRING AGREEMENT	8,284.16	
01-4150-5110 COMPUTER NETWORK				
CDW GOVERNMENT, INC.	FD63576	MS OFFICE MULTI USER LICENSE	304.99	
INTEGRATED TECHNOLOGIES	204101	CO00 CITY OF KETCHUM-02	574.26	
DELL FINANCIAL SERVICES	2203087	PROPERTY TAX MGMT FEE	11.30	
DELL FINANCIAL SERVICES	2281920	001-9009257-001 DEC 22	1,465.97	
01-4150-5150 COMMUNICATIONS				
ALBOUM TRANSLATION SERVIC	I-18772	SNOW REMOVAL DRAFT	50.04	
01-4150-5200 UTILITIES				
IDAHO POWER	2203990334 11	2203990334 111122	64.97	
IDAHO POWER	2206570869 11	2206570869	5.31	
IDAHO POWER	2224128120 11	2224128120 112222	811.87	
INTERMOUNTAIN GAS	44919030005 1	44919030005 112222	49.51	
INTERMOUNTAIN GAS	76053745030 1	76053745030 112222	589.76	
Total ADMINISTRATIVE SERVICES:			13,262.34	
LEGAL				
01-4160-4200 PROFESSIONAL SERVICES				
WHITE PETERSON	24892R 103122	General Services 24892R 103122	11,530.00	

Vendor Name	Invoice Number	Description	Net Invoice Amount	Purchase Order Number
Total LEGAL:			11,530.00	
PLANNING & BUILDING				
01-4170-3100 OFFICE SUPPLIES & POSTAGE				
COPY & PRINT, L.L.C.	124732	POS-8992: MOUSEPAD, DESK SORTER, ORGANIZER	246.83	
01-4170-3200 OPERATING SUPPLIES				
COPY & PRINT, L.L.C.	124746	MOUSE PAD FEL 9175101	83.58	
01-4170-4200 PROFESSIONAL SERVICES				
FORSGREN ASSOCIATES, INC.	222384	Engineering Services	5,657.50	
FORSGREN ASSOCIATES, INC.	222547	Engineering Services	5,002.50	
01-4170-4210 PROFESSIONAL SERVICES - IDBS				
DIVISION OF BUILDING SAFETY	0822 BPF	AUGUST BUILDING PERMIT FEE	31,134.40	
DIVISION OF BUILDING SAFETY	0922 BPF	SEPTEMBER 2022 BUILDING PERMIT FEE	26,082.50	
DIVISION OF BUILDING SAFETY	1022 BPF	OCTOBER 2022 BUILDING PERMIT FEES	34,981.00	
01-4170-4900 PERSONNEL TRAINING/TRAVEL/MTG				
LANDERS, MORGAN	R102622	APA CONFERENCE EXPENSES	909.70	
Total PLANNING & BUILDING:			104,098.01	
NON-DEPARTMENTAL				
01-4193-4500 1ST/WASHINGTON RENT				
URBAN RENEWAL AGENCY	6085	URA RENT	3,000.00	
01-4193-6500 CONTRACT FOR SERVICE				
BLAINE COUNTY TREASURER	SCP-231117	SUSTAINABILITY CONTRACT FY 23	22,200.49	23016
Total NON-DEPARTMENTAL:			25,200.49	
FACILITY MAINTENANCE				
01-4194-3200 OPERATING SUPPLIES				
GEM STATE PAPER & SUPPLY	1084312	PAPER TOWELS, PINE-SOL, TRASH BAGS	230.69	
GEM STATE PAPER & SUPPLY	1084312-01	PINESOL, TRASH BAGS	25.37	
01-4194-3500 MOTOR FUELS & LUBRICANTS				
CHRISTENSEN INC.	1007206	38950 111522	975.89	
01-4194-4200 PROFESSIONAL SERVICES				
RAINMAKER LANDSCAPING & S	8684	SPRINKLER Blowouts	3,440.00	
01-4194-5200 UTILITIES				
IDAHO POWER	2203313446 11	2203313446 111022	5.31	
INTERMOUNTAIN GAS	32649330001 1	130 S 1 AVE	24.54	
01-4194-5910 REPAIR & MAINT-491 SV ROAD				
ALSCO - AMERICAN LINEN DIVI	LBOI2035395	491 E SUN VALLEY 111422	178.70	
BLAINE COUNTY TREASURER	LRK000002400	2022 PROPERTY TAX - 491 E SUN VALLEY RD	1,762.60	
SUN VALLEY SERVICES	17490	HOUSEKEEPING SERVICES	3,268.00	
COX BUSINESS	0012401034971	0012401034971402 112322	143.00	

Vendor Name	Invoice Number	Description	Net Invoice Amount	Purchase Order Number
01-4194-6100 REPAIR & MAINT--MACHINERY & EQ				
SAWTOOTH WOOD PRODUCTS, I	0000137355	V-BELT TRACTION, BELT AUGER	73.51	
01-4194-6950 MAINTENANCE				
CHATEAU DRUG CENTER	2624401	BLK FOAM TAPE	5.68	
PLATT ELECTRIC SUPPLY	3E75976	CONDUIT, LOCKNUT, CEMENT	144.05	
RIVER RUN AUTO PARTS	6538-184614	FUEL STABILIZER	18.95	
Total FACILITY MAINTENANCE:			10,296.29	
POLICE				
01-4210-3620 PARKING OPS EQUIPMENT FEES				
CALE AMERICA, INC.	171940	ACTIVE METERS NOV 2022	169.05	
01-4210-4200 PROFESSIONAL SERVICES				
KETCHUM COMPUTERS, INC.	18914	MONTHLY WORKSTATION MAINT, SPRECIFIC SUPPORT WATCHGUARD	2,004.25	
01-4210-5100 TELEPHONE & COMMUNICATIONS				
CENTURY LINK	2087267848 10	2087267848 105B 111322	138.66	
Total POLICE:			2,311.96	
FIRE & RESCUE				
01-4230-3200 OPERATING SUPPLIES FIRE				
ATKINSONS' MARKET	04285934	WHITE CLOUD COFFEE	27.54	
BUSINESS AS USUAL INC.	160327	OFFICE SUPPLIES	59.88	
GEM STATE PAPER & SUPPLY	1084750	LAUNDRY DISPENSER, POLY FLEX, SPARCLEAN	.00	
GEM STATE PAPER & SUPPLY	1085028	COPY PAPER	36.75	
INTEGRATED TECHNOLOGIES	203668	M7892-01 110822	9.11	
MUNICIPAL EMERGENCY SERIC	IN1782857	ENERGIZER INDUSTIAL ALK AA, AAA	60.04	
01-4230-3210 OPERATING SUPPLIES EMS				
ATKINSONS' MARKET	04285934	WHITE CLOUD COFFEE	27.54	
BUSINESS AS USUAL INC.	160327	OFFICE SUPPLIES	59.87	
GEM STATE PAPER & SUPPLY	1084750	LAUNDRY DISPENSER, POLY FLEX, SPARCLEAN	.00	
GEM STATE PAPER & SUPPLY	1085028	COPY PAPER	36.75	
INTEGRATED TECHNOLOGIES	203668	M7892-01 110822	9.11	
NORCO	36128654	HYDRO AND INSP OF SCBA CYL	261.99	
NORCO	36217473	52355 103122	74.40	
NORCO	36218578	54794 103122	181.35	
MUNICIPAL EMERGENCY SERIC	IN1782857	ENERGIZER INDUSTRIAL ALK AA, AAA	60.04	
HENRY SCHEIN	27290118	RUBBER BANDS	8.30	
HENRY SCHEIN	27353830	MEDICAL EQUIPMENT	219.77	
HENRY SCHEIN	27850180	MEDICAL EQUIPMENT	223.30	
HENRY SCHEIN	27966823	MEDICAL EQUIPMENT	70.00	
01-4230-3500 MOTOR FUELS & LUBRICANTS FIRE				
CHRISTENSEN INC.	1007105	37267 111522	458.36	
CHRISTENSEN INC.	1007219	39060 111522	385.05	
01-4230-3510 MOTOR FUELS & LUBRICANTS EMS				
CHRISTENSEN INC.	1007105	37267 111522	162.00	
01-4230-4900 TRAINING/TRAVEL/MTG FIRE				
IDAHO POWER	2224210258 11	2224210258 110822	26.88	

Vendor Name	Invoice Number	Description	Net Invoice Amount	Purchase Order Number
01-4230-4920 TRAINING-FACILITY				
COX BUSINESS	0012401047339	0012401047339201 103022	99.79	
01-4230-5100 TELEPHONE & COMMUNICATION FIRE				
MTE COMMUNICATIONS	056983 110122	DSL ROUTER RENT	15.13	
VERIZON WIRELESS	9918968394	842054354-00001 102322	282.57	
WHITE CLOUD	102035	TECHNICIAN SERVICES- RADIO REPAIR	145.00	
WHITE CLOUD	102197	148-174 MHZ DUAL ISOLATOR, SERVICES	2,487.50	
WHITE CLOUD	102198	TROUBLESHOOT GOLD LINK 3	137.50	
WHITE CLOUD	102198	TROUBLESHOOT GOLD LINK 3	137.50	
WHITE CLOUD	103049	DASH MOUNT, CONNECTOR, HOOD W/POWER	1,540.30	
01-4230-5110 TELEPHONE & COMMUNICATION EMS				
MTE COMMUNICATIONS	056983 110122	DSL ROUTER RENT	15.12	
VERIZON WIRELESS	9918968394	842054354-00001 102322	282.57	
WHITE CLOUD	102035	TECHNICIAN SERVICES- RADIO REPAIR	145.00	
WHITE CLOUD	102197	148-174 MHZ DUAL ISOLATOR, SERVICES	2,487.50	
WHITE CLOUD	103049	DASH MOUNT, CONNECTOR, HOOD W/POWER	1,540.30	
01-4230-5200 UTILITIES				
COX BUSINESS	0012401049446	0012401049446101 112722	246.50	
01-4230-6000 REPAIR & MAINT-AUTO EQUIP FIRE				
BROOKS WELDING	15180	1*8X2TSX5', 1*8 X 5 FB X 48"	88.38	
RIVER RUN AUTO PARTS	6538-183283	STB 65-85 BATTERY, DIATOM OIL	191.85	
RIVER RUN AUTO PARTS	6538-183622	DIATOM OIL ABSORB	16.95	
RIVER RUN AUTO PARTS	6538-184643	OIL FILTER, AIR FILTER, OIL	108.33	
ROCKY MOUNTAIN APPLIANCE	28117	SERVICE- WASHER AND DRYER	98.00	
CURTIS TOOLS FOR HEROES	INV648146	AIR SAMPLE	224.30	
CURTIS TOOLS FOR HEROES	INV650308	CHAIN GRAB HOOKS	143.66	
01-4230-6010 REPAIR & MAINT-AUTO EQUIP EMS				
ROCKY MOUNTAIN APPLIANCE	28117	SERVICE WASHER & DRYER	98.00	
01-4230-6100 REPAIR & MAINT--MACHINERY & EQ				
MUNICIPAL EMERGENCY SERIC	IN1784303	SCBA FLOW TESTS	2,663.15	
Total FIRE & RESCUE:			15,652.93	
STREET				
01-4310-3200 OPERATING SUPPLIES				
D & B SUPPLY INC.	27561	WORK SHIRTS	24.99	
DAVIS EMBROIDERY INC.	40656	EMBRD SERVICE CARHARTT SHIRTS	120.00	
NAPA AUTO PARTS	127709	SHOP GLOVES	49.12	
RIVER RUN AUTO PARTS	6538-184772	ARMORALL	26.95	
01-4310-3400 MINOR EQUIPMENT				
NAPA AUTO PARTS	126455	TIRE GAUGES	167.63	
01-4310-3500 MOTOR FUELS & LUBRICANTS				
CHRISTENSEN INC.	1007106	37269 111522	10,074.19	
CHRISTENSEN INC.	561606	37269 111422	213.26	
01-4310-4200 PROFESSIONAL SERVICES				
LUNCEFORD EXCAVATION, INC.	13843	WINTER 22-23 SNOW HAULING SERVICE	10,600.00	23045

Vendor Name	Invoice Number	Description	Net Invoice Amount	Purchase Order Number
01-4310-5200 UTILITIES				
INTERMOUNTAIN GAS	32649330001 1	200 E 10 ST	742.59	
INTERMOUNTAIN GAS	32649330001 1	911 WARM SPRINGS	300.69	
01-4310-6000 REPAIR & MAINT--AUTOMOTIVE EQU				
NAPA AUTO PARTS	127139	BlOWER MOTOR RESISTOR	39.60	
NAPA AUTO PARTS	127148	OIL FILTER	8.88	
01-4310-6100 REPAIR & MAINT--MACHINERY & EQ				
FASTENAL COMPANY	IDJER105145	NUTS AND BOLTS	348.63	
FASTENAL COMPANY	IDJER105252	TOP LK GR C, AAA BATTERY, 6*3/4*1 MEDIUM	138.33	
WESTERN STATES CAT	IN002196117	TROUBLESHOOT AND REPAIR ELECTRIC SYSTEM 966M LOADER	780.00	
01-4310-6910 OTHER PURCHASED SERVICES				
ALSCO - AMERICAN LINEN DIVI	LBOI2036873	200 10TH ST	31.79	
01-4310-6920 SIGNS & SIGNALIZATION				
ECONO SIGNS LLC	10-978535	WINTER OVERNIGHT SIGNS	2,041.56	
ECONO SIGNS LLC	10-978677	CUSTOM SIGN	116.68	
01-4310-6930 STREET LIGHTING				
IDAHO POWER	2224304721 11	2224304721 111022	5.31	
01-4310-6950 MAINTENANCE & IMPROVEMENTS				
ANDERSON ASPHALT PAVING IN	682	MATERIAL DUMPED	413.04	
ANDERSON ASPHALT PAVING IN	682	GRAVEL, ASPHALT PICKED UP	3,653.29	
CLEARWATER LANDSCAPING	22-114542	IceBITE, DELIVER	1,864.02	
Total STREET:			31,760.55	
RECREATION				
01-4510-3200 OPERATING SUPPLIES				
CHATEAU DRUG CENTER	2623928	SUREPAW ICE MELT	71.22	
CHATEAU DRUG CENTER	2624340	EMERGEN-C	16.14	
01-4510-3250 RECREATION SUPPLIES				
CHATEAU DRUG CENTER	2627939	D BATTERIES	126.28	
01-4510-3300 RESALE ITEMS-CONCESSION SUPPLY				
ATKINSONS' MARKET	02629279	POTATO BAKERS, ORANGE SUGAR, INDIAN FALL LEAVE	13.56	
ATKINSONS' MARKET	08566067	SUGAR, MILK, BAKING SODA, FLOUR	22.72	
01-4510-4200 PROFESSIONAL SERVICE				
WOOD RIVER LOCK SHOP, LLC	19434	115.00	115.00	
01-4510-5200 UTILITIES				
INTERMOUNTAIN GAS	31904030009 1	31904030009 112222	144.98	
SENTINEL FIRE & SECURITY, IN	82304	ATKINSONS PARK BUILDING	104.85	
01-4510-6000 REPAIR & MAINT--AUTOMOTIVE EQU				
RIVER RUN AUTO PARTS	6538-184602	WINTER BLADE, WIPER BLADE	47.80	
Total RECREATION:			662.55	

Vendor Name	Invoice Number	Description	Net Invoice Amount	Purchase Order Number
Total GENERAL FUND:			225,448.12	
WAGON DAYS FUND				
WAGON DAYS EXPENDITURES				
02-4530-3200 OPERATING SUPPLIES				
A.C. HOUSTON LUMBER CO.	2209-974579	WAGON DAYS ROPE CABLES	75.31	
Total WAGON DAYS EXPENDITURES:			75.31	
Total WAGON DAYS FUND:			75.31	
GENERAL CAPITAL IMPROVEMENT FD				
GENERAL CIP EXPENDITURES				
03-4193-7100 SUN VALLEY RD MILL & OVERLAY				
CITY OF SUN VALLEY	2022-10	SUN VALLEY RD RECONSTRUCTION (JACOBS)	14,944.29	22098
JACOBS ENGINEERING GROUP, I	D3576100-012	Sun Valley Road Rehabilitation Engineering Design Services	610.00	22023
03-4193-7200 TECHNOLOGY UPGRADES				
CDW GOVERNMENT, INC.	FB23829	SW TZ370 SUP ESSENTIAL EDITION, SONICWALL FIREWALL	2,156.00	
CDW GOVERNMENT, INC.	FD88112	WIRED MOUSE	29.09-	
03-4193-7210 SUSTAINABILITY				
BROWN AND CALDWELL	54464560	COK GEOTHERMAL EVALUATION	3,904.90	
03-4193-7220 RECYCLING				
PLATT ELECTRIC SUPPLY	3J70020	RECYLE SNOW MELT	6,953.87	
Total GENERAL CIP EXPENDITURES:			28,539.97	
Total GENERAL CAPITAL IMPROVEMENT FD:			28,539.97	
ORIGINAL LOT FUND				
ORIGINAL LOT TAX				
22-4910-6060 EVENTS/PROMOTIONS				
DAVIS EMBROIDERY INC.	41336	EMBRD SERVICES- BEANIE	2,401.75	
Total ORIGINAL LOT TAX:			2,401.75	
Total ORIGINAL LOT FUND:			2,401.75	
FIRE CONSTRUCTION FUND				
FIRE FUND EXP/TRNFRS				
42-4800-7800 CONSTRUCTION				
LYTLE SIGNS	JQ-OO406-3	KFD FCO LETTER SETS	6,288.23	
Total FIRE FUND EXP/TRNFRS:			6,288.23	
Total FIRE CONSTRUCTION FUND:			6,288.23	
CITY/COUNTY HOUSING				
CITY/COUNTY HOUSING EXPENSE				

Vendor Name	Invoice Number	Description	Net Invoice Amount	Purchase Order Number
54-4410-4200 PROFESSIONAL SERVICES				
CONNELLY, CARISSA	13	COMMUNITY HOUSING CONSULTING	3,562.50	
LANDING, INC.	1420	LEASE TO LOCALS RENTAL PROGRAM	7,500.00	22120
54-4410-4210 LEASE TO LOCALS				
AYERS, SUSAN	LTL 112822	LTL INITIAL PAYMENT	1,000.00	
BELLAMY, KIMBERLY	LTL 112822	LTL INITIAL PAYMENT	2,250.00	
DOUCETTE, JACKIE COSTELLO	LTL 112822	LTL INITIAL PAYMENT	2,250.00	
54-4410-4220 EMERGENCY HOUSING				
FERGUSON ENTERPRISES, LLC	0839635	CVR 101N-H 2.38 X 1 IP F/ HDPE 2	625.80	
BLAINE COUNTY CHARITABLE	1038	TRANSITIONAL HOUSING ASSISTANCE- NOV & DEC	36,100.00	
Total CITY/COUNTY HOUSING EXPENSE:			53,288.30	
Total CITY/COUNTY HOUSING:			53,288.30	
WATER FUND				
WATER EXPENDITURES				
63-4340-3200 OPERATING SUPPLIES				
ALSCO - AMERICAN LINEN DIVI	LBOI2036878	110 RIVER RANCH RD - ADMIN - 111822	30.50	
ALSCO - AMERICAN LINEN DIVI	LBOI2036880	110 RIVER RANCH RD - WATER - 111822	60.59	
D & B SUPPLY INC.	18245-2022	Work Shirts	72.05	
TREASURE VALLEY COFFEE INC	2160:08600792	COFFEE	67.41	
63-4340-3500 MOTOR FUELS & LUBRICANTS				
CHRISTENSEN INC.	1007108	37271 111522	704.10	
63-4340-4200 PROFESSIONAL SERVICES				
HIGHLAND PLUMBING	408	CONNECT WATER LINE - LIMELIGHT / MATERIALS	875.00	
BOWMAN, PHILLIP	R 112822	PUBLIC WORKS INTERVIEW TRAVEL COSTS	225.06	
63-4340-5200 UTILITIES				
DIG LINE	0069315-IN	Monthly Fee	129.03	
IDAHO POWER	2206786259 11	2206786259 111822	29.16	
INTERMOUNTAIN GAS	32649330001 1	110 RIVER RANCH RD A	51.51	
63-4340-6000 REPAIR & MAINT-AUTO EQUIP				
RIVER RUN AUTO PARTS	6538-184694	5W20 OIL & OIL FILTER	47.62	
63-4340-6100 REPAIR & MAINT-MACH & EQUIP				
SILVER CREEK SUPPLY	0008749390-00	5 GALLON RHOMAR	107.00	
SILVER CREEK SUPPLY	0008757796-00	2" X 1-1/2" LEAD FREE BRASS BUSHING MXF	23.89	
Total WATER EXPENDITURES:			2,422.92	
Total WATER FUND:			2,422.92	
WATER CAPITAL IMPROVEMENT FUND				
WATER CIP EXPENDITURES				
64-4340-7650 WATER METERS				
FERGUSON ENTERPRISES, LLC	0840347	2 OMNI+ T2 1000GA AMR 1GPL 15.25LL	2,800.00	
FERGUSON ENTERPRISES, LLC	0840348	2 OMNI+ T2 1000GA AMR 1GPL 15.25LL	2,800.00	
FERGUSON ENTERPRISES, LLC	0840349	2 OMNI+ T2 1000GA AMR 1GPL 15.25LL	2,800.00	
FERGUSON ENTERPRISES, LLC	0840350	2 OMNI+ T2 1000GA AMR 1GPL 15.25LL	2,800.00	
FERGUSON ENTERPRISES, LLC	0840351	2 OMNI+ T2 1000GA AMR 1GPL 15.25LL	2,800.00	

Vendor Name	Invoice Number	Description	Net Invoice Amount	Purchase Order Number
FERGUSON ENTERPRISES, LLC	0840352	2 OMNI+ T2 1000GA AMR 1GPL 15.25LL	2,800.00	
Total WATER CIP EXPENDITURES:			16,800.00	
Total WATER CAPITAL IMPROVEMENT FUND:			16,800.00	
WASTEWATER FUND				
WASTEWATER EXPENDITURES				
65-4350-3200 OPERATING SUPPLIES				
A.C. HOUSTON LUMBER CO.	2211-512324	ICE MELT, GLOVES	76.98	
ALSCO - AMERICAN LINEN DIVI	LBOI2036878	110 RIVER RANCH RD - ADMIN - 111822	30.50	
ALSCO - AMERICAN LINEN DIVI	LBOI2036879	110 RIVER RANCH RD - WASTEWATER - 111822	136.40	
ATKINSONS' MARKET	08567114	ICE	23.66	
CHATEAU DRUG CENTER	2626362	BATTERIES	9.49	
D & B SUPPLY INC.	13780	SHIRTS & JACKET	224.97	
D & B SUPPLY INC.	26366	Work Pants	131.97	
D & B SUPPLY INC.	6773	Work Pants	109.98	
FEDEX	7-942-71639	Ground Shipping	9.83	
FEDEX	7-957-41851	Ground Shipping	9.04	
UPS STORE #2444	MMN7FR54ZB	WATER SAMPLES	17.22	
UPS STORE #2444	MMN7FR57M	WATER SAMPLES	15.99	
65-4350-3400 MINOR EQUIPMENT				
A.C. HOUSTON LUMBER CO.	2211-512325	42" ONE-PIECE POLY SCOOP RED, LS 29" D-HANDLE POLY GRAIN SCOOP	82.98	
65-4350-3500 MOTOR FUELS & LUBRICANTS				
CHRISTENSEN INC.	1007107	37270 111522	1,082.50	
65-4350-3800 CHEMICALS				
HACH	13333280	s-TKN TNT+ (0-16 MG/L N), PK/25	206.08	
NORTH CENTRAL LABORATORI	478203	Chemicals/supplies	658.73	
65-4350-4200 PROFESSIONAL SERVICES				
BD CONSULTING LLC	KET 2023-02	WW DEBT/BOND, WW FINANCIAL MODELING	255.00	
BOWMAN, PHILLIP	R 112822	PUBLIC WORKS INTERVIEW TRAVEL COSTS	225.05	
65-4350-5100 TELEPHONE & COMMUNICATIONS				
CENTURY LINK	2087268953 40	2087268953 402B 111322	62.75	
VERIZON WIRELESS	9920359233	965494438 111022	66.03	
65-4350-5200 UTILITIES				
IDAHO POWER	2202158701 11	2202158701 111422	9,337.61	
IDAHO POWER	2202703357 11	2202703357 111822	92.09	
IDAHO POWER	2206786259 11	2206786259 111822	29.16	
INTERMOUNTAIN GAS	32649330001 1	110 RIVER RANCH RD GRIT	471.58	
INTERMOUNTAIN GAS	32649330001 1	110 RIVER RANCH RD C	446.74	
INTERMOUNTAIN GAS	32649330001 1	110 RIVER RANCH RD SLUDGE	52.53	
INTERMOUNTAIN GAS	32649330001 1	110 RIVER RANCH RD A	51.51	
INTERMOUNTAIN GAS	5820868855 11	110 RIVER RANCH RD SLUDGEMECHANICAL BAR SCREE	68.06	
65-4350-6000 REPAIR & MAINT-AUTO EQUIP				
NAPA AUTO PARTS	127167	HEADLIGHT LENS RESTOR & D EARTH	39.47	
65-4350-6100 REPAIR & MAINT-MACH & EQUIP				
GRAINGER, INC., W.W.	9515850825	AXIAL FAN, SQUARE, 12-45/64" H,353 CFM	579.05	
OVERHEAD DOOR COMPANY, IN	520215	460V BRAKE SOLENOID	148.00	

Vendor Name	Invoice Number	Description	Net Invoice Amount	Purchase Order Number
SAVECO NORTH AMERICA INC	PART22184-PL	SCREW AUGER SPW200 W/BRUSH, L 700	5,025.98	23027
SAVECO NORTH AMERICA INC	PART22184-PL	FREIGHT	1,714.62	
GLOBAL INDUSTRIAL	21568915	CONTINENTAL FAN 12" DIA. DESTRATIFICATION FAN, 1055 CFM	607.54	
65-4350-6900 COLLECTION SYSTEM SERVICES/CHA				
DIG LINE	0069315-IN	Monthly Fee	129.03	
NAPA AUTO PARTS	126951	BLUE DEF 2.5 GAL	37.72	
VERIZON WIRELESS	9920359233	965494438 111022	41.56	
Total WASTEWATER EXPENDITURES:			22,307.40	
Total WASTEWATER FUND:			22,307.40	
WASTEWATER CAPITAL IMPROVE FND				
WASTEWATER CIP EXPENDITURES				
67-4350-7813 CAPITAL IMP PLAN(NO SHARING)				
COPY CENTER LLC	2426	HALF FOLD MAILERS WW	2,962.26	
Total WASTEWATER CIP EXPENDITURES:			2,962.26	
Total WASTEWATER CAPITAL IMPROVE FND:			2,962.26	
PARKS/REC DEV TRUST FUND				
PARKS/REC TRUST EXPENDITURES				
93-4900-5910 WARM SPRINGS PRESR-RESTORATION				
BLAINE COUNTY TREASURER	RPK057800200	WARM SPRINGS RANCH BLK 2	26.52	
BLAINE COUNTY TREASURER	RPK057800300	WARM SPRINGS RANCH BLK 3	2,281.58	
BLAINE COUNTY TREASURER	RPK057800400	WARM SPRINGS RANCH BLK 4	2,202.62	
BLAINE COUNTY TREASURER	RPK057800500	WARM SPRINGS RANCH BLK 5	2,281.58	
BLAINE COUNTY TREASURER	RPK057800600	WARM SPRINGS RANCH BLK 6	2,684.22	
BLAINE COUNTY TREASURER	RPK057800700	WARM SPRINGS RANCH BLK 7	17.42	
COPY & PRINT, L.L.C.	124533	POS-8583: POSTERS	149.94	
COPY CENTER LLC	2468	WSP INFO BOARDS	729.00	
Total PARKS/REC TRUST EXPENDITURES:			10,372.88	
Total PARKS/REC DEV TRUST FUND:			10,372.88	
DEVELOPMENT TRUST FUND				
DEVELOPMENT TRUST EXPENDITURES				
94-4900-8000 PEG GATEWAY MARRIOT AUTOGRAPH				
WHITE PETERSON	24892R 103122	GATEWAY HOTEL DEVELOPMENT PROPOSAL 103122	4,470.00	
94-4900-8005 WILSON CONSTR-460 N MAIN ST				
WILSON CONSTRUCTION	R 111422	SECURITY BOND RETURN	29,905.00	
94-4900-8090 BENOECHEA-191 N 3RD AVE #1188				
BENGOECHEA, LOWELL	R 111822	DEMOLITION BOND REFUND D22-009	18,000.00	
Total DEVELOPMENT TRUST EXPENDITURES:			52,375.00	
Total DEVELOPMENT TRUST FUND:			52,375.00	

Vendor Name	Invoice Number	Description	Net Invoice Amount	Purchase Order Number
Grand Totals:			423,282.14	

Report Criteria:
Invoices with totals above $0 included.
Paid and unpaid invoices included.
[Report].GL Account Number = "0110000000"-"9648008200","9910000000"-"9911810000"
Invoice Detail.Voided = No,Yes

City of Ketchum

December 5, 2022

Mayor Bradshaw and City Councilors
City of Ketchum
Ketchum, Idaho

Mayor Bradshaw and City Councilors:

Recommendation to Approve Snow Hauling Contract for Apollo Construction, LLC
(Apollo is replacing Rick's Excavation)

Recommendation and Summary
Staff is recommending the council approve the snow hauling contract and adopt the following motion:

"I move to authorize the Mayor to approve the contract for services with: "Apollo Construction, LLC."

The reasons for the recommendation are as follows:

- The City of Ketchum does not have the staff and equipment necessary to perform the snow hauling duties and meet the historical level of service.
- Standardized contracts provide an economical method of achieving the historical level of service while ensuring fairness amongst the service providers.

Introduction and History
Rick's Excavation is retiring from snow removal and Apollo Construction is taking his place.
The addition of this contract bares no impact on other snow removal contracts or the snow removal budget.
Currently, the City of Ketchum's Streets Division uses contracted snow haulers to remove snow from the right-of-way immediately after snowstorms greater than 3 inches. Doing so ensures that roadways are immediately passable and parking areas are clear while also providing greater visibility to all users.

Prior to 1996, the Street Division would plow snow on the first night of the storm. On the next night, City staff would start hauling snow away using both city-owned and contracted trucks. This process was less costly but considerably slower. During back-to-back storms, the Streets Division would only plow as the staff was unable to haul snow. As a result, the snow would pile up in town to the point where there would be little parking and very narrow travel lanes down each street.

In 1996, the city had a good snow year with several back-to-back storms which left the city core full of snow with little to no parking. The City Council wanted change and so approved funds to upgrade equipment, increase staff and utilize more contracted snow haulers. Today, the City uses up to 14 contract trucks to help haul snow while City staff plows. The contract allows the City to require that the trucks and drivers are safe, professional and follow a list of details specific to completing the snow hauling job safely and responsibly. Having contracts in place also guarantees that the City will not be paying varying hourly amounts to different contractors; all the contractors are on the same pay scale.

Analysis
As stated, the City started using snow hauling contracts to keep the pay and requirements equal for all contractors. For the coming year, the city will pay $95.00 per hour for a truck that holds between 14 and 16 cubic yards and $100.00 per hour for a truck that holds more than 16 cubic yards. The city also pays up to an hour travel time, per truck, per day. We are recommending an increase of $10.hr to align more closely with the valley's hauling prices. In addition to the above increase, we are recommending a $5.00 per hour fuel surcharge for the trucks until the fuel prices come back down. (Current contractor hauling prices are $125.00 per hour)

Financial Impact
The Streets Division Professional Services line item funds the contract snow haulers, flagging services and engineering services. This year $185,000 is budgeted for the line item. The minimal price change in this contract should not significantly affect this line item.

Sincerely,

Brian Christiansen
Director of Streets and Facilities

Attachments: Snow Hauling Contract and Purchase Order for Apollo Construction, LLC

Contract #23046

INDEPENDENT CONTRACTOR AGREEMENT #23046

(City of Ketchum/Apollo Construction, LLC)

THIS INDEPENDENT CONTRACTOR AGREEMENT is made and entered into as of this 5th day of December 2022, by and between THE CITY OF KETCHUM, an Idaho municipal corporation ("Ketchum") and APOLLO CONSTRUCTION, LLC, an Idaho corporation ("Contractor").

RECITALS

WHEREAS, Ketchum is a municipal corporation duly organized and existing under the laws of the State of Idaho, and

WHEREAS, Pursuant to Idaho Code §50-301 et seq., Ketchum is empowered to contract and be contracted with; and

WHEREAS, it is deemed in the best interest of Ketchum to contract with Contractor for certain snow hauling services as set forth in more detail herein below (the "Services"); and

WHEREAS, Ketchum finds that contracting with Contractor for performance of the Services shall conserve economic resources and improve snow removal throughout Ketchum in furtherance of the health, safety and welfare of the residents and visitors of Ketchum.

NOW, THEREFORE, for the consideration recited herein below, Ketchum and Contractor enter this Agreement according to the following terms and conditions:

1. Incorporation of Recitals. The Recitals set forth herein above are hereby incorporated into and made an integral part of this Agreement.

2. The Services. Contractor shall haul snow from the streets of Ketchum as follows:

   a. Contractor shall provide professionally trained and duly licensed drivers, and sage, Idaho-licensed, Idaho-registered, well-maintained trucks necessary to haul snow from ketchum streets designated by the Head of the ketchum Street Division or any other employee of Ketchum designated by such Division Head. Ketchum shall have no responsibility for the security or protection of, maintenance of or damage to, Contractor's supplies or equipment.

   b. **At all times while performing the Services, Contractor and its drivers shall obey all traffic laws, drive safely and professionally, and act in a polite professional manner. Under no circumstances while performing the Services shall Contractor or any of its drivers be under the influence of any alcohol or other legal or illegal drugs or substances which may impair their driving skills, reaction time or judgment.**

   c. Ketchum shall plow, collect and place the snow in Contractor's trucks.

   d. Contractor's drivers shall haul the snow in Contractor's trucks to a Ketchum designated snow storage site.

   e. Contractor's trucks shall use only biodegradable truck bed liner materials to provide for any non-stick surface.

   f. Contractor shall provide all tools, equipment, materials, and services to complete and perform the Services, including without limitation, fuel for Contractor's trucks and all maintenance and repair of Contractor's trucks.

   g. Ketchum shall make all reasonable efforts to work until all of the snow is hauled; however, Ketchum may allow its employees to take a break before all of the snow is hauled.

   h. Ketchum shall not provide meals or any benefits whatsoever to Contractor, its officers, directors, shareholders, members, managers, agents or employees at any time, including without limitation, during breaks.

   i. Contractor is solely responsible for freeing any of Contractor's trucks that become stuck.

3. Consideration. Ketchum shall pay Contractor the following consideration:
    a. FOR A TRUCK WITH A BED SIZE OF 14 to 16 cubic yards: NINETY-FIVE DOLLARS ($95) per hour.
    b. FOR A TRUCK WITH A BED SIZE OF 16 cubic yards or more: ONE HUNDRED DOLLARS ($100) per hour.
    c. Ketchum shall pay Contractor up to THIRTY (30) minutes each way for travel time to and from Ketchum, not to exceed one-hour total per truck per day.
    d. Ketchum shall only pay Contractor for time actually worked and not for breaks or down time due to any reason including without limitation, equipment failure, labor disputes, strikes, being stuck, adverse weather or traffic accidents.
    e. Contractor must submit a written bill to Ketchum prior to receiving any of the compensation due under this Agreement.

4. Waiver. If Contractor requests Ketchum's assistance in any matter such as truck or trailer repair or maintenance or dislodging any stuck truck and Ketchum is able and willing to assist Contractor, Contractor hereby agrees to hold Ketchum, its employees and elected officials harmless and waives, releases, acquits, and forever discharges and indemnifies Ketchum, its employees and elected officials from any and all actions, causes of action, claims, demands, damages, costs, loss of service, expenses and compensation, in any manner related to or arising from such assistance. Such assistance shall be purely voluntary, and this Paragraph 4 shall not create or imply the creation of any agreement or obligation on the part of Ketchum.

5. Time of Performance. Contractor shall provide the Services on an "on call" basis as designated by the Head of the Ketchum Street Division and shall complete such services in a professional and timely manner.

6. Term. This Agreement shall be effective as of the date first above written, and be in full force and effect until May 1, 2023, at which time it shall terminate and neither Party hereto shall have any continuing obligations to the other hereunder.

7. Independent Contractor. Ketchum and Contractor hereby agree that Contractor shall perform the Services exclusively as an independent contractor and not as employee or agent of Ketchum. The Parties do not intend to create through this Agreement any partnership, corporation, employer/employee relationship, joint venture or other business entity or relationship other than that of independent contractor. Contractor, its managers, members, directors, officers, shareholders, agents and employees shall not receive nor be entitled to any employment-related benefits from Ketchum including without limitation, workers compensation insurance, unemployment insurance, health insurance, retirement benefits or any benefit that Ketchum offers to its employees. Contractor shall be solely responsible for the payment of all payroll and withholding taxes for amounts paid to Contractor under this Agreement and for Contractor's payments for work performed in performance of this Agreement by Contractor's managers, members, directors, officers, shareholders, agents and employees; and Contractor hereby releases, holds harmless and agrees to indemnify Ketchum from and against any and all claims or penalties, including without limitation the 100% penalty, which in any manner relate to or arise from any failure to pay such payroll or withholding taxes.

8. Warranty. Contractor warrants that all equipment used to perform this Agreement will function safely, properly, and efficiently and that all services will be performed in a safe, professional and workmanlike manner. Contractor agrees and warrants that all of Contractor's drivers are duly licensed to and capable of operating the trucks contemplated in this Agreement safely and efficiently in adverse or extreme road and weather conditions and that Contractor and its drivers shall obey all traffic laws, drive safely and professionally, and act in a polite professional manner. Contractor warrants and agrees that under no circumstances while performing the Services shall Contractor or any of its drivers be under the influence of any alcohol or other legal or illegal drugs or substances which may impair their driving skills, reaction time or judgment.

9. Indemnification. Contractor agrees to indemnify and hold Ketchum harmless from and against all claims, suits, damages (including without limitation, damages to persons and property including deaths), costs, losses, and expenses, in any manner related to or arising from the acts or omissions of Contractor, its managers, members, directors, officers, shareholders, agents and employees.

10. Registration. Contractor agrees to maintain all registration, license and insurance as required by the laws and decisions of the State of Idaho for all trucks and trailers used in the performance of this Agreement throughout the term of this Agreement. Contractor shall furnish proof of said registration, license and insurance to Ketchum prior to performing any of the Services or being entitled to any pay there for.

11. Insurance. Contractor shall maintain public liability insurance in the amount of $500,000.00 and workers compensation insurance from an insurance carrier licensed to do business in the State of Idaho, and furnish proof of said insurance to Ketchum prior to performing any of the Services or being entitled to any pay there for.

12. Compliance with Laws/Public Records. Contractor, its managers, members, directors, officers, shareholders, agents and employees shall comply with all federal, state and local laws, rules and ordinances, including without limitation, the Department of Transportation's rules and regulations, 49 CFR Part 40 Drug Testing Program and the Omnibus Transportation Employee Testing Act of 1991. This Agreement does not relieve Contractor of any obligation or responsibility imposed upon Contractor by law. Without limitation, Contractor hereby acknowledges that all writings and documents, including without limitation email,

containing information relating to the conduct or administration of the public's business prepared by Contractor for City regardless of physical form or characteristics may be public records pursuant to Idaho Code Section 9-337 et seq. Contractor further acknowledges that, subject to certain limitations, the public may examine and take a copy of all such public writings and records. Accordingly, Contractor shall maintain such writings and records in such a manner that they may readily identified, retrieved, and made available for such inspection and copying.

13. Notice. All notices, requests, demands or other communication required or provided for under this Agreement, other than instructions given by Ketchum pursuant to Paragraph 2 herein above shall be in writing. Notices to Ketchum and the Contractor shall be addressed as follows:

KETCHUM:
City of Ketchum
PO Box 2315
Ketchum, ID 83340-2315

CONTRACTOR:
Apollo Construction, LLC
113 N 3rd St.
Bellevue, ID 83333

14. Non-Assignment. Contractor hereby acknowledges that Ketchum has agreed to enter this Agreement based in part on Contractor's unique skills and reputation for professional work. Accordingly, Contractor may not assign or transfer in any manner this Agreement or any of Contractor's right, title or interest in or to this Agreement without the prior written consent of Ketchum which may be withheld for any reason.

15. Amendments. This Agreement may only be changed, modified, or amended in writing executed by all parties.

16. Headings. The headings in the Agreement are inserted for convenience and identification only and are in no way intended to describe, interpret, define, or limit the scope, extent, or intent of this Agreement or any provision hereof.

17. Attorney Fees and Costs. In the event that either party hereto is required to retain the services of an attorney to enforce any of its rights hereunder, the non-prevailing party shall pay to the prevailing party all reasonable costs and attorney fees incurred in such enforcement, whether or not litigation is commenced and including reasonable costs and attorney fees on appeal.

18. No Presumption. No presumption shall exist in favor of or against any party to this Agreement as the result of the drafting and preparation of the document.

19. Governing Law. This Agreement shall be governed by the laws and decisions of the State of Idaho.

20. Entire Agreement. This Agreement contains the entire Agreement between the parties respecting the matters herein set forth and supersedes all prior Agreements between the parties hereto respecting such matter.

21. Execution and Fax Copies and Signatures. This Agreement may be executed simultaneously in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

22. Authority. The parties executing this Agreement warrant, state, acknowledge, and affirm that they have the authority to sign the same and to bind themselves to the terms contained herein.

IN WITNESS WHEREOF, the Parties execute this Agreement as of this 5th day of December 2022.

THE CITY OF KETCHUM,
An Idaho municipal corporation

By: _____
Neil Bradshaw, Mayor
City of Ketchum

Apollo Construction, LLC
An Idaho corporation

By: _____

Its: _____

ATTEST:

_____
Trent Donat, City Clerk
City of Ketchum

CITY OF KETCHUM

PO BOX 2315 * 191 5TH ST.* KETCHUM, ID 83340
Administration 208-726-3841 (fax) 208-726-8234

PURCHASE ORDER

BUDGETED ITEM? _x_ Yes ___ No

PURCHASE ORDER - NUMBER: 23046

To:	**Ship to:**
5932 APOLLO CONSTRUCTION LLC 113 N 3RDST BELLEVUE ID 83313	CITY OF KETCHUM PO BOX 2315 KETCHUM ID 83340

P. 0. Date	Created By	Requested By	Department	Req Number	Terms
11/21/2022	kchoma	kchoma		0	

Quantity	Description	Unit Price	Total
1.00	WINTER 22-23 SNOW HAULING SERVICES 01-4310-4200	$18,000.00	$18,000.00
		SHIPPING & HANDLING	0.00
		TOTAL PO AMOUNT	$18,000.00

Authorized Signature

City of Ketchum

November 30, 2022

Mayor Bradshaw and City Councilors
City of Ketchum
Ketchum, Idaho

Mayor Bradshaw and City Councilors:

Recommendation To Approve Purchase Order #23047 for Laptops from Dell computers

Recommendation and Summary

Staff is recommending the council adopt the following purchase order:

"I move to approve Purchase Order #23047 for laptops from Dell computers."

The reasons for the recommendation are as follows:

- Blaine County Ambulance District has agreed to fund the installation of rugged laptops in the 3 ambulances.

Introduction and History
The City of Ketchum provides contract ambulance service to the North portion of Blaine County. To improve data collection and patient reporting, the district has authorized installation of laptops in each ambulance. As we are doing the installations ourselves, the district asked us to purchase the equipment. The district will reimburse this purchase.

Sustainability Impact
No impact.

Financial Impact
This is no cost to the city as the ambulance district will reimburse the costs.

Attachments
PO 23047

CITY OF KETCHUM

PO BOX 2315 * 191 5TH ST. * KETCHUM, ID 83340
Administration 208-726-3841 (fax) 208-726-8234

PURCHASE ORDER

BUDGETED ITEM? ____ Yes ____ No

PURCHASE ORDER - NUMBER: 23047

To:	**Ship to:**
4888 DELL FINANCIAL SERVICES PO BOX 6547 CAROL STREAM IL 60197-6549	CITY OF KETCHUM PO BOX 2315 KETCHUM ID 83340

P. O. Date	Created By	Requested By	Department	Req Number	Terms
11/29/2022	bancona	bancona	Fire & Rescue	0	

Quantity	Description		Unit Price	Total
1.00	AMBULANCE LAPTOPS	42-4800-7450	9,222.79	9,222.79
		SHIPPING & HANDLING		0.00
		TOTAL PO AMOUNT		9,222.79

Authorized Signature

City of Ketchum

December 5, 2022

Mayor Bradshaw and City Councilors
City of Ketchum
Ketchum, Idaho

Mayor Bradshaw and City Councilors:

Adoption of Resolution 22-038 establishing
2023 Ketchum Planning and Zoning Commission Meeting Dates

Recommendation
Recommend that the City Council move to:

> Approve Resolution Number 22-038 setting the 2023 regular meeting dates of the Planning and Zoning Commission and authorizing the Mayor to sign said resolution

Introduction/History
Each year the City Council passes a resolution setting the dates for the regular Planning and Zoning Commission meetings.

Current Report
Attached is Resolution Number 22-038 setting the regular Planning and Zoning Commission meeting dates for 2023.

Financial Requirement/Impact
The City of Ketchum fiscal year 2022/2023 budget has appropriated $25,200 for compensation of Planning and Zoning Commission members for their time and expertise. This budgeted amount is adequate to cover expenses for the Commission in this Fiscal Year.

Attachments
Copy of Resolution 22-038

RESOLUTION NO. 22-038

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF KETCHUM, IDAHO, ESTABLISHING THE DATES FOR ALL REGULAR PLANNING AND ZONING COMMISSION MEETINGS FOR 2023.

WHEREAS, regular meetings of the Planning and Zoning Commission shall be held on the second and fourth Tuesday of each month at 4:30 p.m. at Ketchum City Hall unless such date is a holiday, in which case the meeting shall be held on the following Wednesday or Thursday; and,

WHEREAS, pursuant to Idaho Code § 67-2343(1), any public agency that holds meetings at regular intervals of at least once per calendar month scheduled in advance over the course of the year may satisfy this meeting notice by giving meeting notices at least once each year of its regular meeting schedule; and,

WHEREAS, the City Council has determined that listing all regular meetings of the Planning and Zoning Commission to be held in 2023 would be beneficial to the residents of and visitors to the City of Ketchum.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND CITY COUNCIL OF THE CITY OF KETCHUM, IDAHO that the regular meetings of the Planning and Zoning Commission for 2023 are as follows:

Tuesday January 10, 2023	**Tuesday, July 11, 2023**
Tuesday, January 24, 2023	**Tuesday, July 25, 2023**
Tuesday, February 14, 2023	**Tuesday, August 8, 2023**
Tuesday, February 28, 2023	**Tuesday, August 22, 2023**
Tuesday, March 14, 2023	**Tuesday, September 12, 2023**
Tuesday, March 28, 2023	**Tuesday, September 26, 2023**
Tuesday, April 11, 2023	**Tuesday, October 10, 2023**
Tuesday, April 25, 2023	**Tuesday, October 24, 2023**
Tuesday, May 9, 2023	**Tuesday, November 14, 2023**
Tuesday May 23, 2023	**Tuesday, November 28, 2023**
Tuesday, June,13, 2023	**Tuesday, December 12, 2023**
Tuesday, June 27,2023	**Wednesday, December 27, 2023**

This Resolution will be in full force and effect upon its adoption this 5th day of December 2022.

CITY OF KETCHUM, IDAHO

_____
Mayor Neil Bradshaw

ATTEST:

_____
Trent Donat
City Clerk

City of Ketchum

December 5, 2022

Mayor Bradshaw and City Councilors
City of Ketchum
Ketchum, Idaho

Mayor Bradshaw and City Councilors:

Adoption of Resolution 22-039 establishing
2023 Ketchum Historic Preservation Commission Meeting Dates

Recommendation
Recommend that the City Council move to:

> Approve Resolution Number 22-039 setting the 2023 regular meeting dates of the Historic Preservation Commission and authorizing the Mayor to sign said resolution

Introduction/History
Each year the City Council passes a resolution setting the dates for the regular Historic Preservation Commission meetings.

Current Report
Attached is Resolution Number 22-039 setting the regular Historic Preservation Commission meeting dates for 2023.

Financial Requirement/Impact
There is no financial impact.

Attachments
Resolution 22-039

RESOLUTION NO. 22-039

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF KETCHUM, IDAHO, ESTABLISHING THE DATES FOR ALL REGULAR HISTORIC PRESERVATION COMMISSION MEETING FOR 2023.

WHEREAS, regular meetings of the Historic Preservation Commission shall be held on the first Tuesday of the month at 4:30 PM at Ketchum City Hall unless such date is a holiday, in which case the meeting shall be held on the following day; and,

WHEREAS, pursuant to Idaho Code § 67-2343(1), any public agency that holds meetings at regular intervals of at least once per calendar month scheduled in advance over the course of the year may satisfy this meeting notice by giving meeting notices at least once each year of its regular meeting schedule; and,

WHEREAS, the City Council has determined that listing all regular and special meetings of the Historic Preservation Commission to be held in 2023 would be beneficial to the residents of and visitors to the City of Ketchum.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND CITY COUNCIL OF THE CITY OF KETCHUM, IDAHO that the regular and special meetings of the Historic Preservation Commission for 2023 are as follows:

Wednesday, January 4, 2023
Tuesday, February 7, 2023
Tuesday, March, 7, 2023
Tuesday, April, 4, 2023
Tuesday, May 2, 2023
Tuesday, June 6, 2023

Wednesday July 5, 2023
Tuesday, August 1, 2023
Wednesday, September 6, 2023
Tuesday, October 3, 2023
Tuesday, November 7, 2023
Tuesday, December 5, 2023

This Resolution will be in full force and effect upon its adoption this 5th day of December, 2022.

CITY OF KETCHUM, IDAHO

_____
Mayor Neil Bradshaw

ATTEST:

_____
Trent Donat
City Clerk

RESOLUTION NUMBER 22-040

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF KETCHUM, IDAHO, ESTABLISHING THE DATES FOR ALL REGULAR CITY COUNCIL MEETINGS FOR 2023.

WHEREAS the regular meetings of the Ketchum CITY COUNCIL shall be held on the first and third Mondays of each month at 4:00 p.m. at Ketchum City Hall unless such date is a holiday, in which the meeting shall be held on the following Tuesday; and

WHEREAS, pursuant to Idaho Code § 67-2343(1), any public agency that holds meetings at regular intervals of at least once per calendar month scheduled in advance over the course of the year may satisfy this meeting notice by giving meeting notices at least once each year of its regular meeting schedule: and

WHEREAS, the City Council has determined that listing all regular meetings to be held in 2023 would be beneficial to the residents of and visitors to the City of Ketchum.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND CITY COUNCIL OF THE CITY OF KETCHUM that the meetings of the City Council for 2023 are as follows:

Tuesday, January 3, 2023	Monday, May 1, 2023	Tuesday, September 5, 2023
Tuesday, January 17, 2023	Monday, May 15, 2023	Monday, September 18, 2023
Monday, February 6, 2023	Monday, June 5, 2023	Monday, October 2, 2023
Tuesday, February 21, 2023	Tuesday, June 20, 2023	Monday, October 16, 2023
Monday, March 6, 2023	Monday, July 3, 2023	Monday, November 6, 2023
Monday, March 20, 2023	Monday, July 17, 2023	Monday, November 20, 2023
Monday, April 3, 2023	Monday, August 7, 2023	Monday, December 4, 2023
Monday, April 17, 2023	Monday, August 21, 2023	Monday, December 18, 2023

This Resolution will be in full force and effect upon its adoption this 5th day of December 2022.

CITY OF KETCHUM, IDAHO

_____

Mayor Neil Bradshaw

ATTEST:

_____

Trent Donat, City Clerk

City of Ketchum

December 5, 2022

Mayor Bradshaw and City Councilors
City of Ketchum
Ketchum, Idaho

Mayor Bradshaw and City Councilors:

Recommendation to approve Task Order #4 with Superbloom Landscape Architects for Professional Services to advance the Warm Springs Preserve Master Plan

Recommendation and Summary

Staff is recommending approval of Task Order #4 with Superbloom Landscape Architects to complete the final phase of the Warm Springs Preserve Master Plan. In October, the Council approved Task Order #3, which consisted of the refinement of the concept plan (entry/parking lot, restroom/storage building and the existing hydraulic model). Those deliverables were shared during a public open house and joint meeting of the City Council and Planning/Zoning Commission. The Wood River Land Trust has agreed to fund a portion of this task order as outlined in the financial section below.

"I move to approve Task Order #4 with Superbloom Landscape Architects."

The reasons for the recommendation are as follows:

- This task order will complete the following items: illustrated Final Master Plan; proposed Grading Design & Hydraulic Model; Ecological Design Visuals to explain project objectives relative to fish, water and vegetation; Conceptual Soils, Weed, and Vegetation Management Plans; Amenities & Donor Design Refinements; Graphic 3d Model; Plant Palettes with Planting Zones (developed with North Fork Natives); and budget estimates for construction.
- The city completed a competitive solicitation for proposals and Superbloom was the unanimous recommendation by the review committee.
- Superbloom has completed similar projects for other public entity clients in the west. Their partnering team (Rio Applied Science) has completed past water engineering work on the Warm Springs Preserve site as well as having significant experience in the Wood River area.

Introduction & History

On April 14th, the city officially acquired the Warm Springs Preserve via private donations. The public was informed early in the fundraising process that the city would complete a detailed master planning process to guide future improvements to the property. The city recently received $1 million from the Spur Foundation to fund the implementation of the master plan.

During the RFP process, the city sought to engage a professional firm or collection of resources (team) to (1) create a long-term master plan for the Warm Springs Preserve, and (2) serve as architect of record in the development of construction drawings or bid documents to implement the master plan.

The master plan will address the location of the following passive green space amenities:

- Pedestrian connection points to adjacent neighborhood, River Run Lodge and Warm Springs Village
- Walking trails
- Public restroom/maintenance facility /water bottle refill station
- Wayfinding signage
- Donor recognition elements
  - History of the property/donor wall
  - Picnic tables
  - Benches

The plan will also address the following improvement areas:

- Re-vegetation of portions of property from water intensive grass to native grasses
- Warm Springs Creek habitat restoration and floodplain conveyance improvements
- Replacement of irrigation system and recommission intake/holding pond area

Significant public engagement will occur throughout the process with the City Council as the final approval body of the plan. City staff will lead public outreach efforts in concert with the design team.

Sustainability Impact

The master plan will address the following elements:

- New irrigation system to assist with water efficiency
- Revegetation of certain areas from water consumptive grasses to more native species
- Stream restoration to assist with water quality and wildlife habitat
- Flood conveyance improvements

Financial Requirement/Impact

Task Order #4 is proposed to be a not-to-exceed amount of $62,515. The Wood River Land Trust has agreed to fund $29,055 of the task order as it relates to the proposed creek/habitat restoration work. Sufficient funds exist in the Warm Springs Preserve Trust Account from donations.

Attachments

Task Order #4

SUPERBLOOM

TASK ORDER #4

November 30, 2022

Project: WARM SPRINGS PRESERVE | Ketchum, ID

Scope of Work: This proposal outlines the anticipated goals, services, meetings and deliverables for the third public touch point (heretofore "Touch Point No. 3") for the Warm Springs Preserve project. The scope of this proposal includes only those deliverables and meetings expressly listed herein. The primary intent of this proposal is to further the analysis and design efforts for the next phase of the Master Planning process.

Client: City of Ketchum, Idaho ("The City"), PO Box 2315, Ketchum, ID 83340

04 Touch Point #3 - Final Conceptual Master Plan (8-10 weeks)

Budget/Fee

$62,515
hourly,
not-to-exceed

This proposal is for Task Order #4, which is a continuation of prior work refining the master plan and developing focus areas of the design in greater detail. This task order will synthesize feedback from the previous series of meetings and analysis to develop a final conceptual master plan for review and approval by the City and Wood River Land Trust. We will develop initial proposed grading and hydraulic models which will be translated into a graphic 3d model that incorporates amenity and donor design elements for approval to proceed to the Schematic Design phase (future contract).

Meetings/Site Visits

It is anticipated the Client will make necessary arrangements to meet with stakeholders and obtain site access as needed. This Task Order includes:

- **1 Full-Team Site Visit for Public Meeting #3 and Planning & Zoning and City Council Joint Session - Superbloom x Rio x Eco (2 working days)**
  Scheduled: Final Date TBD, anticipated early- to mid-February 2023
- **5-6 Virtual Client Meetings**

Deliverables

- Illustrated Final Master Plan
- Proposed Grading Design & Hydraulic Model
- Ecological Design Visuals to explain project objectives relative to fish, water and vegetation
- Conceptual Soils, Weed, and Vegetation Management Plans
- Amenities & Donor Design Refinements
- Graphic 3d Model
- Plant Palettes with Planting Zones (developed with North Fork Natives)
- Budget updates
- Presentation boards for Public Meeting #3 (to be printed by the Client)
- Slide deck for Joint City Council and/or P&Z Meeting #3

Total Fee (Task Order #4)	**$62,515 hourly, NTE***

**includes fees for Rio / Ecosystem Sciences scope, under subconsultant agreement with Superbloom (PLEASE SEE ATTACHED for Breakdown).*
***fee includes estimated expenses for site visits described herein, to be billed at-cost; large-format printing also available upon Client's written request to be billed at-cost.*

23 Lincoln Street, #200 Denver, CO 80203
720.440.2668 | superbloom.net

This exhibit is attached to and made a part of the Client's master agreement dated June 15, 2022 between the Client and Superbloom for the purposes of providing professional landscape services. Additional services or hours beyond above noted hours will be billed at the following rates only with prior approval from Client:

Standard Billing Rates, 2023 (please note new billing rates, effective January 1, 2023)

Team billing rates below, provided for reference only. Rates subject to change annually. Superbloom will notify Client of updates 30 days prior to change.

Superbloom	
Principal/Landscape Architect	$200.00/hr
Senior Associate	$150.00/hr
Associate	$135.00/hr
Senior Project Leader	$125.00/hr
Project Leader	$115.00/hr
Designer	$100.00/hr
Intern	$75.00/hr

Rio ASE	
Senior Principal Geomorphologist	$150
Principal Geomorphologist	$145
Principal Engineer	$145
Staff Engineer II	$115
Staff Engineer I	$95-110
Office Manager	$85

Reimbursable Expenses

Expenses are included in the above fees except where noted.

IN WITNESS WHEREOF, the Parties have executed this Agreement.

By: Diane Lipovsky 11/30/22
Stacy Passmore or Diane Lipovsky, Principal

Studio Superbloom, LLC

By: _____
(signature)

Printed Name/Title: _____

By signing, Client acknowledges that they have read and understand this proposal, any additional scope of work and material selections and all documents referenced therein, along with the terms and conditions attached hereto. Client agrees that upon signature this Proposal becomes the sole contract between Client and Superbloom. By signing, Client confirms that it is the owner or duly authorized representative of the owner, of the property where work is to be performed and has full, binding, legal authority to enter into this Agreement.

Estimated Labor & Expenses
SUPERBLOOM, Rio/ASE, and Ecosystem Sciences

Task Order #4

Warm Springs Preserve - Public Touchpoint 3

Scope/Schedule/Budget Summary

		Task	Start	End	Deliverable	Superbloom	Rio ASE	ESS	Total
4	.01	Project Mgt	11/20/22	2/1/23	Monthly invoices	$1,600	$1,270	$135	$3,005
4	.02	Proposed Grading/Design	11/20/22	12/15/23	Grading for design	$1,200	$6,795	$0	$7,995
4	.03	Proposed Hydraulic Model	11/20/22	12/31/22	Rasters	$200	$4,045	$0	$4,245
4	.04	Design Revisions and Sheets	11/20/22	12/31/22	Design Sheets	$900	$1,755	$750	$3,405
4	.05	Ecological Design/Visuals (Indicator Species, Life Cycles, etc.)	11/20/22	12/21/22	Drawings	$1,200	$290	$3,240	$4,730
4	.06	Soils,Weed Management & Veg Plan	11/20/22	12/31/22	Drawings	$1,500	$290	$2,000	$3,790
4	.07	Graphic 3D Model	12/15/22	1/15/22	3D Model & Still Images	$4,200	$0	$0	$4,200
4	.08	Plant Palettes for Planting Zones (talk w/North Fork Natives)	1/2/23	2/1/23	Image Board	$2,000	$0	$2,110	$4,110
4	.09	Amenities & Donor Design	12/1/22	2/1/23	Drawings & 3D views	$2,120	$0	$0	$2,120
4	.10	Presentation Prep	1/15/23	2/1/23	Slide Deck	$4,750	$0	$0	$4,750
4	.11	Cost Estimate	1/15/23	2/1/23	Spreadsheet	$1,390	$500	$0	$1,890
4	.12	Phasing & VE discussion	1/15/23	2/1/23	Diagrams	$1,260	$0	$0	$1,260
4	.13	In-Person Meetings	1/1/23	2/1/23	Meeting notes	$6,400	$3,565	$0	$9,965
4	.14	Virtual Meetings	1/1/23	2/1/23	Meeting notes	$2,200	$870	$810	$3,880
					Labor Totals:	**$30,920**	**$19,380**	**$9,045**	**$59,345**

Purpose of Expense	Affiliation	Units	Rates	Amount
SUPERBLOOM				
Airfare, estimated (1 trip, 2 people) (at cost)	Superbloom	2	$500.00	$1,000
Lodging (2 nights/2 people)	Superbloom	4	$200.00	$800
Travel, estimated (ride share)	Superbloom	4	$50.00	$200
Meals (3 days/2 people)	Superbloom	6	$90.00	$540
			Expenses Subtotal (Superbloom)	$2,540.00
RIO/ECOSYSTEM SCIENCES				
Mileage, Estimated (at IRS rates)	Rio	400	$0.63	$250
Meals (2 days/2 people)	Rio	2	$90.00	$180
Lodging (1 night/2 people)	Rio	1	$200.00	$200
			Expesnses Subtotal (Rio/ESS)	$630.00
			Estimated Expenses (billed at cost)	**$3,170**

TOTALS BY TEAM, with expenses	Superbloom	Rio/ASE	Ecosystem Sciences
	$33,460	$19,695	$9,360

Task Order #4 Total	**$62,515**

SUPERBLOOM
23 Lincoln Street, #200 Denver, CO 80203
720.440.2668 | superbloom.net

City of Ketchum

December 5, 2022

Mayor Bradshaw and City Councilors
City of Ketchum
Ketchum, Idaho

Mayor Bradshaw and City Councilors:

Recommendation to Hold First Reading of Ordinance #1243 Amending Chapter 13.04.080 (BUILDING SEWERS AND SERVICE CONNECTIONS) of the Ketchum Municipal Code

Recommendation and Summary

Staff is recommending approval of the first reading of Ordinance #1243 which seeks to update the requirements of sewer and service connections.

"I move to approve the first reading of Ordinance #1243."

The reasons for the recommendation are as follows:

- Current Code requires every building to have a separate and independent sewer service connection.
- This amendment will authorize an exception for approved accessory dwelling units allowing them to be connected to the sewer service of the primary residence on the property.

Sustainability Impact: None

Financial Requirement/Impact: None

Attachments

Ordinance #1243

KETCHUM ORDINANCE NO. 1243

AN ORDINANCE OF THE CITY OF KETCHUM, BLAINE COUNTY, IDAHO, AMENDING TITLE 13, CHAPTER 13.04., BUILDING SEWERS AND SERVICE CONNECTIONS, TO UPDATE THE REQUIREMENTS OF SEWER AND SERVICE CONNECTIONS OF SUCH CHAPTER; AND PROVIDING AN EFFECTIVE DATE.

A. The City has determined that an update and revision to Chapter 13.04.080 of Title 13 are warranted to clarify when a sewer and service connection is required for an approved accessory dwelling unit or a building in the rear of another building.

NOW, THEREFORE, BE IT ORDAINED by the Mayor and City Council of the city of Ketchum, Blaine County, Idaho:

SECTION 1: That Section 13.04.080 of the Ketchum City Code be amended as follows:

13.04.080: Building Sewers and Service Connections

F. A separate and independent building sewer and service connection shall be provided for every building; except where one building is an approved accessory dwelling unit on the same property; or except where one building stands at the rear of another on an interior lot and no separate sewer is available or can be constructed to the rear building through an adjoining alley, court, yard or driveway, the building sewer from the front building may be extended to the rear building and the whole considered as one building sewer.

SECTION 2: **EFFECTIVE DATE.** This ordinance shall be in full force and effect after its passage, approval and publication, according to law.

PASSED BY the City Council of the City of Ketchum, Idaho, this ___ day of _____, 2022.

APPROVED BY the Mayor of the City of Ketchum, Idaho, this ___ day of _____, 2022.

_____
Neil Bradshaw, Mayor

ATTEST:

_____
Trent Donat, City Clerk

ek/W:\Work\K\Ketchum, City of 24892\Ordinances\Drafts\2022\Ordinance Changing Requirements for Sewer Connections.docx

City of Ketchum

December 5, 2022

Mayor Bradshaw and City Councilors
City of Ketchum
Ketchum, Idaho

Mayor Bradshaw and City Councilors:

Recommendation to Receive and File FY22 Audited Financial Statements

Recommendation and Summary
Staff is recommending the council approve the receipt of the FY22 audited financial statements using the following motion:

"I move to approve the FY22 audited financial statements and file in the city's permanent records."

The reason for the recommendation is as follows:

- Section 50-1010 of the Idaho Statutes requires the Council to cause a full and complete audit of the financial statements of the City each fiscal year.

Introduction and History
The City of Ketchum is required under Section 50-1010 of the Idaho Statutes to conduct a "full and complete audit of the financial statements" each fiscal year. Workman & Company was retained to serve as the external auditing professional and has completed the approved scope of work.

Sustainability Impact
There is no sustainability impact arising from this action.

Financial Impact
No fiscal impact.

Attachments
Management Letter
Audited Financial statements

WORKMAN & COMPANY | Office of Accounting

2190 Village Park Avenue, Suite 300 • Twin Falls, ID 83301 • 208.733.1161 • Fax: 208.733.6100

November 4, 2022

To the City Council
City of Ketchum, Idaho

We have audited the financial statements of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of the City of Ketchum, Idaho, for the year ended September 30, 2022. Professional standards require that we provide you with information about our responsibilities under generally accepted auditing standards (and, if applicable, *Government Auditing Standards* and the Uniform Guidance), as well as certain information related to the planned scope and timing of our audit. We have communicated such information in our letter to you dated September 6, 2022. Professional standards also require that we communicate to you the following information related to our audit.

Significant Audit Findings

Qualitative Aspects of Accounting Practices

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by the City of Ketchum, Idaho, are described in Note 1 to the financial statements. No new accounting policies were adopted, and the application of existing policies was not changed during 2022. We noted no transactions entered into by the City of Ketchum, Idaho during the year for which there is a lack of authoritative guidance or consensus. All significant transactions have been recognized in the financial statements in the proper period.

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected. The most sensitive estimate affecting the City of Ketchum, Idaho's financial statements was:

> Management's estimate of the useful lives of fixed assets is based on historical data. We evaluated the key factors and assumptions used to develop the useful lives of fixed assets in determining that it is reasonable in relation to the financial statements taken as a whole.

Certain financial statement disclosures are particularly sensitive because of their significance to financial statement users. The most sensitive disclosure affecting the financial statements was:

> The disclosure of Employees' Retirement System in Note 9 to the financial statements is based on information provided by Idaho's Public Employees Retirement System (PERSI) and is relied upon in these financial statements.

The financial statement disclosures are neutral, consistent, and clear.

Difficulties Encountered in Performing the Audit

We encountered no significant difficulties in dealing with management in performing and completing our audit.

Corrected and Uncorrected Misstatements

Professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that are clearly trivial, and communicate them to the appropriate level of management. Management has corrected all such misstatements. In addition, none of the misstatements detected as a result of audit procedures and corrected by management were material, either individually or in the aggregate, to each opinion unit's financial statements taken as a whole.

Disagreements with Management

For purposes of this letter, a disagreement with management is a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditor's report. We are pleased to report that no such disagreements arose during the course of our audit.

Management Representations

We have requested certain representations from management that are included in the management representation letter dated November 4, 2022.

Other Audit Findings or Issues

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to retention as the City of Ketchum, Idaho's auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our retention.

Other Matters

We applied certain limited procedures to Management's Discussion and Analysis (MD&A) and Budgetary Information, which are required supplementary information (RSI) that supplements the basic financial statements. Our procedures consisted of inquiries of management regarding the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We did not audit the RSI and do not express an opinion or provide any assurance on the RSI.

We were engaged to report on the schedules of bond future principle and interest, which accompany the financial statements but are not RSI. With respect to this supplementary information, we made certain inquiries of management and evaluated the form, content, and methods of preparing the information to determine that the information complies with accounting principles generally accepted in the United States of America, the method of preparing it has not changed from the prior period, and the information is appropriate and complete in relation to our audit of the financial statements. We compared and reconciled the supplementary information to the underlying accounting records used to prepare the financial statements or to the financial statements themselves.

Restriction on Use

This information is intended solely for the information and use of the City Council and management of the City of Ketchum, Idaho and is not intended to be, and should not be, used by anyone other than these specified parties.

Very truly yours,

Workman & Company

WORKMAN AND COMPANY
Certified Public Accountants
Twin Falls, Idaho

CITY OF KETCHUM, IDAHO

Financial Statements

Year Ended September 30, 2022

CITY OF KETCHUM, IDAHO

Financial Statements
For the year ended September 30, 2022

Table of Contents

WORKMAN & COMPANY | Office of Accounting

2190 Village Park Avenue, Suite 300 • Twin Falls, ID 83301 • 208.733.1161 • Fax: 208.733.6100

INDEPENDENT AUDITOR'S REPORT

November 4, 2022

To the City Council
City of Ketchum, Idaho
Ketchum, Idaho

Opinions

We have audited the accompanying financial statements of the governmental activities, the business-type activities, the aggregate discretely presented component unit, each major fund, and the aggregate remaining fund information of the City of Ketchum, Idaho, as of and for the year ended September 30, 2022, and the related notes to the financial statements, which collectively comprise the City of Ketchum, Idaho's basic financial statements as listed in the table of contents.

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities, the business-type activities, the aggregate discretely presented component unit, each major fund, and the aggregate remaining fund information of the City of Ketchum, Idaho, as of September 30, 2022, and the respective changes in financial position, and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinions

We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the City of Ketchum, Idaho, and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the City of Ketchum, Idaho's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditor's Responsibility

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with generally accepted auditing standards will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgement made by a reasonable user based on the financial statements.

Report Continued—

In performing an audit in accordance with generally accepted auditing standards, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the City of Ketchum, Idaho's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the City of Ketchum, Idaho's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planning scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, budgetary comparison information, and post-employment information on pages 3–11 and 36–39 and 40 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the City of Ketchum, Idaho's basic financial statements. The combining and individual nonmajor fund financial statements and long-term debt payment schedules on pages 41-46 are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The combining and individual nonmajor fund financial statements and long-term debt payment schedules are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the combining and individual nonmajor fund financial statements are fairly stated in all material respects in relation to the basic financial statements as a whole.

Workman & Company

Certified Public Accountants
Twin Falls, Idaho

November 4, 2022

The City of Ketchum, Idaho's general purpose external financial statements are presented in this report. The components of the general purpose external financial statements include:

- Management's Discussion and Analysis (MD&A)
- Basic Financial Statements
- Other Required Supplementary Information (RSI).

FINANCIAL HIGHLIGHTS

- The total of all fund assets of the City of Ketchum exceeded liabilities at the close of the most recent fiscal year by $ 51,914,692. Of that amount, $ 18,601,208 (unrestricted net position) may be used to meet future obligations and programs.
- The Local Option Tax (LOT) receipts increased $ 677,486 from the previous year. This increase is due in part to the continued economic rebound from the Corona Virus in the current year. This Special Revenue Fund received an amount of, $6,849,285 in the current year.
- Governmental Fund Revenues were $ 22,225,299 and expenditures were $20,843,252. This increase in revenues over expenditures was mostly due to the receipt of donations for the City's Warm Springs Project.

OVERVIEW OF THE FINANCIAL STATEMENTS

This discussion and analysis is intended to serve as an introduction to the City of Ketchum's basic financial statements. The City's basic financial statements comprise three components: 1) government-wide financial statements, 2) fund financial statements, and 3) notes to the financial statements. This report also contains other supplementary information in addition to the basic financial statements themselves.

Government-wide Financial Statements

Government-wide financial statements provide both long-term and short-term information about the City's overall financial condition. Changes in the City's financial position may be measured over time by increases and decreases in the Statement of Net Position. Information on how the City's net position changed during the fiscal year is presented in the Statement of Activities.

Fund Financial Statements

Fund financial statements focus on individual parts of the City, reporting the City's operations in more detail than the government-wide financial statements. Fund financial statements include the statements for governmental and proprietary funds. Financial statements for the City's component unit are also presented.

Continued...

Table 1: Major Features of the Basic Financial Statements

	Government-wide Financial Statements	Fund Financial Statements	
		Governmental Funds	*Proprietary Funds*
Scope	Entire City government and the City's component unit.	Activities of the City that are not proprietary.	Activities of the City that are operated similar to private businesses
Required financial statements	* Statement of net position * Statement of activities	* Balance sheet * Statement of revenues, expenditures, and changes in fund balances	* Statement of net position * Statement of revenues, expenses, and changes in net position * Statement of cash flows
Accounting basis and measurement focus	Accrual accounting and economic resources focus	Modified accrual accounting and current financial resources focus	Accrual accounting and economic resources focus
Type of asset/liability information	All assets and liabilities, both financial and capital, and short-term and long-term	Only assets expected to be used up and liabilities that come due during the year or soon thereafter; no capital assets	All assets and liabilities, both financial and capital, and short-term and long-term
Type of inflow/outflow information	All revenues and expenses during the year, regardless of when cash is received or paid	* Revenues for which cash is received during or soon after the end of the year * Expenditures when goods or services have been received and payment is due during the year or soon thereafter	All revenues and expenses during the year, regardless of when cash is received or paid

Notes to the Financial Statements

Notes to the financial statements provide additional information that is essential to the full understanding of the data provided in the government-wide and fund financial statements.

Refer to Note 1 of the financial statements for more detailed information on the elements of the financial statements. Table 1 above summarizes the major features of the basic financial statements.

CONDENSED FINANCIAL INFORMATION

Condensed Statement of Net Position

The largest component (Total $51,914,692) of the City's net position (61.4%) reflects its investment in capital assets (e.g. land, infrastructure, buildings, equipment, and others), less any related debt outstanding that was needed to acquire or construct the assets. The City uses these capital assets to provide services to the citizens and businesses in the City; consequently, this net position amount is not eligible for future spending. Restricted net position totals $ 4,188,860. Restricted net position represents resources that are subject to external restrictions, constitutional provisions, debt service requirements, or enabling

Continued...

legislation on how they can be used. The remaining portion of net position is unrestricted, which can be used to finance government operations.

Table 2 below presents the City's condensed statement of net position as of September 30, 2022, derived from the government-wide Statement of Net Position.

Table 2: Condensed Statement of Net Position
As of September 30, 2022

	Governmental Activities	Business-type Activities	Total Primary Government	Component Unit - Urban Renewal Agency
Current and other assets	$ 15,663,717	$ 6,815,909	$ 22,479,626	$ 3,785,640
Capital assets	34,524,432	12,799,544	47,323,976	5,106,516
Total Assets	50,188,149	19,615,453	69,803,602	8,892,156
Deferred Outflows	1,205,848	360,188	1,566,036	
Current Liabilities	754,628	413,490	1,168,118	475,478
Long-term liabilities	14,014,918	4,258,016	18,272,934	3,502,169
Total Liabilities	14,769,546	4,671,506	19,441,052	3,977,647
Deferred Inflows	10,699	3,195	13,894	
Net assets:				
Invested in capital assets net of related debt	22,909,647	8,940,470	31,850,117	0
Restricted	1,251,367	212,000	1,463,367	1,261,687
Unrestricted	12,452,738	6,148,470	18,601,208	3,652,822
Total Net Position	$ 36,613,752	$ 15,300,940	$ 51,914,692	$ 4,914,509

Condensed Statement of Activities

Table 3 below presents the City's condensed statement of activities for the fiscal year ended September 30, 2022, as derived from the government-wide Statement of Activities. Over time, increases and decreases in net position measure whether the City's financial position is improving or deteriorating. During the fiscal year, the net position of the governmental activities increased by $ 4,336,631 or 11.8% percent, the net position of the business-type activities increased by $ 1,738,894 or 13.8%, and the net position of the City's Component Unit (Urban Renewal Agency) increased $ 1,605,876 or 48.5%.

Continued...

Table 3: Condensed Statement of Activities
As of September 30, 2022

	Governmental Activities	Business-type Activities	Total Primary Government	Component Unit Urban Renewal Agency
Revenue:				
Program revenues				
Charges for services	$ 4,939,856	$ 5,979,057	$ 10,918,913	$ 36,000
Capital grants /contributions	1,550,661		1,550,661	
Total program revenues	6,490,517	5,979,057	12,469,574	36,000
General revenues				
Taxes	12,293,161		12,293,161	2,116,188
Franchise, licenses, permits	1,465,717		1,465,717	
State shared revenues	1,732,909		1,732,909	
Interest	83,266	29,455	112,721	18,534
Gain (Loss) on sale of assets	89		89	
Other revenues (Losses)	(189,361)	(21,631)	(210,992)	1,920
Total general revenues	15,385,781	7,824	15,393,605	2,136,642
Total revenues	21,876,298	5,986,881	27,863,179	2,172,642
Program expenses:				
General government	5,675,427		5,675,427	490,063
Public safety	4,957,216		4,957,216	
Streets	2,156,796		2,156,796	
Parks and recreation	492,231		492,231	
Transportation	3,087,000		3,087,000	
Affordable Housing	845,011		845,011	
Wastewater		2,295,296	2,295,296	
Water		1,782,675	1,782,675	
Interest, long-term debt	325,986	170,016	496,002	76,703
Total program expenses	17,539,667	4,247,987	21,787,654	566,766
Change in net position	4,336,631	1,738,894	6,075,525	1,605,876
Beginning net position	32,277,121	13,562,046	45,839,167	3,308,633
Ending net position	$ 36,613,752	$ 15,300,940	$ 51,914,692	$ 4,914,509

Continued...

Program Expenses and Revenues for Governmental Activities

Table 4 below presents program expenses and revenues for governmental activities. Overall, program revenues were not sufficient to cover program expenses for governmental activities. The net program expenses of these governmental activities were therefore supported by general revenues, mainly taxes.

Table 4: Program Expenses and Revenues for Government Activities For the Fiscal Year Ended September 30, 2022

	Program Expenses	Program Revenues	Net Expense (Revenues) (a)
General government	$ 5,675,427	$ 4,698,096	$ (977,331)
Public safety	4,957,216	238,959	(4,718,257)
Streets	2,156,796		(2,156,796)
Parks and Recreation	492,231	1,205,530	713,299
Transportation	3,087,000		(3,087,000)
Affordable Housing	845,011	347,932	(497,079)
Interest on long-term debt	325,986		(325,986)
Totals	$ 17,539,667	$ 6,490,517	$ (11,049,150)

(a) Net Program Expenses are mainly supported by taxes.

Program Expenses and Revenues for Business-type Activities

Table 5 below presents program expenses and revenues for business-type activities. Program revenues generated from business-type activities were sufficient to cover program expenses.

Table 5: Program Expenses and Revenues for Business-type Activities For the Fiscal Year Ended September 30, 2022

City Programs	Program Expenses	Program Revenues	Net Program Expenses (Revenues)
Wastewater	$ 2,295,296	$ 3,521,564	$ 1,226,268
Water	1,782,675	2,457,493	674,818
Interest on long-term debt	170,016		(170,016)
Totals	$ 4,247,987	$ 5,979,057	$ 1,731,070

Continued...

The City of Ketchum, Idaho adopts an annual budget. A budgetary comparison statement of Governmental Funds is provided below. In total, any negative variances are insignificant.

BUDGET VARIANCES IN THE GENERAL FUND

The changes made to the budget format have moved the City into compliance with the budget standards developed by the Government Finance Officers of America (GFOA). An analysis of budget variances this year shows that more assets were budgeted for expenditure than were expended during the current operating cycle.

Table 6: Analysis of Significant Budget Variances
for Major Governmental Funds
For the Fiscal Year Ended September 30, 2022

	Actual Amounts	Original Budget Amounts	Final Budget Amounts	Positive (Negative)
Revenues:				
Taxes	$ 11,643,730	$ 8,849,368	$ 9,215,615	$ 2,428,115
Franchises, licenses, permits	1,465,717	670,969	1,010,969	454,748
State of Idaho	1,841,503	1,678,939	1,678,939	162,564
Fees, fines, & charges for services	4,654,951	3,576,498	4,157,958	496,993
Miscellaneous	522,281	772,840	797,840	(275,559)
Total Revenue	20,128,182	15,548,614	16,861,321	3,266,861
Expenditures:				
General Government	4,651,658	5,022,699	5,528,222	876,564
Public Safety	4,622,468	4,525,793	4,654,730	32,262
Streets	1,823,218	1,891,540	1,891,540	68,322
Capital outlay	4,556,953	6,849,714	8,331,323	3,774,370
Parks and Recreation	514,798	607,505	607,505	92,707
Transportation	3,087,000	2,660,753	3,087,000	0
Affordable Housing	75,000	75,000	75,000	0
Debt Service	0	0	0	0
Total Expenditures	19,331,095	21,633,004	24,175,320	4,844,225
Excess Revenues over (Expenditures)	$ 797,087	$ (6,084,390)	$ (7,313,999)	$ 8,111,086

Continued...

Table 7: Comparison of Statement of Net Position
As of September 30, 2022 and 2021

	2022	2021	Percentage Change
Current Assets	$ 22,479,626	$ 19,642,982	14.4410%
Capital Assets	47,323,976	44,209,180	7.0456%
Total Assets	69,803,602	63,852,162	9.3207%
Deferred Outflow of Resources	1,566,036	892,073	75.5502%
Current Liabilities	1,168,118	904,326	29.1700%
Long Term Liabilities	18,272,934	15,955,315	14.5257%
Total Liabilities	19,441,052	16,859,641	15.3112%
Deferred Inflow of Resources	13,894	2,045,427	-99.3207%
Net Position:			
Invested in Capital Assets net of related debt	31,850,117	27,956,897	13.9258%
Restricted	1,463,367	4,188,860	-65.0653%
Unrestricted	18,601,208	13,693,410	35.8406%
Total Net Position	$ 51,914,692	$ 45,839,167	13.2540%

OVERALL ANALYSIS

Financial highlights for the City as a whole during the fiscal year ended September 30, 2022 show the assets of the City exceeded its liabilities (net position) at the close to the fiscal year by $51,914,692 (for governmental activities $36,613,752, for the business-type activities $15,300,940). Additionally, the City's total net position increased during the year by $6,075,525. The net position of the governmental activities increased by $ 4,336,631, while the net position of the business-type activities increased by $ 1,738,894.

Continued...

**Table 8: Changes in Fixed Assets
for All Funds
For the Fiscal Year Ended September 30, 2022**

	Beginning Balance	Additions	Deletions	Ending Balance
Land and Infrastructure	$ 11,859,002	2,009,241		$ 13,868,243
Buildings and Improvements	36,148,301	12,897,411		49,045,712
Vehicles and Equipment	9,505,930	1,050,358		10,556,288
Construction in Progress	12,467,035	749,518	(12,129,917)	1,086,636
Totals	69,980,268	16,706,528	(12,129,917)	74,556,879
Accumulated Depreciation	(25,771,087)	(1,461,816)	0	(27,232,903)
Net Book Value	$ 44,209,181			$ 47,323,976

CAPITAL ASSET AND LONG-TERM, ACTIVITY

Capital Asset Activity

At September 30, 2022, the City reported $34,524,432 in capital assets for governmental activities and $12,799,544 in capital assets for business-type activities.

Long-term Debt Activity

See Note 4 of the financial statements for information on the City's long-term debt.

FUNDS ANALYSIS

Funds that experienced significant changes during the year are as follows:

Governmental funds

As of the close of the fiscal year, the City's governmental funds reported a combined ending fund balance of $ 15,295,351. The fund balance increased $ 1,385,047 during the fiscal year. The increase is the result of $22,225,299 of revenues reduced by $20,843,252 of expenditures. The increase in fund balance follows a fund balance decrease of $6,125,176 in FY2021, and results in large part from contributions for the City's Warms Springs Project. The City's management and Council continue to expend resources under approved budgets and strive to strengthen the City's financial position during uncertain economic times. This ongoing accomplishment is due to the commitment and determination of the City Council and staff to make prudent financial decisions while also seeking to preserve levels of service to the community by continually pursuing and implementing cost savings and efficiencies in operations.

Table 9 below presents an analysis of the fund balances in the Governmental Funds and Enterprise Funds.

Continued...

**Table 9: Analysis of Fund Balances
for All Funds
For the Fiscal Year Ended September 30, 2022**

	Investment in Capital Assets	Restricted or Assigned	Unassigned	Total Balance
General Fund	$	$ 93,859	$ 5,763,011	$ 5,856,870
City Sales Tax Fund		1,753,304		1,753,304
In-Lieu Housing Fund		2,366,256		2,366,256
Capital Improvement Funds		3,500,501		3,500,501
Fire Construction Fund				0
GO Bond Debt Fund		(1,995)		(1,995)
Wagon Days Fund		17,854		17,854
City/County Housing Fund		551,194		551,194
Police Trust Fund		7,333		7,333
Community Development Trust Fund		0		0
Park Trust Fund		1,244,034		1,244,034
Water	2,006,360	0	3,094,446	5,100,806
Wastewater	6,934,110	212,000	3,054,024	10,200,134

REQUESTS FOR INFORMATION

Requests for information regarding City finances should be directed to:

Shellie Rubel, City Treasurer
City of Ketchum, Idaho
P.O. Box 2315
Ketchum, Idaho, 83340
Telephone: (208) 726-3841

ACKNOWLEDGMENTS

A special thanks to the City Treasurer, and staff for working so hard to operate the financial department of the City. Also, appreciation is expressed to the Mayor, City Council and all the Department Directors for their cooperation and assistance throughout the year in matters pertaining to the financial affairs of the City.

Respectfully submitted,
Jade Riley
CITY ADMINISTRATOR

CITY OF KETCHUM, IDAHO
Statement of Net Position
at September 30, 2022

	Governmental Activities	Business-type Activities	Total Primary Government	Component Unit Urban Renewal Agency
ASSETS				
Cash and Deposits	$ 13,629,481	$ 6,433,067	$ 20,062,548	$ 3,773,652
Accounts Receivable & Prepaid Expenses		55,728	55,728	
Taxes Receivable	364,232		364,232	11,988
Due From Other Governments	418,637	115,114	533,751	
Restricted Cash	1,251,367	212,000	1,463,367	
Other Assets			0	
Totals	15,663,717	6,815,909	22,479,626	3,785,640
Capital Assets:				
Land	8,809,038	15,380	8,824,418	4,768,746
Construction in Progress	551,551	535,085	1,086,636	
Infrastructure	5,043,825		5,043,825	397,136
Buildings and Improvements	22,660,673	26,385,039	49,045,712	
Equipment and Vehicles	9,116,157	1,440,131	10,556,288	
Accumulated Deprecation	(11,656,812)	(15,576,091)	(27,232,903)	(59,366)
Total Capital Assets	34,524,432	12,799,544	47,323,976	5,106,516
Total Assets	50,188,149	19,615,453	69,803,602	8,892,156
Net Pension Asset & Deferred Outflows of Resources:				
Deferred Outflows from Pension Activity	1,205,848	360,188	1,566,036	0
LIABILITIES				
Accounts and Interest Payable	392,680	6,490	399,170	2,890
Due To Other Funds				
Long-term Liabilities:				
Portion due or payable within one year:				
Lease and Bonds Payable	361,948	407,000	768,948	472,588
Portion due or payable after one year:				
Lease and Bonds Payable	10,648,918	3,253,000	13,901,918	3,537,138
Unamortized Bond Discount		(18,527)	(18,527)	(34,969)
Unamortized Bond Premium	603,919	217,601	821,520	
Net Pension Liability	2,396,924	715,964	3,112,888	
Compensated Absences	365,157	89,978	455,135	
Total Liabilities	14,769,546	4,671,506	19,441,052	3,977,647
Deferred Inflows of Resources:				
Deferred Inflows from Pension Activities	10,699	3,195	13,894	0
NET POSITION				
Invested in Capital Assets - net of related debt	22,909,647	8,940,470	31,850,117	0
Restricted For:				
Debt Service		212,000	212,000	0
Other Purposes	1,251,367		1,251,367	1,261,687
Unrestricted	12,452,738	6,148,470	18,601,208	3,652,822
Total Net Position	$ 36,613,752	$ 15,300,940	$ 51,914,692	$ 4,914,509

The accompanying notes are a part of these financial statements.

CITY OF KETCHUM, IDAHO
Statement of Activities
For the Year Ended September 30, 2022

Activities:	Expenses	Program Revenues: Fees, Fines, and Charges for Services	Program Revenues: Capital Grants and Contributions	Net (Expense) Revenues and Changes in Net Assets: Governmental Activities	Net (Expense) Revenues and Changes in Net Assets: Business Type Activities	Net (Expense) Revenues and Changes in Net Assets: Total	Component Unit - Urban Renewal Agency
Governmental:							
General Government	$ 5,675,427	$ 4,322,207	$ 375,889	$ (977,331)		$ (977,331)	$ 36,000
Public Protection:							
Public Safety	4,957,216	238,959		(4,718,257)		(4,718,257)	
Streets	2,156,796			(2,156,796)		(2,156,796)	
Parks and Recreation	492,231	30,758	1,174,772	713,299		713,299	
Transportation	3,087,000			(3,087,000)		(3,087,000)	
Affordable Housing	845,011	347,932		(497,079)		(497,079)	
Interest - on long-term debt	325,986			(325,986)		(325,986)	
Total Governmental Activities	17,539,667	4,939,856	1,550,661	(11,049,150)		(11,049,150)	
Business Type:							
Water	1,782,675	2,457,493			$ 674,818	674,818	
Wastewater	2,295,296	3,521,564			1,226,268	1,226,268	
Interest - on long-term debt	170,016				(170,016)	(170,016)	
Total Business-type Activities	4,247,987	5,979,057	0		1,731,070	1,731,070	
Total City of Ketchum, Idaho	$ 21,787,654	$ 10,918,913	$ 1,550,661	(11,049,150)	1,731,070	(9,318,080)	
Component Units:							
Urban Renewal Agency	$ 566,766						(566,766)
Total							(530,766)
General Revenues:							
Property taxes				5,418,142		5,418,142	2,108,546
Local Option sales taxes				6,849,285		6,849,285	
Franchises, licenses, permits				1,465,717		1,465,717	
State of Idaho revenue sharing				1,111,673		1,111,673	
State of Idaho liquor receipts				404,523		404,523	
State highway user collections				216,713		216,713	
Penalty and interest on property taxes				25,734		25,734	7,642
County court and parking fines				84,463		84,463	
Gain (Loss) from Sale of Assets				89		89	
Earnings on investments				83,266	29,455	112,721	18,534
Miscellaneous				75,177		75,177	1,920
Amortization of Bond Premium				17,677	16,964	34,641	
Amortization of Bond Discount					2,119	2,119	
Gain (Loss) from Pension Activity				(366,678)	(40,714)	(407,392)	
Total general revenues and transfers				15,385,781	7,824	15,393,605	2,136,642
Changes in net position				4,336,631	1,738,894	6,075,525	1,605,876
Net Position - Beginning				32,277,121	13,562,046	45,839,167	3,308,633
Net Position - Ending				$ 36,613,752	$ 15,300,940	$ 51,914,692	$ 4,914,509

The accompanying notes are a part of these financial statements.

CITY OF KETCHUM, IDAHO
Balance Sheet
Governmental Funds
at September 30, 2022

	General Fund	City Sales Tax Fund	In-Lieu Housing Fund	General Capital Improvement Fund	Other Governmental Funds	Total Governmental Funds
ASSETS:						
Cash and Cash Deposits	$ 5,499,106	$ 1,422,058	$ 2,366,256	$ 3,503,840	$ 2,089,588	$ 14,880,848
Taxes Receivable	32,986	331,246				364,232
Due From Other Governments	418,637					418,637
Total Assets	$ 5,950,729	$ 1,753,304	$ 2,366,256	$ 3,503,840	$ 2,089,588	$ 15,663,717
LIABILITIES:						
Accounts Payable	$ 93,859	$	$	$ 3,339	$	$ 97,198
Funds Held in Trust					271,168	271,168
Due To Other Funds						0
Total Liabilities	93,859	0	0	3,339	271,168	368,366
FUND BALANCE:						
Non-spendable						0
Restricted					1,251,367	1,251,367
Committed	93,859					93,859
Assigned		1,753,304	2,366,256	3,500,501	567,053	8,187,114
Unassigned	5,763,011					5,763,011
Total Fund Balance	5,856,870	1,753,304	2,366,256	3,500,501	1,818,420	$ 15,295,351
Total Liabilities and Fund Balance	$ 5,950,729	$ 1,753,304	$ 2,366,256	$ 3,503,840	$ 2,089,588	

Amounts reported for governmental activities in the Statement of Net Position (page 12) are different because:

Governmental fund capital assets are not financial resources and therefore are not reported in the funds. The cost of assets is $ 46,181,244 and the accumulated depreciation is $ 11,656,812	34,524,432
Long-term liabilities, including bonds/leases payable, net pension liability, and compensated absences are not payable in the current period and therefore are not reported in the governmental funds	(13,206,031)
Net Position of Governmental Activities	$ 36,613,752

The accompanying notes are a part of these financial statements.

CITY OF KETCHUM, IDAHO
Statement of Revenues, Expenditures, and Changes in Fund Balances
Governmental Funds
for the year ended September 30, 2022

	General Fund	City Sales Tax Fund	In-Lieu Housing Fund	General Capital Improvement Fund	Other Governmental Funds	Total Governmental Funds
REVENUE:						
Property taxes	$ 4,794,445	$	$	$	$ 623,697	$ 5,418,142
Local Option sales taxes		6,849,285				6,849,285
Franchises, licenses, permits	1,173,851			291,866		1,465,717
State of Idaho shared revenue	1,111,673					1,111,673
State of Idaho liquor receipts	404,523					404,523
State highway user collections	216,713					216,713
Penalty/Interest on property taxes	24,131				1,603	25,734
County court and parking fines	84,463					84,463
Proceeds from sale of assets	89					89
Fees and charges for services	3,487,413		347,932	819,606	284,905	4,939,856
Grants, contributions, bond proceeds	367,271				1,183,390	1,550,661
Earnings on investments	39,839	4,785	14,929	20,191	3,522	83,266
Miscellaneous and Reimbursements	73,457	1,720				75,177
Total Revenue	11,777,868	6,855,790	362,861	1,131,663	2,097,117	22,225,299
EXPENDITURES:						
General Government	4,483,397	168,261			402,097	5,053,755
Public Safety	4,460,912	161,556				4,622,468
Streets	1,823,218					1,823,218
Capital outlay			770,011	3,786,942	451,803	5,008,756
Parks and Recreation	514,798				43,238	558,036
Transportation		3,087,000				3,087,000
Affordable Housing			75,000			75,000
Debt Service					615,019	615,019
Total Expenditures	11,282,325	3,416,817	845,011	3,786,942	1,512,157	20,843,252
EXCESS REVENUE (EXPENDITURES)	495,543	3,438,973	(482,150)	(2,655,279)	584,960	1,382,047
OTHER FINANCING SOURCES (USES):						
Operating transfers from other funds	1,718,942			1,929,416	991,100	4,639,458
Operating transfers (to) other funds	(1,082,154)	(3,462,034)		(270)	(95,000)	(4,639,458)
NET CHANGE IN FUND BALANCES	1,132,331	(23,061)	(482,150)	(726,133)	1,481,060	1,382,047
FUND BALANCE - BEGINNING	4,724,539	1,776,365	2,848,406	4,226,634	337,360	13,913,304
FUND BALANCE - ENDING	$ 5,856,870	$ 1,753,304	$ 2,366,256	$ 3,500,501	$ 1,818,420	$ 15,295,351

The accompanying notes are a part of these financial statements.

CITY OF KETCHUM, IDAHO
Reconciliation of the Statement of Revenues,
Expenditures, and Changes in Fund Balances of Governmental Funds
To the Statement of Activities
for the year ended September 30, 2022

Net Change in Fund Balance - Total Governmental Funds (Page 15)	$	1,382,047
Governmental funds report capital outlays as current year expenditures. In the Statement of Activities the cost of these assets is allocated over their estimated useful lives as depreciation expense. This is the amount of current capital outlay for new fixed assets.		
This is the amount of current year depreciation.		(875,744)
This is the amount of new Governmental Fund assets.		2,976,854
This is the amount of disposed of Governmental Fund assets.		0
Long term liabilities are not recorded in the Governmental funds.		
This is the amount of new debt		0
This is the amount of payments on General Obligation Bonds Payable		345,806
This is the amount of changes in net pension activities		527,258
Liability for personal leave days are not recorded in Governmental funds.		
This is the increase in compensated leave during the year.		(19,590)
Change in Net Assets of Governmental Activities (Page 13)	$	4,336,631

The accompanying notes are a part of these financial statements.

CITY OF KETCHUM, IDAHO
Statement of Net Position
Proprietary Funds
at September 30, 2022

	Water	Wastewater	Totals
Assets:			
Current Assets:			
Cash and Deposits	$ 3,248,329	$ 3,184,738	$ 6,433,067
Accts receivable - customers	36,135	19,593	55,728
Accts receivable - other govts.		115,114	115,114
	3,284,464	3,319,445	6,603,909
Restricted Current Assets:			
Cash and Deposits		212,000	212,000
Total Current Assets	3,284,464	3,531,445	6,815,909
Capital Assets:			
Plant and equipment	13,320,248	15,055,387	28,375,635
Accumulated depreciation	(8,221,225)	(7,354,866)	(15,576,091)
Net Plant and equipment	5,099,023	7,700,521	12,799,544
Total Assets	8,383,487	11,231,966	19,615,453
Net Pension Asset & Deferred Outflow of Resources:			
Deferred Outflows from Pension Activity	140,943	219,245	360,188
Liabilities:			
Current Liabilities:			
Accounts and Interest Payable	5,031	1,459	6,490
Current portion long-term debt	187,000	220,000	407,000
Total current liabilities	192,031	221,459	413,490
Noncurrent Liabilities:			
Bonds Payable	2,773,000	480,000	3,253,000
Unamortized Bond Discount	(18,527)		(18,527)
Unamortized Bond Premium	151,190	66,411	217,601
Net Pension Liability	280,160	435,804	715,964
Compensated Absences Payable	44,520	45,458	89,978
Total noncurrent liabilities	3,230,343	1,027,673	4,258,016
Total Liabilities	3,422,374	1,249,132	4,671,506
Deferred Inflow of Resources:			
Deferred Inflows from Pension Activity	1,250	1,945	3,195
Net Position:			
Investment in capital assets net of related debt	2,006,360	6,934,110	8,940,470
Restricted	0	212,000	212,000
Unrestricted	3,094,446	3,054,024	6,148,470
Total Net Position	$ 5,100,806	$ 10,200,134	$ 15,300,940

The accompanying notes are a part of these financial statements.

CITY OF KETCHUM, IDAHO
Statement of Revenues, Expenditures, and Changes in Net Position
Proprietary Funds
for the year ended September 30, 2022

	Water	Wastewater	Totals
Operating Revenues:			
Charges for services	$ 2,140,871	$ 3,363,806	$ 5,504,677
Hookups, connections, impact fees	315,412	157,674	473,086
Reimbursements and Misc.	1,210	84	1,294
Total Operating Revenue	2,457,493	3,521,564	5,979,057
Operating Expenses:			
Salaries and benefits	481,417	810,220	1,291,637
Administrative and supplies	1,031,569	1,168,694	2,200,263
Depreciation	269,689	316,382	586,071
Total Operating Expenses	1,782,675	2,295,296	4,077,971
Operating Income	674,818	1,226,268	1,901,086
Nonoperating Revenues (Expenses):			
Interest Income	13,778	15,677	29,455
Interest Expense	(124,266)	(45,750)	(170,016)
Gain (Loss) on pension activity	(16,086)	(24,628)	(40,714)
Amortization of bond discount	2,119		2,119
Amortization of bond premuim	(3,434)	20,398	16,964
Total Nonoperating	(127,889)	(34,303)	(162,192)
Income before transfers	546,929	1,191,965	1,738,894
Transfers in			
Transfers out			
Net Income	546,929	1,191,965	1,738,894
Total Net Position - Beginning	4,553,877	9,008,169	13,562,046
Total Net Position - Ending	$ 5,100,806	$ 10,200,134	$ 15,300,940

The accompanying notes are a part of these financial statements.

CITY OF KETCHUM, IDAHO
Statement of Cash Flows
Proprietary Funds
for the year ended September 30, 2022

	Water Fund	Wastewater Fund	Total
Cash Flows From Operating Activities:			
Receipts from customers	$ 2,451,047	$ 3,480,351	$ 5,931,398
Payments to suppliers	(1,031,569)	(1,168,694)	(2,200,263)
Payments to employees	(488,464)	(813,466)	(1,301,930)
Other receipts	1,210	84	1,294
Net cash provided (used) by operations	932,224	1,498,275	2,430,499
Cash Flows From Capital and Related Financing Activities:			
Purchase and construction of capital assets	(197,967)	(526,047)	(724,014)
Payments from (to) other funds			0
Principal paid on capital debt	(182,000)	(215,000)	(397,000)
Interest paid on capital debt	(124,427)	(46,196)	(170,623)
Net cash provided (used) by capital and related financing activities	(504,394)	(787,243)	(1,291,637)
Cash Flows From Investing Activities:			
Interest Income	13,778	15,677	29,455
Net Increase (Decrease) in Cash and Deposits	441,608	726,709	1,168,317
Balances - Beginning of the year	2,806,721	2,670,029	5,476,750
Balances - Ending of the year	$ 3,248,329	$ 3,396,738	$ 6,645,067
Displayed as:			
Pooled Cash and Investments	3,248,329	3,184,738	6,433,067
Restricted Assets		212,000	212,000
Balances - Ending of the year	$ 3,248,329	$ 3,396,738	$ 6,645,067
Reconciliation of Operating Income (Loss) to Net Cash Provided (Used) by Operating Activities:			
Operating Income (Loss)	674,818	1,226,268	1,901,086
Adjustments to reconcile operating income to net cash provided (used) by operating activities:			
Depreciation expense	269,689	316,382	586,071
Changes in assets and liabilities:			
Receivables, net	(5,236)	(41,129)	(46,365)
Accounts and other payables	(7,047)	(3,246)	(10,293)
Net Cash Provided (Used) by Operating Activites	$ 932,224	$ 1,498,275	$ 2,430,499

The accompanying notes are a part of these financial statements.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The City of Ketchum, Idaho became an incorporated city under the laws of the State of Idaho on October 16, 1961. The accounting policies of the City of Ketchum, Idaho conform to generally accepted accounting principles as applicable to governmental units. The financial statements of the City of Ketchum, Idaho have been prepared in conformity with the generally accepted accounting principles (GAAP) as applied to governmental units. The Governmental Accounting Standards Board (GASB) is the accepted standard-setting body for establishing governmental accounting and financial reporting principles. The City also applies Financial Accounting Standards Board (FASB) statements and interpretations issued on or before November 30, 1989, to its governmental and business-type activities (enterprise funds) provided they do not conflict with or contradict GASB pronouncements. The following is a summary of the more significant policies:

(A) Basis of Presentation – Basis of Accounting

Basis of Presentation:

For this reporting period, the City has conformed its financial statement model to *Governmental Auditing Standards Board (GASB) Statement No. 34.* This model presents the financial statements as follows:

Government-wide Statements: The statement of net assets and the statement of activities display information about the primary government (the City). These statements distinguish between the *governmental* and *business-type activities* of the City. Governmental activities generally are financed through taxes, intergovernmental revenues, and other nonexchange transactions. Business-type activities are financed in whole or in part by fees charged to external parties.

The statement of activities presents a comparison between direct expenses and program revenues for the different business-type activities of the City and for each function of the City's governmental activities. Direct expenses are those that are specifically associated with a program or function and, therefore, are clearly identifiable to a particular function. Indirect expense allocations that have been made in the funds have been reversed for the statement of activities. Program revenues include (a) fees, fines, and charges paid by the recipients of goods or services offered by the programs and (b) grants and contributions that are restricted to meeting the operational or capital requirements of a particular program. Revenues that are not classified as program revenues, including all taxes, are presented as general revenues.

Fund Financial Statements: The fund financial statements provide information about the City's funds. Separate statements for each fund category—*governmental* and *proprietary*—are presented. The emphasis of fund financial statements is on major governmental and enterprise funds, each displayed in a separate column.

Proprietary fund operating revenues, such as charges for services, result from exchange transactions associated with the principal activity of the fund. Exchange transactions are those in which each party receives and gives up essentially equal values. Nonoperating revenues, such as subsidies and investment earnings, result from nonexchange transactions or ancillary activities.

-Continued

The City reports the following governmental funds:
General Fund. This is the City's operating fund. It accounts for all financial resources of the general government, except those required to be accounted for in another fund.

The City reports the following enterprise funds:
Water and Wastewater Fund. This fund accounts for the operation, maintenance, and development of the City's water and waste-water facilities.

Discretely Presented Component Unit

The Component unit column in the financial statements includes the financial data of the City's only discretely presented component unit, the Ketchum Urban Renewal Agency. It is reported in a separate column to emphasize that it is separate from the City's operations. Complete financial statements of the Ketchum Urban Renewal Agency can be requested.

Measurement Focus, Basis of Accounting

Government-wide and Proprietary Fund Financial Statements. The government-wide and proprietary fund financial statements are reported using the economic resources measurement focus and the accrual basis of accounting. Revenues are recorded when earned and expenses are recorded at the time liabilities are incurred, regardless of when the related cash flows take place. Nonexchange transactions, in which the City gives (or receives) value without directly receiving (or giving) equal value in exchange, include property taxes, grants, entitlements, and donations. On an accrual basis, revenue from property taxes is recognized in the fiscal year for which the taxes are levied. Revenue from grants, entitlements, and donations is recognized in the fiscal year in which all eligibility requirements have been satisfied.

Governmental Fund Financial Statements. Governmental funds are reported using the current financial resources measurement focus and the modified accrual basis of accounting. Under this method, revenues are recognized when measurable and available. The City considers all revenues reported in the governmental funds to be available if the revenues are collected within sixty days after year-end. Property taxes, sales taxes, franchise taxes, licenses, and interest are considered to be susceptible to accrual. Expenditures are recorded when the related fund liability is incurred, except for principal and interest on general long-term debt, claims and judgments, and compensated absences, which are recognized as expenditures to the extent they have matured. General capital asset acquisitions are reported as expenditures in governmental funds. Proceeds of general long-term debt and acquisitions under capital leases are reported as other financing sources.

Budgets and Budgetary Accounting. The City adheres to City budget requirements in Title 50, Chapter 10 of the Idaho Code. The provisions of this chapter include the following procedures to establish budgetary data which is reflected in these financial statements:

A. Prior to certifying the tax levy to the County Commissioners, and prior to passing the annual appropriation ordinance, a public meeting shall be held to adopt a budget by a favorable vote of a majority of the members of the council.
B. Budgets for all funds are adopted on a basis consistent with generally accepted accounting principles. Uncommitted appropriations lapse at year end.
C. There are no provisions in Title 50, Chapter 10 for budget augmentations.

-continued

Entity Classifications.

A. City-Wide Financial Statements – The City reports net position in three categories – invested in capital assets, restricted and unrestricted.

B. Fund Financial Statements – The City has adopted GASB Statement No. 54 "Fund Balance Reporting and Governmental Fund Type Definitions" (GASB 54) which defines how fund balances of the governmental funds are presented in the financial statements. There are five classifications of fund balances as presented below:

Non-spendable – These funds are not available for expenditures based on legal or contractual requirements. In this category, one would see inventory, long-term receivables, unless proceeds are restricted, committed, or assigned and legally or contractually required to be maintained intact (corpus or a permanent fund).

Restricted – These funds are governed by externally enforceable restrictions. In this category, one would see restricted purpose grant funds, debt service or capital projects.

Committed – Fund balances in this category are limited by the governments' highest level of decision making. Any changes of designation must be done in the same manner that it was implemented and should occur prior to end of the fiscal year, though the exact amount may be determined subsequently.

Assigned – These funds are intended to be used for specific purposes, intent is expressed by governing body or an official delegated by the governing body.

Unassigned – This classification is the default for all funds that do not fit into the other categories. This, however, should not be a negative number for the general fund. If it is, the assigned fund balance must be adjusted.

Order of Use of Fund Balance – The City's policy is to apply expenditures against non-spendable fund balance, restricted fund balance, committed fund balance, assigned fund balance and unassigned fund balance at the end of the fiscal year. For all funds, non-spendable fund balances are determined first and then restricted fund balances for specific purposes are determined.

Allocation of Indirect Expenses. The City allocates indirect expense, primarily comprised of central governmental services, to operating functions and programs benefiting from those services. Central services include overall City management, centralized budgetary formulation and oversight, accounting, financial reporting, payroll, procurement contracting and oversight, investing and cash management, personnel services, and other central administrative services. Allocations are charged to programs based on use of central services determined by various allocation methodologies. As a matter of policy, certain functions that use significant central services are not charged for the use of these services. These functions or programs include police, fire, and certain divisions with public services and parks.

-Continued

(B) Assets, Liabilities, and Equity

Deposits and Investments

The cash balances of substantially all funds are pooled and invested by the State of Idaho Treasurer's Office for the purpose of increasing earnings through investment activities. The pool's investments are reported at fair value at September 30 of each year based on market prices. The individual funds' portions of the pool's fair value are presented as "Cash and Deposits". Earnings on the pooled funds are apportioned and paid or credited to the funds monthly based on the average daily balance of each participating fund.

Cash and Deposits

The City considers cash and deposits in proprietary funds to be cash on hand. In addition, because the State Treasury Pool is sufficiently liquid to permit withdrawal of cash at any time without prior notice or penalty, equity in the pool is also deemed to be a deposit.

Receivables and Payable

All trade and property tax receivables are shown net of an allowance for uncollectibles.

Property Tax Calendar

Property taxes are levied each November based on the assessed value of property as listed on the previous September tax rolls. Assessed values are an approximation of market value. The Blaine County Assessor establishes assessed values. Property tax payments are due in one-half installments in December and June. Property taxes become a lien on the property when it is levied.

Deferred Outflows/Inflows of Resources

In 2007, the Governmental Accounting Standards Board (GASB) released Concepts Statement No. 4 *Elements of Financial Statements* which provides a framework for determining the nature of financial accounting or reporting issues. Since the release of the framework, GASB has been looking at the assets and liabilities on the balance sheet to determine if they should continue to be reflected as such. GASB has concluded that, in order to improve financial reporting, there are assets and liabilities that no longer should be reflected as assets and liabilities. These changes are included in the recently issued GASB Statement No. 65, *Items Previously Reported as Asset and Liabilities.*

These changes include two new items that are reflected on the Statement of Net Position.

- Deferred outflow of resources – the current *consumption* of net assets that is applicable to a *future* reporting period.
- Deferred inflows of resources – the current *acquisition* of net assets that is applicable to a *future* reporting period.

The City's financial statements may report a separate section for deferred inflows of resources which reflects an increase in resources that applies to a future period.

-Continued

Capital Assets

Purchased or constructed capital assets used in operations with an initial useful life that extends beyond one year are capitalized. Infrastructure assets such as roads and bridges are also capitalized. They are reported net of accumulated depreciation on the Statement of Net Assets. The City capitalizes assets in excess of $5,000.

Under the requirements of *GASB Statement No. 34*, the City is considered a Phase 3 government, as its total annual revenues are less than $10 million. Such governments are not required to report major general infrastructure assets retroactively. Accordingly, the City has determined not to retroactively report this type of capital asset.

Capital assets are recorded at their historical cost and are depreciated using the straight-line method of depreciation over the following estimated useful lives:

Asset Class	Estimated Useful Lives
Infrastructure	30
Buildings	50
Building Improvements	20
Vehicles	5-15
Office and Other Equipment	3-15
Computer Equipment	3-15

Compensated Absences

The liability for compensated absences reported in the government-wide and proprietary fund statements consists of unpaid, accumulated annual vacation and sick leave balances. The liability has been calculated using the vesting method, in which leave amounts for both employees who currently are eligible to receive termination payments and other employees who are expected to become eligible in the future to receive such payments upon termination are included.

Pensions

For purposes of measuring the net pension liability and pension expense, information about the fiduciary net position of the Public Employee Retirement System of Idaho Base Plan (Base Plan) and additions to/deductions from Base Plan's fiduciary net position have been determined on the same basis as they are reported by the Base Plan. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

NOTE 2 – CASH AND DEPOSITS

Deposits: Custodial credit risk, in the case of deposits, is the risk that in the event of a bank failure, the government's deposits may not be returned to it. The City has no deposit policy for custodial credit risk. At year end, $ 1,753,766 of the City's bank balances were exposed to custodial credit risk because of the $250,000 limit insured by the FDIC.

-Continued

Investments: Custodial credit risk, in the case of investments, is the risk that in the event of the failure of the counterparty, the government will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. At year end, the City held the following investments:

Investment Type

Idaho State Local Government Investment Pool $ 20,762,802.

These investments are unrated external investment pools sponsored by the Idaho State Treasurer's Office. They are classified as "Investments in an External Investment Pool" and are exempt from custodial credit risk and concentration of credit risk reporting. Interest rate risk is summarized as follows: Asset-backed securities are reported using weighted average life to more accurately reflect the projected term of the security, considering interest rates and repayment factors.

The elected Idaho State Treasurer, following Idaho Code, Section 67-2328, is authorized to sponsor an investment pool in which the City voluntarily participates. The Pool is not registered with the Securities and Exchange Commission or any other regulatory body - oversight is with the State Treasurer, and Idaho Code defines allowable investments. All investments are entirely insured or collateralized with securities held by the Pool or by its agent in the Pool's name. And the fair value of the City's position in the external investment pool is the same as the value of the pool shares.

Credit Risk: The City's policy is to comply with Idaho State statutes which authorize the City to invest in obligations of the United States, obligations of the State or any taxing district in the State, obligations issued by the Farm Credit System, obligations of public corporations of the State of Idaho, repurchase agreements, tax anticipation notes of the State or taxing district in the State, time deposits, savings deposits, revenue bonds of institutions of higher education, and the State Treasurer's Pool.

Interest rate risk and concentration of *credit risk:* The City has no policy regarding these two investment risk categories.

The City maintains a cash and investment pool that is available for use by all funds. Each fund type's portion of this pool is presented on the combined balance sheet as "Cash and Deposits".

Cash and Deposits are comprised of the following at the financial statement date:

Cash on Hand	$ 344
Deposits with financial institutions:	
Demand deposits	763,776
State of Idaho Investment Pool	20,762,802
Total	$ 21,525,570

– Continued

NOTE 3 – CAPITAL ASSETS

Capital asset activity for the current year ended was as follows:

	Beginning Balances	Increases	Decreases	Ending Balances
Governmental Activities:				
Capital Assets not being depreciated:				
Land	$ 8,809,038	$	$	$ 8,809,038
Construction in Progress	12,129,917	551,551	(12,129,917)	551,551
Total	20,938,955	551,551	(12,129,917)	9,360,589
Capital Assets being depreciated:				
Buildings & Improvements	9,785,787	12,874,886		22,660,673
Infrastructure	3,034,584	2,009,241		5,043,825
Vehicles and Equipment	8,569,320	546,837		9,116,157
Total	21,389,691	15,430,964	0	36,820,655
Less: Accumulated Depreciation:	10,781,068	875,744		11,656,812
Total Net Depreciated Assets	10,608,623	14,555,220	0	25,163,843
Governmental capital assets, net	$ 31,547,578	$ 15,106,771	$ (12,129,917)	$ 34,524,432
Business-type activities:				
Capital Assets not being depreciated:				
Land	$ 15,380	$	$	$ 15,380
Construction in Progress	337,118	197,967		535,085
Total	352,498	197,967	0	550,465
Capital Assets being depreciated:				
Buildings & Improvements	26,362,514	22,525		26,385,039
Vehicles and Equipment	936,610	503,521		1,440,131
Total	27,299,124	526,046	0	27,825,170
Less: Accumulated Depreciation	14,990,019	586,072		15,576,091
Total Net Depreciated Assets	12,309,105	(60,026)	0	12,249,079
Business-type capital assets, net	$ 12,661,603	$ 137,941	$ 0	$ 12,799,544

– Continued

NOTE 4 - BONDS PAYABLE

In December of 2004, the City sold $ 1,990,000 of Sewer Revenue Bonds, Series 2004. The proceeds of this issue were used to make improvements to the City's wastewater system. The bonds were retired with funds from the 2014 Wastewater Refunding Bonds 2014.

In May of 2006, the City sold $ 1,730,000 of Sewer Revenue Bonds, Series 2006A. The proceeds of this issue were used to make improvements to the City's wastewater system. The bonds were retired by the 2014 bond issue.

In November of 2014 the City sold $ 1,950,000 of Sewer Revenue Refunding Bonds, Series 2014. The proceeds from this bond issue retired the City's 2004 and 2006 bond series. This bond issue is to be retired by user fees generated by the City's enterprise fund.

In 2006 outstanding bonds from the City's series 1998 issue were defeased by placing proceeds of a new bond issue, Water Revenue Refunding Bonds Series 2006B for $ 3,030,000, in an irrevocable trust to provide for all future debt payments on the old bonds. These bonds were retired by the City's Water Revenue Refunding Bonds Series 2016.

In September of 2016 the City sold $ 1,697,000 of Water Revenue Refunding Bonds, Series 2016. The proceeds from this bond issue retired the City's 2006B bond series. This bond issue is to be retired by user fees generated by the City's enterprise fund.

In May of 2006, the City sold $ 2,780,000 of Water Revenue Bonds, Series 2006A. The proceeds of this issue were used to make improvements to the City's water system. These bonds were retired by the City's Water Revenue Refunding Bonds Series 2015.

In September of 2015 the City sold $ 2,310,000 of Water Revenue Refunding Bonds, Series 2015. The proceeds from this bond issue retired the City's 2006A bond series. This bond issue is to be retired by user fees generated by the City's enterprise fund.

In March of 2020, the City sold $10,870,000 of General Obligation Bonds, Series 2020. These bonds were sold at a premium of $630,000, providing the City with $11,500,000 in cash to construct a new fire facility. Construction began in the FY 2020 period and was completed in FY 2021.

The following is a list of the interest and principal payments through the end of the bond issues:

Bonds Payable – Continued

Wastewater Refunding Bond Series 2014

FY		Interest	Principal
2023		$ 35,000	$ 220,000
2024		24,000	230,000
2025		12,500	250,000
	Totals	$ 71,500	$ 700,000

		Water Refunding Bonds 2015		Water Revenue Bonds 2016	
FY		Interest	Principal	Interest	Principal
2023		$ 106,475	$ 30,000	$ 14,269	$ 157,000
2024		105,500	30,000	11,537	162,000
2025		104,000	35,000	8,717	162,000
2026		102,250	35,000	5,899	166,000
2027		100,500	30,000	3,010	173,000
2028-2032		360,250	1,415,000		
2033-2034		40,000	565,000		
	Totals	$ 918,975	$ 2,140,000	$ 43,432	$ 820,000

General Obligation Bonds Series 2020

FY		Interest	Principal
2023		$ 291,769	$ 320,000
2024		275,769	335,000
2025		259,019	355,000
2026		241,269	370,000
2027		222,769	390,000
2028-2032		842,645	2,220,000
2033-2037		570,645	2,490,000
2038-2042		309,267	2,755,000
2043-2044		40,161	1,185,000
	Totals	$ 3,053,313	$ 10,420,000

– Continued

NOTE 5 – CAPITAL LEASES

The City has entered into a municipal lease agreement for the purchase of a 2020 Hughes Aerial Fire Ladder Trust to be used by the General Fund of the City. The obligation is recorded in the respective fund. Annual lease payments are paid on July 1 of each year. Unless sooner terminated as set forth in the lease, ownership will transfer to the City upon expiration of the lease. Depreciation expense has been computed on assets acquired under municipal lease agreements.

Detail of the Capital Leases follows:

	Balance Financed	2023	2024	2025	2026-34	Total
Governmental Activities						
2019 Hughes Aerial Fire Ladder Truck						
Zions Bancorporaton	$ 588,613	$ 41,948	$ 43,123	$ 44,330	459,212	$ 588,613
Computed Interest 2.8%		16,481	15,307	14,099	66,655	112,542
	588,613	58,429	58,430	58,429	525,867	701,155
Total Capital Leases	$ 588,613	$ 58,429	$ 58,430	$ 58,429	525,867	$ 701,155

NOTE 6 – MISCELLANEOUS REVENUES, GOVERNMENTAL FUND TYPES

The miscellaneous revenues section of the combined statement of revenues and expenditures includes the following amounts:

	Total Governmental
Rents	$ 73,408
Sale of Unusable Equipment	89
Miscellaneous	1,680
Total	$ 75,177

NOTE 7 – LITIGATION

The City, at the financial statement date, is not involved in any material disputes as either plaintiff or defendant.

NOTE 8 – RESTRICTED NET ASSETS

The ordinance authorizing the Enterprise Fund revenue bonds requires that the City establish certain restricted cash accounts to be used in the retirement of the bonds and improvements to the waste-water systems. In addition, certain cash amounts are restricted for use in law enforcement, zoning ordinance enforcement, and for other restrictions imposed by the City Council in the general fund, and for debt retirement in the long-term debt group of accounts. The City's policy is to first apply unrestricted resources when an expense is incurred for purposes for which both restricted and unrestricted net assets are available. These restricted amounts are as follows:

	General Fund	Enterprise Fund
Various Trust Cash and Fire GO Bond	$ 1,251,367	
Wastewater Bonds Debt Reserve Cash		$ 212,000
Totals	$ 1,251,367	$ 212,000

NOTE 9 – RISK MANAGEMENT

A City is exposed to various risks of loss related to torts; theft of, damage to, and destruction of assets; errors and omissions; injuries to employees; and natural disasters. During the fiscal year, the City is contracted with Idaho County Risk Management Program (ICRMP) for property, crime and fleet insurance and the State Insurance Fund for workman's compensation. Under the terms of the ICRMP policy, the City of Ketchum's liability is limited to the amount of annual financial membership contributions, including a per occurrence deductible. There has been no significant reduction in insurance coverage in the current year. Settlement amounts have not exceeded insurance coverage for the current year or the three prior years.

NOTE 10 – KETCHUM URBAN RENEWAL AGENCY

The component unit column in the combined financial statements includes the financial data of the Ketchum Urban Renewal Agency, the City's only discretely presented component unit. It is reported in a separate column to emphasize that it is legally separate from the City in accordance with State Urban Renewal law. The Agency has authority to construct public improvements including the acquisition of public right-of-way within the blighted area legally designated as the redevelopment district. The City appoints the governing board of the Agency. The Agency derives its funding from tax increment financing. Complete financial statements for the current year are available from the Agency.

The City advanced $1,495,830 of cash held for affordable housing construction to the Agency to begin their operations. The Agency has determined to pay this amount back to the City over the next several years as funds become available. These amounts are not accrued in the City's records but will be recognized as revenue when received in the "In-Lieu Housing Fund". The balance remaining unpaid at the date of these financial statements is $ 195,514.

-Continued

NOTE 11 – EMPLOYEE RETIREMENT PLAN

Plan Description

The City of Ketchum contributes to the Base Plan which is a cost-sharing multiple-employer defined benefit pension plan administered by Public Employee Retirement System of Idaho (PERSI or System) that covers substantially all employees of the State of Idaho, its agencies, and various participating political subdivisions. The cost to administer the plan is financed through the contributions and investment earnings of the plan. PERSI issues a publicly available financial report that includes financial statements and the required supplementary information for PERSI. That report may be obtained on the PERSI website at www.persi.idaho.gov.

Responsibility for administration of the Base Plan is assigned to the Board comprised of five members appointed by the Governor and confirmed by the Idaho Senate. State law requires that two members of the Board be active Base Plan members with at least ten years of service and three members who are Idaho citizens not members of the Base Plan except by reason of having served on the Board.

Pension Benefits

The Base Plan provides retirement, disability, death and survivor benefits of eligible members or beneficiaries. Benefits are based on members' years of service, age and highest average salary. Members become fully vested in their retirement benefits with five years of credited services (5 months for elected or appointed officials). Members are eligible for retirement benefits upon attainment of the ages specified for their employment classification. The annual service retirement allowance for each month of credited service is 2.0% (2.3% for police/firefighters) of the average monthly salary for the highest consecutive 42 months.

The benefit payments for the Base Plan are calculated using a benefit formula adopted by the Idaho Legislature. The Base Plan is required to provide a 1% minimum cost of living increase per year provided the Consumer Price Index increases 1% or more. The PERSI Board has the authority to provide higher cost of living increases to a maximum of the Consumer Price Index movement or 6%, whichever is less; however, any amount above the 1% minimum is subject to review by the Idaho Legislature.

Member and Employer Contributions

Member and employer contributions paid to the Base Plan are set by statute and are established as a percent of covered compensation. Contribution rates are determined by the PERSI Board within limitations, as defined by state law. The Board may make periodic changes to employer and employee contribution rates (expressed as percentages of annual covered payroll) that are adequate to accumulate sufficient assets to pay benefits when due.

The contribution rates for employees are set by statute at 60% of employer rate for general employees and 74% for police and firefighters. As of June 30, 2022, it was 7.16% for general employees and 9.13% for police and firefighters. The employer contribution rate, as s percent of covered payroll, is set by the Retirement Board and was 11.94% for general employees and 12.28% for police and firefighters. The City's contributions were $420,730 for the year ended September 30, 2022.

-Continued

Pension Liabilities, Pension Expense (Revenue), and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions.

At September 30, 2022, the City reported a liability for its proportionate share of the net pension liability. The net pension liability was measured as of June 30, 2022, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date. The City's proportion of the net pension liability was based on the City's share of contributions in the Base Plan pension plan relative to the total contributions of all participating PERSI Base Plan employers. At June 30, 2022, the City's proportion was 0.0790322 percent.

For the year ended September 30, 2022, the City recognized pension expense (revenue) of $407,392. At September 30, 2022, the City reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ 716,238	$ 13,894
Changes in assumptions or other inputs	$ 507,494	
Net difference between projected and actual earnings on pension plan investments	$ 342,304	
Changes in the employer's proportion and differences between the employer's contributions and the employer's proportionate contributions	$ (105,182)	
City's contributions subsequent to the measurement date	$ 105,182	
Total	$ 1,566,036	$ 13,894

$ 105,182 reported as deferred outflows of resources related to pensions resulting from Employer contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ending September 30, 2023.

The average of the expected remaining service lives of all employees that are provided with pensions through the System (active and inactive employees) determined at July 1, 2020, the beginning of the measurement period ended June 30, 2021, is 4.6 and 4.6 for the measurement period June 30, 2022.

Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense (revenue) as follows:

-Continued

Year ended September 30, 2022:

2023	$ 371,174
2024	$ 402,945
2025	$ 186,362
2026	$ 591,662

Actuarial Assumptions

Valuations are based on actuarial assumptions, the benefit formulas, and employee groups. Level percentages of payroll normal costs are determined using the Entry Age Normal Cost Method. Under the Entry Age Normal Cost Method, the actuarial present value of the projected benefits of each individual included in the actuarial valuation is allocated as a level percentage of each year's earnings of the individual between entry age and assumed exit age. The Base Plan amortizes any unfunded actuarial accrued liability based on a level percentage of payroll. The maximum amortization period for the Base Plan permitted under Section 59-1322, Idaho Code, is 25 years.

The total pension liability in the June 30, 2022, actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.30%
Salary increases	3.05%
Salary inflation	3.05%
Investment rate of return	6.35%, net of investment expenses
Cost-of-living adjustments	1%

Contributing Members, Service Retirement Members, and Beneficiaries

General Employees and All Beneficiaries - Males Pub-2010 General Tables, increased 11%
General Employees and All Beneficiaries - Females Pub-2010 General Tables, increased 21%
Fire & Police - Males Pub-2010 Safety Tables, increased 21%
Fire & Police - Females Pub-2010 Safety Tables, increased 26%
Disabled Members - Males Pub-2010 Disabled Tables, increased 38%
Disabled Members - Females Pub-2010 Disabled Tables, increased 36%

An experience study was performed for the period July 1, 2015, through June 30, 2020, which reviewed all economic and demographic assumptions including mortality. The Total Pension Liability as of June 30, 2022, is based on the results of an actuarial valuation date of July 1, 2022.

The long-term expected rate of return on pension plan investments was determined using the building block approach and a forward-looking model in which best estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighing the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

-Continued

Even though history provides a valuable perspective for setting the investment return assumption, the System relies primarily on an approach which builds upon the latest capital market assumptions. Specifically, the System uses consultants, investment managers and trustees to develop capital market assumptions in analyzing the System's asset allocation. The assumptions and the System's formal policy for asset allocation are shown below. The formal asset allocation policy is somewhat more conservative than the current allocation of System's assets. The best-estimate range for the long-term expected rate of return is determined by adding expected inflation to expected long-term real returns and reflecting expected volatility and correlation. The capital market assumptions are as of 2022.

2021

	DB Plans	Sick Leave
Asset Class		
Fixed Income	30.00%	50.00%
US/Global Equity	55.00%	39.30%
International Equity	15.00%	10.70%
Cash	0.00%	0.00%

Discount Rate

The discount rate used to measure the total pension liability was 7.05%. The projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current contribution rate. Based on these assumptions, the pension plans' net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability. The long-term expected rate of return was determined net of pension plan investment expense but without reduction for pension plan administrative expense.

Sensitivity of the Employer's proportionate share of the net pension liability to changes in the discount rate.

The following presents the Employer's proportionate share of the net pension liability calculated using the discount rate of 6.35%, as well as what the Employer's proportionate share of the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (5.35%) or 1-percentage-point higher (7.35%) than the current rate:

	1% Decrease (5.35%)	**Current Discount Rate (6.35%)**	**1% Increase (7.35%)**
Employer's proportionate share of the net pension liability (asset)	$ 3,081,759	$ 3,112,888	$ 3,144,017

-Continued

Pension plan fiduciary net position

Detailed information about the pension plan's fiduciary net position is available in the separately issued PERSI financial report.

PERSI issues a publicly available financial report that includes financial statements and the required supplementary information for PERSI. That report may be obtained on the PERSI website at www.persi.idaho.gov

Payables to the pension plan

At September 30, 2022, the City reported payables to the defined benefit pension plan of $ 0 for legally required employer contributions and $ 0 for legally required employee contributions which had been withheld from employee wages but not yet remitted to PERSI.

NOTE 12 – SUBSEQUENT EVENTS

Subsequent events were evaluated through the date of the auditor's report, which is the date the financial statements were available to be issued.

REQUIRED
SUPPLEMENTARY INFORMATION

CITY OF KETCHUM, IDAHO
Schedule of Revenues, Expenditures and Changes in Fund Balances
Budget and Actual -- General Fund

	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
REVENUE:				
Property taxes	$ 4,616,115	$ 4,616,115	$ 4,794,445	$ 178,330
Local Option sales taxes				
Franchises, licenses, permits	670,969	745,969	1,173,851	427,882
State of Idaho shared revenue	1,108,723	1,108,723	1,111,673	2,950
State of Idaho liquor receipts	385,000	385,000	404,523	19,523
State highway user collections	138,216	138,216	216,713	78,497
Penalty and interest on property taxes	12,000	12,000	24,131	12,131
County court and parking fines	35,000	35,000	84,463	49,463
Fees, fines and charges for services	3,284,448	3,350,788	3,487,413	136,625
Grants and contributions	327,050	352,050	367,271	15,221
Earnings on investments	35,000	35,000	39,839	4,839
Miscellaneous	380,290	380,290	73,546	(306,744)
Total Revenue	10,992,811	11,159,151	11,777,868	618,717
EXPENDITURES:				
General Government	5,019,699	5,363,712	4,483,397	880,315
Public Safety	4,364,237	4,493,174	4,460,912	32,262
Streets	1,891,540	1,891,540	1,823,218	68,322
Capital outlay				
Parks and Recreation	607,505	607,505	514,798	92,707
Transportation				
Affordable Housing				
Debt Service				
Total Expenditures	11,882,981	12,355,931	11,282,325	1,073,606
EXCESS REVENUE (EXPENDITURES)	(890,170)	(1,196,780)	495,543	1,692,323
OTHER FINANCING SOURCES (USES):				
Operating transfers from other funds	1,310,656	1,721,884	1,718,942	2,942
Operating transfers (to) other funds	(1,082,154)	(1,082,154)	(1,082,154)	0
NET CHANGE IN FUND BALANCES	(661,668)	(557,050)	1,132,331	1,689,381
FUND BALANCE - BEGINNING	4,724,539	4,724,539	4,724,539	
FUND BALANCE - ENDING	4,062,871	$ 4,167,489	$ 5,856,870	

CITY OF KETCHUM, IDAHO
Schedule of Revenues, Expenditures and Changes in Fund Balances
Budget and Actual -- City Sales Tax Fund
for the year ended September 30, 2022

	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
REVENUE:				
Property taxes	$	$	$	$
Local Option sales taxes	4,233,253	4,599,500	6,849,285	2,249,785
Franchises, licenses, permits				
State of Idaho shared revenue				
State of Idaho liquor receipts				
State highway user collections				
Penalty and interest on property taxes				
County court fines				
Fees, fines and charges for services				
Grants and contributions				
Earnings on investments	500	500	4,785	4,285
Miscellaneous			1,720	1,720
Total Revenue	4,233,753	4,600,000	6,855,790	2,255,790
EXPENDITURES:				
General Government	3,000	164,510	168,261	(3,751)
Public Safety	161,556	161,556	161,556	0
Streets				
Capital outlay				
Parks and Recreation				
Transportation	2,660,753	3,087,000	3,087,000	0
Affordable Housing				
Debt Service				
Total Expenditures	2,825,309	3,413,066	3,416,817	(3,751)
EXCESS REVENUE (EXPENDITURES)	1,408,444	1,186,934	3,438,973	2,252,039
OTHER FINANCING SOURCES (USES):				
Operating transfers from other funds				0
Operating transfers (to) other funds	(1,424,444)	(3,462,034)	(3,462,034)	0
NET CHANGE IN FUND BALANCES	(16,000)	(2,275,100)	(23,061)	2,252,039
FUND BALANCE - BEGINNING	1,776,365	1,776,365	1,776,365	
FUND BALANCE - ENDING	$ 1,760,365	$ (498,735)	$ 1,753,304	

CITY OF KETCHUM, IDAHO
Schedule of Revenues, Expenditures and Changes in Fund Balances
Budget and Actual -- In-Lieu Housing Fund
for the year ended September 30, 2022

	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
REVENUE:				
Property taxes	$	$	$	$
Local Option sales taxes				
Franchises, licenses, permits				
State of Idaho shared revenue				
State of Idaho liquor receipts				
State highway user collections				
Penalty and interest on property taxes				
County court fines				
Fees, fines and charges for services	292,050	421,594	347,932	73,662
Grants and contributions				
Earnings on investments	30,000	30,000	14,929	15,071
Miscellaneous				0
Total Revenue	322,050	451,594	362,861	88,733
EXPENDITURES:				
General Government				
Public Safety				
Streets				
Capital outlay	3,095,456	3,225,000	770,011	2,454,989
Parks and Recreation				
Transportation				
Affordable Housing	75,000	75,000	75,000	0
Debt Service				
Total Expenditures	3,170,456	3,300,000	845,011	2,454,989
EXCESS REVENUE (EXPENDITURES)	(2,848,406)	(2,848,406)	(482,150)	2,543,722
OTHER FINANCING SOURCES (USES):				
Operating transfers from other funds				
Operating transfers (to) other funds				
NET CHANGE IN FUND BALANCES	(2,848,406)	(2,848,406)	(482,150)	2,543,722
FUND BALANCE - BEGINNING	2,848,406	2,848,406	2,848,406	
FUND BALANCE - ENDING	$ 0	$ 0	$ 2,366,256	

CITY OF KETCHUM, IDAHO
Schedule of Revenues, Expenditures and Changes in Fund Balances
Budget and Actual -- General Capital Improvement Fund
for the year ended September 30, 2022

	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
REVENUE:				
Property taxes	$	$	$	$
Local Option sales taxes				
Franchises, licenses, permits		265,000	291,866	26,866
State of Idaho shared revenue				
State of Idaho liquor receipts				
State highway user collections				
Penalty and interest on property taxes				
County court fines				
Fees, fines and charges for services		385,576	819,606	434,030
Grants, contributions, bond proceeds				
Earnings on investments	0	0	20,191	20,191
Miscellaneous				
Total Revenue	0	650,576	1,131,663	481,087
EXPENDITURES:				
General Government				
Public Safety				
Streets				
Capital outlay	3,754,258	5,106,323	3,786,942	1,319,381
Parks and Recreation				
Transportation				
Affordable Housing				
Debt Service				
Total Expenditures	3,754,258	5,106,323	3,786,942	1,319,381
EXCESS REVENUE (EXPENDITURES)	(3,754,258)	(4,455,747)	(2,655,279)	1,800,468
OTHER FINANCING SOURCES (USES):				
Operating transfers from other funds	829,949	1,929,416	1,929,416	
Operating transfers (to) other funds		(270)	(270)	
NET CHANGE IN FUND BALANCES	(2,924,309)	(2,526,601)	(726,133)	1,800,468
FUND BALANCE - BEGINNING	4,226,634	4,226,634	4,226,634	
FUND BALANCE - ENDING	$ 1,302,325	$ 1,700,033	$ 3,500,501	

CITY OF KETCHUM, IDAHO
PUBLIC EMPLOYEE PENSION INFORMATION
For the year ended September 30, 2022

Required Supplementary Information

Schedule of Employer's Share of Net Pension Liability
PERSI - Base Plan
Last 10 - Fiscal Years*

	2019	2018	2017	2016	2015
Employer's portion of the net pension liability	.0865200%	.0799402%	.0866389%	.0857958%	.0889864%
Employer's proportionate share of the net pension liability	$ 987,602	$ 1,179,132	$ 1,361,816	$ 1,739,214	$ 1,171,806
Employer's covered-employee payroll	$ 3,625,685	$ 3,742,286	$ 3,585,052	$ 3,435,203	$ 2,691,486
Employer's proportional share of the net pension liability as a percentage of its covered-employee payroll	27.24%	31.51%	37.99%	50.63%	43.54%
Plan fiduciary net position as a percentage of the total pension liability	93.79%	91.69%	90.68%	87.26%	91.38%

	2022	2021	2020
Employer's portion of the net pension liability	.0790322%	.0809575%	.0833870%
Employer's proportionate share of the net pension liability (Net Asset)	$ 3,112,888	$ (63,939)	$ 1,936,356
Employer's covered-employee payroll	$ 3,462,905	$ 4,052,180	$ 3,822,116
Employer's proportional share of the net pension liability as a percentage of its covered-employee payroll	89.89%	-1.58%	50.66%
Plan fiduciary net position as a percentage of the total pension liability	83.09%	100.36%	88.22%

* GASB Statement No. 68 required ten years of information to be presented in this table. However, until a full 10-year trend is compiled, the City will present information for those years for which information is available.

Data reported is measured as of June 30, 2022

Schedule of Employer's Contributions
PERSI - Base Plan
Last 10 - Fiscal Years*

	2019	2018	2017	2016	2015
Statutorily required contributions	$ 441,262	$ 455,247	$ 445,468	$ 425,702	$ 393,730
Contributions in relation to the statutorily required contribution	$ (441,262)	$ (455,247)	$ (445,468)	$ (425,702)	$ (393,730)
Contribution (deficiency) excess	$ 0	$ 0	$ 0	$ 0	$ 0
Employer's covered-employee payroll	$ 3,625,685	$ 3,742,286	$ 3,585,052	$ 3,435,203	$ 2,691,486
Contributions as a percentage of covered-employee payroll	12.17%	12.16%	12.43%	12.39%	12.03%

	2022	2021	2020
Statutorily required contributions	$ 420,730	$ 484,563	$ 465,534
Contributions in relation to the statutorily required contribution	$ (420,730)	$ (484,563)	$ (465,534)
Contribution (deficiency) excess	$ 0	$ 0	$ 0
Employer's covered-employee payroll	$ 3,462,905	$ 4,052,180	$ 3,822,116
Contributions as a percentage of covered-employee payroll	12.15%	11.96%	12.18%

OTHER
SUPPLEMENTARY INFORMATION

CITY OF KETCHUM, IDAHO
Combining Balance Sheets
Combining Other Governmental Funds
at September 30, 2022

	Wagon Days Fund	General Obligation Bond Debt Fund	City/County Housing Fund	Police/Fire Trust Fund	Community Development Trust Fund	Park Trust Fund	Total Combined Other Governmental Funds
ASSETS:							
Cash and Cash Deposits	$ 17,854	$ (1,995)	$ 551,194	$ 7,333	$ 271,168	$ 1,244,034	$ 2,089,588
Taxes Receivable							0
Due From Other Governments							0
Total Assets	$ 17,854	$ (1,995)	$ 551,194	$ 7,333	$ 271,168	$ 1,244,034	2,089,588
LIABILITIES:							
Accounts Payable	$	$	$	$	$	$	$ 0
Funds Held in Trust					271,168		271,168
Due To Other Funds							0
Total Liabilities	0	0	0	0	271,168	0	271,168
FUND BALANCE:							
Non-spendable							0
Restricted				7,333		1,244,034	1,251,367
Committed							0
Assigned	17,854	(1,995)	551,194				567,053
Unassigned							0
Total Fund Balance	17,854	(1,995)	551,194	7,333	0	1,244,034	1,818,420
Total Liabilities and Fund Balance	$ 17,854	$ (1,995)	$ 551,194	$ 7,333	$ 271,168	$ 1,244,034	2,089,588

The accompanying notes are a part of these financial statements.

CITY OF KETCHUM, IDAHO
Statement of Revenues, Expenditures, and Changes in Fund Balances
Combining Other Governmental Funds
for the year ended September 30, 2022

	Wagon Days Fund	General Obligation Bond Debt Fund	City/County Housing Fund	Police/Fire Trust Fund	Community Development Trust Fund	Park Trust Fund	Total Combined Other Governmental Funds
REVENUE:							
Property taxes	$	$ 623,697	$	$	$	$	$ 623,697
Local Option sales taxes							0
Franchises, licenses, permits							0
State of Idaho shared revenue							0
State of Idaho sales tax							0
State of Idaho liquor receipts							0
State highway user collections							0
Penalty and interest on property taxes		1,603					1,603
Proceeds from sale of assets							0
Fees and charges for services	14,471				239,676	30,758	284,905
Grants and contributions	8,618					1,174,772	1,183,390
Earnings on investments	183			426	4	2,909	3,522
Miscellaneous							0
Total Revenue	23,272	625,300	0	426	239,680	1,208,439	2,097,117
EXPENDITURES:							
General Government	162,417				239,680		402,097
Public Safety							0
Streets							0
Capital outlay			312,906			138,897	451,803
Parks and Recreation						43,238	43,238
Transportation							0
Affordable Housing							0
Debt Service		615,019					615,019
Total Expenditures	162,417	615,019	312,906	0	239,680	182,135	1,512,157
EXCESS REVENUE (EXPENDITURES)	(139,145)	10,281	(312,906)	426	0	1,026,304	584,960
OTHER FINANCING SOURCES (USES):							
Operating transfers from other funds	117,000		864,100			10,000	991,100
Operating transfers (to) other funds				(95,000)			(95,000)
NET CHANGE IN FUND BALANCES	(22,145)	10,281	551,194	(94,574)	0	1,036,304	1,481,060
FUND BALANCE - BEGINNING	39,999	(12,276)		101,907	0	207,730	337,360
FUND BALANCE - ENDING	$ 17,854	$ (1,995)	$ 551,194	$ 7,333	$ 0	$ 1,244,034	$ 1,818,420

The accompanying notes are a part of these financial statements.

CITY OF KETCHUM, IDAHO
Bond-Future Principal and Interest Requirements
at September 30, 2022

	Annual Payment			
	Interest Rate	Fiscal Year	Principal Payment	Interest Payment
General Obligation Bond:				
$11,500,000 General Obligation Bonds Series 2020				
	5.00%	2023	$ 320,000	$ 291,769
	5.00%	2024	335,000	275,769
	5.00%	2025	355,000	259,019
	5.00%	2026	370,000	241,269
	5.00%	2027	390,000	222,769
	5.00%	2028	410,000	203,269
	5.00%	2029	430,000	182,769
	2.00%	2030	450,000	161,269
	2.00%	2031	460,000	152,269
	2.00%	2032	470,000	143,069
	2.00%	2033	480,000	133,669
	2.00%	2034	490,000	124,069
	2.00%	2035	495,000	114,269
	2.00%	2036	505,000	104,369
	2.00%	2037	520,000	94,269
	2.00%	2038	530,000	83,869
	2.00%	2039	540,000	73,269
	2.125%	2040	550,000	62,468
	2.150%	2041	560,000	50,780
	2.125%	2042	575,000	38,881
	2.250%	2043	585,000	26,661
	2.250%	2044	600,000	13,500
			$ 10,420,000	$ 3,053,313

The accompanying notes are a part of these financial statements.

CITY OF KETCHUM, IDAHO
Bond-Future Principal and Interest Requirements
at September 30, 2022

Water Revenue Bond:	Interest Rate	Fiscal Year	Annual Payment Principal Payment	Annual Payment Interest Payment
Water Refunding Bond 2016 $ 1,697,000, September 8, 2016 1.74%				
	1.74%	2023	$ 157,000	$ 14,269
	1.74%	2024	162,000	11,537
	1.74%	2025	162,000	8,717
	1.74%	2026	166,000	5,899
	1.74%	2027	173,000	3,010
			$ 820,000	$ 43,432

The accompanying notes are a part of these financial statements.

CITY OF KETCHUM, IDAHO
Bond-Future Principal and Interest Requirements
at September 30, 2022

Water Revenue Bond:	Annual Payment			
	Interest Rate	Fiscal Year	Principal Payment	Interest Payment
Water Revenue Refunding Bonds 2015 $2,310,000, September 2, 2015 2.00% - 5.00%				
	3.25%	2023	$ 30,000	$ 106,475
	5.00%	2024	30,000	105,500
	5.00%	2025	35,000	104,000
	5.00%	2026	35,000	102,250
	5.00%	2027	30,000	100,500
	5.00%	2028	255,000	99,000
	5.00%	2029	270,000	86,250
	5.00%	2030	285,000	72,750
	5.00%	2031	295,000	58,500
	5.00%	2032	310,000	43,750
	5.00%	2033	330,000	28,250
	5.00%	2034	235,000	11,750
			$ 2,140,000	$ 918,975

The accompanying notes are a part of these financial statements.

CITY OF KETCHUM, IDAHO
Bond-Future Principal and Interest Requirements
at September 30, 2022

Wastewater Revenue Bond:	Interest Rate	Fiscal Year	Annual Payment Principal Payment	Annual Payment Interest Payment
Wastewater Revenue Refunding Bonds 2014 $1,950,000, November 18, 2014 2.00% - 5.00%				
	5.00%	2023	$ 220,000	$ 35,000
	5.00%	2024	230,000	24,000
	5.00%	2025	250,000	12,500
			$ 700,000	$ 71,500

The accompanying notes are a part of these financial statements.

WORKMAN & COMPANY | Office of Accounting

2190 Village Park Avenue, Suite 300 • Twin Falls, ID 83301 • 208.733.1161 • Fax: 208.733.6100

INDEPENDENT AUDITOR'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

November 4, 2022

To the City Council
City of Ketchum, Idaho

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of the City of Ketchum, Idaho, as of and for the year ended September 30, 2022, and the related notes to the financial statements, which collectively comprise the City of Ketchum, Idaho's basic financial statements, and have issued our report thereon dated November 4, 2022.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered the City of Ketchum, Idaho's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the City of Ketchum, Idaho's internal control. Accordingly, we do not express an opinion on the effectiveness of the City of Ketchum, Idaho's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or, significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the City of Ketchum, Idaho's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Workman & Company

WORKMAN AND COMPANY
Certified Public Accountants
Twin Falls, Idaho

City of Ketchum

December 5, 2022

Mayor Bradshaw and City Councilors
City of Ketchum
Ketchum, Idaho

Mayor Bradshaw and City Councilors:

Provide Feedback on Final Reports for Warm Springs Road and Main Street Transportation Improvements

Recommendation and Summary

The city retained HDR Engineering to complete a technical analysis of future transportation enhancements on Main Street and Warm Springs Road. HDR presented the details of the proposed enhancements during the October 3rd Council meeting. HDR and City staff then conducted three open houses and an on-line survey to solicit public feedback. Staff and HDR did meeting with ITD staff to review the proposed changes to Main Street to solicit any concerns. Staff reviewed findings from the public engagement effort and ITD's feedback during the October 17th City Council meeting. HDR has completed their full technical analysis and has memorialized the recommendations in the attached draft reports. HDR will provide a quick summary presentation and then solicit feedback/direction from the City Council.

Introduction & Background

Main Street Objectives

- Improve vehicular flow through the corridor
    - Create new timing plan for signals (complete)
    - Recommendation to add dedicated turn lanes at Sun Valley Road
    - Modernize signals (partially complete)
    - Extend transition lanes beyond River Street to Trail Creek Bridge
- Improve pedestrian realm/crosswalk
    - Bulb-outs at each intersection where possible
    - Evaluate transition from 4 travel lanes, 2 with turn lane (complete)
    - Reduce travel lanes by one foot to allow for sidewalk expansion

Warm Springs Objectives

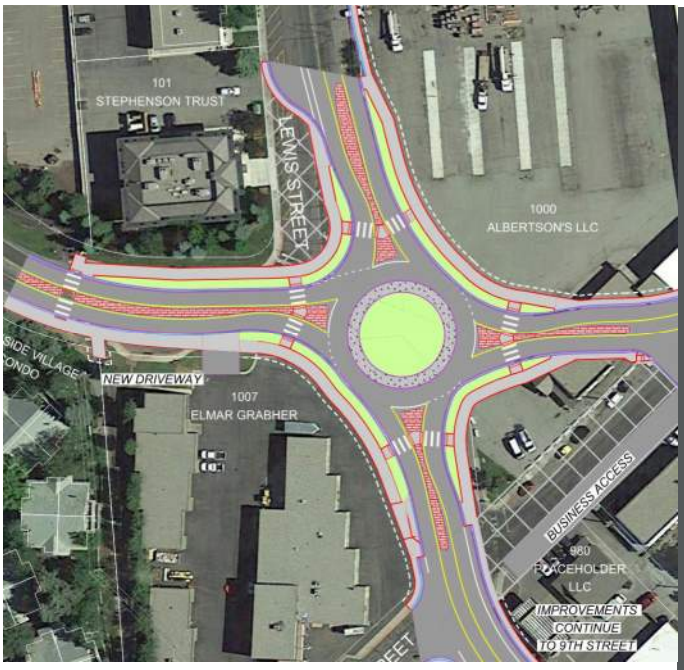
- Improve safety for all travel modes at Lewis Street and 10th Street intersections
- Improve pedestrian/bike experience throughout the corridor (Saddle to Main Street)

During the July 18th Council meeting, HDR presented five potential future Warm Springs intersection configurations. Council was requested to select two options to move forward for deeper technical review. The Council endorsed alternate #2 (roundabout at Lewis Street) and alternate #4 (realign 10th street with Lewis Street via one roundabout).

Sustainability Impact
No direct impact. The project seeks to improve pedestrian and bicycle facilities along the corridor which should increase alternative mobility choices.

Financial Impact
None currently.

Attachments
Draft Warm Springs Road Technical Memorandum
Draft Main Street Technical Memorandum

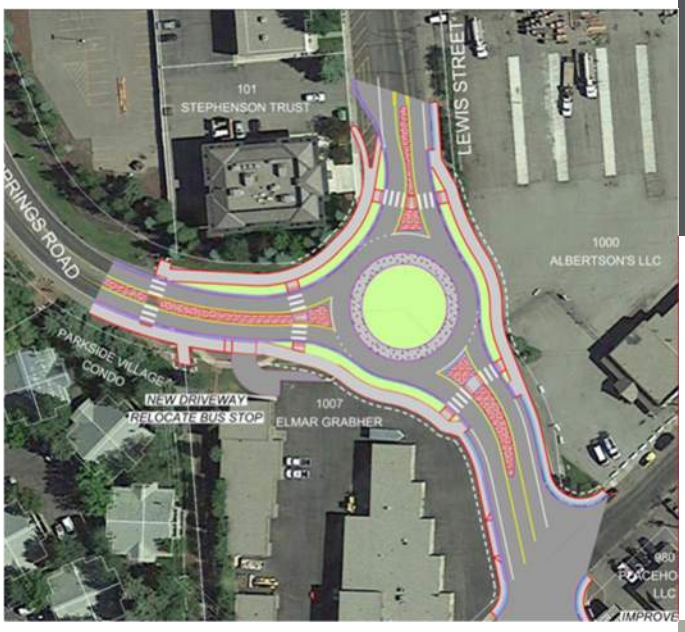


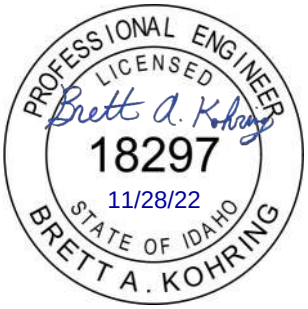
Warm Springs Road Alternatives Analysis Concept Report

City of Ketchum

Ketchum, Idaho

November 28, 2022





Executive Summary

The City of Ketchum, Idaho (City) *Master Transportation Plan* (2021) identified the Warm Springs Road corridor between 10th Street and Lewis Street for enhancement and development of conceptual alternatives to improve the area. This corridor experiences relatively high traffic volumes connecting recreation and residences to the downtown core and beyond. The study area for conceptual alternatives includes the intersections of 10th Street and Main Street (SH-75), Warm Springs Road and 10th Street, and Warm Springs Road and Lewis Street.

The Warm Springs Road corridor – from its diversion from Main Street at 6th Street to its entry into residential West Ketchum – is diverse in its land use and is a nexus of several neighborhoods and zoning districts. Currently, the three zoning districts in the area provide an abrupt transition from one to the next and do not provide a gateway experience. The area lacks many of the basic public realm amenities or elements to make it feel a part of the City, including comfortable and consistent sidewalks and a diversity of shared open space. Overall, the area lacks a consistent and safe public realm, which is critical to extend the vibrancy of downtown to this area, provide an identity, or present a gateway to or from the downtown core or Warms Springs Road.

Under existing conditions, the study intersections are all estimated to operate at a level of service (LOS) C or better during peak season morning (AM) and evening (PM) peak hours. The worst performing intersection is the 10th Street and Warm Springs Road intersection, which experiences 17-second delays during the peak hours for the left turning movements from 10th Street. During the off-peak periods, the intersections operate at a LOS B or better during the AM and PM peak hours, meaning delays are less than 15 seconds at each intersection.

During the 5-year study period, there was one crash near the intersection of Warm Springs Road/Lewis Street and one crash at the intersection of Warm Springs Road/10th Street. Both crashes occurred during the noon hour on a weekday with clear conditions. The cause of the possible injury crash near Warm Springs Road and Lewis Street was caused by a driver following too close and was not related to the intersection. The crash at the intersection of Warm Springs Road/10th Street was a left turning crash were the driver failed to yield. There were no injuries associated with this crash.

Although the number of crashes in the study area is low, conversations with the public at public involvement meetings, City staff, and City Council members revealed safety concerns with the corridor. These concerns increase the amount of stress that pedestrians, bicyclists and motorists feel while traversing the area. These perceived safety issues include restricted sight distance for a southbound vehicle turning left at 10th Street onto Warm Springs with the gas station pumps, long pedestrian crossings across intersections or private approaches, inconsistent and aged sidewalks, and a lack of facilities compliant with the Americans with Disabilities Act (ADA) and Public Rights-of-Way Accessibility Guidelines (PROWAG).

The project team developed and proposed five alternatives for qualitative analysis to improve the surrounding land use in the study area:

- Alternative 1: 10th Street Roundabout
- Alternative 2: Lewis Street Roundabout
- Alternative 3: 10th Street and Lewis Street Dog bone roundabout
- Alternative 4: 10th Street and Lewis Street Realignment & Roundabout
- Alternative 5: Block/Street Realignment.

The five build alternatives and a No Build option were presented to the public for comment and feedback at public meetings. The project team developed a screening process to evaluate each of the alternatives using 11 criteria identified in discussion with City staff. City staff and members of the project team rated each alternative as good, neutral, or poor for each of the criteria. Based on an aggregated score and public feedback, HDR and City staff recommended Alternative 2, Alternative 4, and the No Build option move forward to the City Council (July 18, 2022). The City Council concurred with the recommendation and advanced the three alternatives.

In terms of public realm improvements and future land use, Alternative 4 has the most potential benefit followed by Alternative 2, while the No Build option provides few opportunities. Both the roundabout options would maintain the opportunity for the Albertson's property to redevelop and provide opportunities for a placemaking. Both alternatives would enhance bike and pedestrian connectivity and safety by removing conflict points with vehicles and shortening pedestrian exposure. In conversations with Mountain Rides, bus transit facilities would need to be relocated in the general area, but operations would not be negatively impacted by either option. Mountain Rides commented that Alternative 4 would enhance operations by removing a difficult turn.

The City does not lie within boundaries of a Municipal Planning Organization (MPO) that would produce a travel demand model that projects trip generation out into the future. HDR instead calculated a 1.44 percent historical growth rate to represent traffic volume growth based on historical data from Idaho Transportation Department's (ITD) Automated Traffic Recorders (ATRs) on State Highway 75 (SH-75). Design year 2042 was selected for the purposes of this analysis and LOS D was set for the target LOS threshold. HDR analyzed the study intersections using the forecasted volumes and found that both Alternatives 2 and 4 are estimated to operate well in the design year, with vehicle delays at approximately 10 seconds for the improved intersections. The unimproved intersections are expected to operate adequately in the design year.

The following table shows the opinion of probable costs for each of the two build alternatives:

Cost	Alternative 2	Alternative 4
Engineering Fee	$288,000	$398,000
Construction Cost	$1,532,000	$2,117,000
Right-of-way Cost	$1,075,100	$4,461,700
Total Project Cost	$3,278,100	$7,506,700

The realigned roadway in Alternative 4 requires purchasing large amounts of right-of-way (ROW) and these costs make up the largest difference between the two alternatives. Alternative 4 also creates an opportunity for the City to vacate the abandoned 10th Street connection and sell it to adjacent land owners. The vacated parcel's estimated value is $1,277,325 and the revenue from the sale could be used to offset some of the ROW costs. This would be determined during ROW negotiations.

If the City can acquire funding to cover the higher ROW and construction costs, Alternative 4 is recommended. This alternative best improves multi-modal connectivity and operations, simplifies the roadway network, provides the most opportunity for placemaking, and is preferred by both Mountain Rides and the public. However, Alternative 4 costs are significantly higher; therefore, Alternative 2 is recommended if funding for Alternative 4 cannot be secured. Alternative 2 still provides traffic calming, multi-modal, placemaking, and safety benefits to the area. The No Build option is not recommended as it does not provide benefits meeting the City's goals. **Appendix G** contains final concept exhibits for each alternative.

As the City pursues funding for the larger aspects of the build alternatives, there are several opportunities to enhance the area in the meantime. Even if the City chooses the No Build option, the City could consider the following improvements. **Appendix H** contains conceptual exhibits of potential improvements.

- Restripe the two-way left turn (TWLT) lane in front of the gas station to be a dedicated left turn lane. This will prevent delivery vehicles from parking close to the intersection.
- Replace dilapidated sidewalk, install sidewalk where none exists within the study area, and install ADA/PROWAG-complaint pedestrian ramps.
- Install bulb-outs at the Lewis Street and Warm Springs Road intersection to shorten pedestrian crossings.
- Explore one or more of the following options to mitigate the difficult 10th Street left turn sight distance issue:
    - Prohibit southbound left turns at the intersection by signage or adding a diverter in the intersection.
    - Convert the intersection from two-way stop control to all-way stop control.

Contents

Figures

Tables

Appendicies

Appendix A: Existing Turning Movement Counts
Appendix B: Existing Capacity Analysis Reports
Appendix C: First Public Involvement Summary
Appendix D: High Level Screening Criterion Definitions
Appendix E: Future Operations Results
Appendix F: Second Public Meeting Summary
Appendix G: Final Concept Exhibits
Appendix H: Additional Improvement Concepts

Acronyms/Abbreviations

Acronyms and abbreviations used more than once in the report text.

ADA	Americans with Disabilities Act
ATR	automated traffic recorders
City	City of Ketchum
CMF	crash modification factor
HCM	Highway Capacity Manual
ITD	Idaho Transportation Department
LOS	level of service
NBL	Northbound left
NBT/L	Northbound through left
NEL	Northeast left
NET/L/R	Northeast through left right
NET/LR	Northeast through left right
PROWAG	Public Rights-of-Way Accessibility Guidelines
ROW	right-of-way
SBL	Southbound Left
SBR	Southbound right
SEL	Southeast left
SWT/L/R	Southwest through left right
TWLT	two-way left turn
v/c	volume to capacity ratio
vpd	vehicles per day

1 Introduction

1.1 Background and Purpose

The City of Ketchum, Idaho (City) *Master Transportation Plan* (2021)[1] identified the Warm Springs Road corridor between 10th Street and Lewis Street for enhancement. This corridor experiences high traffic volumes connecting recreation and residences to the downtown core and beyond. The *Master Transportation Plan* identified the intersections at 10th Street and Lewis Street for further evaluation and development of conceptual alternatives to improve the area. The purpose of this report is to document the concept study process and the decision-making process and recommend an alternative to meet the City's goals.

1.2 Study Area

The study area is bounded by the following three intersections: 10th Street and Main Street (State Highway 75 [SH-75]), Warm Springs Road and 10th Street, and Warm Springs Road and Lewis Street. The study area is shown in Figure 1**.** The surrounding land use is zoned as light industrial and features several small businesses, including a gas station on the southeast corner of Warm Springs Road and 10th Street. The Warm Springs Road corridor provides access from residential developments in the northwest part of the City to the downtown core. Nearby traffic generators include the Ernest Hemingway STEAM School to the southwest, the YMCA to the northwest, and the City's downtown core to the southeast. A large undeveloped lot, owned by Albertsons Corporation, is located along Warm Springs Road between 10th Street and Lewis Street.

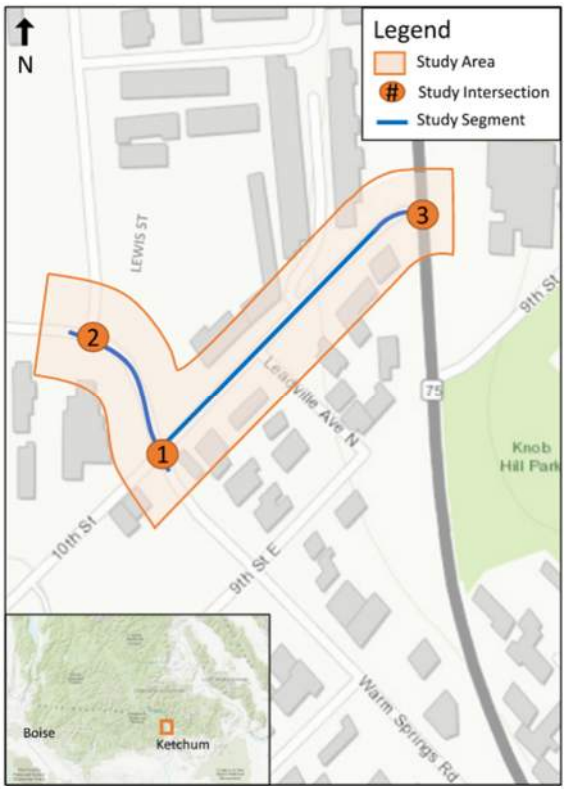


Figure 1. Study Area

1.3 Study Process

The study process followed the procedure outlined in Figure 2. The project team performed an initial evaluation of existing conditions in the study area that evaluated the existing traffic operations, determined the safety needs and examined the public realm needs. Then, the project team developed a series of potential alternatives for presentation to the public that were also evaluated by City and consultant staff based on 11 criteria, developed in consultation with the City. The City and project team recommended two alternatives for detailed analysis to the City Council. This detailed analysis included identifying potential public realm enhancements, future traffic capacity analysis, safety benefits, and a cost comparison. Finally, the project team

[1] City of Ketchum, Master Transportation Plan. March 15, 2021.

revised the alternatives, as necessary, prepared a final report, and presented it to the City Council for adoption.

At each stage during the process, the project team engaged stakeholders, including Mountain Rides, surrounding businesses, the YMCA, and adjacent landowners. Public comment was solicited at two public meetings where residents could evaluate the alternatives, ask questions, and provide feedback. Online surveys accompanied each public meeting for those unable to make the in-person meetings.

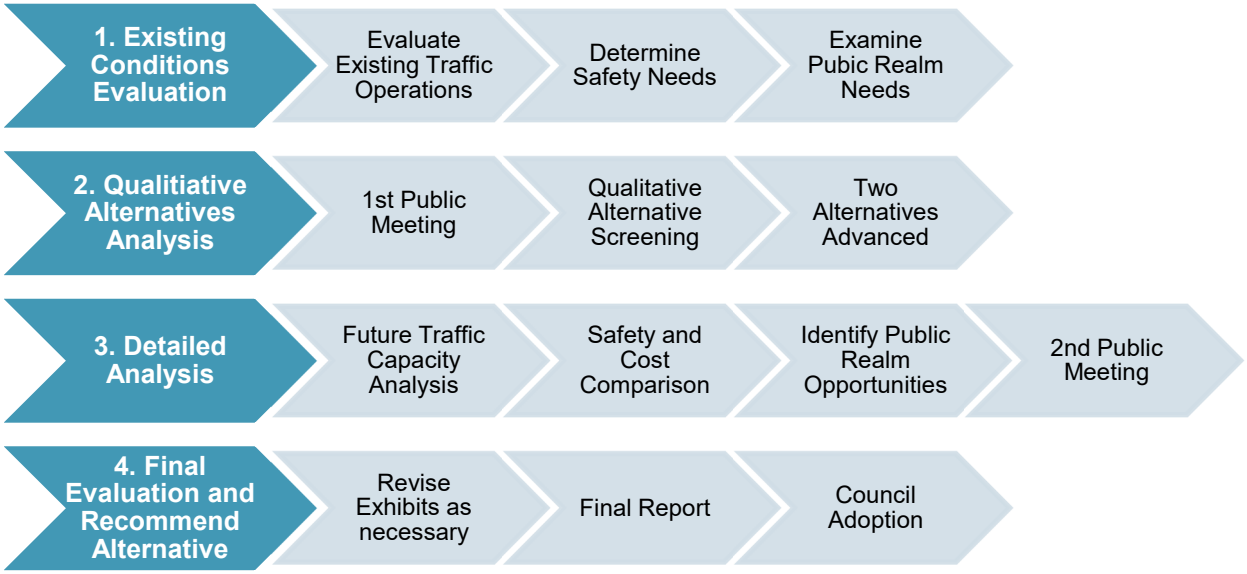


Figure 2: Study Process

1.4 Organization of Report

Following the introduction in Section 1, this report is also organized following the general structure of the study process shown in Figure 2.

- Section 2 describes existing conditions and determines needs;
- Section 3 reviews the first public meeting and qualitative alternatives analysis;
- Section 4 describes the detailed analysis and reviews the second public meeting; and
- Section 5 compares the alternatives, considers mitigation and other issues, makes recommendations, and describes next steps.

2 Existing Conditions Evaluation

2.1 Land Use

The Warm Springs Road corridor – from its diversion from Main Street at 6th Street to its entry into residential West Ketchum at the Big Wood River crossing – is diverse in its land use and is a nexus of several neighborhoods and districts. At its southeastern end, the corridor acts as a lower-intensity extension of the downtown core and has an eclectic mix of uses, including restaurants, homes, and retail. In this stretch, Warm Springs Road is straight and contributes to the downtown block structure and scale found in the downtown core and neighborhoods further to the east.

Figure 3. Character Areas of Warm Springs Road

Approaching 10th Street, the corridor begins to exhibit uses and features indicating its connection to the industrial zone that extends north along Lewis Street. This area includes a mix of light industrial and commercial spaces. The most prominent land use in this section is the large, vacant parcel on the northern edge of the corridor and west of 10th Street along Lewis

Street. Ketchum's *2014 Comprehensive Plan*[2] identifies this stretch as a part of the industrial neighborhood and as having a future Mixed-Use Industrial land use.

Crossing the popular Wood River Trail, the land use shifts again with single- and multi-family residences defining its southern edge and the substantial YMCA recreation and community center. Beyond the YMCA, the Guy Coles Skate Park occupies the stretch of land leading to the Wood River. This public institutional land use defines this part of the corridor and acts as a landmark.

Though the YMCA is a large, recognizable landmark, the transition from this portion of the corridor into the downtown core is not well-defined through the land uses or buildings. The three distinct zones, described above and shown in Figure 3, provide a somewhat erratic transition from one to the next and do not provide a gateway experience. This corridor is a primary corridor connecting Downtown to the Warm Springs neighborhood and ski mountain; therefore, there is an opportunity for this portion of the corridor to act as a gateway between the areas.

2.2 Public Realm

Currently, the Warm Springs Road corridor from Main Street (SH-75) to the Wood River lacks many basic public realm amenities or elements to make it feel like a part of the City. Many of the amenities and facilities found in or around the downtown core – such as comfortable and consistent sidewalks and a diversity of shared open space, among others – are not found throughout this portion of the corridor. Some areas, such as the stretch from Main Street (SH-75) to 10th Street, lack sidewalks altogether, whereas others have small, attached sidewalks that do not provide a safe or a comfortable experience for pedestrians. Similarly, there is no comfortable, on-street cycling infrastructure along much of the corridor other than a 5' wide bike line on the west side of Warm Springs Road from 9th Street to 6th Street and the Wood River trail connection just south of the YMCA. The Wood River Trail is an important connector through the community and is well-used by residents and visitors, though it does not supplant the need for safer, street-adjacent sidewalks or cycle facilities as prescribed in Goal M-4 of the *2014 Comprehensive Plan*.

Other amenities and pedestrian-oriented lighting, are almost entirely absent in this area. The Blue and Bronze route bus stops at Lewis Street, for example, only provide seating in the eastbound direction and this single bench is unprotected from the elements.

The area has several open spaces nearby, including Atkinson Park (connected by the Wood River Trail), and the public spaces around the YMCA, including the Guy Coles Skate Park. These open spaces are important to the area and provide well-used amenities for the community but act more as "community" open spaces as opposed to "neighborhood" open spaces, as defined in the *2014 Comprehensive Plan*.

[2] City of Ketchum, 2014 Comprehensive Plan. February 18, 2014. Accessible online: https://www.ketchumidaho.org/sites/default/files/fileattachments/planning_and_building/page/2131/2014_compplan_adopted_cc_2-18-14_final_201403281009599481.pdf

Overall, the area lacks a consistent and safe public realm critical to extend the vibrancy of downtown to this area, provide an identity, or present a gateway to or from the downtown core or Warms Springs Road.

2.3 Existing Traffic Operations

2.3.1 Intersection Layout and Traffic Control

The Lewis Street intersection is a T-intersection with stop control on the Lewis Street leg. At this intersection, Warm Springs Road has three-lanes with one travel lane in each direction and a center continuous two-way left turn (TWLT) lane. Additionally, the east leg of the intersection features a dedicated right-turn lane for westbound traffic to turn onto Lewis Street. Lewis Street features one right-turn lane, one left turn lane and one receiving lane with diagonal on-street parking on the west side and parallel on-street parking on the east side. Sidewalk is present along the south side of Warm Springs Road and the west side of 10th Street. The east leg of the intersection has sidewalk on both sides of the road. A crosswalk exists on the north leg of the intersection. Transit stops are present in both directions east of the intersection. Figure 4 shows the Lewis Street Warm Springs Intersection.

Figure 4: Lewis Street and Warm Springs Road Intersection Area

The 10th Street intersection is a four-leg intersection with stop control on the 10th Street legs. Warm Springs Road is currently striped as a three-lane section with one lane in each direction and a TWLT lane. 10th Street features one lane in each direction on each leg and on-street parking on the northeast side of the east leg. Sidewalk is present south of the intersection to the Hemmingway STEAM school and on the south side of Warm Springs Road. Crosswalks exist on all four legs of the intersection; however, no sidewalk is present on the north side of Warm Springs Road or along 10th Street to the north. Figure 5 shows the 10th Street and Warm Springs Road intersection area.

Figure 5. 10th Street and Warm Springs Road Intersection Area

The 10th Street intersection with Main Street (SH-75) is a T-intersection with stop control on the 10th Street leg. Main Street (SH-75) is one lane in each direction and has on street parking on the east side of the roadway. 10th Street is one lane in each direction with parking on the northeast side of the roadway. No Sidewalks or marked pedestrian crossings are present at this intersection. Figure 6 Shows the 10th Street and Main Street (SH-75) intersection area.

Figure 6. 10th Street and Main Street (SH-75) Intersection Area

2.3.2 Existing Volume Development

L2 Data Collection acquired turning movement counts for the study intersections on August 31, 2021, between the hours of 7:00AM to 9:00AM and 4:00PM and 6:00PM. For the Warm Springs Road intersections, the AM or morning peak hour was found to begin at 7:45AM while the evening or PM peak hour begins at 4:00PM. At the 10th Street and Main Street (SH-75) intersection, the AM peak hour begins at 8:00AM and the PM peak hour begins at 4:00 PM. **Appendix A** contains summaries of the traffic counts.

In general, the traffic counts indicate a travel pattern where commuters are going to work along the light industrial areas near Lewis Street or Saddle Road in the morning and then commuting home in the evening.

The City of Ketchum is a resort destination community with travel patterns that vary throughout the year. Although the City of Ketchum has no automated traffic recorders (ATR) stations of their own, the Idaho Transportation Department (ITD) has two ATRs at the following locations to record traffic volumes and estimate seasonal variations on SH-75 near Ketchum:

- ATR #28 – SH-75 @ mile post (MP) 135.95 (7.6 miles north of Sun Valley Road)
- ATR #68 – SH-75 @ MP 119.4 (2.9 miles north of Bullion Street in Hailey, ID)

Traffic volumes on SH-75 were analyzed using data from the ATRs to see how they fluctuate throughout a given year. The highest volumes were observed in the summer months, averaging over 15,000 vehicles per day (vpd) in June, July, and August at ATR #68 and around 2,400 vpd at ATR #28. The lowest volumes were observed in the winter months of December, January,

and February with volumes less than 1,200 vpd at ATR #68 and less than 900 vpd at ATR #28. There is a significant drop in volume on the highway from north and south of Ketchum. Table 1 shows the average monthly seasonal factors determined from the historical ATR data. Volumes from 2020 are not included in the analysis due to the Covid-19 pandemic and associated shutdowns.

Table 1. Monthly Seasonal Factors

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg MSF	0.90	0.94	0.88	0.85	0.93	1.11	1.24	1.19	1.08	1.03	0.88	0.98
w/o 2020	**0.89**	**0.93**	**0.89**	**0.89**	**0.94**	**1.11**	**1.24**	**1.18**	**1.06**	**1.02**	**0.88**	**0.97**

The seasonal adjustment results were calculated by dividing the August 2021 counts by a factor of 1.18. This represents an 18 percent decrease in volumes to represent a typical day. Figure 7 details the results of the volume adjustments.

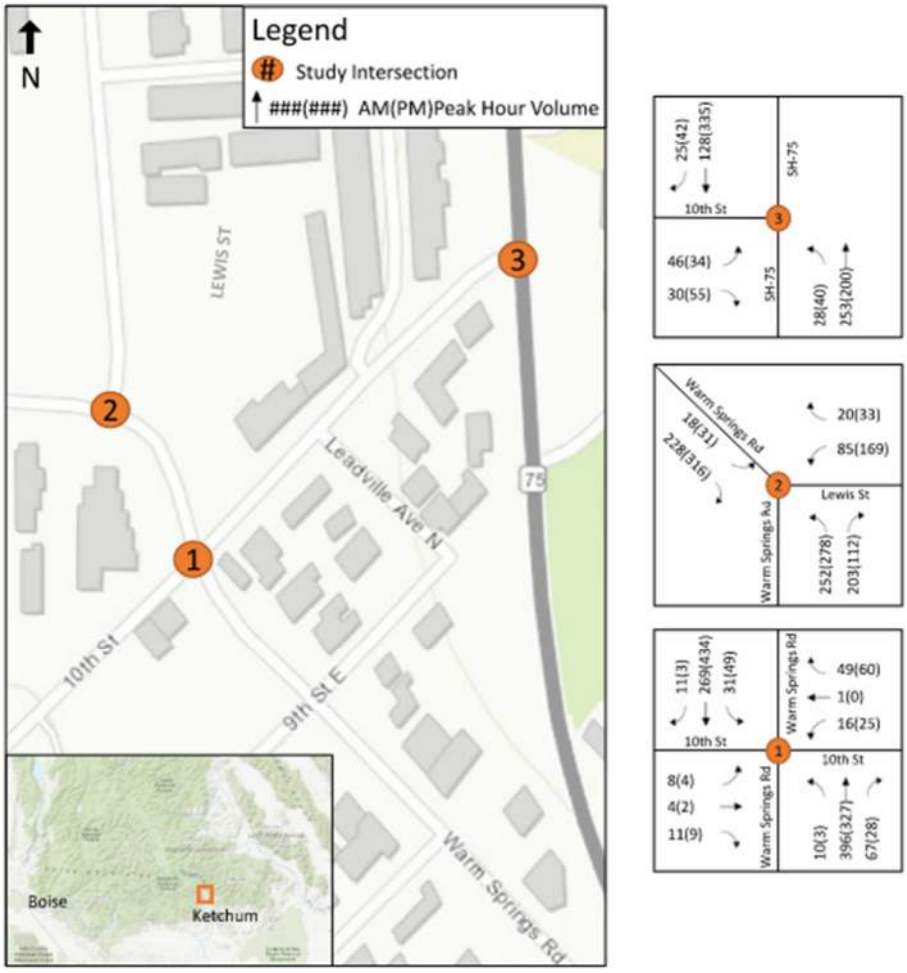


Figure 7. Warm Springs AM and PM Peak Hour Turning Movement Counts

2.3.3 Existing Traffic Operations

Capacity is defined as the maximum rate at which vehicles can pass through a given point in an hour under prevailing conditions. Intersection capacity is measured by evaluating the critical lane groups that experience the most delay for stop-controlled intersections. A volume to capacity (v/c) ratio less than 0.85 generally indicates that adequate capacity is available, and vehicles are not expected to experience significant queues or delays. As the v/c ratio approaches 1.0, traffic flow may become unstable and significant delay and queuing conditions may occur. Once the demand exceeds capacity, defined as a v/c ratio greater than 1.0, traffic flow is unstable and excessive delay and queuing is expected. The concept of level of service (LOS) was developed to correlate numerical traffic operational data to subjective descriptions of traffic performance at intersections. LOS is defined as the system of six designated ranges, from "A" (best) to "F" (worst), used to evaluate performance. Table 2 presents the Highway Capacity Manual (HCM) thresholds based on delay at stop-controlled intersections.

Table 2. LOS Thresholds for Motor Vehicles at Intersections

LOS	Stop Control Intersection Control Delay (seconds/vehicle)	Roundabout Intersection Control Delay (seconds/vehicle)
A	≤ 10	≤ 10
B	10 – 15	10 – 15
C	15 – 25	15 – 25
D	25 – 35	25 – 35
E	35 – 50	35 – 50
F	> 50	> 50

Source: National Academies Press. Highway Capacity Manual, 6th Ed. A Guide for Multimodal Mobility Analysis.

The project team used Synchro 11 software to model and analyze study area intersections under existing conditions and HCM 6th edition analysis methods to produce the analysis reports.

Given the large variability of the traffic volumes during the summer months compared to other months, the project team analyzed intersections with the unadjusted August volumes for comparison. In this scenario, the Warm Springs Road study intersections are all estimated to operate at LOS B or better during off-peak season AM and PM peak hours. Detailed reports from the capacity analyses are available in **Appendix B**.

Table 3 summarizes the capacity analysis results for the Warm Springs study intersections, using the existing traffic counts depicted in Figure 7**.** In general, the intersections are operating well over capacity with delays under 15 seconds for each movement. All the intersections operate at LOS A or B with vehicle queue lengths under 30 feet.

Table 3. Warm Springs Road Intersections - Seasonal Adjustment 2021 AM & PM Peak

Intersection	Overall Intersection LOS	Movement	Delay(s)	LOS	95th Percentile Queue Length (feet)	V/C
10th Street / Warm Springs Road	B (B)	NET/L/R	14.2 (14.3)	B (B)	4.4 (2.2)	0.052 (0.037)
		SWT/L/R	13.3 (14.1)	B (B)	8.8 (13.2)	0.13 (0.174)
		SBL	8.3 (8.1)	A (A)	2.2 (2.2)	0.027 (0.04)
		NBL	7.8 (8.2)	A (A)	0 (0)	0.007 (0.003)
10th Street / SH-75	B (B)	NEL	10.7 (12.4)	B (B)	6.6 (11)	0.096 (0.15)
		NBT/L	7.5 (8.1)	A (A)	2.2 (2.2)	0.017 (0.032)
Warm Springs Road/ Lewis Street	B (B)	SBL	12 (14.9)	B (B)	11 (28.6)	0.137 (0.316)
		SBR	9.6 (9.9)	A (A)	2.2 (2.2)	0.024 (0.042)
		SEL	8.1	A	0 (2.2)	0.015 (0.026)

2.3.4 Summer Peak Operations

Given the large variability of the traffic volumes during the summer months compared to other months, the project team analyzed the intersections with the unadjusted August volumes for comparison. The ad study intersections are all estimated to operate at LOS C or better during peak season AM and PM peak hours and Table 4. Warm Springs Road Intersections - August 2021 AM & PM Peak outlines the operational results. Detailed reports from the capacity analyses are available in **Appendix B**.

Table 4. Warm Springs Road Intersections - August 2021 AM & PM Peak

Intersection	Overall Intersection LOS	Movement	Delay (s)	LOS	95th Percentile Queue Length (feet)	V/C
10th Street / Warm Springs Road	C (C)	NET/L/R	16.3 (16.9)	C (C)	4.4 (4.4)	0.076 (0.054)
		SWT/L/R	15.1 (17)	C (C)	13.2 (22)	0.174 (0.245)
		SBL	8.6 (8.3)	A (A)	2.2 (4.4)	0.034 (0.049)
		NBL	7.9 (8.4)	A (A)	0 (0)	0.009 (0.003)
10th Street / SH-75	B (B)	NEL	11.4 (13.8)	B (B)	8.8 (15.4)	0.123 (0.198)
		NBT/L	7.6 (8.3)	A (A)	2.2 (2.2)	0.021 (0.04)
Warm Springs Road / Lewis Street	B (B)	SBL	12.9 (17.7)	B (C)	13.2 (44)	0.175 (0.412)
		SBR	9.9 (10.3)	A (B)	2.2 (4.4)	0.03 (0.053)
		SEL	8.5 (8.3)	A (A)	2.2 (2.2)	0.019 (0.032)

2.4 Existing Safety Analysis

2.4.1 Crash History

During the 5-year study period (2016-2020), there was one crash near the intersection of Warm Springs Road/Lewis Street and one crash at the intersection of Warm Springs Road/10th Street. Both crashes occurred during the noon hour on a weekday with clear conditions. The possible injury crash near Warm Springs Road and Lewis Street was caused by a driver following too close and was not related to the intersection. The crash at the intersection of Warm Springs Road/10th Street was a left turning crash where the driver failed to yield. There were no injuries associated with this crash.

2.4.2 Qualitative Safety Analysis

Although the number of crashes in the study area is low, conversations with the public at public involvement meetings, with City staff, and at City Council meetings revealed safety concerns with the corridor, as described in the following bullets. While the concerns may not be producing crashes within the study area, they do increase the amount of stress that pedestrians, bicyclists and motorists feel while traversing the area.

- A southbound driver turning left from 10th Street onto Warm Springs has a difficult time seeing cross traffic as the visibility is blocked by the gas station pumps. Multiple individuals commented that they specifically avoided the intersection because of the sight distance issues. An intersection sight triangle analysis was performed using methodologies outlined in Sections 9.5.2.3 and 9.5.3 of the AASHTO *Policy on Geometric Design of Highways and Streets*[3]. A 25 mph design speed was used to evaluate the sight distance. As shown in Figure 8, the gas station blocks the turning vehicle's view of oncoming traffic on Warm Springs Road.

[3] American Association of State Highway and Transportation Officials (AASHTO). A Policy On Geometric Design of Highways and Streets, 7th Edition. 2018

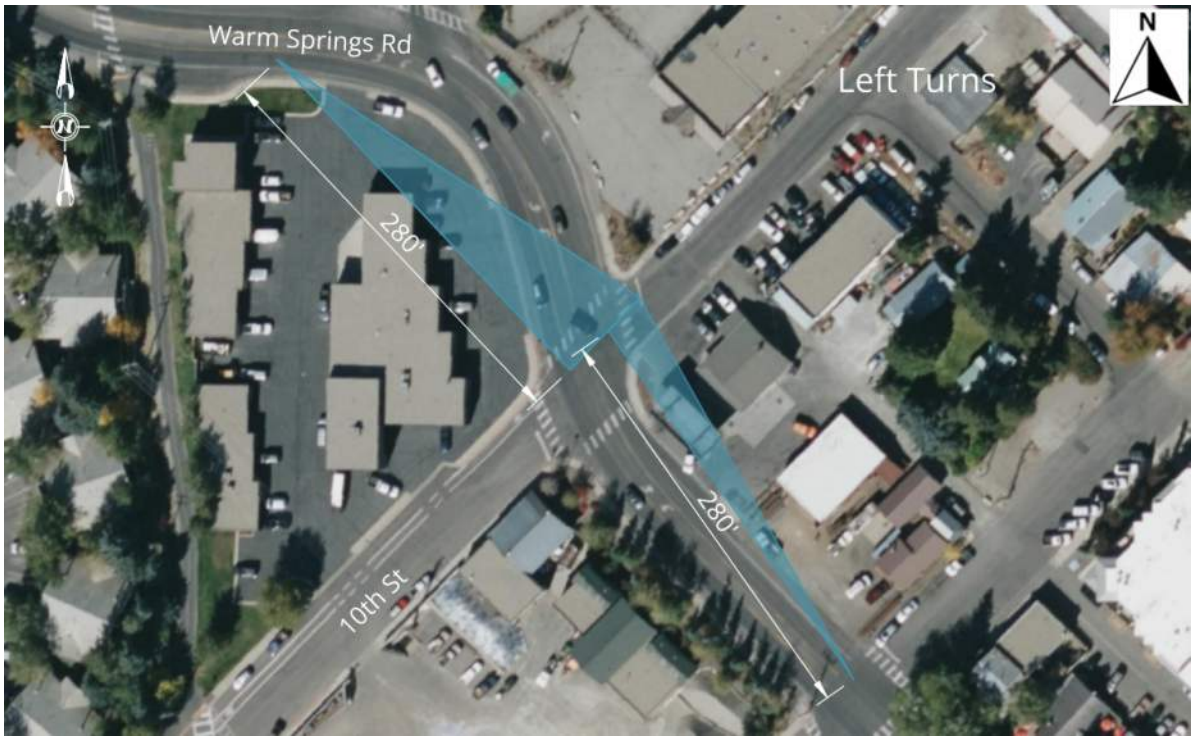


Figure 8: Left Turn Sight Triangles

- Multiple private approaches are within 60 feet of the intersection creating conflicts throughout the intersection.
- Pedestrians and bikes are also overexposed. The sidewalks in this area are in disrepair or missing for long sections. Some business approaches are longer than necessary and overexpose pedestrians traversing the sidewalk to turning traffic entering the business as shown in Figure 9. Lewis Street's wide cross section and skewed intersection with Warm Springs creates an approximately 90-foot crossing for pedestrians in that area, shown in Figure 10. Facilities complaint with the Americans with Disabilities Act (ADA) and Public Rights-of-Way Accessibility Guidelines (PROWAG) are not present to alert visually impaired pedestrians that they are entering a conflict area. The Lack of ADA/PROWAG compliant facilities also creates difficulties for disabled individuals to traverse the area.

Figure 9. Aged Sidewalk and Large Approach At 10th & Warm Springs. Source: Google Earth

Figure 10. Large Pedestrian Crossing Across Lewis Street

- The Warm Springs Road shoulder widths between Lewis Street and 10th Street are too narrow to support bike lanes, which prevents continuity of the network. This forces cyclists into the travel lanes and increases user stress.

2.5 Transit Facilities

Mountain Rides is the local transit authority maintaining bus routes throughout the City of Ketchum. The Blue, Bronze and Valley Routes all provide transit access through this corridor. One stop exists on either side of Warm Springs Road west of Lewis Street. There is a pullout on the route going toward downtown that is no longer of sufficient length for the buses Mountain Rides is using. The pullout is shown in Figure 11. Also, the stops do not feature shelters, or safety lighting. In conversations with Mountain Rides, they expressed concerns with the 10th Street intersection, specifically with how difficult it is to turn right onto Warm Springs Road.

Figure 11: Existing Mountain Rides Bus Pullout. Source: Google Earth

3 Qualitative Alternatives Analysis

3.1 Alternatives

The project team developed five conceptual alternatives for the study area to improve the surrounding land use.

3.1.1 Concept Alternative 1 – 10th Street Roundabout

Figure 12 shows the concept for Alternative 1. This alternative replaces the existing two-way stop-controlled Warm Springs Road and 10th Street intersection with a single lane roundabout. This concept provides good vehicle operations while requiring drivers to slow down approaching and moving through the intersection. Pedestrian facilities would be provided on all legs, connecting to existing facilities, and bikes would be able to travel through the roundabout due to low vehicle speeds or on pathways around the circle, crossing the legs in the pedestrian crosswalks. This concept would require widening the intersection with estimated private and public parking, gas pump, access, and building impacts. The adjacent Warm Springs Road and Lewis Street intersection is not improved with this alternative.

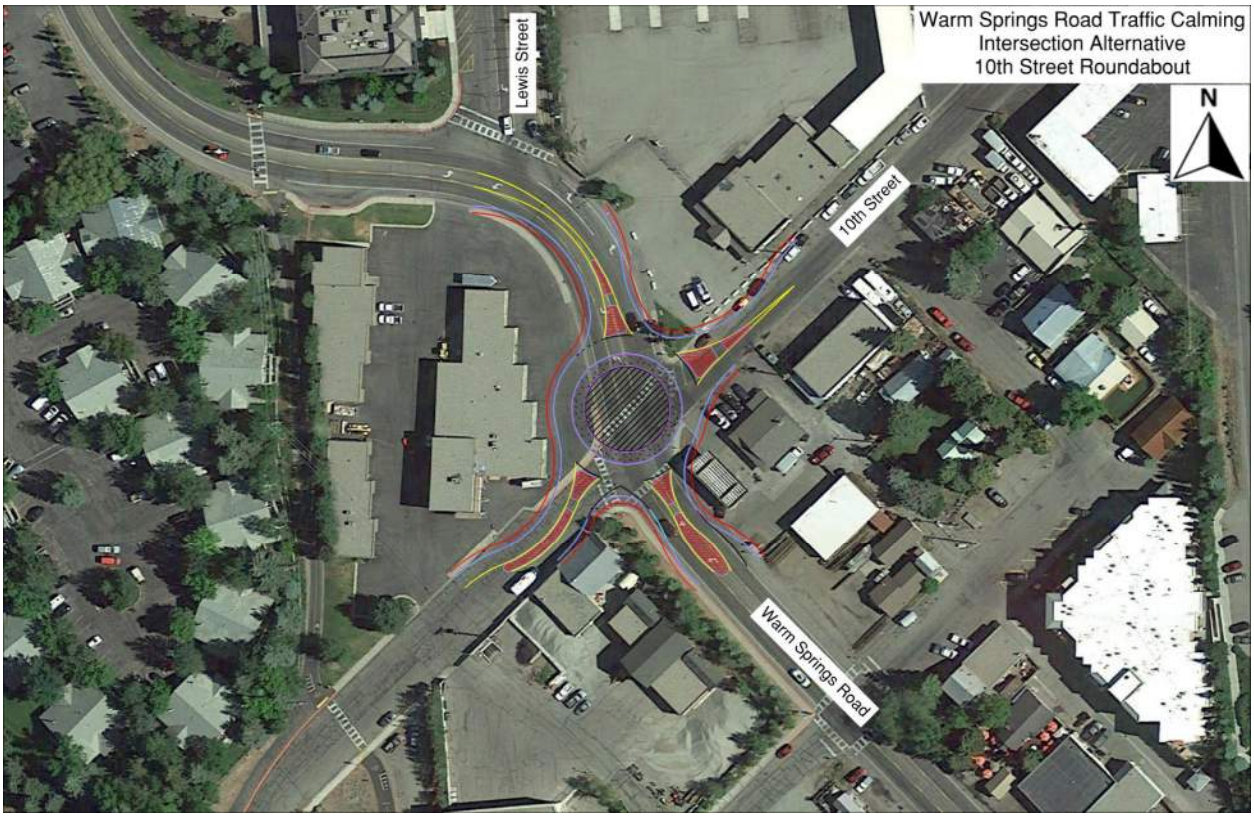


Figure 12. Concept Alternative 1

3.1.2 Concept Alternative 2 - Lewis Street Roundabout

Figure 13 shows the concept for Alternative 2. This alternative replaces the existing stop-controlled Warm Springs Road and Lewis Street intersection with a single lane roundabout. This concept provides good vehicle operations while requiring drivers to slow down approaching and moving through the intersection. Pedestrian facilities would be provided on all legs, connecting to existing facilities, and bikes would be able to travel through the roundabout due to low vehicle speeds or on pathways around the circle, crossing the legs in the pedestrian crosswalks. The bus stop on the west leg would be updated with this alternative. This concept would require widening the intersection with estimated private and public parking and access impacts. The adjacent Warm Springs Road and 10th Street intersection is not improved with this alternative.

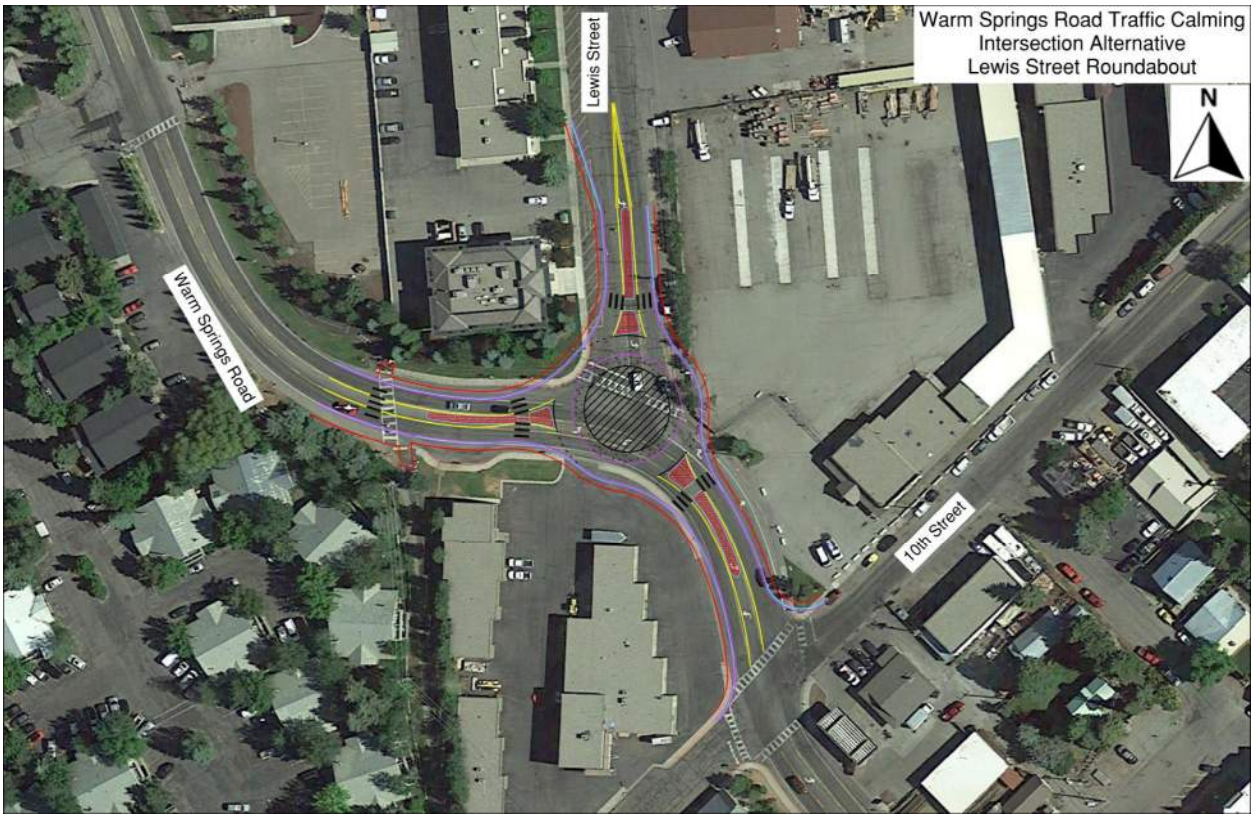


Figure 13. Concept Alternative 2

3.1.3 Concept Alternative 3 - 10th Street and Lewis Street Dog Bone Roundabout

Figure 14 shows the concept for Alternative 3. This alternative replaces the existing stop-controlled Warm Springs Road intersections at both 10th Street and Lewis Street with a single lane "dog bone" roundabout. A dog bone roundabout does not form a complete circle but instead has a "raindrop" or "teardrop shape" in the middle that connects two roundabout intersections. In this case, the two intersections operate as a single larger intersection connected by the dog bone roundabout. This alternative has similar benefits and impacts described for Alternatives 1 and 2. It increases out-of-direction travel for vehicles turning left from some approaches as they must navigate around the entire dog bone to reach the desired street. Pedestrians and bikes potentially have more out-of-direction travel as well.

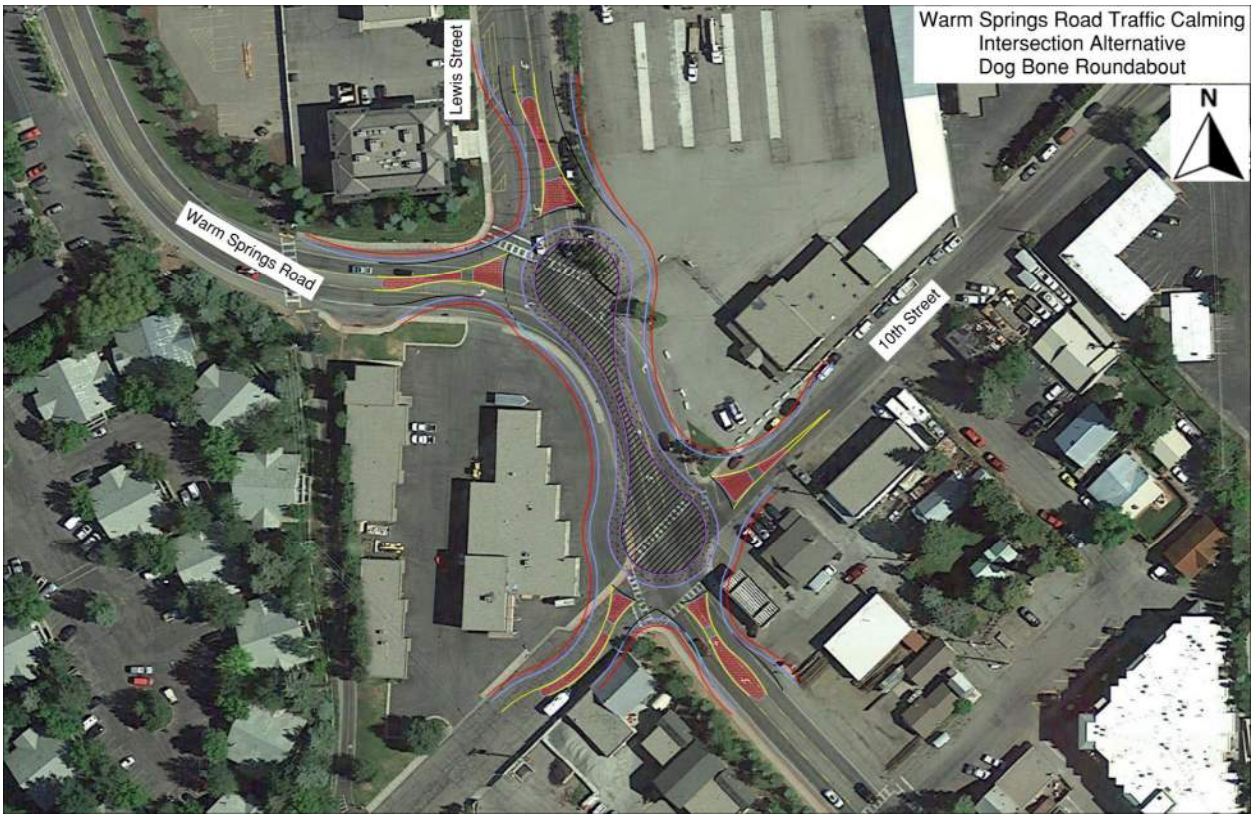


Figure 14. Concept Alternative 3

3.1.4 Concept Alternative 4 – 10th Street & Lewis Street Realignment & Roundabout

Figure 15 shows the concept for Alternative 4. This alternative realigns 10th Street between Warms Springs Road and SH-75 to the north and west to match into the Lewis Street and Warm Springs Road intersection, cutting through the adjacent property. The Lewis Street leg is realigned to the east and a single lane roundabout is developed to serve the new four-leg intersection. The existing 10th Street between Warms Springs Road and SH-75 is proposed to be disconnected from Warm Springs Road but could remain as an access to existing businesses along with Leadville Avenue. The abandoned roadway could also be negotiable for incorporation in development opportunities for adjacent landowners.

As with the other roundabout alternatives, this concept provides good vehicle operations while requiring drivers to slow down approaching and moving through the intersection. Pedestrian facilities would be provided on all legs, connecting to existing facilities, and bikes would be able to travel through the roundabout due to low vehicle speeds or on pathways around the circle, crossing the legs in the pedestrian crosswalks. The bus stop on the west leg of Warm Springs Road would be updated with this alternative. This concept would require widening the intersection with estimated private and public parking, access, and building impacts along with splitting the parcel in the northeast corner. The adjacent Warm Springs Road and 10th Street intersection is updated with this alternative by removing the east leg, as described.

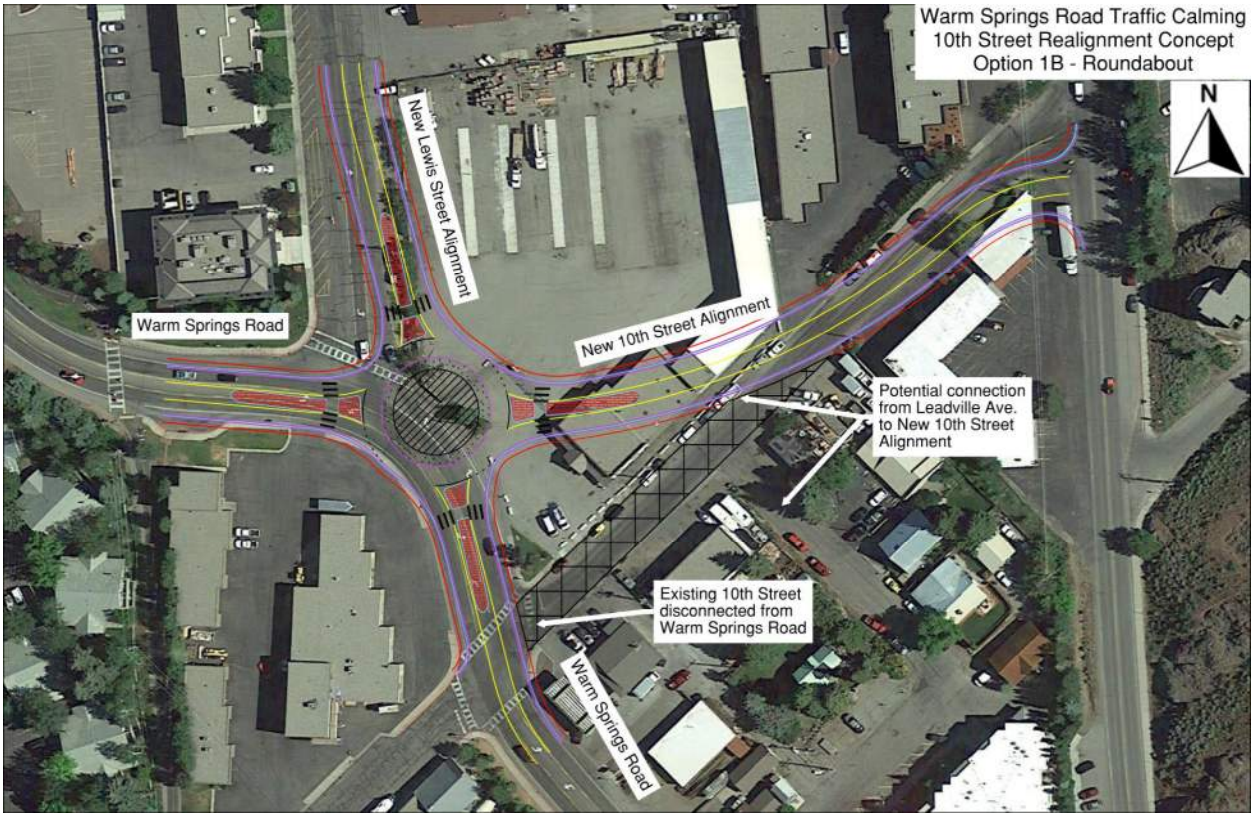


Figure 15. Concept Alternative 4

3.1.5 Concept Alternative 5 – Block/Street Realignment

Figure 16 shows the concept for Alternative 5. This alternative realigns Lewis Street to line up with Leadville Avenue and realigns Warm Springs to be a more direct north/south connection through the adjacent parcel. A new east/west street connects Warm Springs Road and Lewis Street, creating a new block between the realigned Warm Springs Road, realigned Lewis Road, 10th Street, and the new street. The intersections are assumed to be stop controlled in each corner of the new block.

Alternative 5 differs from the others because it includes new local street alignments that impact several parcels. It removes most of the curves in these streets while introducing more intersections to the area.

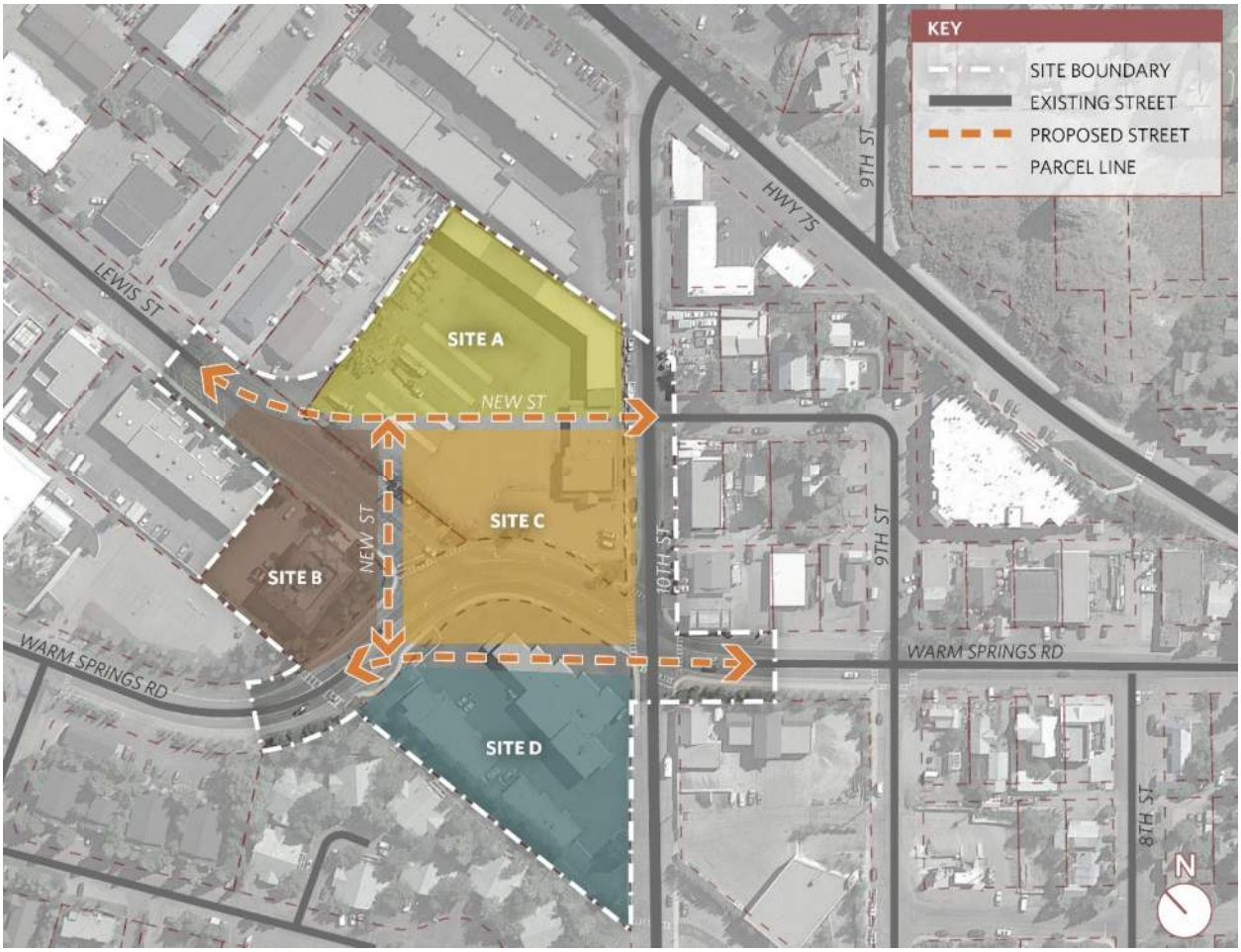


Figure 16. Concept Alternative 5

3.2 First Public Involvement Summary

The first public involvement meeting was held on May 5, 2022, to show the public the different improvement concept alternatives. Online surveys were also available for 2 weeks after the in-person meeting to allow the public to view the alternatives and provide feedback. Public involvement results are shown in **Appendix C**. In total, 219 responses were recorded via the online survey. Not every respondent answered every question.

The results of the public involvement meetings indicated that most people were dissatisfied with the existing intersection configurations and 77 percent of individuals (137 out of 177) said the intersections should be reconfigured or adjusted. One hundred forty-four of 172 individuals (84 percent) said pedestrian enhancements should occur. When asked to rank the different alternatives from first to last, Alternative 4 received the most support, followed by Alternative 1. Alternative 5 received the least support.

3.3 High Level Screening

The project team developed a screening process to evaluate each of the alternatives using 11 separate criteria identified in discussion with the City staff, at the public meeting, and during other project update meetings. Detailed descriptions of each criterion can be found in **Appendix D**.

- Safety
- Improved Connectivity for All Modes
- Warms Springs Road Crossings Improvements
- Split Parcels
- Building Removal
- Parking Impacts
- Improve Existing Business Access & Connectivity
- Opportunity for Redevelopment and/or Placemaking
- Traffic Calming
- Reduce the Number of Intersections/Driveways on Warm Springs Road
- Serve as Parade Detour Route

City staff and members of the project team gave each alternative a score of **GOOD**, **NEUTRAL**, or **POOR** for each of the criteria. A **GOOD** score received +1 point while a **POOR** score received -1 point. A **NEUTRAL** score received 0 points. An overall "score" was given to each alternative by adding up the number of **GOOD** scores and subtracting the number of **POOR** scores. A **NEUTRAL** score for a given criterion neither helped nor hurt an alternative.

3.3.1 Concept Alternative Screening Results

A meeting was held on July 8, 2022, to discuss each alternative, compare the criteria evaluations, and reconcile screening from each evaluator to identify the top two alternatives to move into a more detailed qualitative analysis and screening. City staff and the project team were consistent in identifying the two alternatives to carry forward as Concept Alternative 2 – Lewis Street Roundabout and Concept Alternative 4 – 10th Street & Lewis Street Realignment & Roundabout. Table 5 summarizes the screening process final scoring. Figure 17 also shows a graphical representation of the final score totals.

Table 5. Screening Matrix

Concept Alternative / Criterion	No Build	1– 10th Street Roundabout	2 - Lewis Street Roundabout	3 - 10th Street and Lewis Street Dog Bone Roundabout	4– 10th Street & Lewis Street Realignment & Roundabout	5 – Block/Street Realignment
Safety	NEUTRAL	GOOD	GOOD	GOOD	GOOD	POOR
Improved Connectivity for All Modes	POOR	GOOD	GOOD	POOR	GOOD	GOOD
Warms Springs Road Crossings Improvements	POOR	NEUTRAL	GOOD	GOOD	GOOD	POOR
Split Parcels	GOOD	GOOD	GOOD	POOR	POOR	POOR
Building Removal	GOOD	POOR	GOOD	POOR	POOR	POOR
Parking Impacts	GOOD	POOR	GOOD	POOR	GOOD	POOR
Improve Existing Business Access & Connectivity	POOR	POOR	NEUTRAL	POOR	GOOD	GOOD
Opportunity for Redevelopment and/or Placemaking	POOR	NEUTRAL	NEUTRAL	NEUTRAL	GOOD	GOOD
Traffic Calming	POOR	GOOD	GOOD	GOOD	GOOD	GOOD
Reduce the Number of Intersections/Driveways on Warm Springs Road	NEUTRAL	GOOD	NEUTRAL	GOOD	GOOD	POOR
Serve as Parade Detour Route	GOOD	GOOD	GOOD	POOR	GOOD	GOOD
Total Green Score	4	6	8	4	9	5
Total Red Score	-5	-3	0	-6	-2	-6
Green – Red Total Score	-1	3	8	-2	7	-1

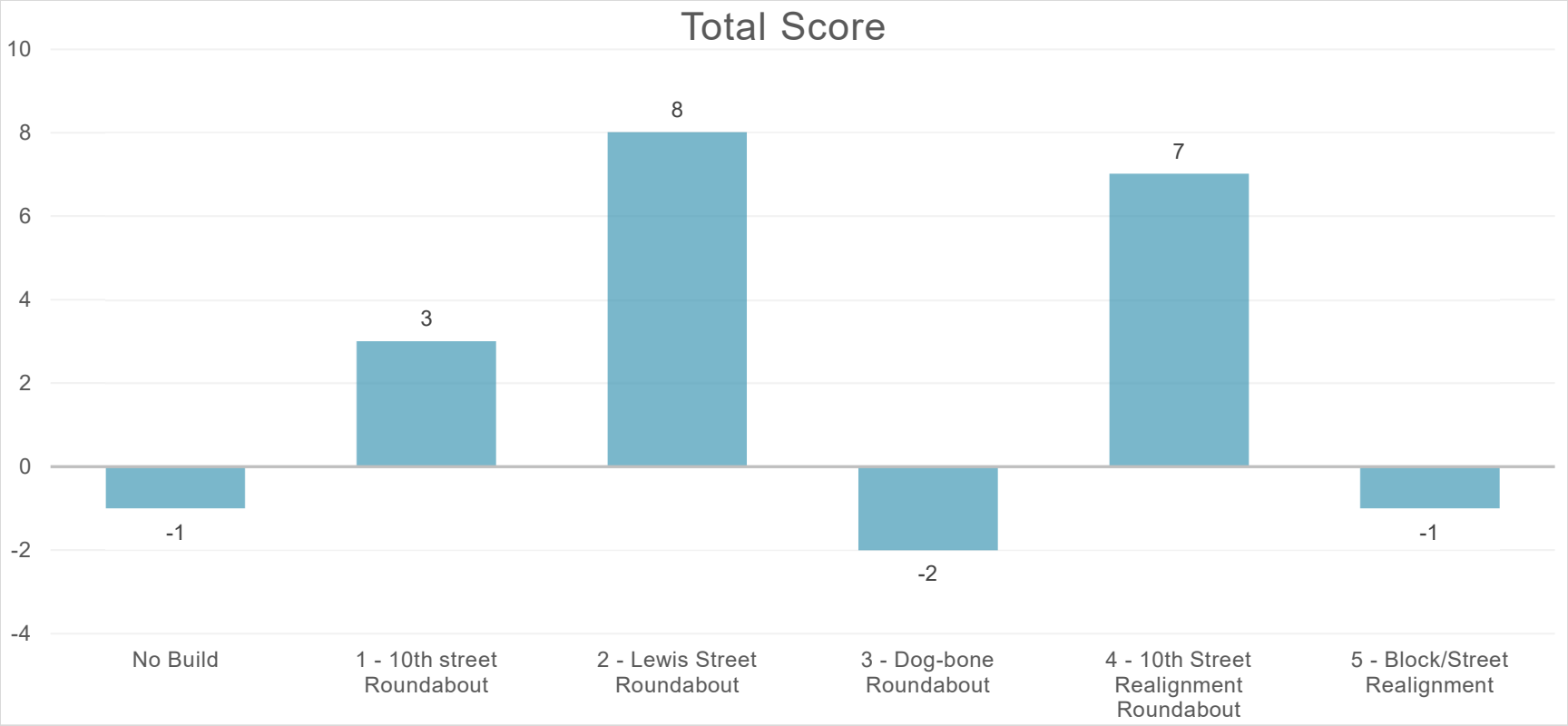


Figure 17. Total Scores

3.4 Alternatives Selected

At a City Council meeting on July 18, 2022, HDR and City staff recommended that the City move Alternative 2, Alternative 4, and the No Build option into a qualitative analysis. The City Council concurred with the recommendation and advanced the three alternatives for more analysis.

Each of the identified alternatives had issues requiring further investigation, mitigation, and comparison in the qualitative analysis. The project team updated the conceptual layouts to address the following issues, as appropriate.

- No Build
  - Add sidewalk to eliminate sidewalk gaps and improve pedestrian ramps, where possible, to improve pedestrian connectivity and ADA/PROWAG compliance.
  - Evaluate existing access near Warms Springs Road/10th Street intersection to improve safety and pedestrian facilities.
- Concept Alternative 2 – Lewis Street Roundabout
  - Verify and update access changes to adjacent properties/businesses.
  - Address Warms Springs Road/10th Street intersection skew, if possible.
  - Adjust on street parking on Lewis Street.
- Concept Alternative 4 – 10th Street & Lewis Street Realignment & Roundabout
  - Verify and update access changes to adjacent properties/businesses.
  - Address Warms Springs Road/10th Street intersection/business access.
  - Update intersection of 10th Street/SH-75 to avoid right-of-way (ROW)/building impacts.

4 Detailed Analysis

4.1 Future Land Use and Public Realm Opportunities

The three alternatives feature differing options to enhance the area. Alternative 4 has the most potential benefit followed by Alternative 2, while the No Build option provides fewer opportunities. Coordination with adjacent business owners will be required to fully realize the benefits of each alternative. The following sections summarize the opportunities that each alternative could provide the City.

4.1.1 No Build

The No Build option provides no changes to the land use or public realm opportunities. The large, underdeveloped parcel owned by Albertsons could still be redeveloped. The transition from the downtown core to the light industrial zone on Warm Springs Road would not be improved. The quick transition of land uses in the area may still lead to a disjointed experience.

4.1.2 Alternative 2 – Lewis Street Roundabout

Alternative 2 provides several opportunities to enhance the area. The alternative allows for development of the large undeveloped parcel owned by Albertsons, and there is potential to

provide enhanced features for pedestrians, bikes, and placemaking. Extra space at the southern portion of the Albertsons' parcel could allow for a distinctive plaza to be created providing the needed space for a gateway element identifying a transition in and out of the downtown core. The roadway improvements will require some ROW from surrounding businesses but the impact to the parcels is minimal.

The opportunity also has potential to enhance placemaking in the area. Space inside the roundabout could be used for public realm enhancements such as artwork, specialty landscaping, or signage and wayfinding. New roadway improvements enable public realm and placemaking elements to continue farther down Warm Springs Road and Lewis Street along the streets themselves. Public realm and placemaking elements that could be incorporated include wide detached sidewalks/pathways, tree coverage, specialty paving, signage and wayfinding, and/or artwork.

4.1.3 Alternative 4 – 10th Street & Lewis Street Realignment & Roundabout

Similar to Alternative 2, the realigned roundabout in Alternative 4 provides opportunity to enhance the area. The alternative allows for developing the large undeveloped parcel owned by Albertsons, and there is potential to provide enhanced features for pedestrians, bikes, and placemaking. A new parcel would be formed between Warm Springs Road and Leadville Avenue with frontage to the proposed roundabout. Land use at this site could be commercial, continuing the downtown feel farther up Warm Springs Road. The parcel could also be sold to adjacent businesses to aid in the redevelopment and enhancement of those parcels. Roadway improvements will have impacts to existing businesses and roads such as 10th Street, Leadville Avenue and Lewis Street.

4.2 Forecasted Travel Patterns

4.2.1 Study Year, Target LOS and Growth Rates

For the purposes of this study, the project team identified year 2042 as the design year for the improvements. Per section A.15 of the Idaho Transportation Department's *Roadway Design Manual,* a target LOS D was set to analyze the intersection improvements. According to the manual, this LOS standard is "applicable for Federal-aid construction on State and local highway excluding highways on the National Highway System." Should the project receive federal funding, identified improvements would need to meet the LOS D threshold.

Since 10th Street intersects Main Street (SH-75), which is an ITD roadway, a target LOS D was set for the intersection improvements per Table A-3 in section A.15.01 of ITD's *Roadway Design Manual*[4].

The City of Ketchum does not lie within boundaries of a Municipal Planning Organization (MPO) that would produce a travel demand model that projects trip generation out into the future. Therefore, the project team calculated an average growth rate to represent traffic volume growth.

[4] Idaho Transportation Department (ITD). Roadway Design manual. 2012

Traffic volumes on SH-75 were analyzed using historical data from ITD's ATRs to see how they have grown between 1990 and 2019. Due to the Covid 19 pandemic shutdowns, 2020 data was again excluded. Historical data from the ATR stations show patterns of steady and rapid growth on SH-75 up to the early 2000s, followed by a steep decline that coincides with the Great Recession. Traffic volumes started increasing again around 2012 and have steadily increased each year approaching the highest volumes seen before the Great Recession. Using the ATR data, the project team calculated a historical annual average growth rate of 1.44 percent for SH-75 and applied it as a regional growth factor for the City of Ketchum. Figure 18 shows the change in traffic volumes since 1990.

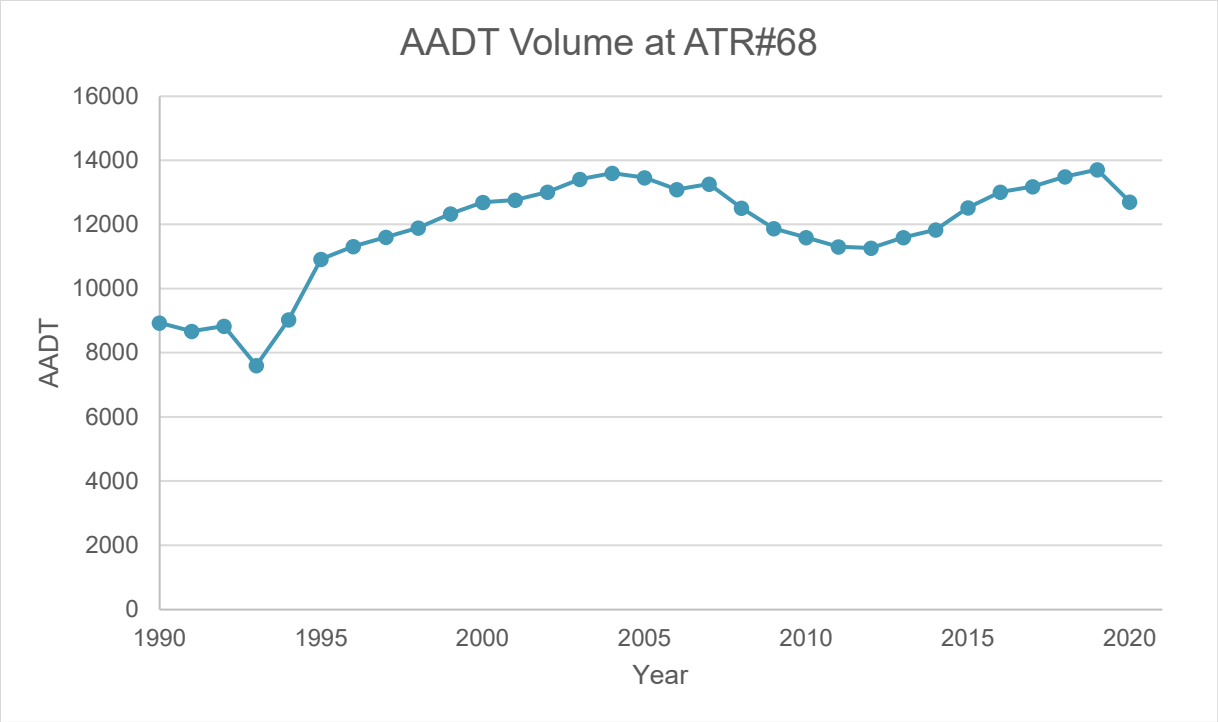


Figure 18. Traffic Volumes since 1990

While the City of Ketchum has experienced recent traffic growth, it also is a resort destination City that is sensitive to economic downturns. Over the design life of the improvements, one can reasonably expect an economic downturn and traffic growth to slow or decline as compared to recent trends. The historical 1.44 percent calculated smooths out the ups and downs that the City may experience throughout the future economic cycles and provides a growth scenario consistent with historical trends.

4.2.2 Forecasted Travel Patterns

HDR applied the historical growth rates to the unadjusted August count volumes to estimate future travel demand. For Alternative 2 and the No Build option, the growth rate was applied to the turning movements directly. However, Alternative 4 removes a portion of 10th Street and converts the intersection of 10th Street and Warm Springs from a four-way intersection into a T-intersection. 10th Street traffic is then rerouted to a new four-way intersection at Warm Springs Road and Lewis Street. For this new intersection, traffic demand entering and leaving the study

area was assumed to remain the same and turning movement volumes were estimated using the iterative procedure – directional method outlined in National Cooperative Highway Research Program (NCHRP) 765, *Analytical Travel Forecasting Approaches for Project-Level Planning and Design*[5]. The directional method uses an iterative approach to alternatively balance entering traffic and departing traffic volumes until an acceptable level of convergence is reached. The T-intersections turning movements were manually reconfigured assuming similar traffic patterns. Results of the turning movement analysis are shown in Figure 19 and Figure 20.

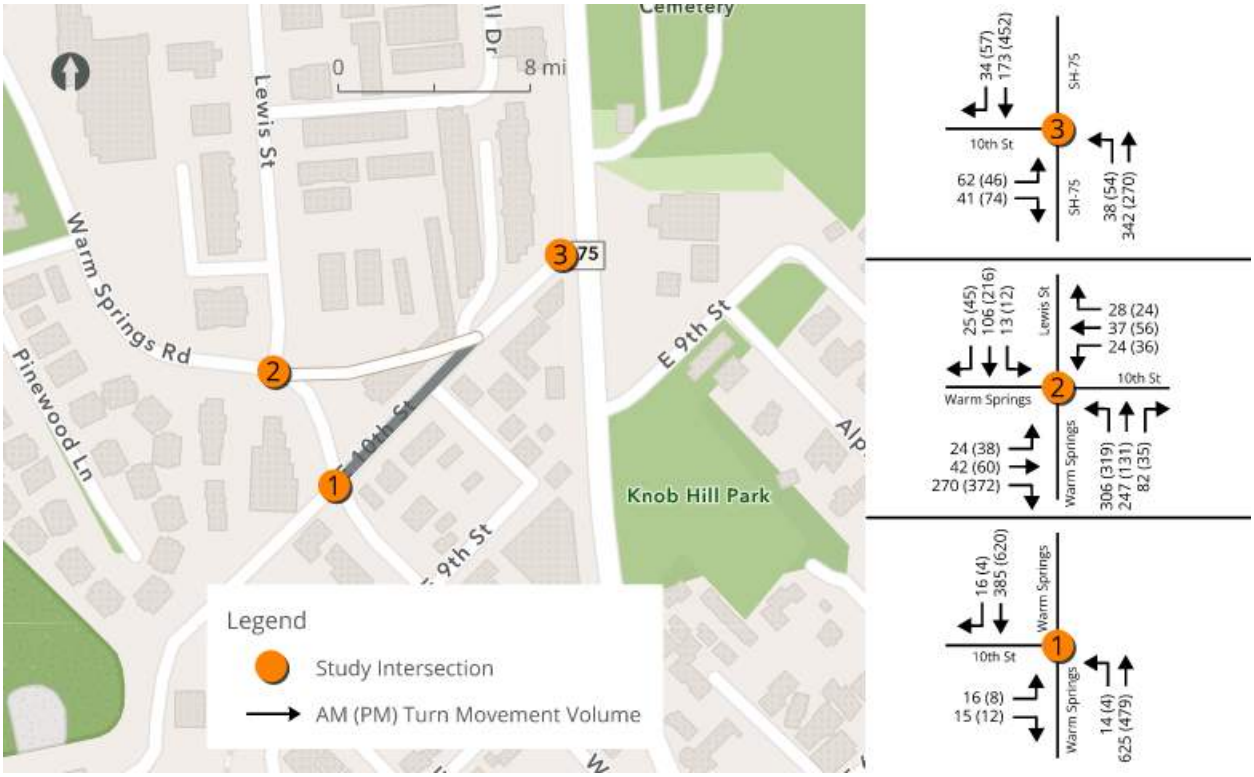


Figure 19. Alternative 4 Peak Volumes

[5] National Cooperative Highway Research Program (NCHRP). Report 765. Analytical Travel Forecasting Approaches for Project-Level Planning and Design. Transportation Research Board of the National Academies. 2014.

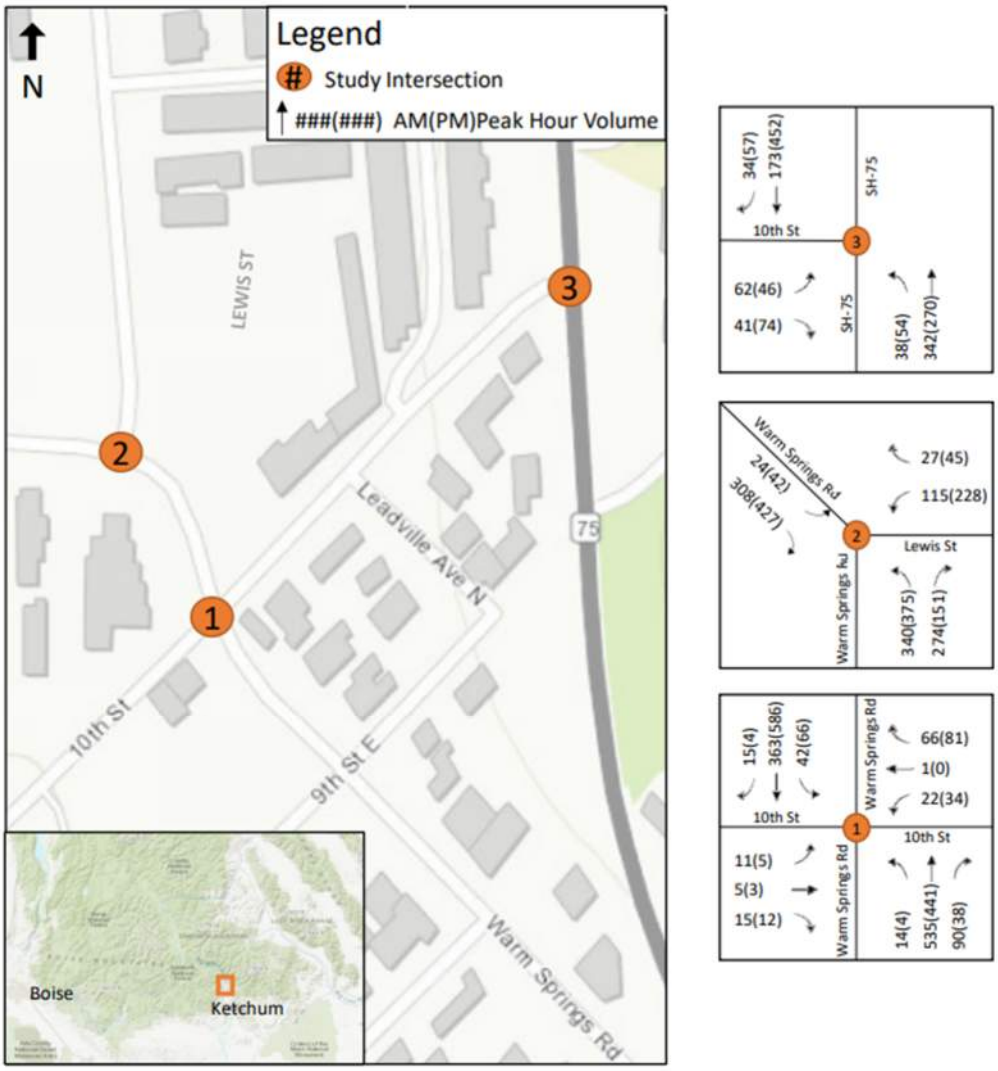


Figure 20: No Build and Alternative 2 Peak Volumes

4.3 Future Capacity Analysis

4.3.1 Analysis Software and Settings

The project team used SIDRA 9 software to analyze the roundabout alternatives and Synchro 11 software to analyze the stop-controlled intersections. Both software programs use the HCM methodology to compute delay, LOS, and V/C ratios. The peak hour factor for the future scenarios was set at 0.92 per HCM recommendations.

4.3.2 No Build Results

In the No Build option, the three study intersections are expected to experience longer delays than in the existing conditions; however, they are estimated to operate at or above the LOS D threshold. The movements on Warm Springs Road continue to see shorter delays; however, the increased volume on Warm Springs Road decreases the number of gaps available for vehicles on the side streets. The 10th Street and Warm Springs Road intersection side street operations

decrease from LOS B to LOS C or D and the Warm Springs Road and Lewis Street intersection decreases to a LOS D from LOS B. Results are presented in Table 6 and detailed results can be found in **Appendix E**.

Table 6. No Build Traffic Operations - August 2042 AM & (PM) Peak

Intersection	Overall Intersection LOS	Movement	Delay (s)	LOS	95th Percentile Queue Length (feet)	V/C
10th Street / Warm Springs Road	C (D)	NET/L/R	18 (23.5)	C (C)	6.6 (6.6)	0.09 (0.10)
		SWT/L/R	16.7 (27.7)	C (D)	17.6 (48.4)	0.22 (0.45)
		SBL	8.8 (8.7)	A (A)	2.2 (4.4)	0.04 (0.07)
		NBL	8 (8.8)	A (A)	0 (0)	0.01 (0.01)
10th Street / SH-75	B (C)	NEL	7.7 (18.2)	A (C)	2.2 (30.8)	0.03 (0.32)
		NBT/L	12.4 (8.7)	B (A)	13.2 (4.4)	0.16 (0.06)
Warm Springs Road/ Lewis Street	C (D)	SBL	15.2 (27.3)	C (D)	22.0 (88.0)	0.26 (0.62)
		SBR	14.3 (11.0)	B (B)	2.2 (4.4)	0.04 (0.08)
		SEL	9.0 (8.7)	A (A)	2.2 (2.2)	0.03 (0.05)

The presence of a TWLT lane at the Warm Springs Road and Lewis Street intersection allows for a two-stage southbound left turn movement; vehicles will first turn into the turn lane and then merge into traffic. The HCM methodology assumes a smaller gap acceptance with a TWLT lane than if traffic were to pull out directly into traffic. Therefore, the HCM assumes TWLT lanes increase capacity at an intersection. Without the TWLT lane, the southbound left turn at Lewis Street is estimated to operate at LOS F in the PM peak hour with delays exceeding 90 seconds.

4.3.3 Alternative 2 – Lewis Street Roundabout

Table 7. Alternate 2 Traffic Operations - August 2042 AM & (PM) Peak

Intersection	Overall Intersection LOS	Movement	Delay (s)	LOS	95th Percentile Queue Length (feet)	V/C
Warm Springs Road/ Lewis Street	A (A)	NET/L/R	8.2 (7.3)	A (A)	103.0 (79.2)	0.51 (0.45)
		SWT/L/R	5.6 (7.9)	A (A)	18.8 (42.3)	0.17 (0.34)
		ET/L/R	6.0 (9.3	A (A)	42.6 (78.6)	0.31 (0.49)

The results of the analysis presented in Table 7 show that the proposed roundabout at 10th Street and Warm Springs Road is estimated to operate at LOS A during the design year using the August 2042 volumes. The V/C ratios for each leg are all under 0.85 suggesting that excess

capacity exists to handle an increase in traffic volumes if they increase faster than projected. The 10th Street intersections will not be improved and are expected to operate similarly to the No Build option scenario.

4.3.4 Alternative 4

Table 8. Alternative 4 Traffic Operations - August 2042 AM & (PM) Peak

Intersection	Overall Intersection LOS	Movement	Delay (s)	LOS	95th Percentile Queue Length (feet)	V/C
10th Street / Warm Springs Road / Lewis Street	A (A)	NBT/L/R	9.5 (7.7)	A (A)	116.1 (73.9)	0.56 (0.45)
		WBT/L/R	6.7 (6.4)	A (A)	14.2 (17.3)	0.14 (0.16)
		SBT/L/R	5.9 (8.4)	A (A)	19.6 (43.8)	0.18 (0.35)
		EBT/L/R	6.3 (10.0)	A (B)	44.5 (93.3)	0.32 (0.52)
10th Street / Warm Springs Road	C (C)	NWL	8.2 (8.9)	A (A)	0 (0)	0.01 (0.01)
		NEL/R	17.4 (17.7)	C (C)	6.6 (4.4)	0.10 (0.07)

The re-aligned roundabout provides nearly the same LOS for the roundabout as Alternative 2 as presented in Table 8. The roundabout delays remain low at 10 seconds or less and V/C ratios under 0.85. Again, excess capacity is present in the roundabout for an increase in traffic. The overall LOS for the roundabout is A in both the AM and PM peaks. The 10th Street intersection near the Ernest Hemingway STEAM School is converted into a T-intersection and Warm Springs Road is expected to operate with minimal delays. The side street of the T-intersection will operate at LOS C and experience approximately 17 seconds of delay during the peak hours. The 10th Street intersection with Main Street will operate as shown in the No Build option scenario.

4.4 Impacts to Transit, Pedestrians and Bikes

4.4.1 No Build

The No Build option provides no improvement for transit, pedestrians, or bikes.

4.4.2 Alternative 2 – Lewis Street Roundabout

Mountain Rides eastbound bus stop facilities on Warm Springs Road would likely need to be relocated to provide access to the adjacent parcel. Based on conversations with Mountain Rides, bus routes would be unimproved by the change, but not negatively impacted by the roundabout.

This option would enhance bike connectivity. The bike lanes can be extended to the roundabout where ramps would transition cyclists to multi-use pathways to circulate around the roundabout away from vehicle traffic. Roundabouts generally slow traffic, which would provide an opportunity for experienced cyclists to traverse the intersection in the vehicle lanes, if desired.

Pedestrian connectivity would be improved with this option. The long crossing distance at Lewis Street would be eliminated. Sidewalks would be installed on Warm Springs Road where there are none, thereby enhancing connectivity. Slower vehicle speeds would decrease pedestrian stress while using the intersection. Although the Warm Springs and Lewis Street intersection would be improved with the change, the 10th Street intersection would still present a challenge to pedestrians. Due to the skewed intersection and tight ROW, the long crossing distances are likely to remain. Installing ADA/PROWAG-complaint ramps would bring the intersection into compliance.

4.4.3 Alternative 4

In Alternative 4, Mountain Rides eastbound bus stop facilities on Warm Springs Road would likely need to be relocated to provide access to the adjacent parcel. Based on conversations with Mountain Rides, bus operations would be improved with this option. Instead of busses turning right onto Warm Springs from 10th Street, this movement would become a through movement in the roundabout once 10th Street is realigned.

Like Alternative 2, this option would enhance bike connectivity. The bike lanes could be extended to the roundabout where ramps would transition cyclists to multi-use pathways to circulate around the roundabout away from vehicle traffic. Roundabouts generally slow traffic, which would provide an opportunity for experienced cyclists to traverse the intersection in the vehicle lanes, if desired.

Pedestrian connectivity would be improved with this option. The long crossing distance at Lewis Street would be eliminated. Sidewalks would be installed on Warm Springs Road where there are none, thereby enhancing connectivity. Slower vehicle speeds would decrease pedestrian stress while using the intersection. This option would also eliminate the skewed crossings at the 10th Street intersection.

4.5 Future Safety Analysis

The project team used the Federal Highway Administration's (FHWA) Crash Modification Factor (CMF) Clearinghouse[6] to identify the potential change in crash frequency or severity associated with the possible changes to the intersections. CMFs were selected based on study similarities to Warm Springs Road roadway conditions and star rating (minimum of three stars). Each CMF also needed to include all crash types and crash severities. When there are no CMFs available for the specific situation, a qualitative discussion is provided. The following sections summarize the findings:

[6] Crash Modification Factors Clearinghouse. https://www.cmfclearinghouse.org/

4.5.1 No Build

The No Build option would not improve safety at the location.

4.5.2 Alternative 2

The proposed treatments of converting the minor road stop control to a roundabout is covered by CMF ID 227 (3 Stars), which estimates a 44 percent decrease in all crashes. With this alternative, the long pedestrian crossing on Lewis Street is split into a two-stage crossing at the roundabout. The improvements propose installing rectangular rapid flashing beacons on all three legs of the roundabout, which are covered by CMF ID 11158. This CMF estimates a 31 percent decrease in crashes.

The left-turn sight distance issue on 10th Street onto Warm Springs Road would not be eliminated with these improvements. Some mitigation measures with this option could include:

- Prohibiting this left turn movement and requiring individuals to turn right and make a U-turn through the roundabout to complete the movement.
- Eliminate parking on 10th Street to move the turn lane closer to the curbing.
- Revising the striping on the east leg of the 10th Street and Warm Springs to be a left-turn lane instead of a TWLT lane, which would prevent delivery vehicles from parking so close to the intersection.

4.5.3 Alternative 4

The proposed treatments of converting the minor road stop control to a roundabout is covered by CMF ID 227 (3 Stars), which estimates a 44 percent decrease in all crashes. With this alternative, the long pedestrian crossing on Lewis Street is split into a two-stage crossing at the roundabout. The improvements propose installing rectangular rapid flashing beacons on all four legs of the roundabout, which are covered by CMF ID 11158. This CMF estimates a 31 percent decrease in crashes. The 10th Street left-turn sight distance issue would be eliminated.

4.6 Opinion of Probable Costs

Typically, roadway projects can be evaluated using a cost/benefit analysis, where alternative costs can be compared to potential safety benefits to determine if the alternative would be beneficial to the public. In this case, crashes within the project area are so infrequent that it would be hard to reach an acceptable benefit-over-cost ratio with any alternative. The benefits to the community may come from improvements to the public realm and a decrease to pedestrian and biker stress when using the roadway. These factors are hard to quantify; therefore, the alternatives are evaluated on total project costs.

The build alternatives probable costs are summarized in Table 9. Three costs were estimated for each alternative: engineering fee, construction costs, and right-of-way costs. Based on experience, the engineering fee is estimated to be approximately 15% of the construction costs. The ROW costs are estimated based upon conceptual layouts and prices provided by a ROW agent contracted with the City.

Table 9. Project Alternatives – Total Project Costs

Cost	Alternative 2	Alternative 4
Engineering Fee	$288,000	$398,000
Construction Cost	$1,532,000	$2,117,000
Right-of-way Cost	$1,075,100	$4,461,700
Total Project Cost	$3,278,100	$7,506,700

As with all costs, ROW and construction costs are subject to market changes and could increase or decrease depending on economic conditions. Each cost is based on current year (2022) unit prices and dollar values and adjustment factors are not applied for a future construction year. Comparatively, Alternative 4 would remain more costly than Alternative 2 in future years.

ROW costs make up the largest difference between the two alternatives. Alternative 4 creates an opportunity for the City to vacate the abandoned 10th Street connection and sell it to adjacent land owners. The vacated parcel's estimated value is $1,277,325 and the revenue from the sale could be used to offset some of the ROW costs, but that would need to be determined during ROW negotiations.

4.7 Second Public Meeting Summary

A second public meeting was held on October 3, 2022, followed by 2 weeks of online public comment. The public meeting consisted of three separate presentations (one each in the morning, mid-day and evening) that outlined the results of the concept study, presented revised concept exhibits for Alternatives 2 and 4, and reported the benefits or drawbacks of each alternative. For individuals who could not go to the meeting in person, an online form was made available for the public to provide feedback. Additionally, the public meeting included a presentation on a concept study project concerning Main Street between 6th Street and River Street and the online survey reflected both projects.

The results of the in-person meetings showed most people preferred Alternative 4 at 60 percent compared to 40 percent for Alternative 2. A summary of the online public involvement results can be found in **Appendix F**.

5 Recommendations and Next Steps

5.1 Comparing the Alternatives

Alternative 4 provides the most benefit to all modes of travel and has the most opportunity to improve the public realm. The re-aligned roadway would simplify the roadway network and remove most of the perceived safety issues. To achieve these benefits, the alternative would greatly impact adjacent parcels. Alternative 2 would similarly calm traffic and remove safety issues at the Lewis Street and Warm Springs Road intersection but would not address issues at the Warm Springs Road and 10th Street intersection. The placemaking opportunities would not be as robust as with Alternative 4 but could still be significant in providing a transition from the

downtown core to the light industrial or residential areas. Final concept exhibits can be found in **Appendix G**.

Alternative 2 is expected to be significantly less expensive than Alternative 4 primarily because it does not require purchase of large amount of ROW on the undeveloped Albertsons parcel. There could be opportunities to reduce ROW costs for Alternative 4 during the negotiation process. For example, the City could vacate the 10th Street parcel and the adjacent landowners could purchase the property, thereby offsetting ROW costs elsewhere.

5.2 Recommendation and Interim Improvements

If the City can acquire funding to cover the higher ROW and construction costs, Alternative 4 is recommended. The alternative best improves multi-modal connectivity and operation, simplifies the roadway network, provides the most opportunity for placemaking, and is preferred by both Mountain Rides and the public. If the higher amount of funding is not available, then Alternative 2 is recommended as this option still provides traffic calming, multi-modal, placemaking, and safety benefits to the area. The No Build option is not recommended as it does not provide benefits meeting the City's goals.

As the City pursues funding for the larger aspects of the build alternatives, there are several opportunities to enhance the area in the meantime. Even if the City chooses the No Build option, the City could consider the following improvements.

- Restripe the TWLT in front of the gas station to be a dedicated left turn lane. This will prevent delivery vehicles from parking close to the intersection.
- Replace dilapidated sidewalk, install sidewalk where none exists within the study area, and install ADA/PROWAG complaint pedestrian ramps.
- Install bulb-outs at the Lewis Street and Warm Springs Road intersection to shorten pedestrian crossings (Figure 21).

Figure 21. Example Bulb-outs at Lewis Street

- Explore one or more of the following options to mitigate the difficult 10th Street left turn sight distance issue:
    - Prohibit southbound left turns at the intersection by signage or adding a diverter in the intersection.
    - Convert the intersection from two-way stop control to all-way stop control.

5.3 Mitigating Impact of Future Nearby Developments

If there is a large time gap between the selection of the preferred alternative and construction such that nearby parcels are developed, the City should require the developments to submit a traffic impact study and evaluate how those developments will impact the selected alternative. Large high-density developments, multi-family homes, or new traffic generators along Warm Springs Road could impact estimated future operations. The roundabout options are shown to have excess capacity, but major changes to travel patterns may require re-evaluation with the traffic generated specifically by the new development. Opportunities may exist to coordinate placemaking opportunities with adjacent development as well as mitigate traffic impact.

Traffic circulation of developments will need to be considered depending on which alternative is selected. For example, if Alternative 2 is selected, the developer of the Albertson's parcel should avoid creating a situation that increases the number of vehicles performing southbound left turns at 10th Street onto Warm Springs Road. Although not generating crashes today, the sight distance problems at this intersection could be exacerbated if the number of vehicles making this movement is increased. One possible solution is to have most vehicles access the development from Lewis Street to reduce conflicts at 10th Street. The City should work with the developer to identify the best traffic circulation patterns as the development goes through the permitting process.

5.4 Nearby Enhancements to Consider

To fully realize the benefits of enhancing Alternative 2 or Alternative 4, the City should consider programming improvements between Saddle Road and 6th Street on Warm Springs Road. These improvements should be targeted at reducing pedestrian crossing widths, providing sidewalk connectivity and creating more placemaking opportunities. The following are suggested improvements:

- Install sidewalk on the north side of Warm Springs Road between 10th Street and 7th Street.
- Install bulb-outs at 9th Street, 8th Street, and 7th Street to better delineate parking and shorten pedestrian crossings (Figure 22).

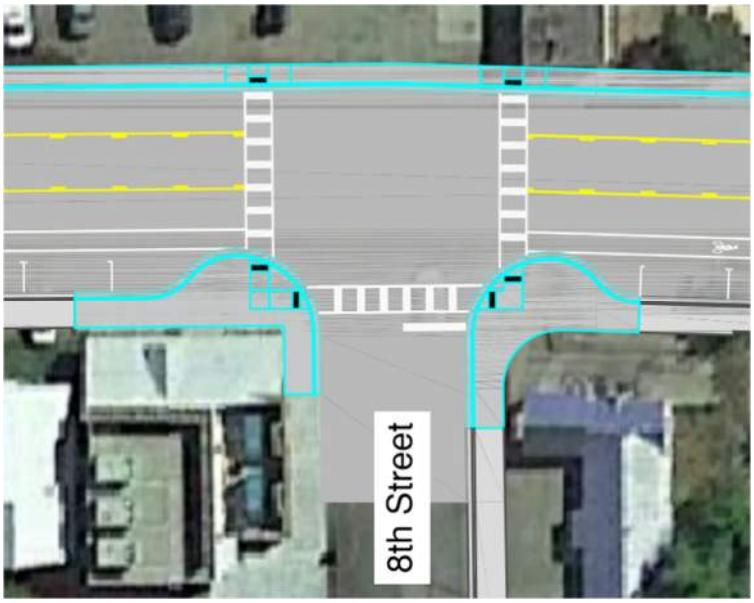


Figure 22. Example Bulb-outs at 8th Street

- Evaluate opportunities to convert the informal pathways people use to traverse down the hill from Main Street to Warm Springs Road into formal pathways.
- Install bike lanes from 6th Street to the Wood River Trail Crossings. To reduce the need for a retaining wall, a sharrow can be installed in the downhill direction between 6th Street and 9th Street until a full lane bike lane can be developed.
- Provide a multi-use pathway on the west side of Warm Springs Road Between the Wood River Trail crossing and Saddle Road to provide access to the Wood River Trail pathway and easier pedestrian connection to the bus stops (Figure 23). This could be implemented with a lane reconfiguration to remove the center turn lane, which could also help in providing traffic calming.

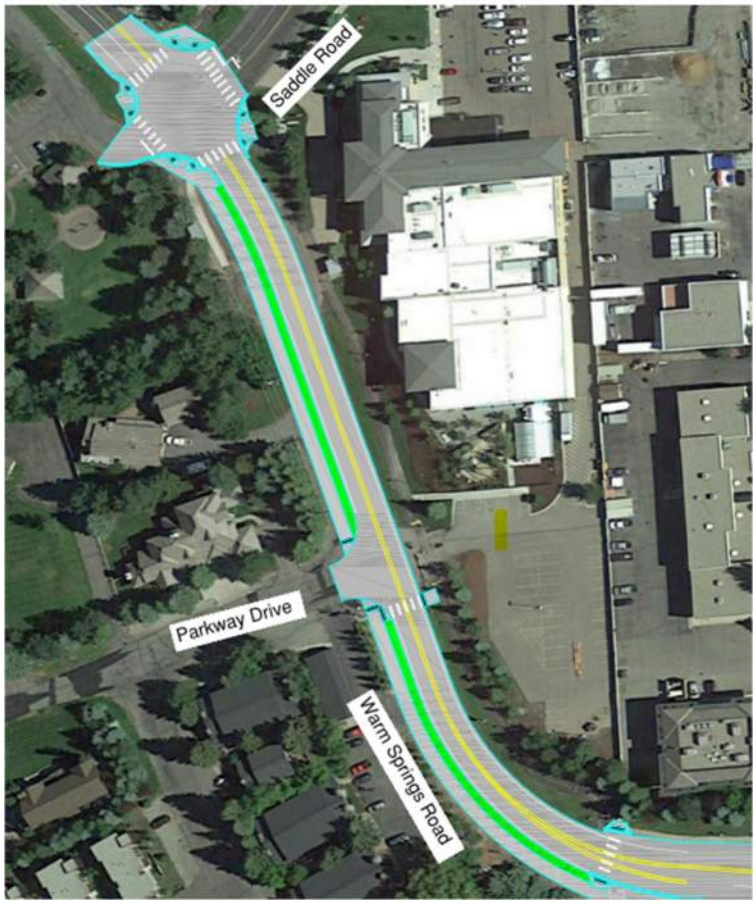


Figure 23. Example Separated Pathway Along Warm Springs Road

- Revise the trail crossing at Saddle Road to be set back from the intersection.
- Evaluate a roundabout at the Saddle Road intersection.
- Install sidewalk on 10th Street between Warm Springs Road and Main Street.

Appendix H contains conceptual exhibits of possible enhancements.

5.5 Next Steps

The City should pursue grant opportunities to fund the recommended improvements. Outreach for stakeholder participation in the grant pursuits should occur, including Mountain Rides, Blaine County School District, and the Ketchum Urban Renewal Agency.

A

Existing Turning Movement Counts

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: SH-75 / 10th Street
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : SH-75 & 10th St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 1

Groups Printed- General Traffic - 3+ Axle Heavy Trucks

	SH-75 From North				SH-75 From South				10th Street From Southwest				
Start Time	**Bear Right**	**Thru**	**Peds**	**App. Total**	**Thru**	**Hard Left**	**Peds**	**App. Total**	**Hard Right**	**Bear Left**	**Peds**	**App. Total**	**Int. Total**
07:00 AM	3	12	0	15	35	2	1	38	3	4	1	8	61
07:15 AM	5	13	0	18	54	2	0	56	4	4	0	8	82
07:30 AM	7	20	0	27	65	2	0	67	3	5	0	8	102
07:45 AM	6	25	0	31	63	9	0	72	7	14	0	21	124
Total	21	70	0	91	217	15	1	233	17	27	1	45	369
08:00 AM	7	22	2	31	71	6	0	77	6	21	0	27	135
08:15 AM	7	36	0	43	64	4	1	69	7	11	1	19	131
08:30 AM	6	28	0	34	62	9	0	71	9	8	0	17	122
08:45 AM	5	42	0	47	56	9	2	67	8	6	1	15	129
Total	25	128	2	155	253	28	3	284	30	46	2	78	517

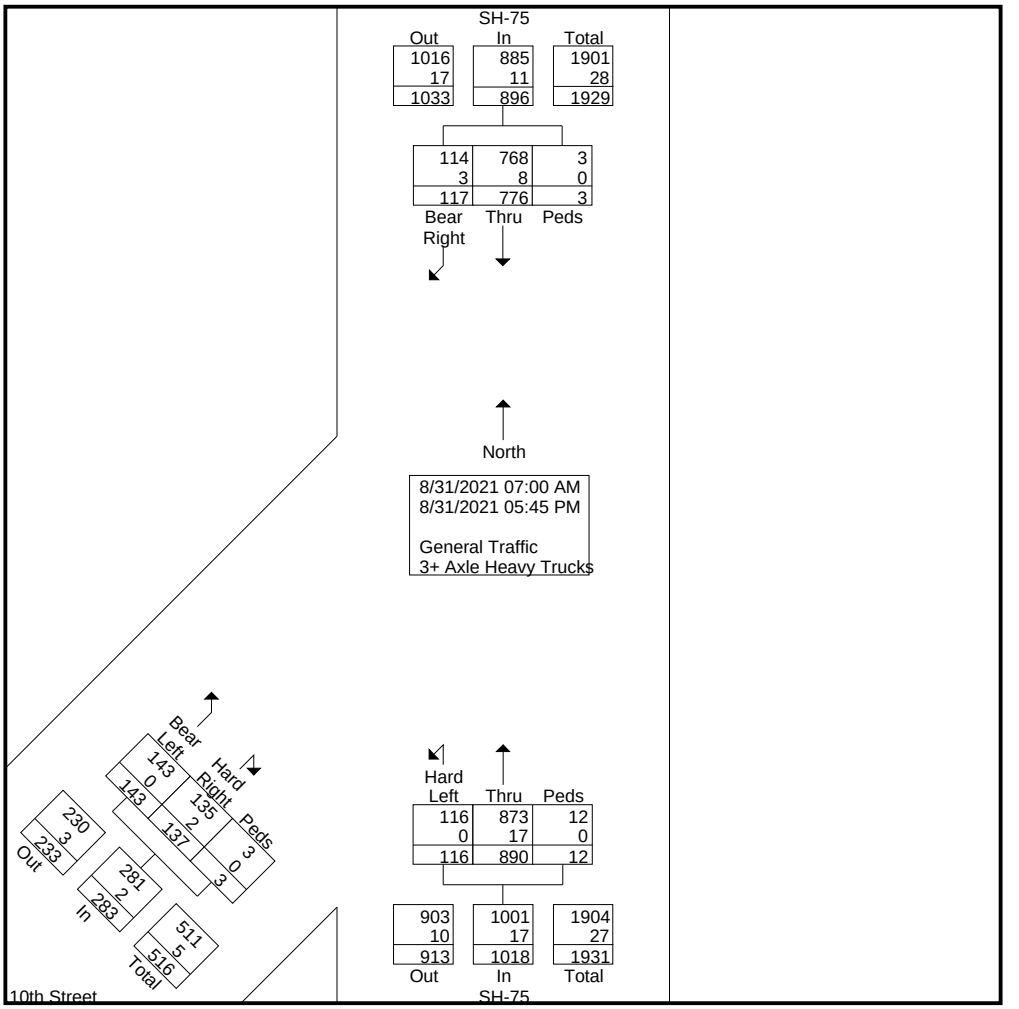
04:00 PM	14	87	0	101	46	9	0	55	17	10	0	27	183
04:15 PM	9	97	1	107	51	13	4	68	12	7	0	19	194
04:30 PM	11	87	0	98	67	12	1	80	16	8	0	24	202
04:45 PM	8	64	0	72	36	6	0	42	10	9	0	19	133
Total	42	335	1	378	200	40	5	245	55	34	0	89	712
05:00 PM	8	67	0	75	56	6	0	62	6	10	0	16	153
05:15 PM	8	64	0	72	62	13	0	75	12	5	0	17	164
05:30 PM	9	54	0	63	42	6	3	51	9	11	0	20	134
05:45 PM	4	58	0	62	60	8	0	68	8	10	0	18	148
Total	29	243	0	272	220	33	3	256	35	36	0	71	599
Grand Total	117	776	3	896	890	116	12	1018	137	143	3	283	2197
Apprch %	13.1	86.6	0.3		87.4	11.4	1.2		48.4	50.5	1.1		
Total %	5.3	35.3	0.1	40.8	40.5	5.3	0.5	46.3	6.2	6.5	0.1	12.9	
General Traffic	114	768	3	885	873	116	12	1001	135	143	3	281	2167
% General Traffic	97.4	99	100	98.8	98.1	100	100	98.3	98.5	100	100	99.3	98.6
3+ Axle Heavy Trucks	3	8	0	11	17	0	0	17	2	0	0	2	30
% 3+ Axle Heavy Trucks	2.6	1	0	1.2	1.9	0	0	1.7	1.5	0	0	0.7	1.4

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: SH-75 / 10th Street
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : SH-75 & 10th St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 2



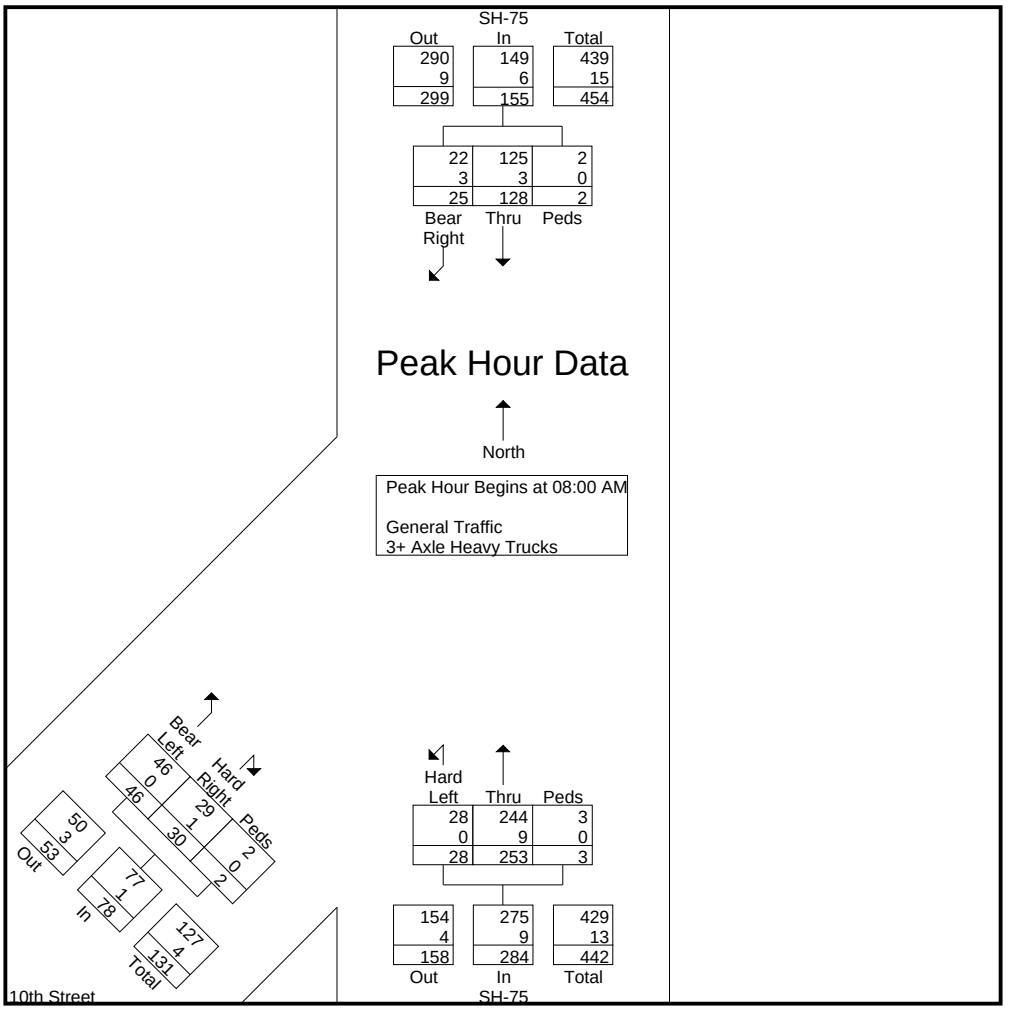
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: SH-75 / 10th Street
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : SH-75 & 10th St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 3

	SH-75 From North				SH-75 From South				10th Street From Southwest				
Start Time	Bear Right	**Thru**	**Peds**	**App. Total**	**Thru**	Hard Left	**Peds**	**App. Total**	Hard Right	Bear Left	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	**7**	22	**2**	31	**71**	6	0	**77**	6	**21**	0	**27**	**135**
08:15 AM	7	36	0	43	64	4	1	69	7	11	**1**	19	131
08:30 AM	6	28	0	34	62	**9**	0	71	**9**	8	0	17	122
08:45 AM	5	**42**	0	**47**	56	9	**2**	67	8	6	1	15	129
Total Volume	25	128	2	155	253	28	3	284	30	46	2	78	517
% App. Total	16.1	82.6	1.3		89.1	9.9	1.1		38.5	59	2.6		
PHF	.893	.762	.250	.824	.891	.778	.375	.922	.833	.548	.500	.722	.957
General Traffic	22	125	2	149	244	28	3	275	29	46	2	77	501
% General Traffic	88.0	97.7	100	96.1	96.4	100	100	96.8	96.7	100	100	98.7	96.9
3+ Axle Heavy Trucks	3	3	0	6	9	0	0	9	1	0	0	1	16
% 3+ Axle Heavy Trucks	12.0	2.3	0	3.9	3.6	0	0	3.2	3.3	0	0	1.3	3.1



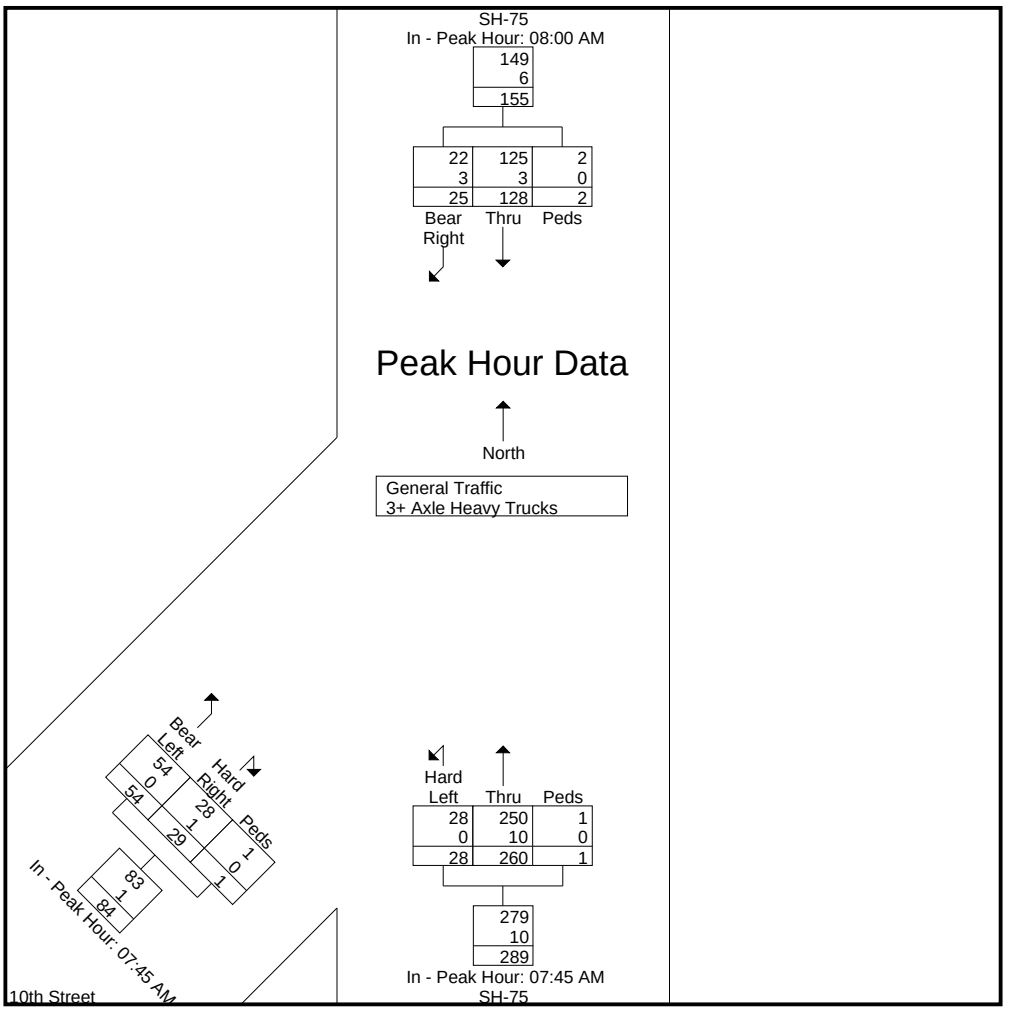
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: SH-75 / 10th Street
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : SH-75 & 10th St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 4

	SH-75 From North				SH-75 From South				10th Street From Southwest				
Start Time	**Bear Right**	**Thru**	**Peds**	**App. Total**	**Thru**	**Hard Left**	**Peds**	**App. Total**	**Hard Right**	**Bear Left**	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	08:00 AM				07:45 AM				07:45 AM				
+0 mins.	**7**	22	**2**	31	63	**9**	0	72	7	14	0	21	
+15 mins.	7	36	0	43	**71**	6	0	**77**	6	**21**	0	**27**	
+30 mins.	6	28	0	34	64	4	**1**	69	7	11	**1**	19	
+45 mins.	5	**42**	0	**47**	62	9	0	71	**9**	8	0	17	
Total Volume	25	128	2	155	260	28	1	289	29	54	1	84	
% App. Total	16.1	82.6	1.3		90	9.7	0.3		34.5	64.3	1.2		
PHF	.893	.762	.250	.824	.915	.778	.250	.938	.806	.643	.250	.778	
General Traffic	22	125	2	149	250	28	1	279	28	54	1	83	
% General Traffic	88	97.7	100	96.1	96.2	100	100	96.5	96.6	100	100	98.8	
3+ Axle Heavy Trucks	3	3	0	6	10	0	0	10	1	0	0	1	
% 3+ Axle Heavy Trucks	12	2.3	0	3.9	3.8	0	0	3.5	3.4	0	0	1.2	



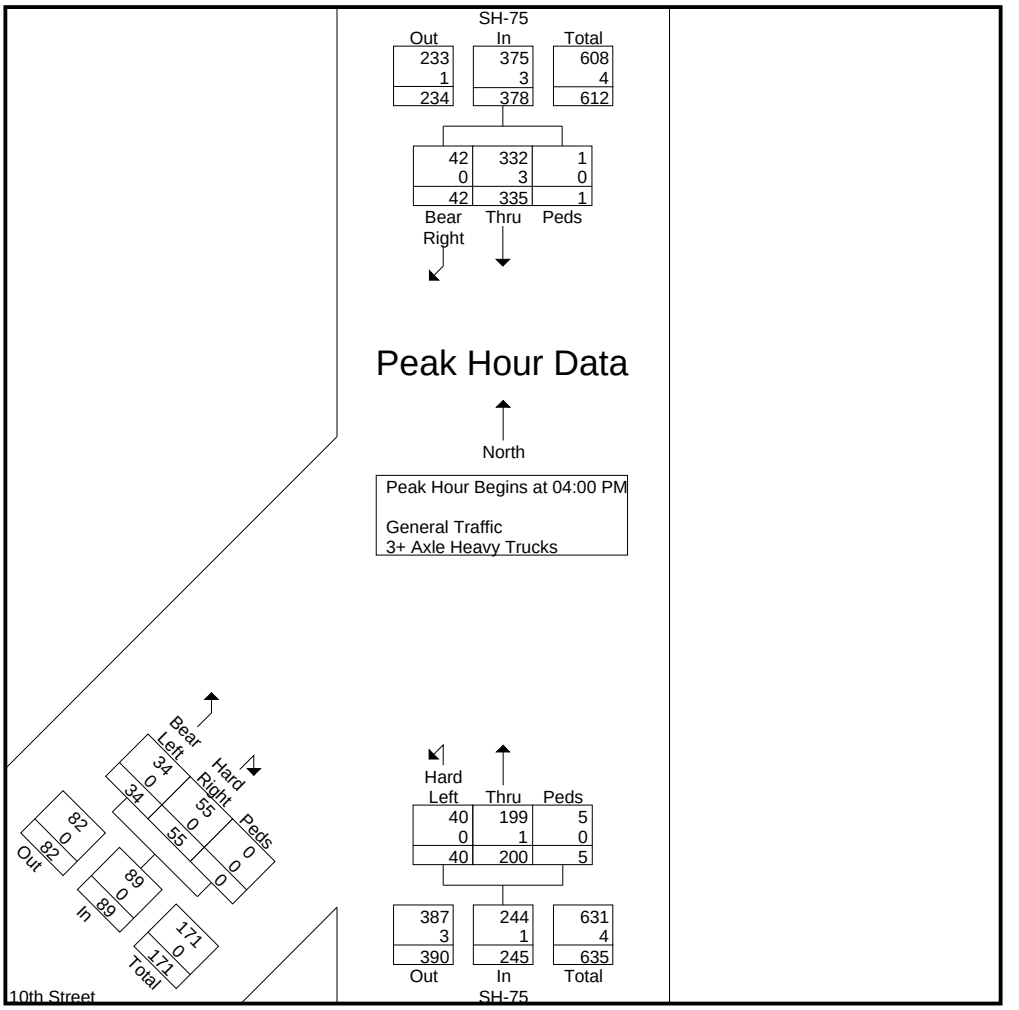
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: SH-75 / 10th Street
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : SH-75 & 10th St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 5

	SH-75 From North				SH-75 From South				10th Street From Southwest				
Start Time	Bear Right	**Thru**	**Peds**	**App. Total**	**Thru**	Hard Left	**Peds**	**App. Total**	Hard Right	Bear Left	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	**14**	87	0	101	46	9	0	55	**17**	**10**	0	**27**	183
04:15 PM	9	**97**	**1**	**107**	51	**13**	**4**	68	12	7	0	19	194
04:30 PM	11	87	0	98	**67**	12	1	**80**	16	8	0	24	**202**
04:45 PM	8	64	0	72	36	6	0	42	10	9	0	19	133
Total Volume	42	335	1	378	200	40	5	245	55	34	0	89	712
% App. Total	11.1	88.6	0.3		81.6	16.3	2		61.8	38.2	0		
PHF	.750	.863	.250	.883	.746	.769	.313	.766	.809	.850	.000	.824	.881
General Traffic	42	332	1	375	199	40	5	244	55	34	0	89	708
% General Traffic	100	99.1	100	99.2	99.5	100	100	99.6	100	100	0	100	99.4
3+ Axle Heavy Trucks	0	3	0	3	1	0	0	1	0	0	0	0	4
% 3+ Axle Heavy Trucks	0	0.9	0	0.8	0.5	0	0	0.4	0	0	0	0	0.6



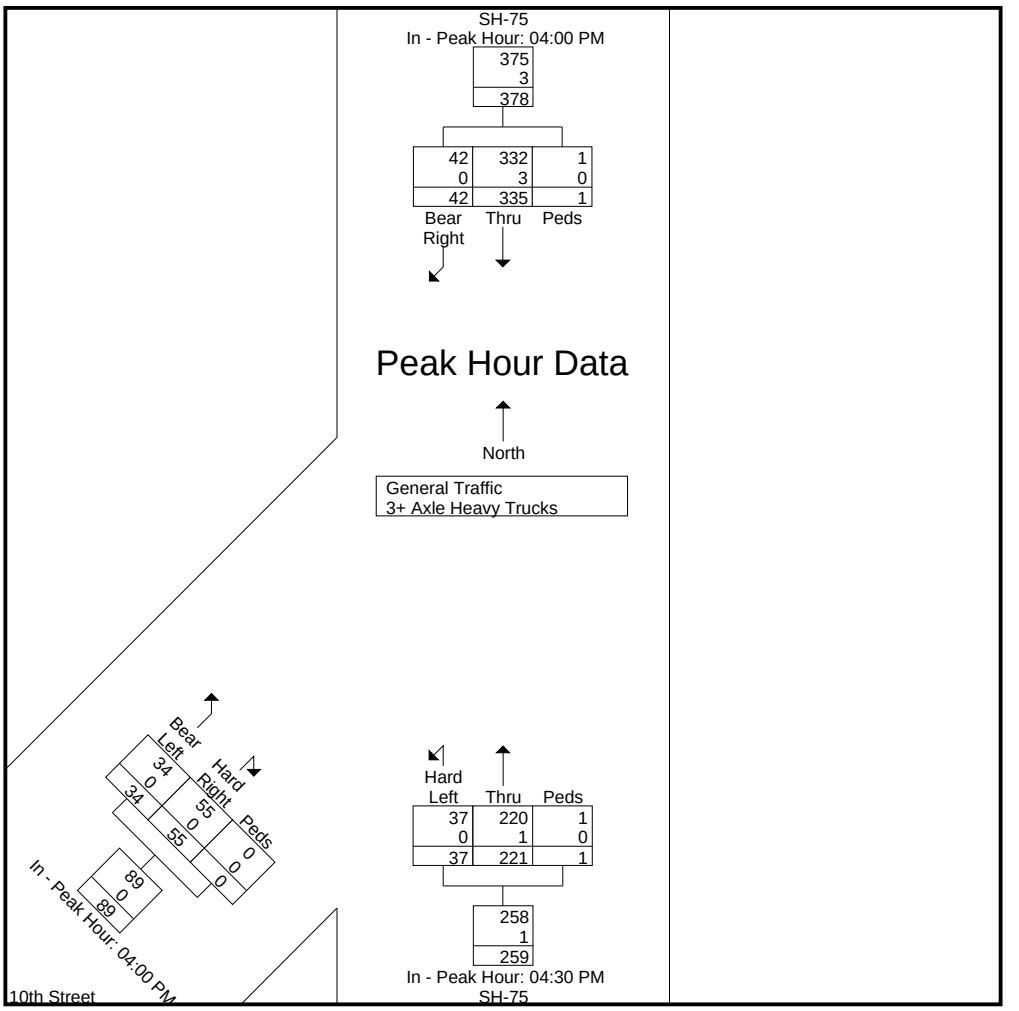
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: SH-75 / 10th Street
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : SH-75 & 10th St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 6

	SH-75 From North				SH-75 From South				10th Street From Southwest				
Start Time	**Bear Right**	**Thru**	**Peds**	**App. Total**	**Thru**	**Hard Left**	**Peds**	**App. Total**	**Hard Right**	**Bear Left**	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	04:00 PM				04:30 PM				04:00 PM				
+0 mins.	**14**	87	0	101	**67**	12	**1**	**80**	**17**	**10**	0	**27**	
+15 mins.	9	**97**	**1**	**107**	36	6	0	42	12	7	0	19	
+30 mins.	11	87	0	98	56	6	0	62	16	8	0	24	
+45 mins.	8	64	0	72	62	**13**	0	75	10	9	0	19	
Total Volume	42	335	1	378	221	37	1	259	55	34	0	89	
% App. Total	11.1	88.6	0.3		85.3	14.3	0.4		61.8	38.2	0		
PHF	.750	.863	.250	.883	.825	.712	.250	.809	.809	.850	.000	.824	
General Traffic	42	332	1	375	220	37	1	258	55	34	0	89	
% General Traffic	100	99.1	100	99.2	99.5	100	100	99.6	100	100	0	100	
3+ Axle Heavy Trucks	0	3	0	3	1	0	0	1	0	0	0	0	
% 3+ Axle Heavy Trucks	0	0.9	0	0.8	0.5	0	0	0.4	0	0	0	0	



L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: SH-75 / 10th Street
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : SH-75 & 10th St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 7

Image 1

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: Warm Springs / 10th Street
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : Warm Springs Rd & 10th St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 1

Groups Printed- General Traffic - 3+ Axle Heavy Trucks

	10th Street From Northeast					Warm Springs Road From Southeast					10th Street From Southwest					Warm Springs Road From Northwest					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	3	0	1	0	4	2	35	4	2	43	0	0	0	1	1	0	24	3	0	27	75
07:15 AM	7	2	1	0	10	6	47	6	1	60	0	0	0	1	1	3	29	3	1	36	107
07:30 AM	4	2	4	0	10	2	51	7	0	60	9	0	0	0	9	1	40	7	1	49	128
07:45 AM	13	0	7	1	21	28	91	5	0	124	7	1	5	0	13	8	79	4	0	91	249
Total	27	4	13	1	45	38	224	22	3	287	16	1	5	2	24	12	172	17	2	203	559
08:00 AM	12	1	3	0	16	18	131	1	0	150	1	3	2	0	6	2	69	6	2	79	251
08:15 AM	7	0	4	1	12	12	92	1	0	105	2	0	0	0	2	0	60	11	0	71	190
08:30 AM	17	0	2	0	19	9	82	3	0	94	1	0	1	2	4	1	61	10	0	72	189
08:45 AM	10	0	0	0	10	6	81	2	1	90	1	0	0	0	1	0	93	12	1	106	207
Total	46	1	9	1	57	45	386	7	1	439	5	3	3	2	13	3	283	39	3	328	837

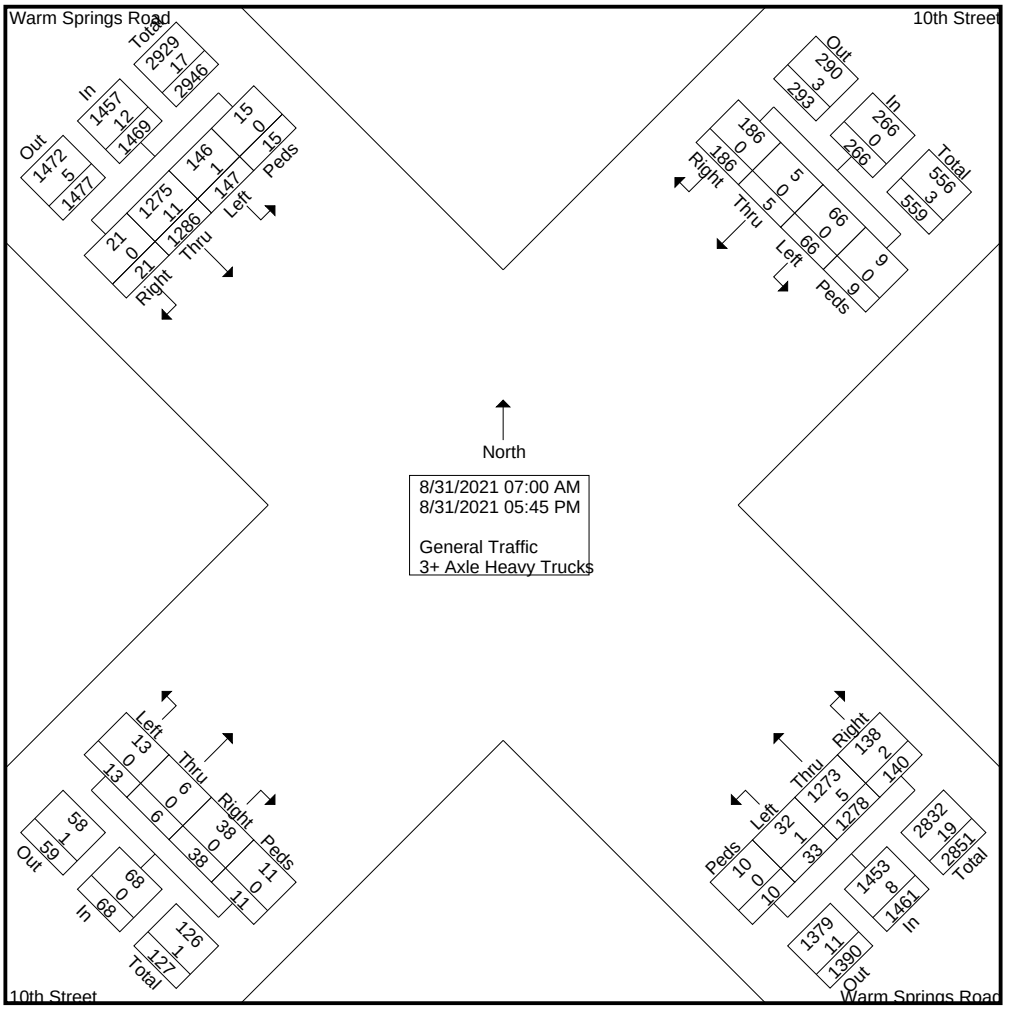
04:00 PM	20	0	10	2	32	6	104	0	0	110	2	2	2	2	8	0	110	15	0	125	275
04:15 PM	19	0	6	0	25	6	86	3	2	97	3	0	1	1	5	3	118	8	5	134	261
04:30 PM	13	0	4	0	17	8	70	0	0	78	2	0	1	0	3	0	101	15	1	117	215
04:45 PM	8	0	5	1	14	8	67	0	0	75	2	0	0	0	2	0	105	11	1	117	208
Total	60	0	25	3	88	28	327	3	2	360	9	2	4	3	18	3	434	49	7	493	959
05:00 PM	16	0	5	1	22	2	94	0	0	96	1	0	0	1	2	0	138	13	1	152	272
05:15 PM	22	0	7	2	31	8	95	0	4	107	3	0	1	2	6	0	91	12	1	104	248
05:30 PM	7	0	0	0	7	9	81	0	0	90	1	0	0	1	2	1	96	9	0	106	205
05:45 PM	8	0	7	1	16	10	71	1	0	82	3	0	0	0	3	2	72	8	1	83	184
Total	53	0	19	4	76	29	341	1	4	375	8	0	1	4	13	3	397	42	3	445	909
Grand Total	186	5	66	9	266	140	1278	33	10	1461	38	6	13	11	68	21	1286	147	15	1469	3264
Apprch %	69.9	1.9	24.8	3.4		9.6	87.5	2.3	0.7		55.9	8.8	19.1	16.2		1.4	87.5	10	1		
Total %	5.7	0.2	2	0.3	8.1	4.3	39.2	1	0.3	44.8	1.2	0.2	0.4	0.3	2.1	0.6	39.4	4.5	0.5	45	
General Traffic	186	5	66	9	266	138	1273	32	10	1453	38	6	13	11	68	21	1275	146	15	1457	3244
% General Traffic	100	100	100	100	100	98.6	99.6	97	100	99.5	100	100	100	100	100	100	99.1	99.3	100	99.2	99.4
3+ Axle Heavy Trucks	0	0	0	0	0	2	5	1	0	8	0	0	0	0	0	0	11	1	0	12	20
% 3+ Axle Heavy Trucks	0	0	0	0	0	1.4	0.4	3	0	0.5	0	0	0	0	0	0	0.9	0.7	0	0.8	0.6

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: Warm Springs / 10th Street
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : Warm Springs Rd & 10th St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 2



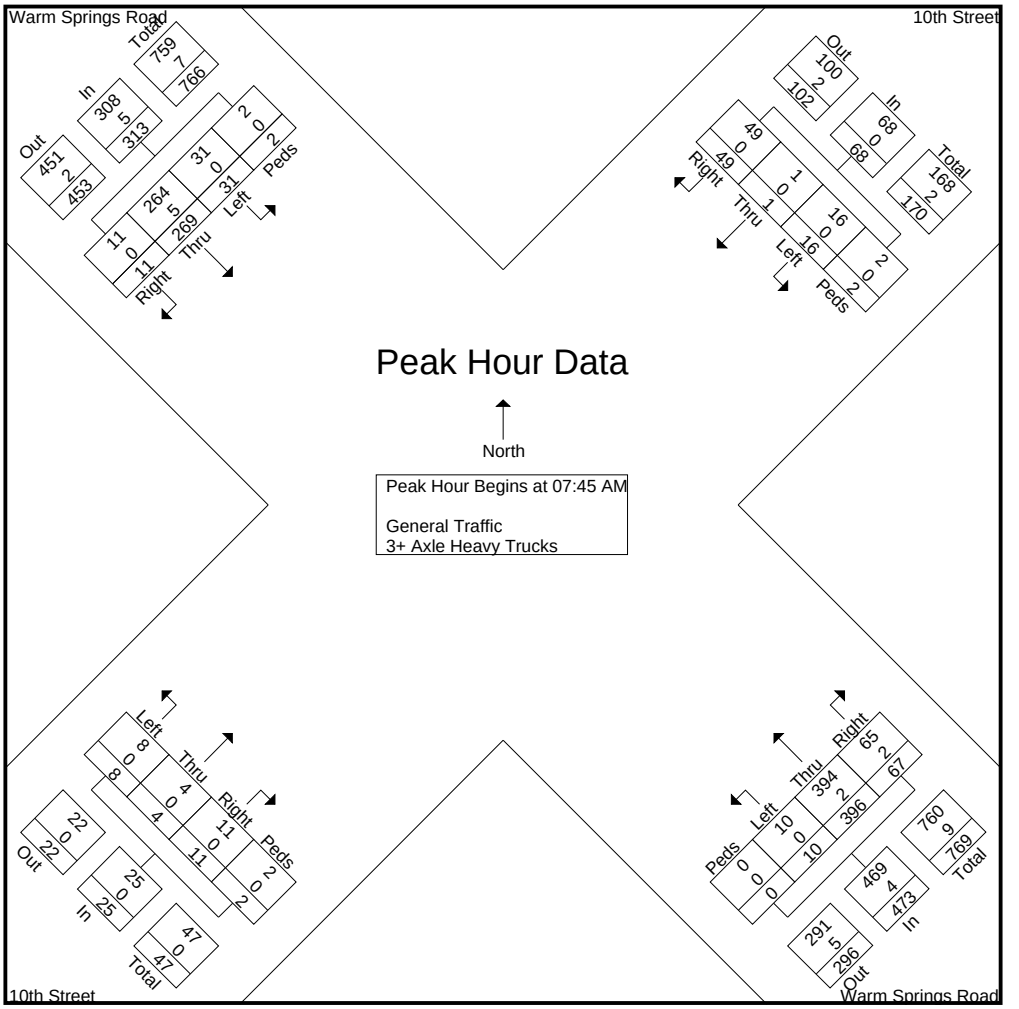
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: Warm Springs / 10th Street
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : Warm Springs Rd & 10th St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 3

	10th Street From Northeast					Warm Springs Road From Southeast					10th Street From Southwest					Warm Springs Road From Northwest					
Start Time	**Right**	**Thru**	**Left**	**Peds**	**App. Total**	**Right**	**Thru**	**Left**	**Peds**	**App. Total**	**Right**	**Thru**	**Left**	**Peds**	**App. Total**	**Right**	**Thru**	**Left**	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	13	0	**7**	**1**	**21**	**28**	91	**5**	0	124	**7**	1	**5**	0	**13**	**8**	**79**	4	0	**91**	249
08:00 AM	12	**1**	3	0	16	18	**131**	1	0	**150**	1	**3**	2	0	6	2	69	6	**2**	79	**251**
08:15 AM	7	0	4	1	12	12	92	1	0	105	2	0	0	0	2	0	60	**11**	0	71	190
08:30 AM	**17**	0	2	0	19	9	82	3	0	94	1	0	1	**2**	4	1	61	10	0	72	189
Total Volume	49	1	16	2	68	67	396	10	0	473	11	4	8	2	25	11	269	31	2	313	879
% App. Total	72.1	1.5	23.5	2.9		14.2	83.7	2.1	0		44	16	32	8		3.5	85.9	9.9	0.6		
PHF	.721	.250	.571	.500	.810	.598	.756	.500	.000	.788	.393	.333	.400	.250	.481	.344	.851	.705	.250	.860	.875
General Traffic	49	1	16	2	68	65	394	10	0	469	11	4	8	2	25	11	264	31	2	308	870
% General Traffic	100	100	100	100	100	97.0	99.5	100	0	99.2	100	100	100	100	100	100	98.1	100	100	98.4	99.0
3+ Axle Heavy Trucks	0	0	0	0	0	2	2	0	0	4	0	0	0	0	0	0	5	0	0	5	9
% 3+ Axle Heavy Trucks	0	0	0	0	0	3.0	0.5	0	0	0.8	0	0	0	0	0	0	1.9	0	0	1.6	1.0



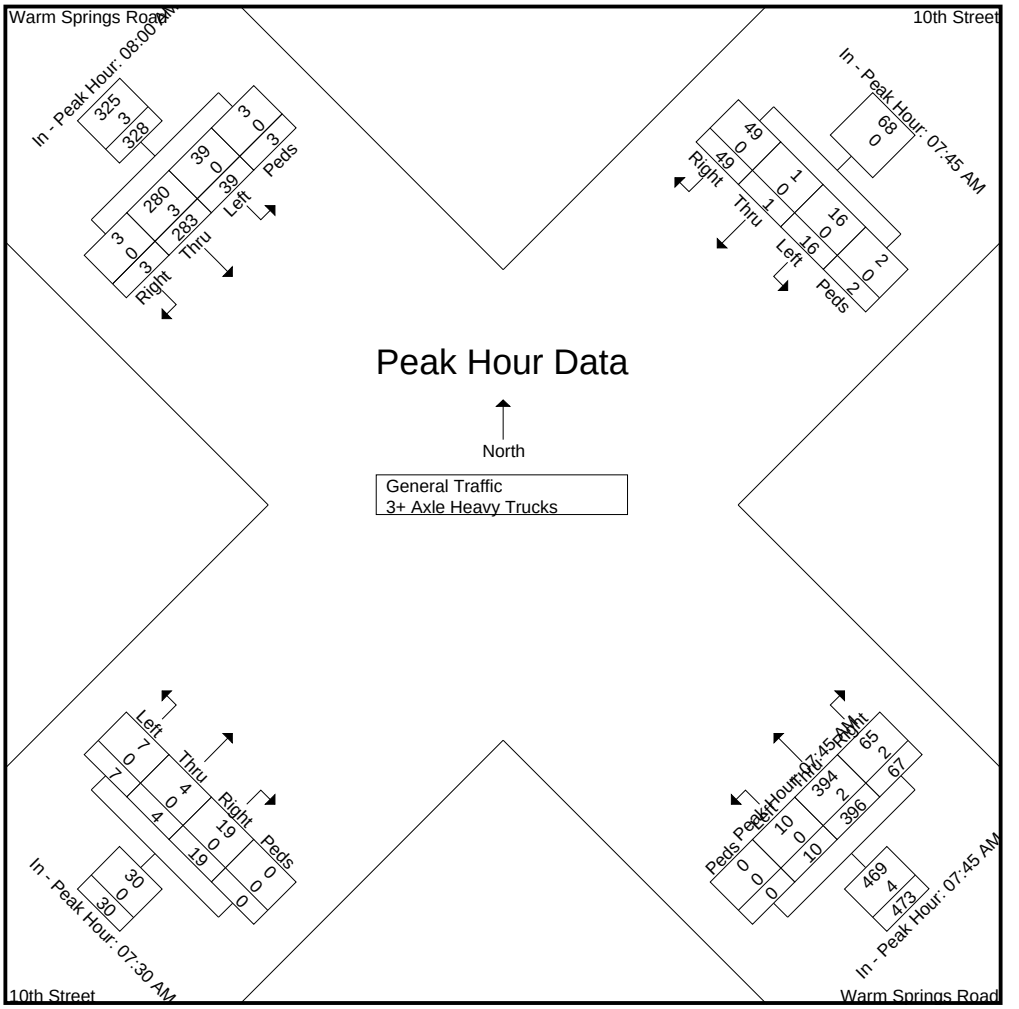
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: Warm Springs / 10th Street
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : Warm Springs Rd & 10th St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 4

	10th Street From Northeast					Warm Springs Road From Southeast					10th Street From Southwest					Warm Springs Road From Northwest					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:45 AM					07:45 AM					07:30 AM					08:00 AM					
+0 mins.	13	0	**7**	**1**	**21**	**28**	91	**5**	0	124	**9**	0	0	0	9	**2**	69	6	**2**	79	
+15 mins.	12	**1**	3	0	16	18	**131**	1	0	**150**	7	1	**5**	0	**13**	0	60	11	0	71	
+30 mins.	7	0	4	1	12	12	92	1	0	105	1	**3**	2	0	6	1	61	10	0	72	
+45 mins.	**17**	0	2	0	19	9	82	3	0	94	2	0	0	0	2	0	**93**	**12**	1	**106**	
Total Volume	49	1	16	2	68	67	396	10	0	473	19	4	7	0	30	3	283	39	3	328	
% App. Total	72.1	1.5	23.5	2.9		14.2	83.7	2.1	0		63.3	13.3	23.3	0		0.9	86.3	11.9	0.9		
PHF	.721	.250	.571	.500	.810	.598	.756	.500	.000	.788	.528	.333	.350	.000	.577	.375	.761	.813	.375	.774	
General Traffic	49	1	16	2	68	65	394	10	0	469	19	4	7	0	30	3	280	39	3	325	
% General Traffic	100	100	100	100	100	97	99.5	100	0	99.2	100	100	100	0	100	100	98.9	100	100	99.1	
3+ Axle Heavy Trucks	0	0	0	0	0	2	2	0	0	4	0	0	0	0	0	0	3	0	0	3	
% 3+ Axle Heavy Trucks	0	0	0	0	0	3	0.5	0	0	0.8	0	0	0	0	0	0	1.1	0	0	0.9	



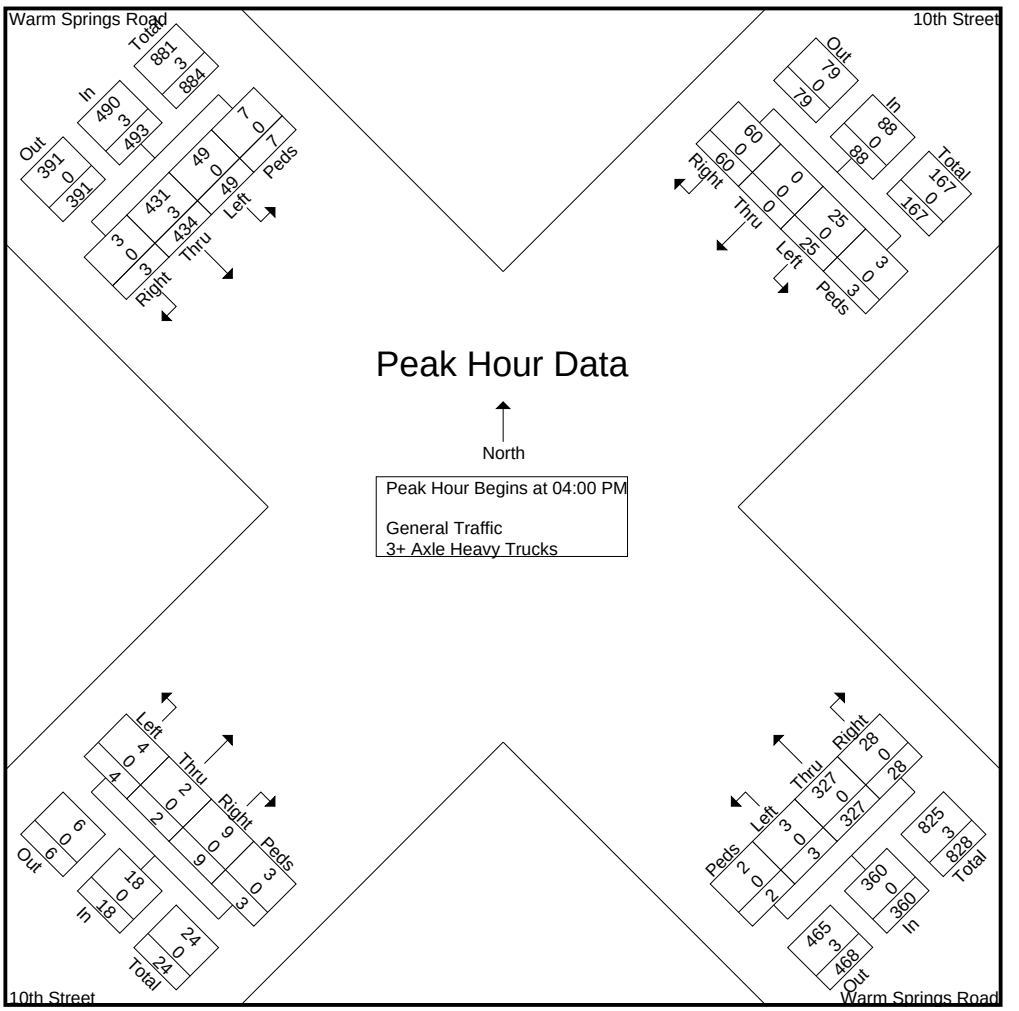
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: Warm Springs / 10th Street
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : Warm Springs Rd & 10th St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 5

	10th Street From Northeast					Warm Springs Road From Southeast					10th Street From Southwest					Warm Springs Road From Northwest					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	**20**	0	**10**	**2**	**32**	6	**104**	0	0	**110**	2	**2**	**2**	**2**	**8**	0	110	**15**	0	125	**275**
04:15 PM	19	0	6	0	25	6	86	**3**	**2**	97	**3**	0	1	1	5	**3**	**118**	8	**5**	**134**	261
04:30 PM	13	0	4	0	17	**8**	70	0	0	78	2	0	1	0	3	0	101	15	1	117	215
04:45 PM	8	0	5	1	14	8	67	0	0	75	2	0	0	0	2	0	105	11	1	117	208
Total Volume	60	0	25	3	88	28	327	3	2	360	9	2	4	3	18	3	434	49	7	493	959
% App. Total	68.2	0	28.4	3.4		7.8	90.8	0.8	0.6		50	11.1	22.2	16.7		0.6	88	9.9	1.4		
PHF	.750	.000	.625	.375	.688	.875	.786	.250	.250	.818	.750	.250	.500	.375	.563	.250	.919	.817	.350	.920	.872
General Traffic	60	0	25	3	88	28	327	3	2	360	9	2	4	3	18	3	431	49	7	490	956
% General Traffic	100	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	99.3	100	100	99.4	99.7
3+ Axle Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3
% 3+ Axle Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0	0	0.6	0.3



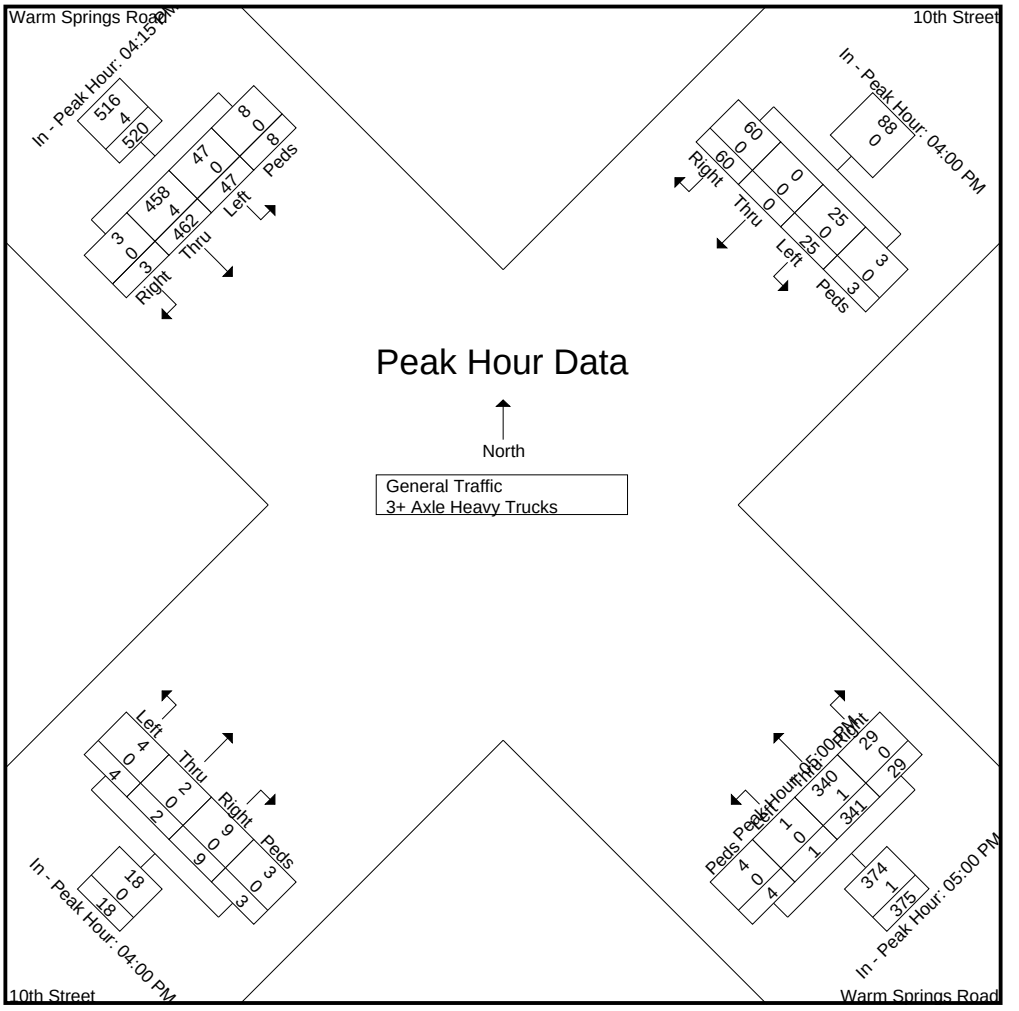
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: Warm Springs / 10th Street
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : Warm Springs Rd & 10th St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 6

	10th Street From Northeast					Warm Springs Road From Southeast					10th Street From Southwest					Warm Springs Road From Northwest					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	04:00 PM					05:00 PM					04:00 PM					04:15 PM					
+0 mins.	**20**	0	**10**	**2**	**32**	2	94	0	0	96	2	**2**	**2**	**2**	**8**	**3**	118	8	**5**	134	
+15 mins.	19	0	6	0	25	8	**95**	0	**4**	**107**	**3**	0	1	1	5	0	101	**15**	1	117	
+30 mins.	13	0	4	0	17	9	81	0	0	90	2	0	1	0	3	0	105	11	1	117	
+45 mins.	8	0	5	1	14	**10**	71	**1**	0	82	2	0	0	0	2	0	**138**	13	1	**152**	
Total Volume	60	0	25	3	88	29	341	1	4	375	9	2	4	3	18	3	462	47	8	520	
% App. Total	68.2	0	28.4	3.4		7.7	90.9	0.3	1.1		50	11.1	22.2	16.7		0.6	88.8	9	1.5		
PHF	.750	.000	.625	.375	.688	.725	.897	.250	.250	.876	.750	.250	.500	.375	.563	.250	.837	.783	.400	.855	
General Traffic	60	0	25	3	88	29	340	1	4	374	9	2	4	3	18	3	458	47	8	516	
% General Traffic	100	0	100	100	100	100	99.7	100	100	99.7	100	100	100	100	100	100	99.1	100	100	99.2	
3+ Axle Heavy Trucks	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	
% 3+ Axle Heavy Trucks	0	0	0	0	0	0	0.3	0	0	0.3	0	0	0	0	0	0	0.9	0	0	0.8	



L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: Warm Springs / 10th Street
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : Warm Springs Rd & 10th St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 7

Image 1

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: Warm Springs / Lewis St
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : Warm Springs Rd & Lewis St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 1

Groups Printed- General Traffic - 3+ Axle Heavy Trucks

	Lewis Street From North				Warm Springs Road From Southeast				Warm Springs Road From West				
Start Time	**Right**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Left**	**Peds**	**App. Total**	**Int. Total**
07:00 AM	2	5	0	7	17	23	0	40	23	1	1	25	72
07:15 AM	5	5	0	10	25	29	0	54	29	2	1	32	96
07:30 AM	4	13	0	17	30	21	0	51	36	5	0	41	109
07:45 AM	4	8	1	13	58	53	0	111	86	5	1	92	216
Total	15	31	1	47	130	126	0	256	174	13	3	190	493
08:00 AM	7	24	0	31	67	76	0	143	53	3	1	57	231
08:15 AM	3	28	1	32	39	62	0	101	42	4	0	46	179
08:30 AM	6	25	3	34	39	61	0	100	47	6	0	53	187
08:45 AM	6	26	0	32	37	56	0	93	78	5	0	83	208
Total	22	103	4	129	182	255	0	437	220	18	1	239	805

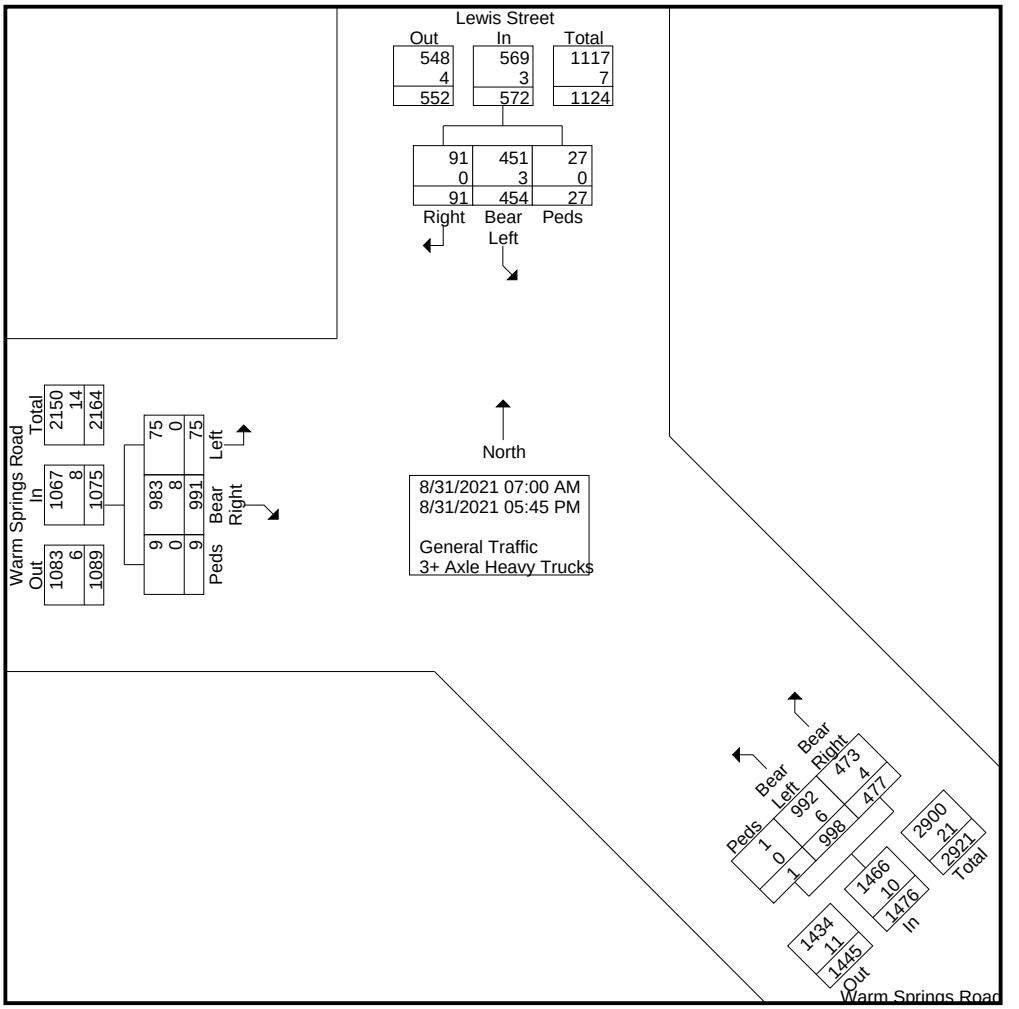
04:00 PM	12	46	4	62	38	87	1	126	84	6	0	90	278
04:15 PM	5	37	4	46	27	78	0	105	90	9	0	99	250
04:30 PM	9	40	1	50	36	49	0	85	72	6	0	78	213
04:45 PM	7	46	3	56	11	64	0	75	70	10	0	80	211
Total	33	169	12	214	112	278	1	391	316	31	0	347	952
05:00 PM	4	57	3	64	14	95	0	109	94	1	1	96	269
05:15 PM	10	33	4	47	21	93	0	114	63	4	1	68	229
05:30 PM	2	28	0	30	12	77	0	89	74	5	0	79	198
05:45 PM	5	33	3	41	6	74	0	80	50	3	3	56	177
Total	21	151	10	182	53	339	0	392	281	13	5	299	873
Grand Total	91	454	27	572	477	998	1	1476	991	75	9	1075	3123
Apprch %	15.9	79.4	4.7		32.3	67.6	0.1		92.2	7	0.8		
Total %	2.9	14.5	0.9	18.3	15.3	32	0	47.3	31.7	2.4	0.3	34.4	
General Traffic	91	451	27	569	473	992	1	1466	983	75	9	1067	3102
% General Traffic	100	99.3	100	99.5	99.2	99.4	100	99.3	99.2	100	100	99.3	99.3
3+ Axle Heavy Trucks	0	3	0	3	4	6	0	10	8	0	0	8	21
% 3+ Axle Heavy Trucks	0	0.7	0	0.5	0.8	0.6	0	0.7	0.8	0	0	0.7	0.7

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: Warm Springs / Lewis St
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : Warm Springs Rd & Lewis St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 2



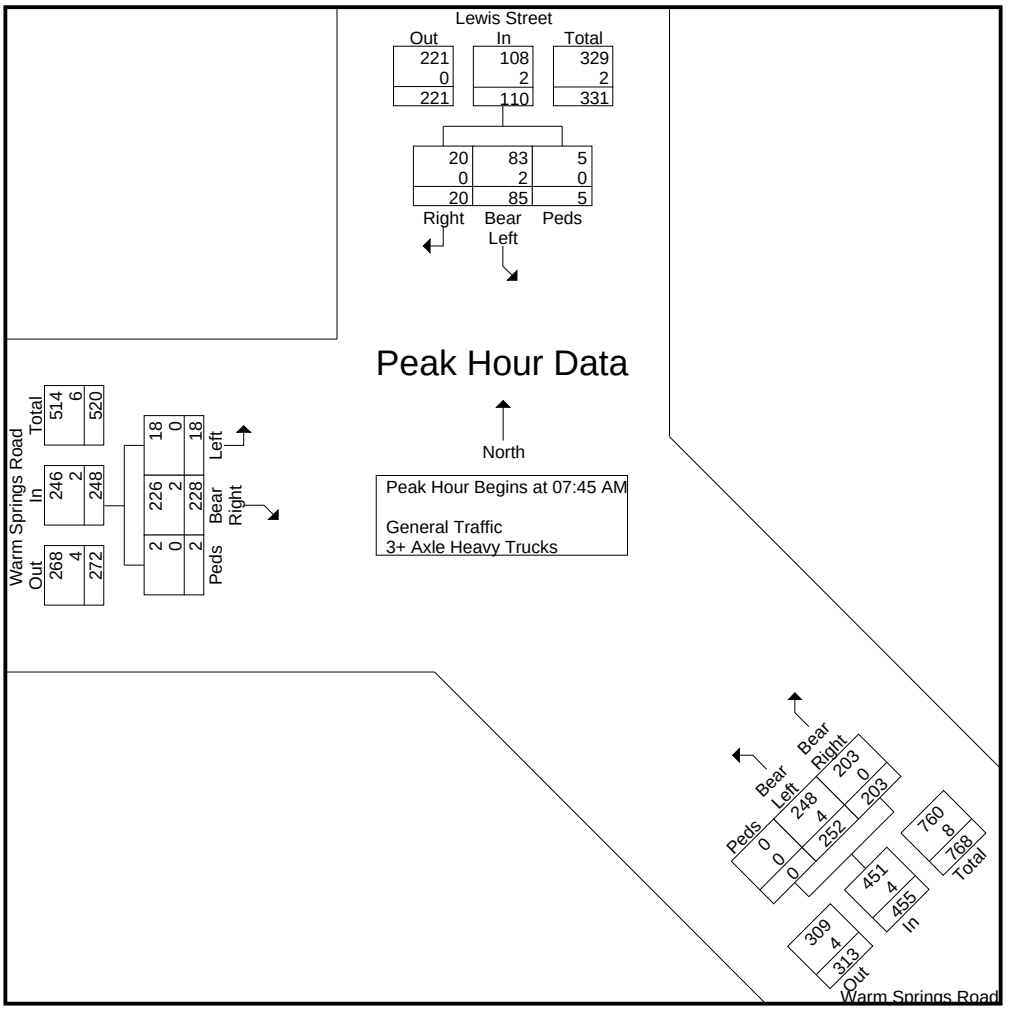
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: Warm Springs / Lewis St
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : Warm Springs Rd & Lewis St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 3

	Lewis Street From North				Warm Springs Road From Southeast				Warm Springs Road From West				
Start Time	**Right**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Left**	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:45 AM													
07:45 AM	4	8	1	13	58	53	0	111	**86**	5	**1**	**92**	216
08:00 AM	**7**	24	0	31	**67**	**76**	0	**143**	53	3	1	57	**231**
08:15 AM	3	**28**	1	32	39	62	0	101	42	4	0	46	179
08:30 AM	6	25	**3**	**34**	39	61	0	100	47	**6**	0	53	187
Total Volume	20	85	5	110	203	252	0	455	228	18	2	248	813
% App. Total	18.2	77.3	4.5		44.6	55.4	0		91.9	7.3	0.8		
PHF	.714	.759	.417	.809	.757	.829	.000	.795	.663	.750	.500	.674	.880
General Traffic	20	83	5	108	203	248	0	451	226	18	2	246	805
% General Traffic	100	97.6	100	98.2	100	98.4	0	99.1	99.1	100	100	99.2	99.0
3+ Axle Heavy Trucks	0	2	0	2	0	4	0	4	2	0	0	2	8
% 3+ Axle Heavy Trucks	0	2.4	0	1.8	0	1.6	0	0.9	0.9	0	0	0.8	1.0



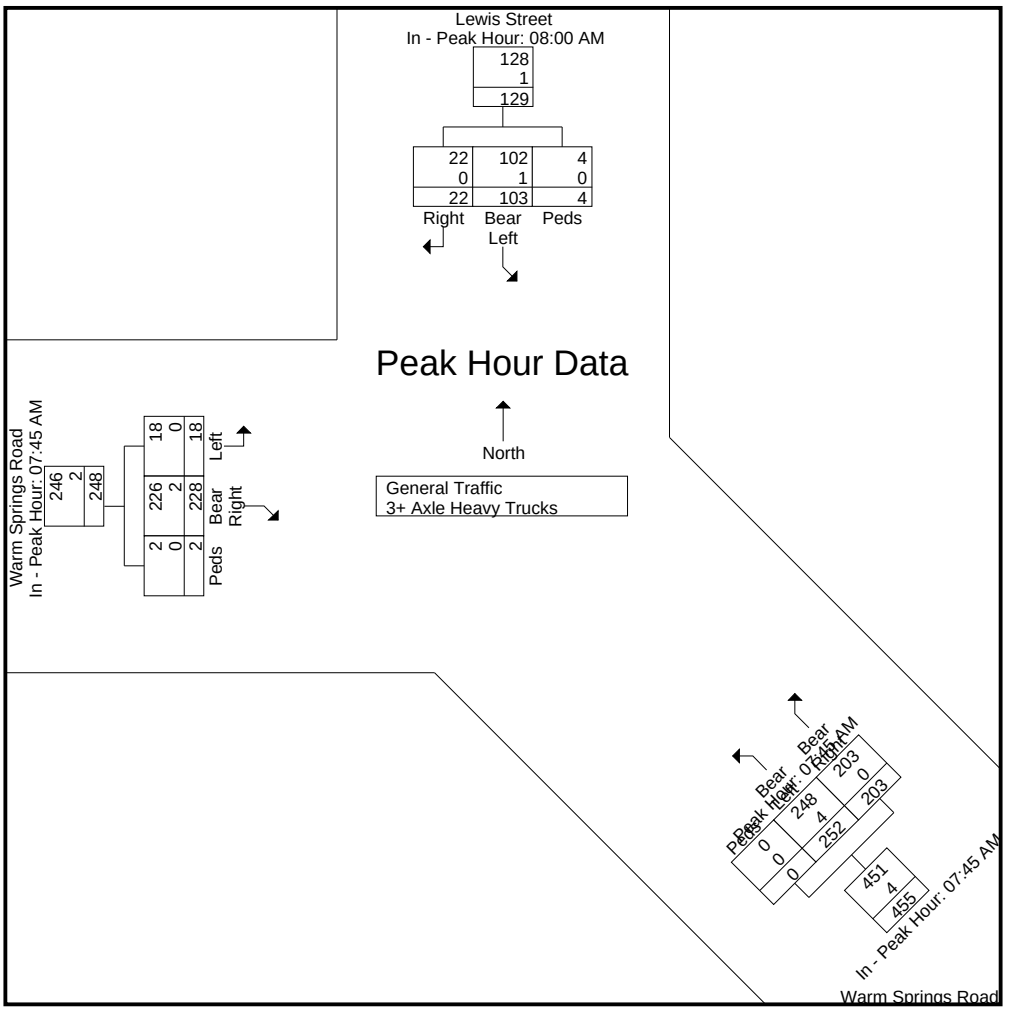
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: Warm Springs / Lewis St
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : Warm Springs Rd & Lewis St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 4

	Lewis Street From North				Warm Springs Road From Southeast				Warm Springs Road From West				
Start Time	**Right**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Left**	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	08:00 AM				07:45 AM				07:45 AM				
+0 mins.	**7**	24	0	31	58	53	0	111	**86**	5	**1**	**92**	
+15 mins.	3	**28**	1	32	**67**	**76**	0	**143**	53	3	1	57	
+30 mins.	6	25	**3**	**34**	39	62	0	101	42	4	0	46	
+45 mins.	6	26	0	32	39	61	0	100	47	**6**	0	53	
Total Volume	22	103	4	129	203	252	0	455	228	18	2	248	
% App. Total	17.1	79.8	3.1		44.6	55.4	0		91.9	7.3	0.8		
PHF	.786	.920	.333	.949	.757	.829	.000	.795	.663	.750	.500	.674	
General Traffic	22	102	4	128	203	248	0	451	226	18	2	246	
% General Traffic	100	99	100	99.2	100	98.4	0	99.1	99.1	100	100	99.2	
3+ Axle Heavy Trucks	0	1	0	1	0	4	0	4	2	0	0	2	
% 3+ Axle Heavy Trucks	0	1	0	0.8	0	1.6	0	0.9	0.9	0	0	0.8	



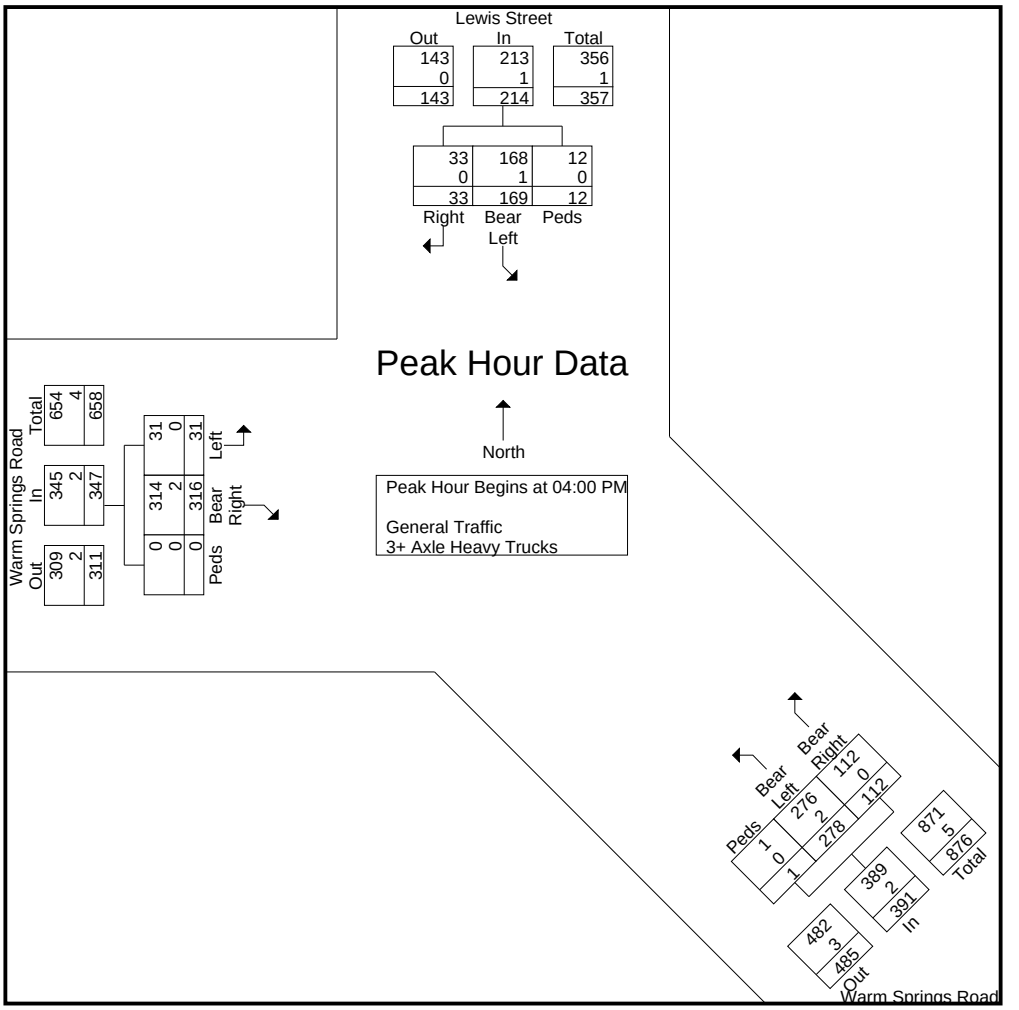
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: Warm Springs / Lewis St
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : Warm Springs Rd & Lewis St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 5

	Lewis Street From North				Warm Springs Road From Southeast				Warm Springs Road From West				
Start Time	**Right**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Left**	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	**12**	**46**	**4**	**62**	**38**	**87**	**1**	**126**	84	6	0	90	**278**
04:15 PM	5	37	4	46	27	78	0	105	**90**	9	0	**99**	250
04:30 PM	9	40	1	50	36	49	0	85	72	6	0	78	213
04:45 PM	7	46	3	56	11	64	0	75	70	**10**	0	80	211
Total Volume	33	169	12	214	112	278	1	391	316	31	0	347	952
% App. Total	15.4	79	5.6		28.6	71.1	0.3		91.1	8.9	0		
PHF	.688	.918	.750	.863	.737	.799	.250	.776	.878	.775	.000	.876	.856
General Traffic	33	168	12	213	112	276	1	389	314	31	0	345	947
% General Traffic	100	99.4	100	99.5	100	99.3	100	99.5	99.4	100	0	99.4	99.5
3+ Axle Heavy Trucks	0	1	0	1	0	2	0	2	2	0	0	2	5
% 3+ Axle Heavy Trucks	0	0.6	0	0.5	0	0.7	0	0.5	0.6	0	0	0.6	0.5



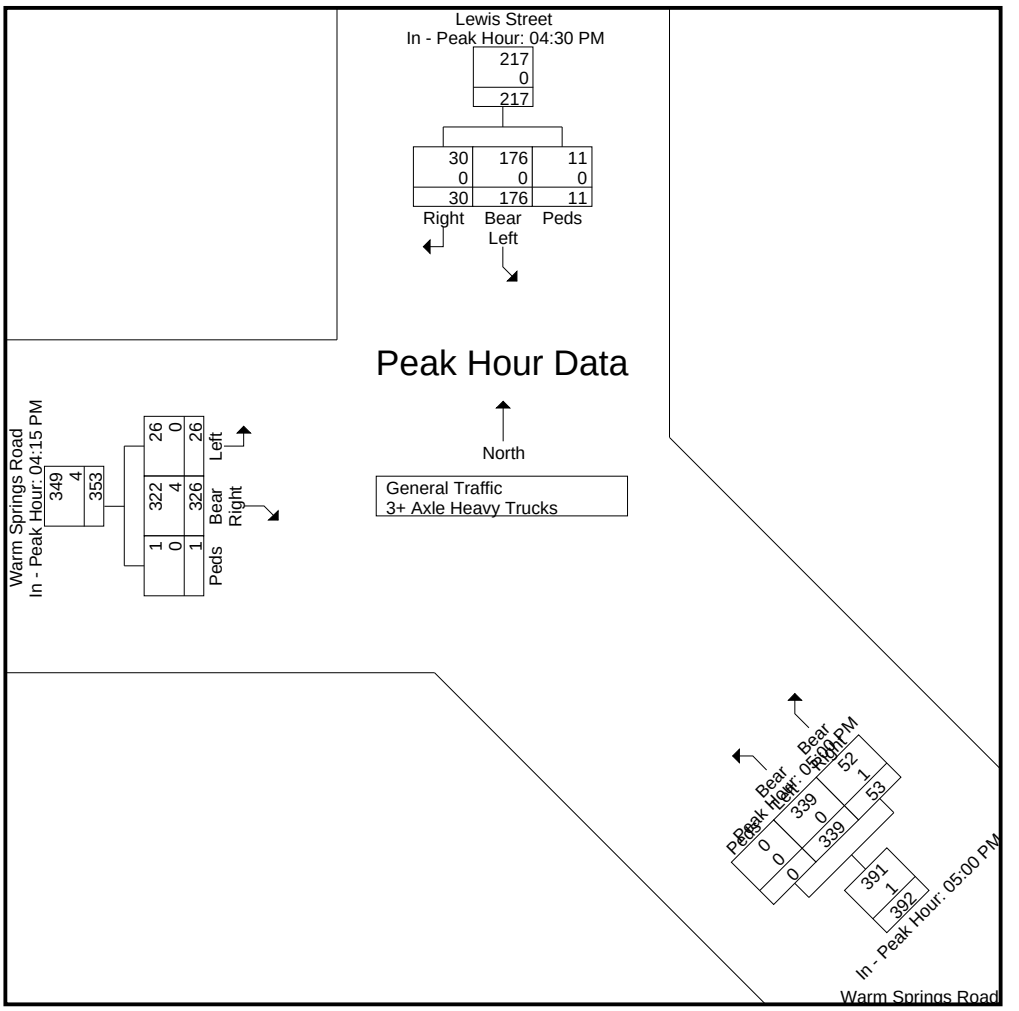
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: Warm Springs / Lewis St
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : Warm Springs Rd & Lewis St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 6

	Lewis Street From North				Warm Springs Road From Southeast				Warm Springs Road From West				
Start Time	**Right**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Bear Left**	**Peds**	**App. Total**	**Bear Right**	**Left**	**Peds**	**App. Total**	**Int. Total**
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	04:30 PM				05:00 PM				04:15 PM				
+0 mins.	9	40	1	50	14	**95**	0	109	90	9	0	**99**	
+15 mins.	7	46	3	56	**21**	93	0	**114**	72	6	0	78	
+30 mins.	4	**57**	3	**64**	12	77	0	89	70	**10**	0	80	
+45 mins.	**10**	33	**4**	47	6	74	0	80	**94**	1	**1**	96	
Total Volume	30	176	11	217	53	339	0	392	326	26	1	353	
% App. Total	13.8	81.1	5.1		13.5	86.5	0		92.4	7.4	0.3		
PHF	.750	.772	.688	.848	.631	.892	.000	.860	.867	.650	.250	.891	
General Traffic	30	176	11	217	52	339	0	391	322	26	1	349	
% General Traffic	100	100	100	100	98.1	100	0	99.7	98.8	100	100	98.9	
3+ Axle Heavy Trucks	0	0	0	0	1	0	0	1	4	0	0	4	
% 3+ Axle Heavy Trucks	0	0	0	0	1.9	0	0	0.3	1.2	0	0	1.1	



L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: HDR0026
Intersection: Warm Springs / Lewis St
City, State: Ketchum, Idaho
Control: Stop Sign

File Name : Warm Springs Rd & Lewis St
Site Code : 00000000
Start Date : 8/31/2021
Page No : 7

Image 1

B

Existing Capacity Analysis Reports

Intersection	
Int Delay, s/veh	2

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	24	214	108	21	39	25
Future Vol, veh/h	24	214	108	21	39	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	4	4	1	1
Mvmt Flow	25	223	113	22	41	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	135	0	-	0	397	124
Stage 1	-	-	-	-	124	-
Stage 2	-	-	-	-	273	-
Critical Hdwy	4.13	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.227	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1443	-	-	-	610	929
Stage 1	-	-	-	-	904	-
Stage 2	-	-	-	-	775	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1443	-	-	-	598	929
Mov Cap-2 Maneuver	-	-	-	-	598	-
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	775	-

Approach	NB	SB	NE
HCM Control Delay, s	0.8	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	695	1443	-	-	-
HCM Lane V/C Ratio	0.096	0.017	-	-	-
HCM Control Delay (s)	10.7	7.5	-	-	-
HCM Lane LOS	B	A	-	-	-
HCM 95th %tile Q(veh)	0.3	0.1	-	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	28	253	128	25	46	30
Future Vol, veh/h	28	253	128	25	46	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	4	4	1	1
Mvmt Flow	29	264	133	26	48	31

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	159	0	-	0	468	146
Stage 1	-	-	-	-	146	-
Stage 2	-	-	-	-	322	-
Critical Hdwy	4.13	-	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.227	-	-	-	3.509	3.309
Pot Cap-1 Maneuver	1414	-	-	-	555	904
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	737	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1414	-	-	-	542	904
Mov Cap-2 Maneuver	-	-	-	-	542	-
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	737	-

Approach	NB	SB	NE
HCM Control Delay, s	0.8	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	644	1414	-	-	-
HCM Lane V/C Ratio	0.123	0.021	-	-	-
HCM Control Delay (s)	11.4	7.6	-	-	-
HCM Lane LOS	B	A	-	-	-
HCM 95th %tile Q(veh)	0.4	0.1	-	-	-

Intersection	
Int Delay, s/veh	2

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	34	169	284	36	29	47
Future Vol, veh/h	34	169	284	36	29	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	1	1	0	0
Mvmt Flow	39	192	323	41	33	53

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	364	0	-	0	614	344
Stage 1	-	-	-	-	344	-
Stage 2	-	-	-	-	270	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1206	-	-	-	459	703
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	780	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1206	-	-	-	442	703
Mov Cap-2 Maneuver	-	-	-	-	442	-
Stage 1	-	-	-	-	696	-
Stage 2	-	-	-	-	780	-

Approach	NB	SB	NE
HCM Control Delay, s	1.4	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	574	1206	-	-	-
HCM Lane V/C Ratio	0.15	0.032	-	-	-
HCM Control Delay (s)	12.4	8.1	-	-	-
HCM Lane LOS	B	A	-	-	-
HCM 95th %tile Q(veh)	0.5	0.1	-	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	40	200	335	42	34	55
Future Vol, veh/h	40	200	335	42	34	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	1	1	0	0
Mvmt Flow	45	227	381	48	39	63

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	429	0	-	0	722	405
Stage 1	-	-	-	-	405	-
Stage 2	-	-	-	-	317	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1141	-	-	-	397	650
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	743	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1141	-	-	-	379	650
Mov Cap-2 Maneuver	-	-	-	-	379	-
Stage 1	-	-	-	-	647	-
Stage 2	-	-	-	-	743	-

Approach	NB	SB	NE
HCM Control Delay, s	1.4	0	13.8
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	511	1141	-	-	-
HCM Lane V/C Ratio	0.198	0.04	-	-	-
HCM Control Delay (s)	13.8	8.3	-	-	-
HCM Lane LOS	B	A	-	-	-
HCM 95th %tile Q(veh)	0.7	0.1	-	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	8	336	57	26	228	9	7	3	9	14	1	42
Future Vol, veh/h	8	336	57	26	228	9	7	3	9	14	1	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	1	1	1	2	2	2	0	0	0	0	0	0
Mvmt Flow	9	382	65	30	259	10	8	3	10	16	1	48

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	269	0	0	447	0	0	781	789	264	764	762	415
Stage 1	-	-	-	-	-	-	324	324	-	433	433	-
Stage 2	-	-	-	-	-	-	457	465	-	331	329	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1300	-	-	1113	-	-	315	325	780	323	337	642
Stage 1	-	-	-	-	-	-	692	653	-	605	585	-
Stage 2	-	-	-	-	-	-	587	566	-	687	650	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1300	-	-	1113	-	-	283	314	780	308	326	642
Mov Cap-2 Maneuver	-	-	-	-	-	-	283	314	-	308	326	-
Stage 1	-	-	-	-	-	-	687	635	-	601	581	-
Stage 2	-	-	-	-	-	-	539	562	-	656	632	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	0.2	0.8	14.2	13.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NELn1	NBL	NBT	NBR	SBL	SBT	SBR	SWLn1
Capacity (veh/h)	415	1300	-	-	1113	-	-	500
HCM Lane V/C Ratio	0.052	0.007	-	-	0.027	-	-	0.13
HCM Control Delay (s)	14.2	7.8	-	-	8.3	-	-	13.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.4

Intersection	
Int Delay, s/veh	2

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	10	396	67	31	269	11	8	4	11	16	1	49
Future Vol, veh/h	10	396	67	31	269	11	8	4	11	16	1	49
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	1	1	1	2	2	2	0	0	0	0	0	0
Mvmt Flow	11	450	76	35	306	13	9	5	13	18	1	56

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	319	0	0	526	0	0	922	931	313	902	899	488
Stage 1	-	-	-	-	-	-	383	383	-	510	510	-
Stage 2	-	-	-	-	-	-	539	548	-	392	389	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1247	-	-	1041	-	-	253	269	732	261	281	584
Stage 1	-	-	-	-	-	-	644	616	-	550	541	-
Stage 2	-	-	-	-	-	-	530	520	-	637	612	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1247	-	-	1041	-	-	221	257	732	245	269	584
Mov Cap-2 Maneuver	-	-	-	-	-	-	221	257	-	245	269	-
Stage 1	-	-	-	-	-	-	638	595	-	545	536	-
Stage 2	-	-	-	-	-	-	474	515	-	600	591	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	0.2	0.9	16.3	15.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NELn1	NBL	NBT	NBR	SBL	SBT	SBR	SWLn1
Capacity (veh/h)	344	1247	-	-	1041	-	-	432
HCM Lane V/C Ratio	0.076	0.009	-	-	0.034	-	-	0.174
HCM Control Delay (s)	16.3	7.9	-	-	8.6	-	-	15.1
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.6

Intersection	
Int Delay, s/veh	1.9

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	3	277	24	42	368	3	3	2	8	21	0	51
Future Vol, veh/h	3	277	24	42	368	3	3	2	8	21	0	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	1	1	1	0	0	0	0	0	0
Mvmt Flow	3	318	28	48	423	3	3	2	9	24	0	59

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	426	0	0	346	0	0	889	873	425	864	860	332
Stage 1	-	-	-	-	-	-	521	521	-	338	338	-
Stage 2	-	-	-	-	-	-	368	352	-	526	522	-
Critical Hdwy	4.1	-	-	4.11	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.209	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1144	-	-	1219	-	-	266	291	634	277	296	714
Stage 1	-	-	-	-	-	-	542	535	-	681	644	-
Stage 2	-	-	-	-	-	-	656	635	-	539	534	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1144	-	-	1219	-	-	236	279	634	263	284	714
Mov Cap-2 Maneuver	-	-	-	-	-	-	236	279	-	263	284	-
Stage 1	-	-	-	-	-	-	540	514	-	679	642	-
Stage 2	-	-	-	-	-	-	601	633	-	508	513	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	0.1	0.8	14.3	14.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NELn1	NBL	NBT	NBR	SBL	SBT	SBR	SWLn1
Capacity (veh/h)	400	1144	-	-	1219	-	-	476
HCM Lane V/C Ratio	0.037	0.003	-	-	0.04	-	-	0.174
HCM Control Delay (s)	14.3	8.2	-	-	8.1	-	-	14.1
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0.6

Intersection	
Int Delay, s/veh	2.2

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	3	327	28	49	434	3	4	2	9	25	0	60
Future Vol, veh/h	3	327	28	49	434	3	4	2	9	25	0	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	1	1	1	0	0	0	0	0	0
Mvmt Flow	3	376	32	56	499	3	5	2	10	29	0	69

Major/Minor	Major1			Major2			Minor2			Minor1		
Conflicting Flow All	502	0	0	408	0	0	1046	1027	501	1017	1012	392
Stage 1	-	-	-	-	-	-	613	613	-	398	398	-
Stage 2	-	-	-	-	-	-	433	414	-	619	614	-
Critical Hdwy	4.1	-	-	4.11	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.209	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1073	-	-	1156	-	-	208	236	574	218	241	661
Stage 1	-	-	-	-	-	-	483	486	-	632	606	-
Stage 2	-	-	-	-	-	-	605	597	-	480	486	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1073	-	-	1156	-	-	179	224	574	204	229	661
Mov Cap-2 Maneuver	-	-	-	-	-	-	179	224	-	204	229	-
Stage 1	-	-	-	-	-	-	482	463	-	630	604	-
Stage 2	-	-	-	-	-	-	540	595	-	446	463	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	0.1	0.8	16.9	17
HCM LOS			C	C

Minor Lane/Major Mvmt	NELn1	NBL	NBT	NBR	SBL	SBT	SBR	SWLn1
Capacity (veh/h)	319	1073	-	-	1156	-	-	398
HCM Lane V/C Ratio	0.054	0.003	-	-	0.049	-	-	0.245
HCM Control Delay (s)	16.9	8.4	-	-	8.3	-	-	17
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0.2	-	-	1

Intersection	
Int Delay, s/veh	1.7

Movement	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	72	17	15	193	214	172
Future Vol, veh/h	72	17	15	193	214	172
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	140	0	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	82	19	17	219	243	195

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	496	243	438	0	-	0
Stage 1	243	-	-	-	-	-
Stage 2	253	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	533	796	1127	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	789	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	524	796	1127	-	-	-
Mov Cap-2 Maneuver	598	-	-	-	-	-
Stage 1	783	-	-	-	-	-
Stage 2	789	-	-	-	-	-

Approach	SB	SE	NW
HCM Control Delay, s	11.5	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SBLn1	SBLn2
Capacity (veh/h)	-	-	1127	-	598	796
HCM Lane V/C Ratio	-	-	0.015	-	0.137	0.024
HCM Control Delay (s)	-	-	8.2	-	12	9.6
HCM Lane LOS	-	-	A	-	B	A
HCM 95th %tile Q(veh)	-	-	0	-	0.5	0.1

Intersection	
Int Delay, s/veh	1.8

Movement	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	85	20	18	228	252	203
Future Vol, veh/h	85	20	18	228	252	203
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	140	0	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	97	23	20	259	286	231

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	585	286	517	0	-	0
Stage 1	286	-	-	-	-	-
Stage 2	299	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	473	753	1054	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	752	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	463	753	1054	-	-	-
Mov Cap-2 Maneuver	553	-	-	-	-	-
Stage 1	746	-	-	-	-	-
Stage 2	752	-	-	-	-	-

Approach	SB	SE	NW
HCM Control Delay, s	12.3	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SBLn1	SBLn2
Capacity (veh/h)	-	-	1054	-	553	753
HCM Lane V/C Ratio	-	-	0.019	-	0.175	0.03
HCM Control Delay (s)	-	-	8.5	-	12.9	9.9
HCM Lane LOS	-	-	A	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	-	0.6	0.1

Intersection	
Int Delay, s/veh	3.3

Movement	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	143	28	26	268	236	95
Future Vol, veh/h	143	28	26	268	236	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	140	0	50	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	166	33	30	312	274	110

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	646	274	384	0	-	0
Stage 1	274	-	-	-	-	-
Stage 2	372	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	439	770	1180	-	-	-
Stage 1	777	-	-	-	-	-
Stage 2	702	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	428	770	1180	-	-	-
Mov Cap-2 Maneuver	527	-	-	-	-	-
Stage 1	758	-	-	-	-	-
Stage 2	702	-	-	-	-	-

Approach	SB	SE	NW
HCM Control Delay, s	14.1	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SBLn1	SBLn2
Capacity (veh/h)	-	-	1180	-	527	770
HCM Lane V/C Ratio	-	-	0.026	-	0.316	0.042
HCM Control Delay (s)	-	-	8.1	-	14.9	9.9
HCM Lane LOS	-	-	A	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	-	1.3	0.1

Intersection	
Int Delay, s/veh	3.8

Movement	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	169	33	31	316	278	112
Future Vol, veh/h	169	33	31	316	278	112
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	140	0	50	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	197	38	36	367	323	130

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	762	323	453	0	-	0
Stage 1	323	-	-	-	-	-
Stage 2	439	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	376	723	1113	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	654	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	364	723	1113	-	-	-
Mov Cap-2 Maneuver	477	-	-	-	-	-
Stage 1	714	-	-	-	-	-
Stage 2	654	-	-	-	-	-

Approach	SB	SE	NW
HCM Control Delay, s	16.5	0.7	0
HCM LOS	C		

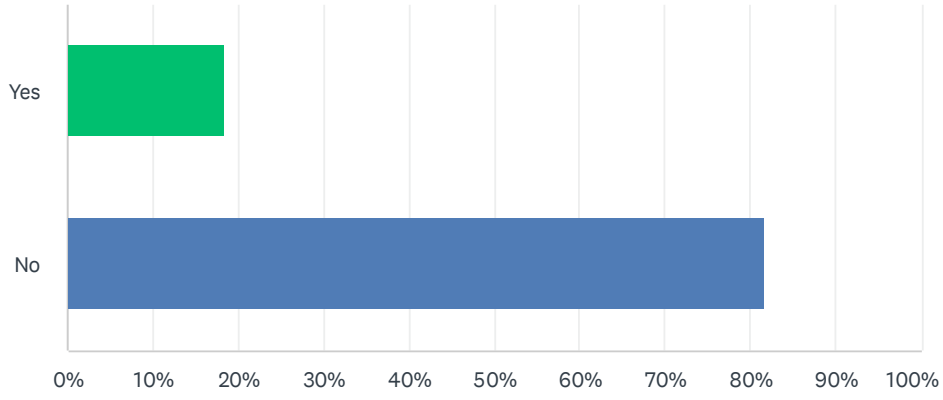
Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SBLn1	SBLn2
Capacity (veh/h)	-	-	1113	-	477	723
HCM Lane V/C Ratio	-	-	0.032	-	0.412	0.053
HCM Control Delay (s)	-	-	8.3	-	17.7	10.3
HCM Lane LOS	-	-	A	-	C	B
HCM 95th %tile Q(veh)	-	-	0.1	-	2	0.2

C

First Public Involvement Summary

Q1 Are you a business or property owner along Warm Springs Road (between Main Street and Saddle Road)

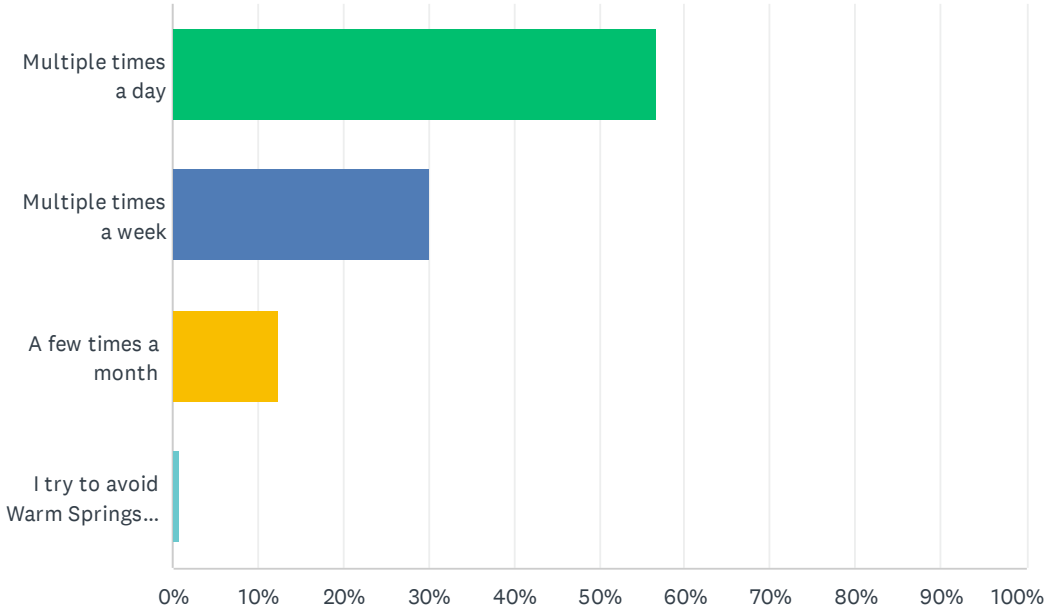
Answered: 219 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	18.26%	40
No	81.74%	179
Total Respondents: 219		

Q2 How frequently do you travel along Warm Springs Road?

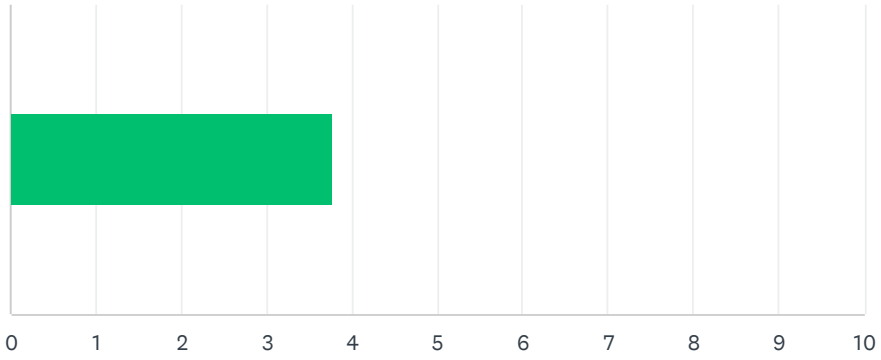
Answered: 219 Skipped: 0



ANSWER CHOICES	RESPONSES	
Multiple times a day	56.62%	124
Multiple times a week	30.14%	66
A few times a month	12.33%	27
I try to avoid Warm Springs Road	0.91%	2
TOTAL		219

Q3 How satisfied are you with the current intersections and roadway configurations?

Answered: 177 Skipped: 42



ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
	4	669	177
Total Respondents: 177			

#		DATE
1	1	5/28/2022 8:42 AM
2	8	5/28/2022 7:28 AM
3	7	5/26/2022 10:23 AM
4	6	5/24/2022 12:41 AM
5	4	5/23/2022 5:37 PM
6	3	5/23/2022 5:07 PM
7	0	5/23/2022 4:54 PM
8	5	5/23/2022 2:34 PM
9	7	5/23/2022 12:39 PM
10	5	5/23/2022 11:54 AM
11	4	5/23/2022 11:46 AM
12	5	5/22/2022 7:55 PM
13	3	5/22/2022 7:46 PM
14	2	5/22/2022 1:09 PM
15	1	5/22/2022 11:54 AM
16	4	5/22/2022 11:07 AM
17	2	5/22/2022 10:04 AM
18	1	5/22/2022 9:37 AM
19	9	5/22/2022 7:54 AM

20	10	5/21/2022 8:58 PM
21	3	5/21/2022 5:00 PM
22	0	5/21/2022 1:58 PM
23	5	5/21/2022 12:23 PM
24	9	5/21/2022 11:56 AM
25	8	5/21/2022 11:36 AM
26	2	5/21/2022 10:57 AM
27	5	5/21/2022 10:34 AM
28	4	5/21/2022 10:17 AM
29	2	5/21/2022 9:46 AM
30	5	5/21/2022 9:01 AM
31	2	5/21/2022 8:38 AM
32	6	5/21/2022 7:45 AM
33	1	5/21/2022 7:21 AM
34	3	5/21/2022 7:19 AM
35	1	5/21/2022 6:55 AM
36	2	5/21/2022 6:22 AM
37	10	5/21/2022 6:06 AM
38	5	5/21/2022 12:46 AM
39	7	5/20/2022 11:51 PM
40	4	5/20/2022 10:55 PM
41	1	5/20/2022 10:22 PM
42	5	5/20/2022 9:59 PM
43	2	5/20/2022 9:36 PM
44	4	5/20/2022 9:29 PM
45	2	5/20/2022 9:06 PM
46	6	5/20/2022 8:55 PM
47	3	5/20/2022 8:14 PM
48	10	5/20/2022 7:12 PM
49	8	5/20/2022 7:07 PM
50	5	5/20/2022 7:02 PM
51	1	5/20/2022 6:30 PM
52	4	5/20/2022 6:30 PM
53	7	5/20/2022 5:48 PM
54	3	5/20/2022 5:45 PM
55	10	5/20/2022 5:10 PM
56	5	5/20/2022 4:31 PM
57	5	5/20/2022 4:15 PM

58	5	5/20/2022 4:06 PM
59	4	5/20/2022 3:45 PM
60	1	5/20/2022 3:21 PM
61	6	5/20/2022 3:16 PM
62	5	5/20/2022 3:12 PM
63	0	5/20/2022 3:10 PM
64	10	5/20/2022 3:05 PM
65	1	5/20/2022 2:54 PM
66	5	5/20/2022 2:18 PM
67	8	5/20/2022 2:16 PM
68	2	5/20/2022 2:16 PM
69	10	5/20/2022 2:13 PM
70	0	5/20/2022 2:08 PM
71	3	5/20/2022 1:45 PM
72	4	5/20/2022 1:45 PM
73	1	5/20/2022 1:31 PM
74	10	5/20/2022 1:29 PM
75	5	5/20/2022 1:22 PM
76	3	5/20/2022 1:13 PM
77	5	5/20/2022 12:58 PM
78	2	5/20/2022 12:56 PM
79	9	5/20/2022 12:43 PM
80	0	5/20/2022 12:30 PM
81	4	5/20/2022 12:22 PM
82	1	5/20/2022 12:18 PM
83	7	5/20/2022 12:14 PM
84	1	5/20/2022 12:12 PM
85	7	5/20/2022 12:12 PM
86	2	5/20/2022 12:06 PM
87	1	5/20/2022 12:04 PM
88	1	5/20/2022 12:02 PM
89	4	5/20/2022 11:59 AM
90	1	5/20/2022 11:58 AM
91	3	5/20/2022 11:56 AM
92	0	5/20/2022 9:43 AM
93	0	5/19/2022 10:40 AM
94	4	5/19/2022 8:16 AM
95	5	5/18/2022 5:10 PM

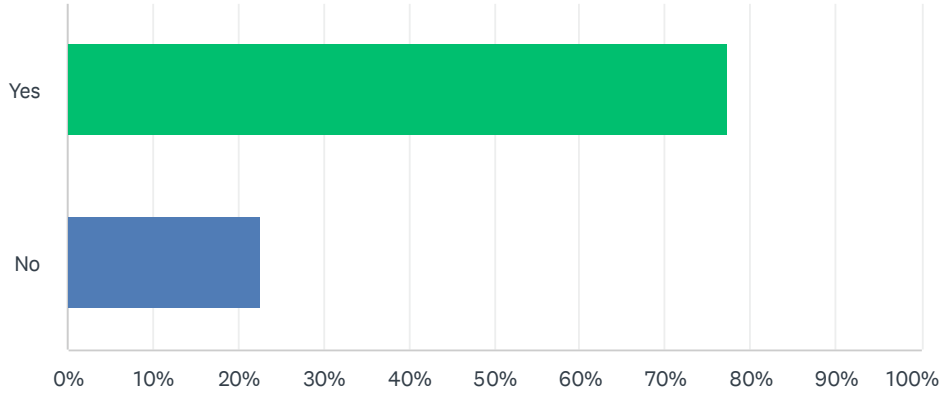
96	2	5/18/2022 5:09 PM
97	5	5/18/2022 4:09 PM
98	3	5/18/2022 3:10 PM
99	0	5/18/2022 2:26 PM
100	4	5/18/2022 12:49 PM
101	2	5/18/2022 12:27 PM
102	1	5/18/2022 10:38 AM
103	1	5/18/2022 9:10 AM
104	3	5/18/2022 8:37 AM
105	7	5/18/2022 8:35 AM
106	1	5/18/2022 7:57 AM
107	1	5/18/2022 7:00 AM
108	1	5/18/2022 6:46 AM
109	1	5/18/2022 6:12 AM
110	2	5/17/2022 10:38 PM
111	2	5/17/2022 9:40 PM
112	2	5/17/2022 6:10 PM
113	3	5/17/2022 5:35 PM
114	5	5/17/2022 4:57 PM
115	1	5/17/2022 4:40 PM
116	2	5/17/2022 4:12 PM
117	8	5/17/2022 4:11 PM
118	1	5/17/2022 4:08 PM
119	0	5/17/2022 3:54 PM
120	5	5/17/2022 2:45 PM
121	8	5/17/2022 2:08 PM
122	4	5/17/2022 1:50 PM
123	8	5/17/2022 1:01 PM
124	7	5/17/2022 12:48 PM
125	5	5/17/2022 12:45 PM
126	1	5/17/2022 12:23 PM
127	7	5/17/2022 10:18 AM
128	5	5/17/2022 9:19 AM
129	10	5/17/2022 9:10 AM
130	1	5/17/2022 8:54 AM
131	2	5/17/2022 8:13 AM
132	2	5/17/2022 7:58 AM
133	2	5/17/2022 7:57 AM

134	2	5/17/2022 7:34 AM
135	7	5/17/2022 7:06 AM
136	1	5/17/2022 5:55 AM
137	9	5/17/2022 3:14 AM
138	1	5/17/2022 12:16 AM
139	3	5/16/2022 11:06 PM
140	2	5/16/2022 10:42 PM
141	3	5/16/2022 10:27 PM
142	5	5/16/2022 10:10 PM
143	8	5/16/2022 10:03 PM
144	5	5/16/2022 9:25 PM
145	10	5/16/2022 9:23 PM
146	6	5/16/2022 8:51 PM
147	0	5/16/2022 7:46 PM
148	5	5/16/2022 7:40 PM
149	0	5/16/2022 6:57 PM
150	2	5/16/2022 6:34 PM
151	5	5/16/2022 6:33 PM
152	4	5/16/2022 6:07 PM
153	4	5/16/2022 1:58 PM
154	4	5/16/2022 1:12 PM
155	3	5/16/2022 1:04 PM
156	2	5/16/2022 12:58 PM
157	7	5/16/2022 12:33 PM
158	6	5/16/2022 12:31 PM
159	3	5/16/2022 12:25 PM
160	1	5/16/2022 12:22 PM
161	4	5/16/2022 12:13 PM
162	3	5/16/2022 12:01 PM
163	2	5/16/2022 11:59 AM
164	2	5/16/2022 11:52 AM
165	1	5/16/2022 11:48 AM
166	1	5/16/2022 11:27 AM
167	5	5/16/2022 11:10 AM
168	4	5/16/2022 10:53 AM
169	5	5/16/2022 10:43 AM
170	5	5/16/2022 10:35 AM
171	3	5/16/2022 10:22 AM

172	1	5/16/2022 10:20 AM
173	1	5/16/2022 10:07 AM
174	2	5/16/2022 10:07 AM
175	1	5/16/2022 9:40 AM
176	3	5/16/2022 9:33 AM
177	1	5/16/2022 8:42 AM

Q4 Should the intersections be reconfigured or adjusted?

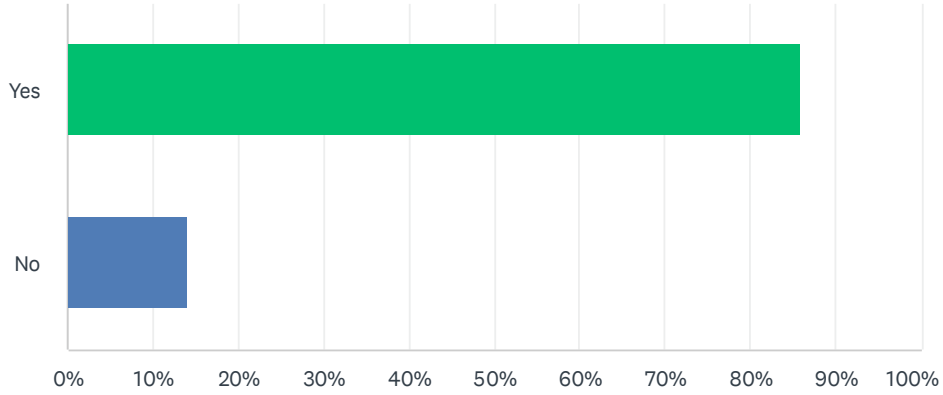
Answered: 177 Skipped: 42



ANSWER CHOICES	RESPONSES	
Yes	77.40%	137
No	22.60%	40
TOTAL		177

Q5 Should pedestrian safety enhancements occur?

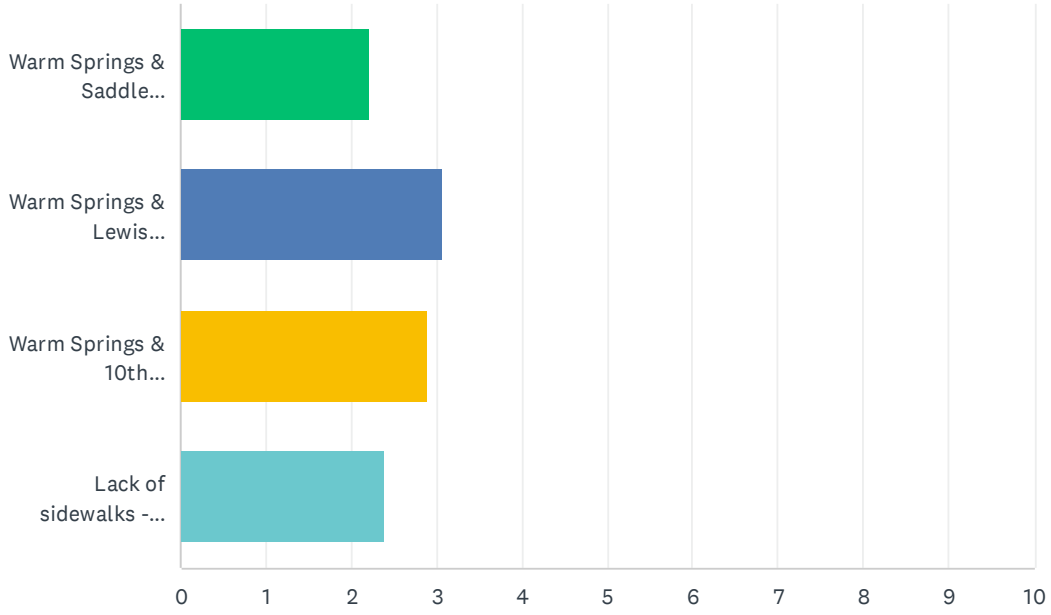
Answered: 177 Skipped: 42



ANSWER CHOICES	RESPONSES	
Yes	85.88%	152
No	14.12%	25
TOTAL		177

Q6 Please rank the locations - 1 being the spot in most need of attention:

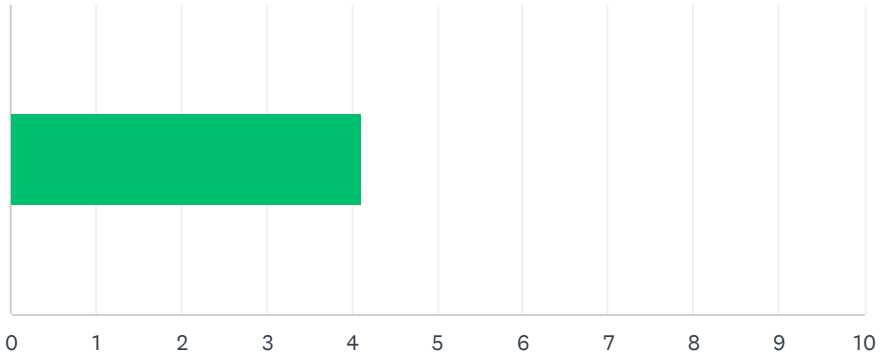
Answered: 177 Skipped: 42



	1	2	3	4	LEAVE AS-IS	TOTAL	SCORE
Warm Springs & Saddle intersection	13.56% 24	11.30% 20	16.95% 30	24.29% 43	33.90% 60	177	2.21
Warm Springs & Lewis intersection	35.03% 62	22.03% 39	20.34% 36	4.52% 8	18.08% 32	177	3.07
Warm Springs & 10th intersection	26.55% 47	32.20% 57	16.95% 30	8.47% 15	15.82% 28	177	2.91
Lack of sidewalks - 10th Street and between 10th & Lewis	16.95% 30	21.47% 38	23.16% 41	22.60% 40	15.82% 28	177	2.39

Q7 How satisfied are you with the current intersections and roadway configurations?

Answered: 172 Skipped: 47



ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
	4	707	172
Total Respondents: 172			

#		DATE
1	10	5/28/2022 8:45 AM
2	8	5/28/2022 7:29 AM
3	7	5/26/2022 10:23 AM
4	6	5/24/2022 12:41 AM
5	6	5/23/2022 5:37 PM
6	8	5/23/2022 5:07 PM
7	0	5/23/2022 4:54 PM
8	6	5/23/2022 2:34 PM
9	7	5/23/2022 12:40 PM
10	9	5/23/2022 11:55 AM
11	1	5/23/2022 11:46 AM
12	7	5/22/2022 7:56 PM
13	2	5/22/2022 7:47 PM
14	2	5/22/2022 1:14 PM
15	3	5/22/2022 11:58 AM
16	1	5/22/2022 11:07 AM
17	6	5/22/2022 10:04 AM
18	7	5/22/2022 9:38 AM
19	9	5/22/2022 7:54 AM

20	10	5/21/2022 8:59 PM
21	5	5/21/2022 5:02 PM
22	5	5/21/2022 1:59 PM
23	5	5/21/2022 12:24 PM
24	9	5/21/2022 11:57 AM
25	8	5/21/2022 11:36 AM
26	6	5/21/2022 10:57 AM
27	5	5/21/2022 10:34 AM
28	9	5/21/2022 10:19 AM
29	3	5/21/2022 9:46 AM
30	5	5/21/2022 9:01 AM
31	1	5/21/2022 8:38 AM
32	5	5/21/2022 7:45 AM
33	3	5/21/2022 7:23 AM
34	1	5/21/2022 7:19 AM
35	1	5/21/2022 6:56 AM
36	2	5/21/2022 6:23 AM
37	10	5/21/2022 6:07 AM
38	6	5/21/2022 12:47 AM
39	7	5/20/2022 11:52 PM
40	7	5/20/2022 10:55 PM
41	1	5/20/2022 10:23 PM
42	5	5/20/2022 9:36 PM
43	2	5/20/2022 9:06 PM
44	1	5/20/2022 8:14 PM
45	10	5/20/2022 7:12 PM
46	8	5/20/2022 7:08 PM
47	2	5/20/2022 7:02 PM
48	3	5/20/2022 6:31 PM
49	1	5/20/2022 6:30 PM
50	4	5/20/2022 5:49 PM
51	7	5/20/2022 5:48 PM
52	10	5/20/2022 5:11 PM
53	6	5/20/2022 4:31 PM
54	2	5/20/2022 4:15 PM
55	6	5/20/2022 4:07 PM
56	9	5/20/2022 3:45 PM
57	1	5/20/2022 3:21 PM

58	6	5/20/2022 3:16 PM
59	5	5/20/2022 3:13 PM
60	0	5/20/2022 3:11 PM
61	9	5/20/2022 3:05 PM
62	1	5/20/2022 2:54 PM
63	5	5/20/2022 2:18 PM
64	5	5/20/2022 2:18 PM
65	7	5/20/2022 2:17 PM
66	6	5/20/2022 2:13 PM
67	0	5/20/2022 2:09 PM
68	1	5/20/2022 1:46 PM
69	6	5/20/2022 1:46 PM
70	6	5/20/2022 1:33 PM
71	10	5/20/2022 1:30 PM
72	5	5/20/2022 1:22 PM
73	2	5/20/2022 1:14 PM
74	3	5/20/2022 12:58 PM
75	2	5/20/2022 12:56 PM
76	9	5/20/2022 12:43 PM
77	1	5/20/2022 12:30 PM
78	4	5/20/2022 12:22 PM
79	1	5/20/2022 12:19 PM
80	7	5/20/2022 12:14 PM
81	1	5/20/2022 12:13 PM
82	6	5/20/2022 12:13 PM
83	2	5/20/2022 12:06 PM
84	1	5/20/2022 12:04 PM
85	2	5/20/2022 12:03 PM
86	6	5/20/2022 11:59 AM
87	1	5/20/2022 11:58 AM
88	1	5/20/2022 11:57 AM
89	0	5/20/2022 9:44 AM
90	1	5/19/2022 10:40 AM
91	1	5/19/2022 8:17 AM
92	2	5/18/2022 5:10 PM
93	1	5/18/2022 5:10 PM
94	5	5/18/2022 4:10 PM
95	3	5/18/2022 3:10 PM

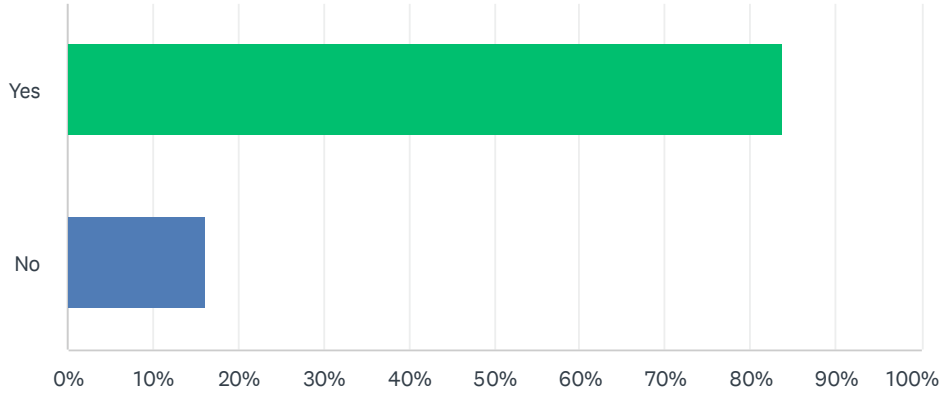
96	0	5/18/2022 2:26 PM
97	8	5/18/2022 1:40 PM
98	6	5/18/2022 12:29 PM
99	3	5/18/2022 10:38 AM
100	1	5/18/2022 9:10 AM
101	3	5/18/2022 8:37 AM
102	5	5/18/2022 8:36 AM
103	1	5/18/2022 7:58 AM
104	3	5/18/2022 7:04 AM
105	1	5/18/2022 6:46 AM
106	3	5/18/2022 6:12 AM
107	1	5/17/2022 10:38 PM
108	2	5/17/2022 9:41 PM
109	2	5/17/2022 6:11 PM
110	3	5/17/2022 5:35 PM
111	7	5/17/2022 4:58 PM
112	1	5/17/2022 4:40 PM
113	5	5/17/2022 4:12 PM
114	1	5/17/2022 4:08 PM
115	0	5/17/2022 3:55 PM
116	5	5/17/2022 2:46 PM
117	8	5/17/2022 2:08 PM
118	3	5/17/2022 1:52 PM
119	8	5/17/2022 1:03 PM
120	6	5/17/2022 12:49 PM
121	1	5/17/2022 12:46 PM
122	3	5/17/2022 12:26 PM
123	9	5/17/2022 10:18 AM
124	0	5/17/2022 9:19 AM
125	10	5/17/2022 9:10 AM
126	3	5/17/2022 8:54 AM
127	2	5/17/2022 8:14 AM
128	8	5/17/2022 7:59 AM
129	1	5/17/2022 7:57 AM
130	2	5/17/2022 7:35 AM
131	5	5/17/2022 7:07 AM
132	3	5/17/2022 5:56 AM
133	9	5/17/2022 3:15 AM

134	5	5/17/2022 12:17 AM
135	5	5/16/2022 11:07 PM
136	1	5/16/2022 10:42 PM
137	3	5/16/2022 10:28 PM
138	3	5/16/2022 10:10 PM
139	8	5/16/2022 9:26 PM
140	10	5/16/2022 9:23 PM
141	7	5/16/2022 8:52 PM
142	0	5/16/2022 7:46 PM
143	3	5/16/2022 7:40 PM
144	2	5/16/2022 6:59 PM
145	1	5/16/2022 6:34 PM
146	4	5/16/2022 6:33 PM
147	3	5/16/2022 6:08 PM
148	5	5/16/2022 1:58 PM
149	4	5/16/2022 1:12 PM
150	2	5/16/2022 1:04 PM
151	2	5/16/2022 12:59 PM
152	7	5/16/2022 12:34 PM
153	9	5/16/2022 12:32 PM
154	3	5/16/2022 12:25 PM
155	0	5/16/2022 12:22 PM
156	6	5/16/2022 12:13 PM
157	2	5/16/2022 12:02 PM
158	1	5/16/2022 11:59 AM
159	3	5/16/2022 11:53 AM
160	3	5/16/2022 11:49 AM
161	1	5/16/2022 11:27 AM
162	2	5/16/2022 11:11 AM
163	4	5/16/2022 10:54 AM
164	5	5/16/2022 10:44 AM
165	5	5/16/2022 10:35 AM
166	3	5/16/2022 10:23 AM
167	5	5/16/2022 10:21 AM
168	1	5/16/2022 10:07 AM
169	2	5/16/2022 10:07 AM
170	1	5/16/2022 9:41 AM
171	3	5/16/2022 9:33 AM

172	1	5/16/2022 8:42 AM

Q8 Should pedestrian safety enhancements occur?

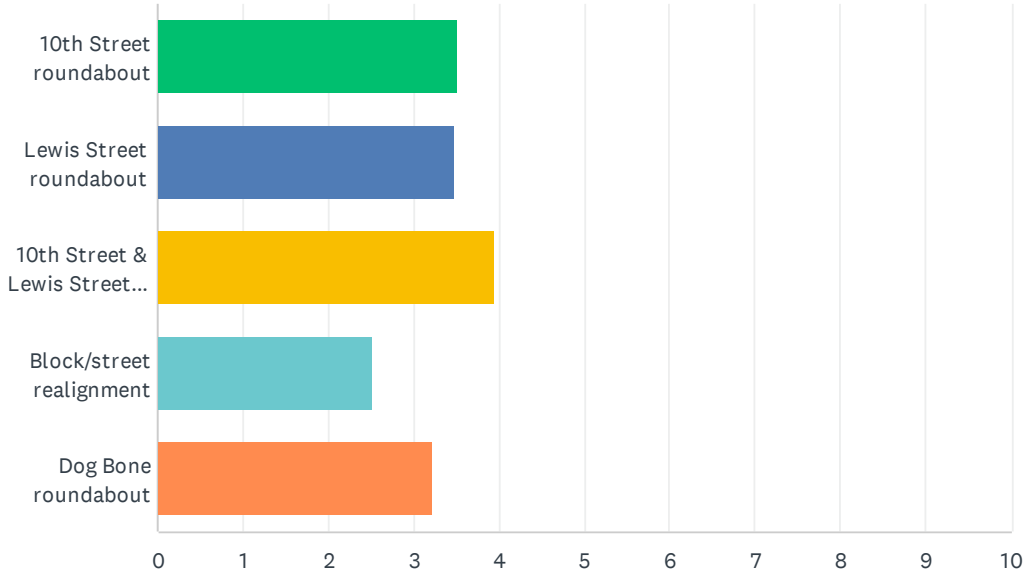
Answered: 172 Skipped: 47



ANSWER CHOICES	RESPONSES	
Yes	83.72%	144
No	16.28%	28
TOTAL		172

Q9 Please rank the above options in order from first choice to last.

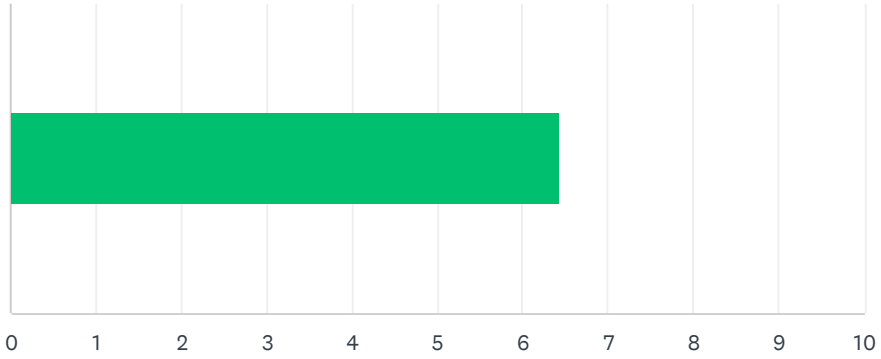
Answered: 143 Skipped: 76



	1	2	3	4	5	DON'T EXPLORE THIS OPTION.	TOTAL	SCORE
10th Street roundabout	16.78% 24	22.38% 32	17.48% 25	9.09% 13	4.90% 7	29.37% 42	143	3.52
Lewis Street roundabout	17.48% 25	16.08% 23	23.78% 34	11.19% 16	2.80% 4	28.67% 41	143	3.48
10th Street & Lewis Street realignment and roundabout	31.47% 45	16.08% 23	13.99% 20	8.39% 12	1.40% 2	28.67% 41	143	3.95
Block/street realignment	7.69% 11	6.29% 9	5.59% 8	16.78% 24	14.69% 21	48.95% 70	143	2.52
Dog Bone roundabout	12.68% 18	14.79% 21	9.15% 13	8.45% 12	9.86% 14	45.07% 64	142	3.22

Q10 How important would these safety enhancements be to you?

Answered: 140 Skipped: 79



ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
	6	901	140
Total Respondents: 140			

#		DATE
1	8	5/26/2022 10:25 AM
2	10	5/25/2022 7:30 PM
3	10	5/23/2022 5:43 PM
4	3	5/23/2022 5:09 PM
5	5	5/23/2022 4:58 PM
6	7	5/23/2022 2:36 PM
7	1	5/23/2022 12:43 PM
8	10	5/23/2022 11:47 AM
9	10	5/22/2022 8:02 PM
10	2	5/22/2022 7:48 PM
11	9	5/22/2022 1:19 PM
12	8	5/22/2022 11:59 AM
13	7	5/22/2022 11:10 AM
14	5	5/22/2022 10:06 AM
15	2	5/22/2022 9:41 AM
16	1	5/22/2022 7:55 AM
17	9	5/21/2022 8:59 PM
18	6	5/21/2022 5:18 PM
19	6	5/21/2022 12:26 PM
20	3	5/21/2022 12:00 PM

21	4	5/21/2022 10:22 AM
22	8	5/21/2022 9:47 AM
23	5	5/21/2022 9:04 AM
24	8	5/21/2022 8:42 AM
25	7	5/21/2022 7:49 AM
26	7	5/21/2022 7:26 AM
27	5	5/21/2022 6:58 AM
28	10	5/21/2022 6:45 AM
29	2	5/21/2022 6:35 AM
30	1	5/21/2022 6:08 AM
31	7	5/21/2022 12:52 AM
32	7	5/20/2022 11:58 PM
33	5	5/20/2022 10:57 PM
34	2	5/20/2022 10:27 PM
35	8	5/20/2022 9:10 PM
36	1	5/20/2022 7:13 PM
37	4	5/20/2022 7:11 PM
38	8	5/20/2022 7:04 PM
39	10	5/20/2022 6:35 PM
40	8	5/20/2022 6:32 PM
41	8	5/20/2022 5:51 PM
42	2	5/20/2022 5:13 PM
43	8	5/20/2022 4:48 PM
44	3	5/20/2022 4:17 PM
45	7	5/20/2022 4:10 PM
46	5	5/20/2022 3:47 PM
47	10	5/20/2022 3:24 PM
48	8	5/20/2022 3:19 PM
49	8	5/20/2022 3:14 PM
50	10	5/20/2022 3:12 PM
51	10	5/20/2022 2:57 PM
52	3	5/20/2022 2:29 PM
53	4	5/20/2022 2:23 PM
54	9	5/20/2022 2:21 PM
55	5	5/20/2022 2:14 PM
56	2	5/20/2022 1:48 PM
57	1	5/20/2022 1:31 PM
58	3	5/20/2022 1:25 PM

59	9	5/20/2022 1:18 PM
60	10	5/20/2022 12:58 PM
61	2	5/20/2022 12:46 PM
62	1	5/20/2022 12:33 PM
63	6	5/20/2022 12:27 PM
64	2	5/20/2022 12:17 PM
65	10	5/20/2022 12:09 PM
66	5	5/20/2022 12:06 PM
67	6	5/20/2022 12:02 PM
68	10	5/20/2022 12:01 PM
69	10	5/19/2022 10:42 AM
70	10	5/19/2022 8:19 AM
71	7	5/18/2022 5:13 PM
72	9	5/18/2022 5:12 PM
73	5	5/18/2022 4:11 PM
74	8	5/18/2022 3:12 PM
75	10	5/18/2022 2:28 PM
76	10	5/18/2022 1:42 PM
77	6	5/18/2022 12:31 PM
78	3	5/18/2022 10:41 AM
79	10	5/18/2022 9:13 AM
80	10	5/18/2022 8:38 AM
81	5	5/18/2022 8:02 AM
82	10	5/18/2022 7:07 AM
83	9	5/18/2022 6:52 AM
84	5	5/18/2022 6:16 AM
85	6	5/17/2022 10:41 PM
86	3	5/17/2022 6:16 PM
87	10	5/17/2022 5:37 PM
88	8	5/17/2022 5:11 PM
89	5	5/17/2022 4:16 PM
90	10	5/17/2022 4:10 PM
91	10	5/17/2022 3:58 PM
92	3	5/17/2022 2:48 PM
93	8	5/17/2022 2:12 PM
94	1	5/17/2022 1:59 PM
95	7	5/17/2022 1:07 PM
96	7	5/17/2022 12:29 PM

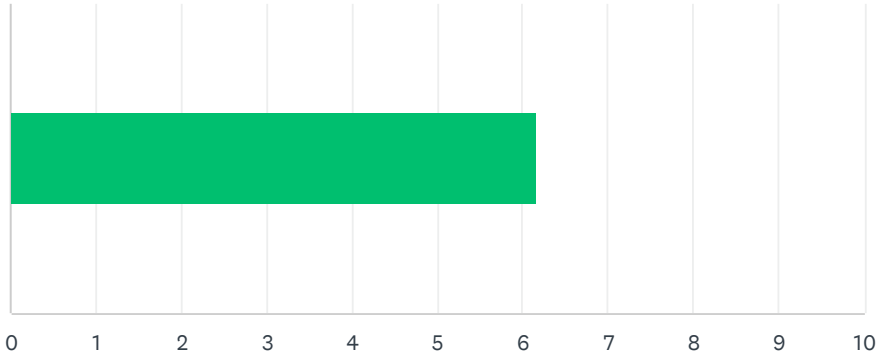
97	2	5/17/2022 10:20 AM
98	2	5/17/2022 9:12 AM
99	4	5/17/2022 9:01 AM
100	9	5/17/2022 8:16 AM
101	5	5/17/2022 8:14 AM
102	10	5/17/2022 8:00 AM
103	7	5/17/2022 7:41 AM
104	4	5/17/2022 7:14 AM
105	10	5/17/2022 6:02 AM
106	9	5/17/2022 3:23 AM
107	2	5/17/2022 12:20 AM
108	8	5/16/2022 11:10 PM
109	8	5/16/2022 10:30 PM
110	5	5/16/2022 10:13 PM
111	6	5/16/2022 9:31 PM
112	1	5/16/2022 9:25 PM
113	10	5/16/2022 7:47 PM
114	10	5/16/2022 7:42 PM
115	10	5/16/2022 6:38 PM
116	10	5/16/2022 6:36 PM
117	2	5/16/2022 6:10 PM
118	2	5/16/2022 2:00 PM
119	9	5/16/2022 1:14 PM
120	1	5/16/2022 1:07 PM
121	10	5/16/2022 1:05 PM
122	3	5/16/2022 1:00 PM
123	1	5/16/2022 12:35 PM
124	10	5/16/2022 12:27 PM
125	5	5/16/2022 12:16 PM
126	4	5/16/2022 12:13 PM
127	3	5/16/2022 12:04 PM
128	8	5/16/2022 12:01 PM
129	8	5/16/2022 11:56 AM
130	10	5/16/2022 11:32 AM
131	6	5/16/2022 11:14 AM
132	10	5/16/2022 11:09 AM
133	5	5/16/2022 10:45 AM
134	5	5/16/2022 10:41 AM

200

135	10	5/16/2022 10:30 AM
136	9	5/16/2022 10:28 AM
137	9	5/16/2022 10:10 AM
138	10	5/16/2022 10:09 AM
139	8	5/16/2022 9:35 AM
140	10	5/16/2022 8:44 AM

Q11 How important would these safety enhancements be to you?

Answered: 140 Skipped: 79



ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
	6	864	140
Total Respondents: 140			

#		DATE
1	10	5/26/2022 10:25 AM
2	10	5/25/2022 7:30 PM
3	8	5/23/2022 5:43 PM
4	2	5/23/2022 5:09 PM
5	4	5/23/2022 4:58 PM
6	5	5/23/2022 2:36 PM
7	1	5/23/2022 12:43 PM
8	10	5/23/2022 11:47 AM
9	7	5/22/2022 8:02 PM
10	4	5/22/2022 7:48 PM
11	4	5/22/2022 1:19 PM
12	7	5/22/2022 11:59 AM
13	7	5/22/2022 11:10 AM
14	5	5/22/2022 10:06 AM
15	2	5/22/2022 9:41 AM
16	1	5/22/2022 7:55 AM
17	10	5/21/2022 8:59 PM
18	2	5/21/2022 5:18 PM
19	6	5/21/2022 12:26 PM
20	3	5/21/2022 12:00 PM

21	2	5/21/2022 10:22 AM
22	6	5/21/2022 9:47 AM
23	5	5/21/2022 9:04 AM
24	6	5/21/2022 8:42 AM
25	6	5/21/2022 7:49 AM
26	9	5/21/2022 7:26 AM
27	6	5/21/2022 6:58 AM
28	10	5/21/2022 6:45 AM
29	2	5/21/2022 6:35 AM
30	1	5/21/2022 6:08 AM
31	7	5/21/2022 12:52 AM
32	2	5/20/2022 11:58 PM
33	6	5/20/2022 10:57 PM
34	2	5/20/2022 10:27 PM
35	7	5/20/2022 9:10 PM
36	4	5/20/2022 7:13 PM
37	4	5/20/2022 7:11 PM
38	8	5/20/2022 7:04 PM
39	10	5/20/2022 6:35 PM
40	10	5/20/2022 6:32 PM
41	8	5/20/2022 5:51 PM
42	2	5/20/2022 5:13 PM
43	8	5/20/2022 4:48 PM
44	9	5/20/2022 4:17 PM
45	7	5/20/2022 4:10 PM
46	3	5/20/2022 3:47 PM
47	10	5/20/2022 3:24 PM
48	7	5/20/2022 3:19 PM
49	7	5/20/2022 3:14 PM
50	10	5/20/2022 3:12 PM
51	10	5/20/2022 2:57 PM
52	8	5/20/2022 2:29 PM
53	3	5/20/2022 2:23 PM
54	7	5/20/2022 2:21 PM
55	4	5/20/2022 2:14 PM
56	2	5/20/2022 1:48 PM
57	1	5/20/2022 1:31 PM
58	5	5/20/2022 1:25 PM

59	2	5/20/2022 1:18 PM
60	10	5/20/2022 12:58 PM
61	2	5/20/2022 12:46 PM
62	1	5/20/2022 12:33 PM
63	8	5/20/2022 12:27 PM
64	2	5/20/2022 12:17 PM
65	6	5/20/2022 12:09 PM
66	8	5/20/2022 12:06 PM
67	6	5/20/2022 12:02 PM
68	10	5/20/2022 12:01 PM
69	10	5/19/2022 10:42 AM
70	10	5/19/2022 8:19 AM
71	7	5/18/2022 5:13 PM
72	7	5/18/2022 5:12 PM
73	1	5/18/2022 4:11 PM
74	8	5/18/2022 3:12 PM
75	10	5/18/2022 2:28 PM
76	5	5/18/2022 1:42 PM
77	4	5/18/2022 12:31 PM
78	2	5/18/2022 10:41 AM
79	10	5/18/2022 9:13 AM
80	10	5/18/2022 8:38 AM
81	5	5/18/2022 8:02 AM
82	10	5/18/2022 7:07 AM
83	9	5/18/2022 6:52 AM
84	4	5/18/2022 6:16 AM
85	7	5/17/2022 10:41 PM
86	3	5/17/2022 6:16 PM
87	9	5/17/2022 5:37 PM
88	8	5/17/2022 5:11 PM
89	5	5/17/2022 4:16 PM
90	10	5/17/2022 4:10 PM
91	9	5/17/2022 3:58 PM
92	7	5/17/2022 2:48 PM
93	4	5/17/2022 2:12 PM
94	1	5/17/2022 1:59 PM
95	7	5/17/2022 1:07 PM
96	7	5/17/2022 12:29 PM

97	2	5/17/2022 10:20 AM
98	2	5/17/2022 9:12 AM
99	8	5/17/2022 9:01 AM
100	5	5/17/2022 8:16 AM
101	5	5/17/2022 8:14 AM
102	10	5/17/2022 8:00 AM
103	4	5/17/2022 7:41 AM
104	2	5/17/2022 7:14 AM
105	6	5/17/2022 6:02 AM
106	9	5/17/2022 3:23 AM
107	5	5/17/2022 12:20 AM
108	6	5/16/2022 11:10 PM
109	8	5/16/2022 10:30 PM
110	5	5/16/2022 10:13 PM
111	8	5/16/2022 9:31 PM
112	2	5/16/2022 9:25 PM
113	10	5/16/2022 7:47 PM
114	10	5/16/2022 7:42 PM
115	10	5/16/2022 6:38 PM
116	10	5/16/2022 6:36 PM
117	5	5/16/2022 6:10 PM
118	6	5/16/2022 2:00 PM
119	8	5/16/2022 1:14 PM
120	1	5/16/2022 1:07 PM
121	9	5/16/2022 1:05 PM
122	9	5/16/2022 1:00 PM
123	1	5/16/2022 12:35 PM
124	10	5/16/2022 12:27 PM
125	2	5/16/2022 12:16 PM
126	8	5/16/2022 12:13 PM
127	3	5/16/2022 12:04 PM
128	8	5/16/2022 12:01 PM
129	8	5/16/2022 11:56 AM
130	10	5/16/2022 11:32 AM
131	4	5/16/2022 11:14 AM
132	10	5/16/2022 11:09 AM
133	7	5/16/2022 10:45 AM
134	2	5/16/2022 10:41 AM

135	6	5/16/2022 10:30 AM
136	9	5/16/2022 10:28 AM
137	9	5/16/2022 10:10 AM
138	10	5/16/2022 10:09 AM
139	8	5/16/2022 9:35 AM
140	8	5/16/2022 8:44 AM

Q12 Please share any additional thoughts or feedback and/or leave your email address to sign up for ProjectKetchum.org newsletters.

Answered: 44 Skipped: 175

#	RESPONSES	DATE
1	The most important element is missing and that is the enhancement of safe bike access. The bike path only functions for through traffic and a limited number of destinations. We need bike lanes and bike safety features on Warm Springs road (from 6th to lewis and a safer bike path beyond the bridge on ws), Lewis and 10th street. Additionally, we need safe access for riders going to and from northwood place and the fire station. Even something simple like a crosswalk from that side of the road to the bike path would be an easy improvement (combined with lowering the speed limit in that stretch). The current bike path is great (in parts) but not sufficient to get riders safely where they need to go. Thank you for addressing this important element especially as we as a community try to reduce our carbon footprint.	5/25/2022 7:41 PM
2	Additional sidewalks designed in the same way as the one going up the hill toward Sawtooth Brewery would be a huge improvement. Connecting the bike path/creating a sidewalk up 10th st could also be a welcome a solution. Thank you City of Ketchum for seeking community feedback on this issue!	5/23/2022 2:38 PM
3	don't forget there is currently a bike path for walking on. Rarely do I see pedestrians walking from Lewis Street to 10th street, and they do have the option of walking on the west side of the road if they desired more space for walking. Please don't waste money needlessly. Pulling out from Hemingway to head back towards Lewis Street is a nightmare, a round about there would be handy, however I frequently use the roundabout in Hailey headed to the high school, and am often astounded at the lack of knowledge US drivers have at how to operated a roundabout.	5/23/2022 12:47 PM
4	If there is to be more retail or living in the light industrial area then sidewalks and bump outs are important!!! If the area will continue to be majority light industry the the need is less.	5/22/2022 1:22 PM
5	Lewis St is the most important thing to address. SO MANY businesses that have to come in and out including 5 wine and beer distributors that have to do delivery's all day. Plus the only car wash in town. 90% of lower 10th street traffic then turn right on Lewis St.	5/22/2022 9:51 AM
6	It's all fine as it is. Let's stop "improving" Ketchum. Slow down development in general. Better yet, just stop.	5/21/2022 9:01 PM
7	I generally dislike roundabouts. The primary issue, I think, is trying to make a left from 10th St. onto warm Spring Road. Visibility is completely blocked if there are cars filling up at the gas station. That intersection is dangerous and needs attention. Safer Pedestrian walkways to and from the YMCA to town are also important. But it's equalky important to make it safer to and from town for bicyclists across 10th and Lewis toward the ymca. The rest of the changes seem unnecessary in my humble opinion. Making a left from Lewis onto warm Springs isn't great, but it doesn't seem to be a major problem. Nothing like trying to make a left from 10th St. onto warm Springs. thanks.	5/21/2022 5:26 PM
8	It seems most American drivers don't know how to use roundabouts (signals, signage, bike paths, etc. are often used wrong or not at all). Please don't add more roundabouts. They're also a pain to plow and often too small for emergency service vehicles.	5/21/2022 12:02 PM
9	This is a terribly written survey and maps/proposals are not explained at all. These survey results should be dismissed	5/21/2022 10:24 AM
10	Thank you for making projects on Warm Springs a priority. As someone who frequently drives, walks, and bikes on this stretch, it can be a frightening commute. Anything that can help the flow of large trucks in particular between 10th/Lewis and Warm Springs will be a tremendous update.	5/21/2022 9:49 AM
11	bulbouts and new sidewalks would be welcome, and less disruptive to install	5/21/2022 9:05 AM
12	Any way to get a pedestrian light or something at the bike path crossing? I frequently am not	5/21/2022 8:44 AM

	able to stop my car in time because bicyclists quickly approach and I don't see them coming. Have had some close calls. If there was a way for both cyclists and drivers to agree on when the cyclist will be crossing (ie with a light) that would be a much safer situation.	
13	Police/speed enforcement would be helpful by the YMCA and near Grumpy's	5/20/2022 11:59 PM
14	FIX MAIN STREET!!! & if you can't…..! get Hailey to do what needs to be done for the last decade	5/20/2022 7:16 PM
15	I honestly think that making the left lane heading north out of town a turn only lane to warm springs while the right lane is the straight ahead lane would ease congestion and confusion on Main Street heading north.…	5/20/2022 7:05 PM
16	My family lives right next to the fire station and we use this route multiple times per day either by car or bicycle. I'm so happy the city is finally working towards making this a safer area for children.	5/20/2022 6:37 PM
17	coburn9526@gmail.com	5/20/2022 3:24 PM
18	The streets are fine for driving. Time abs money should be spent on pedestrian and bicycle safety. All routes out if warm springs neighborhoods should have a cross walk to the bike path. There should be safe abs clear alternate side of the street use for pedestrians or bikes - for neighborhoods on the other side of the bike path. Cars are fine. Take care of the children and people!	5/20/2022 3:16 PM
19	The scariest intersection from a motorist's perspective is the intersection of Saddle and Warm Springs with bicycles speeding down Warm Springs and across Saddle without stopping. It is very blind when approaching Warm Springs from Saddle. Bicyclists are suppose to stop but many don't.	5/20/2022 2:32 PM
20	Please don't make changes that will Make it worse. Better to leave it alone.	5/20/2022 2:15 PM
21	Thanks for keeping us safe out there	5/20/2022 1:19 PM
22	This street and these intersections seem to function fine now and are part of the charm of Ketchum. All of these proposals are way too complicated and will create more problems than they solve.	5/20/2022 12:48 PM
23	if you do the new block then the new property could be rezoned for apartments	5/20/2022 12:03 PM
24	There should be mention of bike traffic and either a protected bike lane or a separate bike road through this area. It is dangerous once you have to leave the bike path and go onto warm springs road to go to the vet/grumpys/basecamp ect.	5/18/2022 9:14 AM
25	this plan has lots of advantages, but lots of issues...Start with one round about and then see how it works...instead of tearing everything up at once...Lewis Street First.…	5/18/2022 8:03 AM
26	Please keep the school and related pedestrian and vehicle traffic along 10th street in mind.	5/17/2022 10:42 PM
27	People speeding in front of YMCA is awful and I have had people go around me thru the crosswalk when i was stopped at crosswalk.	5/17/2022 4:00 PM
28	I think that the pedestrian improvements are far more important and a significantly better and more cost effective means of addressing pedestrian safety than roundabouts. Functional "warning/caution" lights and adding to/improving the sidewalks, adding bulb outs, and more defined marking/painting and signage would make each of the identified intersections significantly safer for pedestrians and on-road cyclists… and would also be significantly more cost effective/efficient.	5/17/2022 1:12 PM
29	Roundabouts save lives, save money in the long run over traffic lights, ease congestion and frustration, and are beautiful!!!	5/17/2022 12:30 PM
30	pedestrians can wait too. if we really cared about pedestrian safety we would stop encouraging them from blindly walking in front of moving vehicles.	5/17/2022 10:24 AM
31	Roundabouts are confusing and difficult for pedestrians to cross. With potentially more housing development in this area, walkability needs to be prioritized.	5/17/2022 8:02 AM
32	Don't do whatever the stoplight is on Main/4th. That's terrible. Please get rid of it. It really only needs a blinking button crosswalk	5/17/2022 7:43 AM

33	My kids have almost been hit multiple times. Thank you for addressing this. My kids go to Boulder Clay works and there is no safe way to get there if you are 8 years old.	5/16/2022 7:49 PM
34	You have not addressed the most significant problem in 10th street, which is the automotive repair business that utilizes a great portion of the street as parking for their business, and has cars backing into 10th street regularly. This is the single biggest issue for 10th street. I live in Wm Springs, take the bus, drive, walk and bike into Ketchum regularly for the past twenty years. The 10th street automotive business is the big problem on 10th street.	5/16/2022 6:40 PM
35	As a warm springs resident who has seen the traffic through this area increase a crazy amount over the last 5 years, I believe that this area is in need of improvements, thank you for looking at it. However I also believe that improvements are needed in order to connect the bike path with the downtown core/Atkinson's area. I love riding my bike to town to meet friends or do chores but hate getting from the bike path west of main street up in to the downtown core. More people biking to town regularly = less parking issues...	5/16/2022 1:17 PM
36	While some changes here can be positive the city has a track record of making things worse when trying to make things better. Main st / SV Rd pedestrian scramble is example. Sometimes less intervention is better.	5/16/2022 12:38 PM
37	Short term, low cost solution to saddle and warm springs: make it a 4 way stop intersection	5/16/2022 12:28 PM
38	The area where Warm Springs breaks off of Main St is a major car & pedestrian danger too.	5/16/2022 12:15 PM
39	monarch83340@hotmail.com	5/16/2022 12:05 PM
40	Love roundabouts- hope it happens!	5/16/2022 12:02 PM
41	A roundabout at the Warm Springs Rd and Saddle Rd intersection should be considered a top priority.	5/16/2022 11:57 AM
42	Appreciated. More focus is needed on Saddle/WmSpgs intersection! From a human injury standpoint, this is the highest priority, since accidents here are much more likely to involve a cyclist or pedestrian. A fender bender on Lewis is not the same as a ghost bike in front of the YMCA!	5/16/2022 10:33 AM
43	Living on Warm Spring Rd we have been concerned about the increase in traffic over the years. Too many cars, too much noise, and cars making multiple trips.	5/16/2022 10:15 AM
44	Lots of pedestrian traffic with Hemingway school and ymca. I am also concerned about the bike path crossing and traffic into Hemingway on 10th st - disaster waiting to happen	5/16/2022 10:10 AM

D

High Level Screening Criterion Definitions

Memo

Date:	Monday, June 27, 2022
Project:	Warm Springs Road Alternative Analysis
To:	Jade Riley, City of Ketchum Sherri Newland, S&C Associates LLC
From:	Cameron Waite, HDR Brett Kohring, HDR
Subject:	Draft Concept Alternative Comparisons & Recommendations

Introduction

This memo summarizes the high-level screening of different intersection alternatives for the Warm Springs Road corridor within the City of Ketchum, Idaho. Previously, an Existing Conditions Memo was submitted that details the analysis of existing operational, safety and land use of the corridor.

Concept Alternatives Development

The five alternative concepts developed all improve operations for all modes of travel along Warm Springs Road and provide opportunities to improve connectivity for pedestrians, bikes, and transit while having unique impacts to adjacent properties. The concept alternatives are presented in **Figures 1 through 5** and are described below.

No-Build Alternative

The no-build alternative was evaluated along with the concept alternatives for comparison purposes.

Concept Alternative 1 – 10th Street Roundabout

Figure 1 shows the concept for Alternative 1. This alternative replaces the existing two-way stop controlled Warm Springs Road and 10th Street intersection with a single lane roundabout. This concept provides good vehicle operations while requiring drivers to slow down approaching and moving through the intersection. Pedestrian facilities would be provided on all legs, connecting to existing facilities, and bikes would be able to travel through the roundabout due to low vehicle speeds or could travel around on pathways around the circle, crossing the legs in the pedestrian crosswalks. This concept would require widening the intersection with estimated private and public parking, gas pump, access, and building impacts. The adjacent Warm Springs Road and Lewis Street intersection is not improved with this alternative.

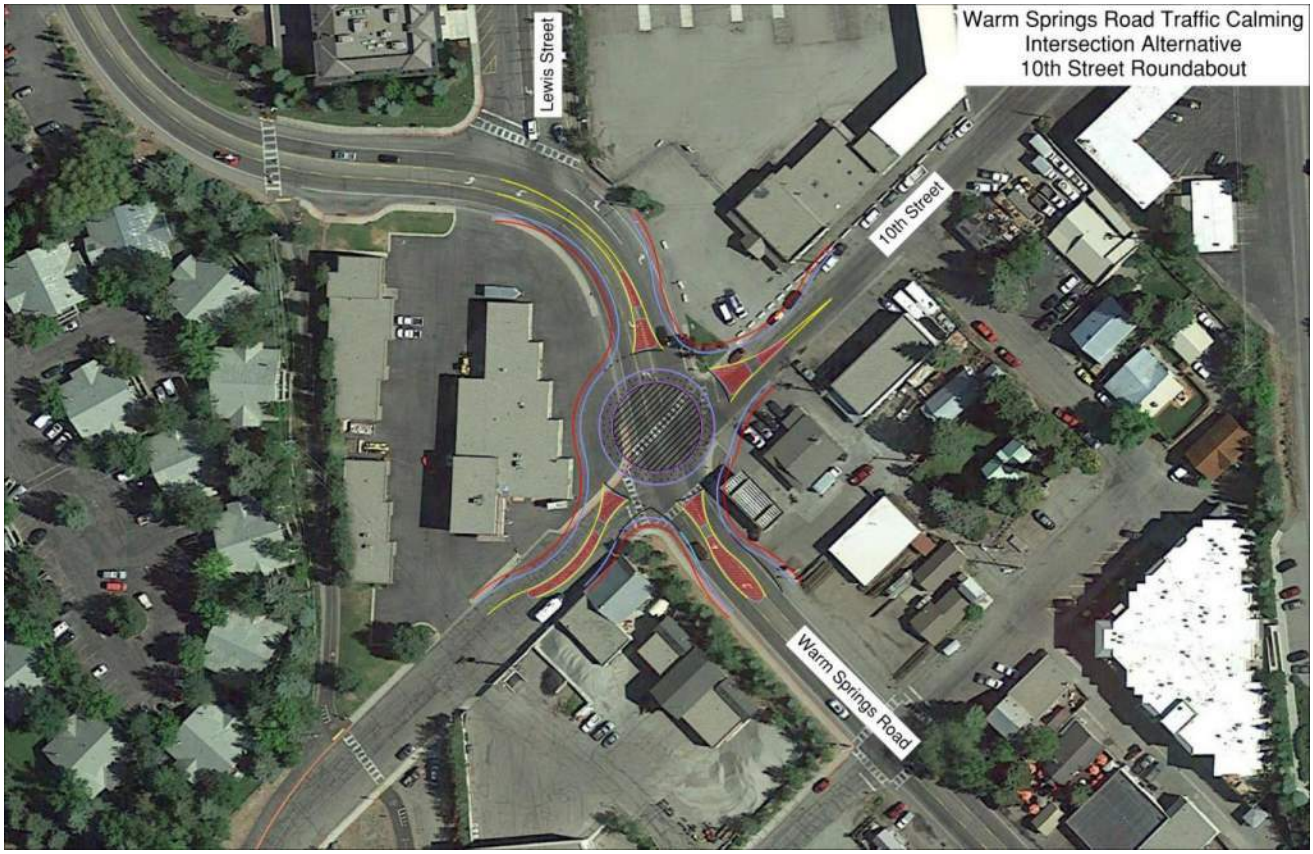


Figure 1. Concept Alternative 1

Concept Alternative 2 - Lewis Street Roundabout

Figure 2 shows the concept for Alternative 2. This alternative replaces the existing stop controlled Warm Springs Road and Lewis Street intersection with a single lane roundabout. This concept provides good vehicle operations while requiring drivers to slow down approaching and moving through the intersection. Pedestrian facilities would be provided on all legs, connecting to existing facilities, and bikes would be able to travel through the roundabout due to low vehicle speeds or could travel around on pathways around the circle, crossing the legs in the pedestrian crosswalks. The bus stop on the west leg would be updated with this alternative. This concept would require widening the intersection with estimated private and public parking and access impacts. The adjacent Warm Springs Road and 10th Street intersection is not improved with this alternative.

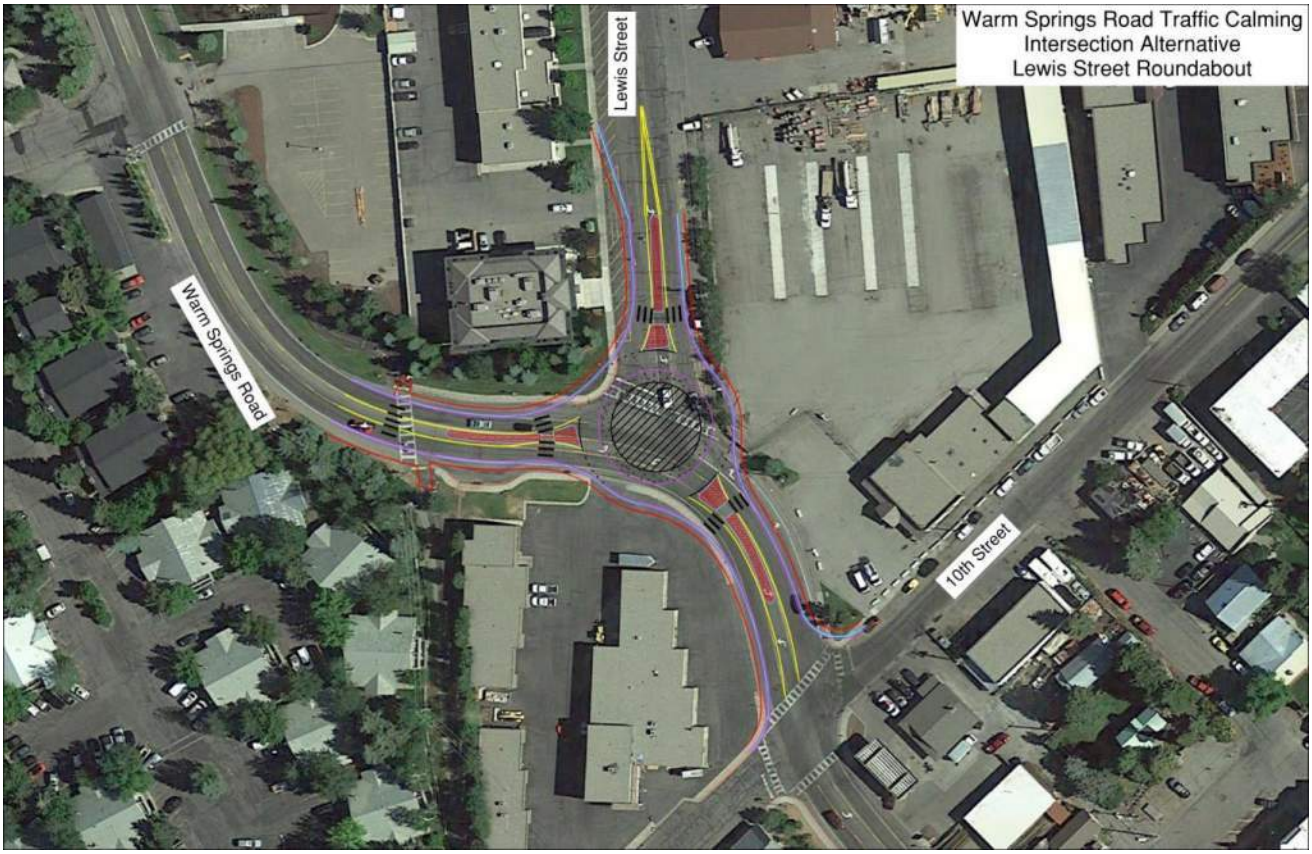


Figure 2. Concept Alternative 2

Concept Alternative 3 - 10th Street and Lewis Street Dog bone Roundabout

Figure 3 shows the concept for Alternative 3. This alternative replaces the existing stop controlled Warm Springs Road intersections at both 10th Street and Lewis Street with a single lane "dog bone" roundabout. A dog bone roundabout does not form a complete circle, but instead has a "raindrop" or "teardrop shape" in the middle that connects two roundabout intersections. In this case, the two intersections operate as a single larger intersection connected by the dog-bone roundabout. This alternative has the benefits and impacts described for Alternatives 1 and 2. It also increases out of direction travel for vehicles turning left from some approaches as they must navigate around the entire dog bone to reach the desired street. Pedestrians and bikes potentially have more out of direction travel as well.

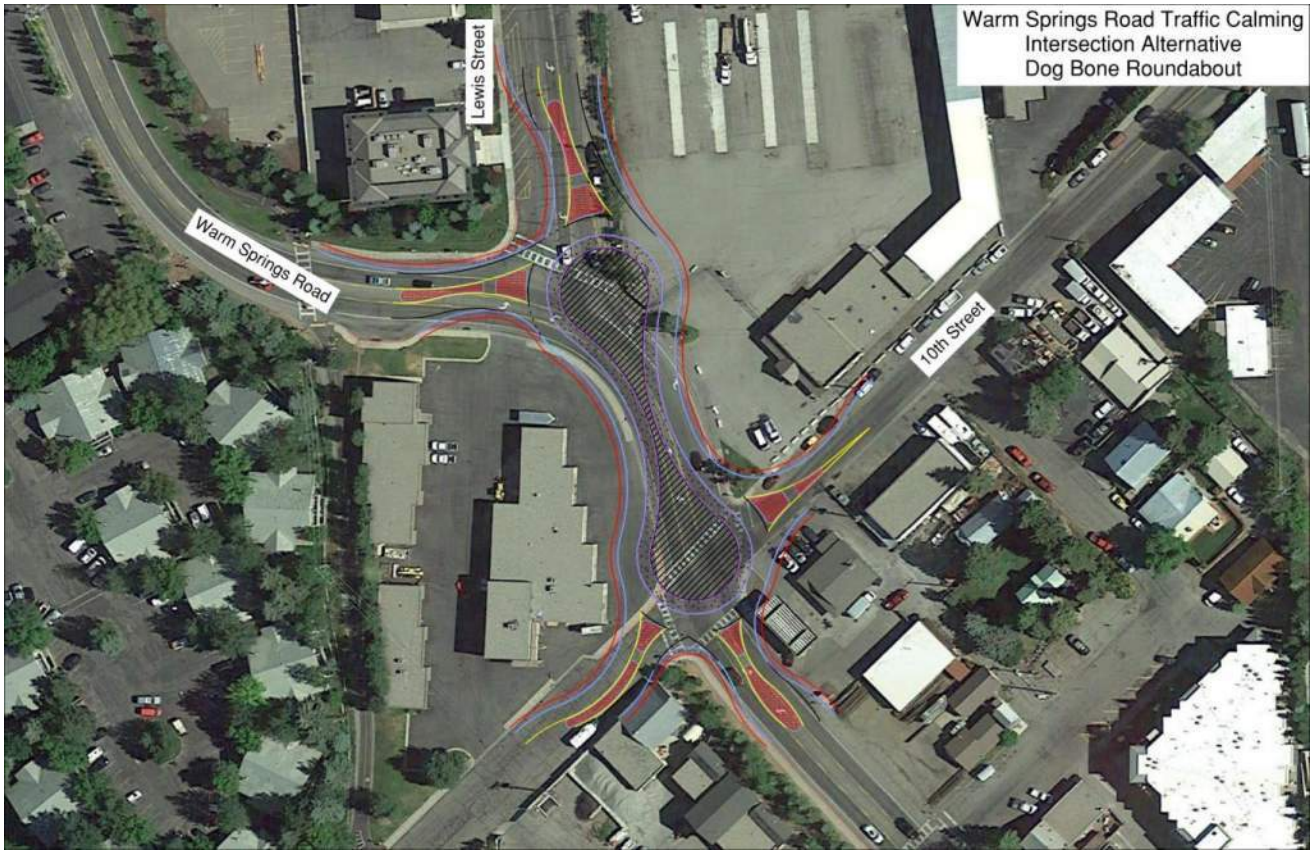


Figure 3. Concept Alternative 3

Concept Alternative 4 – 10th Street & Lewis Street Realignment & Roundabout

Figure 4 shows the concept for Alternative 4. This alternative realigns 10th Street between Warms Springs Road and SH-75 to the north and west to match into the Lewis Street and Warm Springs Road intersection, cutting through the adjacent property. The Lewis Street leg is realigned to the east and a single lane roundabout is developed to serve the new four-leg intersection. The existing 10th Street between Warms Springs Road and SH-75 is proposed to be disconnected from Warm Springs Road but could remain as an access to existing businesses along with Leadville Avenue. The abandoned roadway could also be negotiated to incorporated with adjacent landowners for development opportunities.

As with the other roundabout alternatives, this concept provides good vehicle operations while requiring drivers to slow down approaching and moving through the intersection. Pedestrian facilities would be provided on all legs, connecting to existing facilities, and bikes would be able to travel through the roundabout due to low vehicle speeds or could travel around on pathways around the circle, crossing the legs in the pedestrian crosswalks. The bus stop on the west leg of Warm Springs Road would be updated with this alternative. This concept would require widening the intersection with estimated private and public parking, access, and building impacts along with splitting the parcel in the northeast corner. The adjacent Warm Springs Road and 10th Street intersection is updated with this alternative by removing the east leg as described.

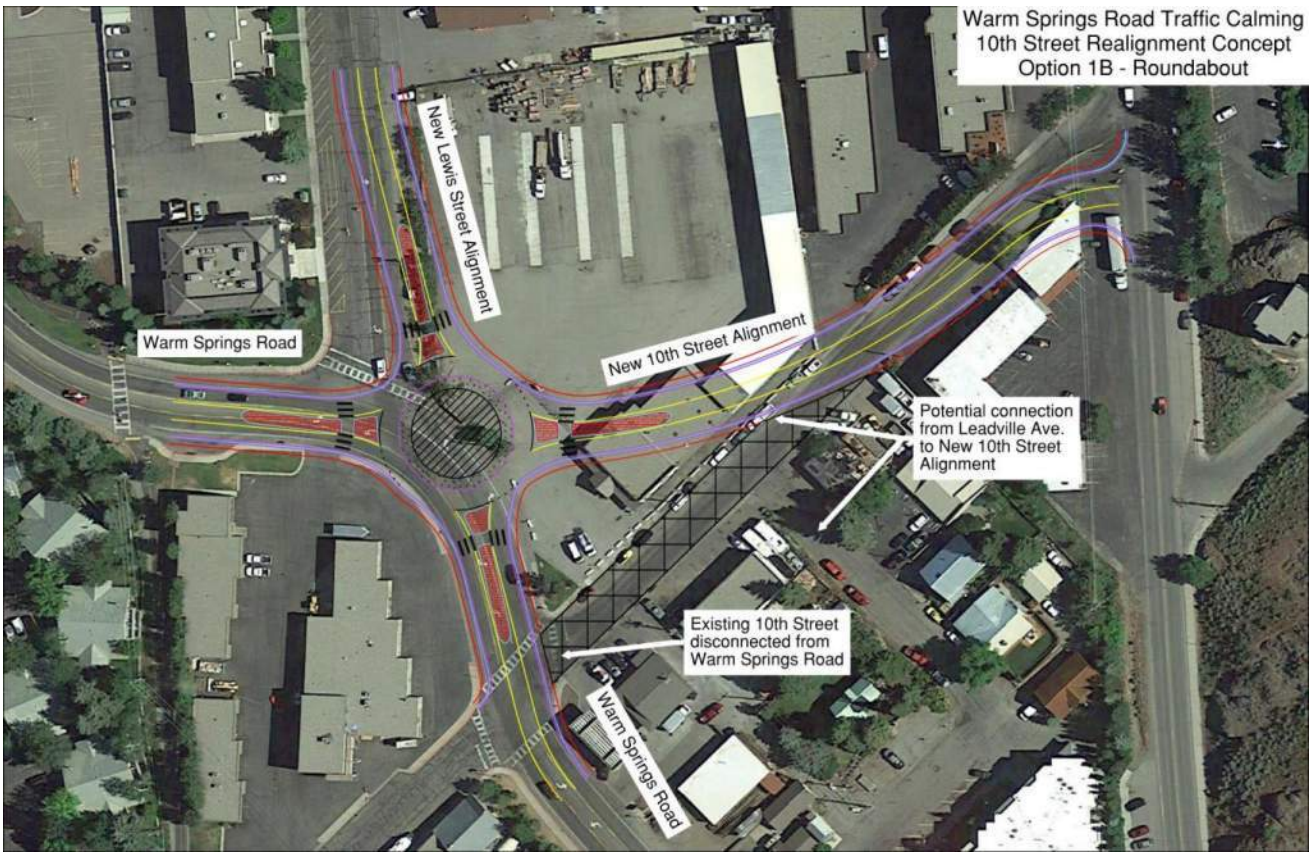


Figure 4. Concept Alternative 4

Concept Alternative 5 – Block/Street Realignment

Figure 5 shows the concept for Alternative 5. This alternate realigns Lewis Street to line up with Leadville Avenue and realigns Warm Springs to be a more direct north/south connection through the adjacent parcel. A new east/west street connects Warm Springs Road and Lewis Street, creating a new block between the realigned Warm Springs Road, realigned Lewis Road, 10th Street, and the new street. The intersections are assumed to be stop controlled in each corner of the new block.

Alternative 5 differs from the others because it includes new local street alignments that impact several parcels. It removes most of the curves in these streets while introducing more intersections to the area.

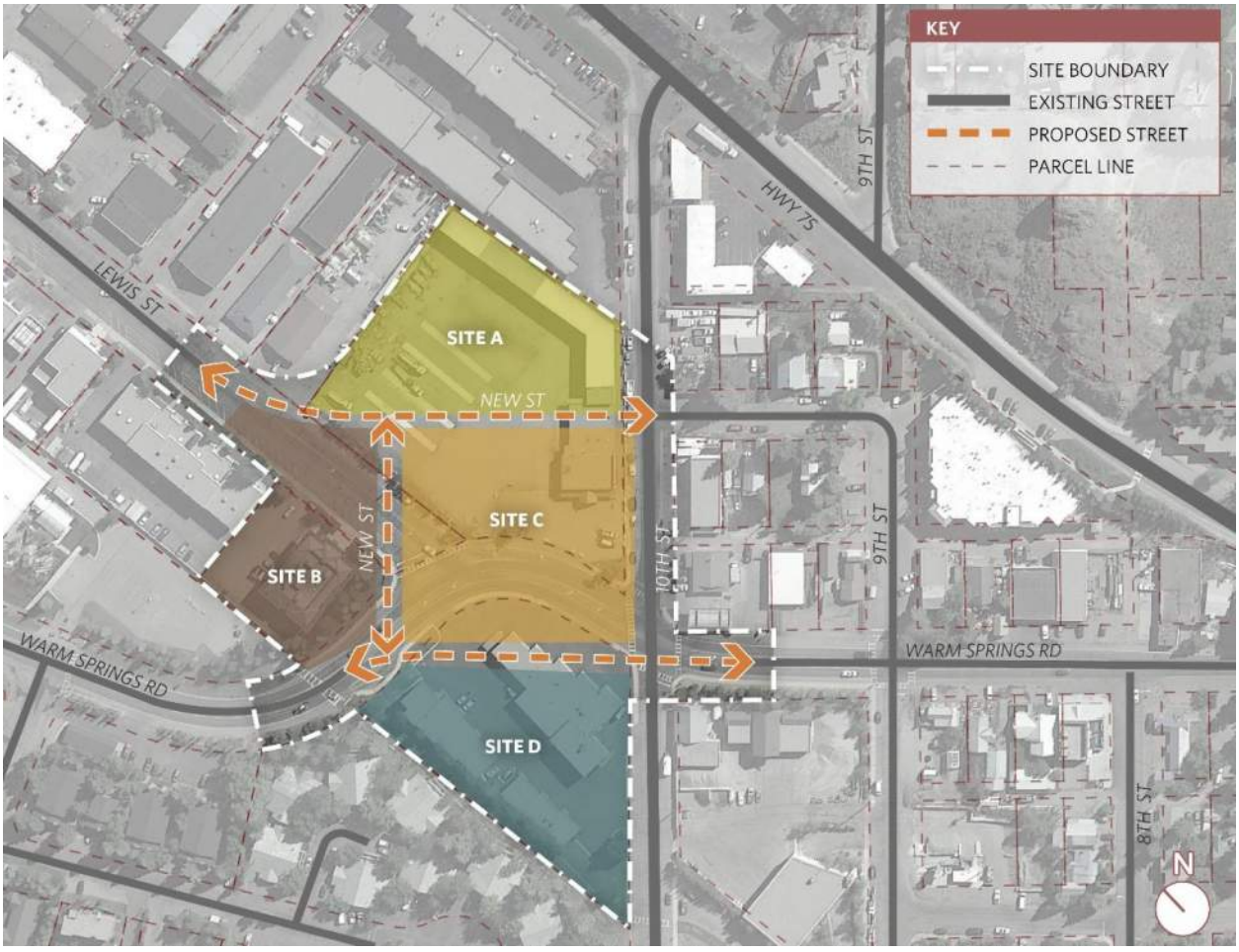


Figure 5. Concept Alternative 5

Screening Process and Criteria

A screening process was developed to evaluate each of the alternatives using criteria identified with the City staff in discussion, at the public meeting, and during other project update meetings. Five categories with a total of eleven criteria were established and are described below. Each alternative was given a score of **GOOD**, **NEUTRAL**, or **POOR** for each of the criteria. A **GOOD** score received +1 point while a POOR score received -1 point. A **NEUTRAL** score received 0 points. An overall "score" was given to each alternative by adding up the number of **GOOD** scores and subtracting the number of **POOR** scores. A **NEUTRAL** score for a given criterion neither helped nor hurt an alternative.

Safety Criterion

Safety is the number one priority of the City of Ketchum in providing mobility and access for the users of their system. This criterion qualitatively evaluates each concept alternative for its potential to make the streets and intersections safer.

- If the alternative reduces the number of potential conflicts between vehicles, pedestrians, and bikes, or improves safety, it was scored as **GOOD**.
- If the alternative does not include any features that will reduce conflicts or improve safety, it was scored as **NEUTRAL**.
- If the alternative increases the number of potential conflicts between vehicles, pedestrians, and bikes it was scored as **POOR**.

Multi-Modal Mobility Criteria

Two criteria were identified to evaluate how each concept alternative would improve the area for pedestrian, bike and transit connectivity and operations.

Improved Connectivity For All Modes

The existing pedestrian, bike, and transit facilities are not connected, do not meet ADA requirements, and do not adequately serve all users in the area. This criterion qualitatively evaluates each concept alternative for its potential to improve connectivity and ADA compliance, including reducing or removing out of direction travel.

- If the alternative provides consistent ADA access and connectivity for pedestrians, bikes, and transit vehicles, it was scored as **GOOD**.
- If the alternative does not provide consistent ADA access and connectivity for pedestrians, bikes, and transit vehicles, it was scored as **POOR**.

Warms Springs Road Crossings improvements

The current pedestrian and bike crossings of Warm Springs Road are wide and difficult for users to cross due to perceived high speeds on Warm Springs Road and less than desirable distance and visibility. This criterion qualitatively evaluates each concept alternative for its potential to improve Warm Springs Road crossings for pedestrians and bikes.

- If the alternative reduces the width of crossings and/or limits crossings to one direction of vehicular traffic, it was scored as **GOOD**.
- If the alternative does not reduce the width of the crossings and/or limits crossings to one direction of vehicular traffic, it was scored as **POOR**.

Right-of-Way Impact Criteria

Right-of-way also is a major cost and impact consideration when developing a project. Three criteria were developed to qualify the impacts each concept alternative would have on property owners in the area.

Split Parcels

- If the alternative does not split any parcels, it was scored as **GOOD.**
- If the alternative splits 1 or more parcels, it was scored as **POOR.**

Building Removal

- If the alternative does not require the removal of any buildings, it was scored as **GOOD**.
- If the alternative requires removal of one or more buildings, it was scored as **POOR**.

Parking Impacts

- If the alternative does not remove existing private parking or creates the opportunity to replace that parking elsewhere, it was scored as **GOOD**.
- If the alternative removes existing private parking, it was scored as **POOR**.

Community Value Criteria

Improve Existing Business Access & Connectivity

Providing better access to the properties Warm Springs Road, 10th Street, and Lewis Street could encourage continued development of the area as a light industrial hub for the City of Ketchum and even expand to other development opportunities. This criterion qualitatively evaluates the ability of each alternative to encourage development by improving connectivity and reliability along these corridors. This criterion is weighted due to its importance.

- If the alternative provides improved access to Warm Springs Road and another street, it was scored as **GOOD**.
- If the alternative only provides improved access to Warm Springs Road, it was scored as **NEUTRAL**.
- If the alternative did not improve access to Warm Springs Road and other streets, it was scored as **POOR**.

Opportunity for Redevelopment and/or Placemaking

This criterion evaluates how the alternative matches the surrounding land use and provides for future redevelopment opportunities. The alternative should work well with the current and future zoning and existing land uses including retail and commercial business, Ernest Hemingway STEAM School, and the YMCA. The alternative should allow for placemaking within the infrastructure improvements.

- If the alternative matches well with the existing land use and provides for future redevelopment and placemaking, it was scored as **GOOD**.
- If the alternative matches well with the existing land use but does not provide for future redevelopment and placemaking, it was scored as **NEUTRAL**.
- If the alternative does not match well with the existing land use and does not provide for future redevelopment and placemaking, it was scored as **POOR**.

Vehicle Operations Criteria

All the concept alternatives are estimated to operate at acceptable levels of service (LOS) for vehicles, pedestrians, and bikes, so other criteria were established to evaluate how the concept alternative would improve the overall operations of the Warms Springs Road area. Once the two recommended alternatives are selected, a deeper operations analysis will be performed to confirm operations.

Traffic Calming

Calming traffic to maintain lower and consistent speeds is a priority of the City and will enhance the overall operations of the roadways and intersections along with the connections to other mode facilities.

- If the alternative provides positive guidance to calm vehicular traffic, it was scored as **GOOD**.
- If the alternative does not provide positive guidance to calm vehicular traffic, it was scored as **POOR**.

Reduce the Number of Intersections/Driveways on Warm Springs Road

This criterion measures the benefits of fewer intersections and driveways along Warm Springs Road as it will reduce the number of conflicts and disruptions to vehicle, pedestrian, and bike movements. Removing conflicts and disruptions will improve operations for all users.

- If the alternative removes one or more intersections and/or driveways from Warm Springs Road, it was scored as **GOOD**.
- If the alternative does not remove an intersection and/or driveway from Warm Springs Road, it was scored as **NEUTRAL**.
- If the alternative adds intersections and/or driveways to Warm Springs Road, it was scored as **POOR**.

Serve as Parade Detour Route

This criterion measures the ability of the alternative to serve as a accommodate State Highway 75 (SH-75) traffic as a detour when parades occur on SH-75.

- If the alternative components will accommodate SH-75 detoured traffic, it was scored as **GOOD**.
- If the alternative will not accommodate SH-75 detoured traffic or is seen as difficult to do so, it was scored as **POOR**.

Screening Matrix

.Concept Alternative	No Build	1– 10th Street Roundabout	2 - Lewis Street Roundabout	3 - 10th Street and Lewis Street Dog bone Roundabout	4– 10th Street & Lewis Street Realignment & Roundabout	5 – Block/Street Realignment
Safety						
Improved Connectivity For All Modes						
Warms Springs Road Crossings Improvements						
Split Parcels						
Building Removal						
Parking Impacts						
Improve Existing Business Access & Connectivity						
Opportunity for Redevelopment and/or Placemaking						
Traffic Calming						
Reduce the Number of Intersections/Driveways on Warm Springs Road						
Serve as Parade Detour Route						
Total Green Score						
Total Red Score						
Green – Red Total						

Screening

The matrix above will be used by City and consultant staff screeners to evaluate each alternative against the established criteria. Once all screeners have completed their screening, we will hold a meeting to reconcile screening and identify the top two alternatives to move into a more detailed qualitative analysis and screening.

Next Steps

HDR will work with the City of Ketchum to compete the screening, identify which two alternative concepts should be advanced, and conduct the qualitative analysis to identify a preferred alternative.

E

Future Operations Results

Intersection	
Int Delay, s/veh	0.6

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	385	16	14	625	16	15
Future Vol, veh/h	385	16	14	625	16	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	1	1	0	0
Mvmt Flow	418	17	15	679	17	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	435	0	1136	427
Stage 1	-	-	-	-	427	-
Stage 2	-	-	-	-	709	-
Critical Hdwy	-	-	4.11	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.209	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1130	-	225	632
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	491	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1130	-	222	632
Mov Cap-2 Maneuver	-	-	-	-	222	-
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	485	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.2	17.4
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	324	1130	-	-	-
HCM Lane V/C Ratio	0.104	0.013	-	-	-
HCM Control Delay (s)	17.4	8.2	-	-	-
HCM Lane LOS	C	A	-	-	-
HCM 95th %tile Q(veh)	0.3	0	-	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	620	4	4	479	8	12
Future Vol, veh/h	620	4	4	479	8	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	1	1	0	0
Mvmt Flow	674	4	4	521	9	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	678	0	1205	676
Stage 1	-	-	-	-	676	-
Stage 2	-	-	-	-	529	-
Critical Hdwy	-	-	4.11	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.209	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	919	-	205	457
Stage 1	-	-	-	-	509	-
Stage 2	-	-	-	-	595	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	919	-	204	457
Mov Cap-2 Maneuver	-	-	-	-	204	-
Stage 1	-	-	-	-	509	-
Stage 2	-	-	-	-	593	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.1	17.7
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	305	919	-	-	-
HCM Lane V/C Ratio	0.071	0.005	-	-	-
HCM Control Delay (s)	17.7	8.9	-	-	-
HCM Lane LOS	C	A	-	-	-
HCM 95th %tile Q(veh)	0.2	0	-	-	-

LANE SUMMARY

Site: 101 [Warm Springs & Lewis - 2042 Un-Adjusted AM (Site Folder: 2042 Un-Adjusted AM)]

Warm Springs & Lewis
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
SouthEast: Warm Springs													
Lane 1[d]	667	3.0	1304	0.512	100	8.2	LOS A	4.0	103.0	Full	1600	0.0	0.0
Approach	667	3.0		0.512		8.2	LOS A	4.0	103.0				
North: Lewis Street													
Lane 1[d]	154	3.0	909	0.170	100	5.6	LOS A	0.7	18.8	Full	1600	0.0	0.0
Approach	154	3.0		0.170		5.6	LOS A	0.7	18.8				
West: Warm Springs													
Lane 1[d]	361	3.0	1175	0.307	100	6.0	LOS A	1.7	42.6	Full	1600	0.0	0.0
Approach	361	3.0		0.307		6.0	LOS A	1.7	42.6				
Intersection	1183	3.0		0.512		7.2	LOS A	4.0	103.0				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

SouthEast: Warm Springs

Mov. From SE To Exit:	L1 W	R1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	370	298	667	3.0	1304	0.512	100	NA	NA
Approach	370	298	667	3.0		0.512			

North: Lewis Street

Mov. From N To Exit:	L1 SE	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	125	29	154	3.0	909	0.170	100	NA	NA
Approach	125	29	154	3.0		0.170			

West: Warm Springs

Mov. From W To Exit:	L2 N	R1 SE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	26	335	361	3.0	1175	0.307	100	NA	NA
Approach	26	335	361	3.0		0.307			

	Total	%HV	Deg.Satn (v/c)
Intersection	1183	3.0	0.512

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Warm Springs Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Lewis Street Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Warm Springs Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

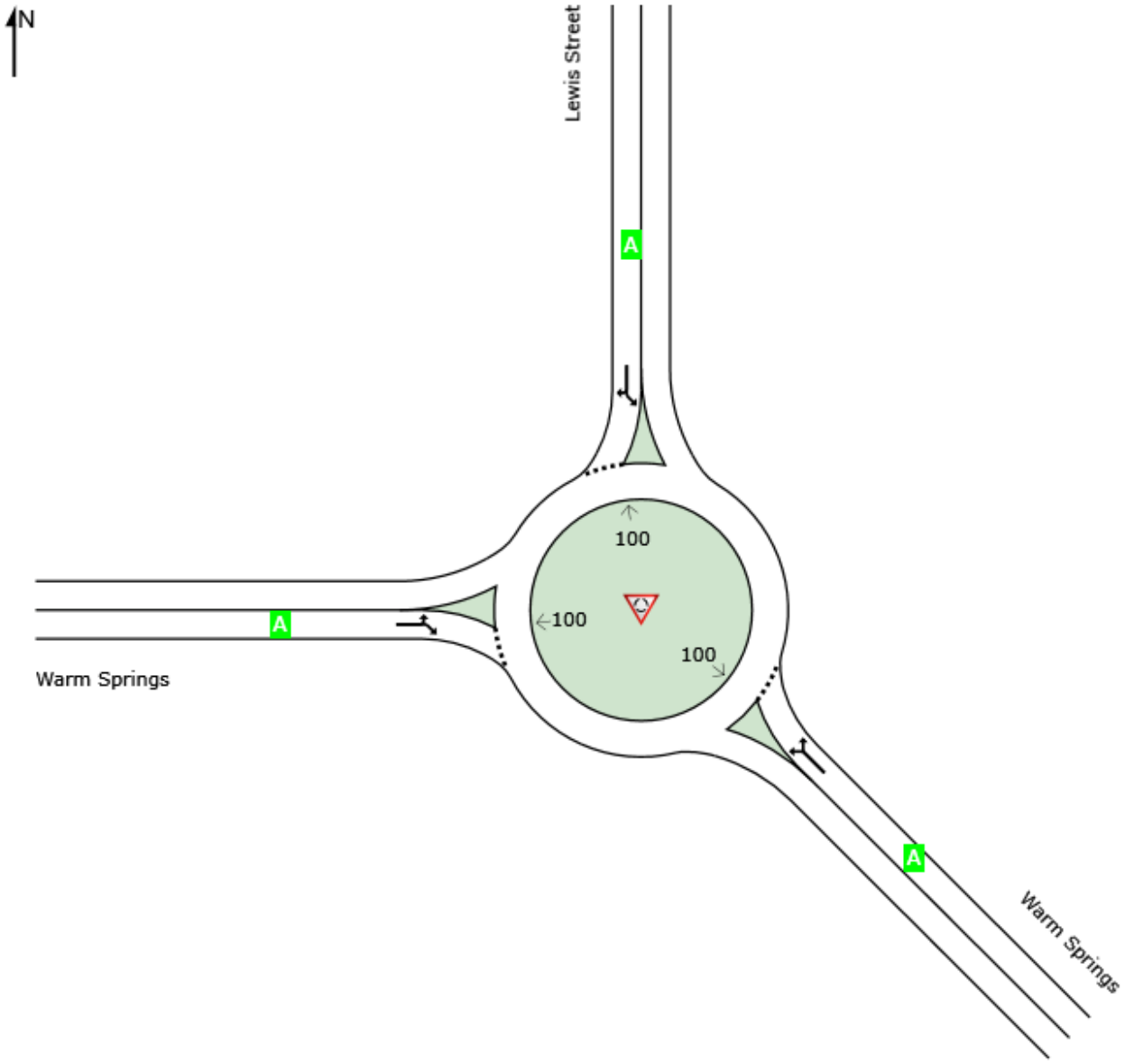
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 101 [Warm Springs & Lewis - 2042 Un-Adjusted AM (Site Folder: 2042 Un-Adjusted AM)]

Warm Springs & Lewis
Site Category: (None)
Roundabout

	Approaches			Intersection
	Southeast	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

INPUT REPORT

Site: 101 [Warm Springs & Lewis - 2042 Un-Adjusted AM]

Warm Springs & Lewis
Site Category: (None)
Roundabout

Intersection - Site Data	
Site Name	Warm Springs & Lewis - 2042 Un-Adjusted AM
Site ID	101
Site Category	(None)
Site Title	Warm Springs & Lewis

Intersection - Site Properties	
Site (Intersection) Type	Roundabout
Setup Name	US HCM (Customary)
Base Setup	NA
Drive Rule	Right-hand side of the road
HCM Version	Yes
Units	US
First Created	----------
Date	1/26/2022 3:35:14 PM
Created By	LMENG
Organisation	HDR, INC.
Version	9.0.3.9771
Last Modified	----------
Date	8/12/2022 12:25:27 PM
Modified By	BFOCHT
Organisation	HDR, INC.
Version	9.0.3.9771

Intersection - Approach & Exit Data

Location	Name	Type	No. of App. Lanes	No. of Exit Lanes	Approach Distance ft	Extra Bunching (Site Analysis) %	Extra Bunching (Network Analysis) %	Exit Distance ft	Approach Area Control	Type Factor
SouthEast	Warm Springs	Two-way	1	1	1600.0	0	–	–	–	–
North	Lewis Street	Two-way	1	1	1600.0	0	–	–	–	–
West	Warm Springs	Two-way	1	1	1600.0	0	–	–	–	–

Movement Definitions - Included Movement Classes

Name	ID	Model Designation	Type
Light Vehicles	LV	Light Vehicle	Standard
Heavy Vehicles	HV	Heavy Vehicle	Standard

Movement Definitions - Origin-Destination Movements

To Approach	Turn	OD Mov ID
From: SouthEast	Warm Springs	
West	L1	3ax
North	R1	18ax
From: North	Lewis Street	
SouthEast	L1	7a
West	R2	14

From: West	Warm Springs	
North	L2	5
SouthEast	R1	12a
Approach	U-Turn Before Intersection	Exclude U-Turn Before Intersection From Signal Analysis
SouthEast	-	-
North	-	-
West	-	-

Lane Geometry - Lane Configuration

Leg	Item	Configuration	Type	Control	Slip/ Bypass Control	Length ft	Width ft	Grade %	Full Lane [ID	Col]	[Front Width ft	Back Width ft	Island Fill Style	Cnct To	For Ped Stgn	Short Splitter Isl]
SouthEast	Warm Springs															
	Exit Lane 1	Full-Length	–	–	–	1600	13	0			–	–	–	–	–	–
	Rou Splt Isl 1	–	–	–	–	–	–	–	–	–	-	0	Solid	–	Yes	Yes
	App. Lane 1	Full-Length	Normal	Yield	–	1600	13	0			–	–	–	–	–	–
North	Lewis Street															
	Exit Lane 1	Full-Length	–	–	–	1600	13	0			–	–	–	–	–	–
	Rou Splt Isl 1	–	–	–	–	–	–	–	–	–	-	0	Solid	–	Yes	Yes
	App. Lane 1	Full-Length	Normal	Yield	–	1600	13	0			–	–	–	–	–	–
West	Warm Springs															
	Exit Lane 1	Full-Length	–	–	–	1600	13	0			–	–	–	–	–	–
	Rou Splt Isl 1	–	–	–	–	–	–	–	–	–	-	0	Solid	–	Yes	Yes
	App. Lane 1	Full-Length	Normal	Yield	–	1600	13	0			–	–	–	–	–	–

Lanes are numbered from left to right in the direction of travel.

Lane Geometry - Lane Disciplines

To Approach	Turn	Free Queue Distance ft	Movement Class(es)
From: SouthEast	App. Lane 1		
West	L1	0	LV, HV
North	R1	0	LV, HV
From: North	App. Lane 1		
SouthEast	L1	0	LV, HV
West	R2	0	LV, HV
From: West	App. Lane 1		
North	L2	0	LV, HV
SouthEast	R1	0	LV, HV

Lane Geometry - Lane Data

Approach Lane Data

Approach Lane	Basic Satn Flow tcu/h	Util Ratio %	Satn Speed mph	Capacity Adj %	Use Given Cap Adj in Network Analysis	Set As Dominant Lane	Include SLip/ ByPass Lane in Entry Lane Count	Apply Satn Flow Est	Short Lane Capacity	Delay Model Param
SouthEast	Warm Springs									
App. Lane 1	–	–	–	0.0	No	–	–	–	–	–
North	Lewis Street									

App. Lane 1	–	–	–	0.0	No	–	–	–	–	–
West	Warm Springs									
App. Lane 1	–	–	–	0.0	No	–	–	–	–	–

Merge Analysis

Exit Lane	Merge Lane Number	Apply Merge Analysis	Merge Type	Percent Opposing in Short Lane %	Percent Opposing in Merge Lane %	Critical Gap sec	Follow-up Headway sec	Minimum Departures veh/min
SouthEast	Warm Springs							
Exit Lane 1	–	–	–	–	–	–	–	–
North	Lewis Street							
Exit Lane 1	–	–	–	–	–	–	–	–
West	Warm Springs							
Exit Lane 1	–	–	–	–	–	–	–	–

Lane Movements - Flow Proportions

Exit Lane	To Exit Leg SouthEast %	North %	West %
Light Vehicles (LV)			
From: SouthEast	App. Lane 1		
Exit Lane 1	–	100	100
From: North	App. Lane 1		
Exit Lane 1	100	–	100
From: West	App. Lane 1		
Exit Lane 1	100	100	–
Heavy Vehicles (HV)			
From: SouthEast	App. Lane 1		
Exit Lane 1	–	100	100
From: North	App. Lane 1		
Exit Lane 1	100	–	100
From: West	App. Lane 1		
Exit Lane 1	100	100	–

Lane Movements - Blockage Calibration

Exit Lane	To Exit Leg SouthEast	North	West
From: SouthEast	App. Lane 1		
Exit Lane 1	–	1.0	1.0
From: North	App. Lane 1		
Exit Lane 1	1.0	–	1.0
From: West	App. Lane 1		
Exit Lane 1	1.0	1.0	–

Roundabouts - Options

Roundabout Model Options	
Roundabout Capacity Model	US HCM 6
Roundabout LOS Method	Same as Sign Control
Exclude Geometric Delay	Yes
HCM Delay Formula	Yes
Apply the SIDRA Model for Unbalanced Flow Conditions for HCM 2010	–
Apply the SIDRA Model for Unbalanced Flow Conditions for HCM 6	No
Other Roundabout Models	
FHWA 2000	No

Use	Urban	Compact
Roundabout		–
HCM 2000		No
NAASRA 1986		No

Roundabouts - Geometry

Location	Name	Circ. Lanes	Circ. Width ft	Island Diameter ft	Inscribed Diameter ft	Entry Radius ft	Entry Angle °	Raindrop Design	Circ Trans Line	Downstream Circ Lanes
SouthEast	Warm Springs	1	20.0	100.0	–	65.0	30.0	No	No	–
North	Lewis Street	1	20.0	100.0	–	65.0	30.0	No	No	–
West	Warm Springs	1	20.0	100.0	–	65.0	30.0	No	No	–

HCM 6 Roundabout Capacity Model Parameters

Location	Name	Single L.Circ: Single L.Entry Para. A	Single L.Circ: Single L.Entry Para. B	Single L.Circ: Multi L.Entry Para. A	Single L.Circ: Multi L.Entry Para. B	Multi L.Circ: Single L.Entry Para. A	Multi L.Circ: Single L.Entry Para. B	Multi L.Circ: Dominant Lane Para. A	Multi L.Circ: Dominant Lane Para. B	Multi L.Circ: Subdominant Lane Para. A	Multi L.Circ: Subdominant Lane Para. B
SouthEast	Warm Springs	1380.0	0.001020	1420.0	0.000910	1420.0	0.000850	1420.0	0.000850	1350.0	0.000920
North	Lewis Street	1380.0	0.001020	1420.0	0.000910	1420.0	0.000850	1420.0	0.000850	1350.0	0.000920
West	Warm Springs	1380.0	0.001020	1420.0	0.000910	1420.0	0.000850	1420.0	0.000850	1350.0	0.000920

HCM 6 Roundabout Model Calibration

Location	Name	Model Calib. Factor (HCM6)	Entry/Circ. Flow Adjust. (HCM6)
SouthEast	Warm Springs	1.00	None
North	Lewis Street	1.00	None
West	Warm Springs	1.00	None

Pedestrians - Pedestrian Movements

Unit Time for Volumes: 60 minutes
Peak Flow Period: 15 minutes

Main Crossing/ Slip/Bypass Lane Crossing	Volume ped	Peak Flow %	Flow Scale %	Growth Rate %
No Ped Movements				

Pedestrians - Pedestrian Movement Data

Main Crossing/ Slip/ Bypass Lane Crossing	Mov. ID	Crossing Distance ft	Conflict Zone Length ft	Oppng Ped.Fac.	P.Deg. Satn	Walking Speed ft/sec	App. Trav. Distance ft	Downst. Distance ft	Queue Space ft
No Ped Movements									

Volumes - Vehicle Volumes

Unit Time for Volumes: 60 minutes
Peak Flow Period: 15 minutes
Volume Data Method: Total and %

Movement Class	To Exit Leg SouthEast veh	North veh	West veh
From: SouthEast	Warm Springs		
Total (veh)	–	274.0	340.0
LV (%)	–	97.000	97.000
HV (%)	–	3.000	3.000
From: North	Lewis Street		
Total (veh)	115.0	–	27.0
LV (%)	97.000	–	97.000
HV (%)	3.000	–	3.000
From: West	Warm Springs		
Total (veh)	308.0	24.0	–
LV (%)	97.000	97.000	–
HV (%)	3.000	3.000	–

Volumes - Volume Factors

To Approach	Peak Flow Factor %	Flow Scale %	Growth Rate %/year
Light Vehicles (LV)			
From: SouthEast	Warm Springs		
West	92.0	100.00	2.00
North	92.0	100.00	2.00
From: North	Lewis Street		
SouthEast	92.0	100.00	2.00
West	92.0	100.00	2.00
From: West	Warm Springs		
North	92.0	100.00	2.00
SouthEast	92.0	100.00	2.00
Heavy Vehicles (HV)			
From: SouthEast	Warm Springs		
West	92.0	100.00	2.00
North	92.0	100.00	2.00
From: North	Lewis Street		
SouthEast	92.0	100.00	2.00
West	92.0	100.00	2.00
From: West	Warm Springs		
North	92.0	100.00	2.00
SouthEast	92.0	100.00	2.00

Gap Acceptance - Gap Acceptance Data

Gap Acceptance Data

Opposed Movement		Critical Gap sec	Follow-up Headway sec	Minimum Departures veh/min	Exiting Flow Effect %	% Opp. By Nearest Lane %	Opng. Peds (UnSig)
SouthEast	Warm Springs						
L1		–	–	2.50	0	0.00	Prg(Flow)
R1		–	–	2.50	0	0.00	Prg(Flow)
North	Lewis Street						
L1		–	–	2.50	0	0.00	Prg(Flow)
R2		–	–	2.50	0	0.00	Prg(Flow)
West	Warm Springs						
L2		–	–	2.50	0	0.00	Prg(Flow)
R1		–	–	2.50	0	0.00	Prg(Flow)

Gap Acceptance - Settings

Gap Acceptance Options				
Gap Acceptance Capacity Model : –				
Merge Analysis & Zebra Crossing Analysis Parameters				
Parameters	Zebra Crossing on Slip/ Bypass Lane	Midblock Zebra Crossing	Merge Analysis [Exit Lane	Short Lane Merge Lane]
Light Vehicles				
Gap Acceptance Factor	1.0	1.0	1.0	1.0
Opposing Vehicle Factor	–	–	1.0	1.0
Continuous Lane Capacity	–	–	1800	1800
Heavy Vehicles				
Gap Acceptance Factor	2.0	2.0	2.0	2.0
Opposing Vehicle Factor	–	–	2.0	2.0
Continuous Lane Capacity	–	–	1800	1800

Vehicle Movement Data - Path Data

Turn	Approach Cruise Speed mph	Exit Cruise Speed mph	Negotiation Speed mph	Negotiation Distance ft	Downstream Distance ft	Negotiation Radius ft
Light Vehicles (LV)						
From: SouthEast Warm Springs						
L1	40.0	40.0	–	–	–	–
R1	40.0	40.0	–	–	–	–
From: North Lewis Street						
L1	40.0	40.0	–	–	–	–
R2	40.0	40.0	–	–	–	–
From: West Warm Springs						
L2	40.0	40.0	–	–	–	–
R1	40.0	40.0	–	–	–	–
Heavy Vehicles (HV)						
From: SouthEast Warm Springs						
L1	40.0	40.0	–	–	–	–
R1	40.0	40.0	–	–	–	–
From: North Lewis Street						
L1	40.0	40.0	–	–	–	–
R2	40.0	40.0	–	–	–	–
From: West Warm Springs						
L2	40.0	40.0	–	–	–	–
R1	40.0	40.0	–	–	–	–

Vehicle Movement Data - Calibration

Turn	Queue Space ft	Vehicle Length ft	Vehicle Occupancy pers/veh	Turn Veh Effect [Factor	Radius] ft	Gap Accp Factor	Opng. Veh Factor	Prac. Deg. Of Satn.
Light Vehicles (LV)								
From: SouthEast Warm Springs								
L1	25.00	17.00	1.20	1.05	–	1	1	–
R1	25.00	17.00	1.20	1.05	–	1	1	–
From: North Lewis Street								
L1	25.00	17.00	1.20	1.05	–	1	1	–
R2	25.00	17.00	1.20	1.18	–	1	1	–
From: West Warm Springs								
L2	25.00	17.00	1.20	1.05	–	1	1	–
R1	25.00	17.00	1.20	1.05	–	1	1	–
Heavy Vehicles (HV)								
From: SouthEast Warm Springs								
L1	45.00	36.00	1.20	1.05	–	2	2	–
R1	45.00	36.00	1.20	1.05	–	2	2	–
From: North Lewis Street								

L1	45.00	36.00	1.20	1.05	–	2	2	–
R2	45.00	36.00	1.20	1.18	–	2	2	–
From: West	Warm Springs							
L2	45.00	36.00	1.20	1.05	–	2	2	–
R1	45.00	36.00	1.20	1.05	–	2	2	–

Site Demand & Sensitivity

Analysis Method: None

Parameter Settings - Options

General Options	
Site Level of Service Method	Delay & v/c (HCM 6)
Site Level of Service Target	LOS D
Pedestrian Level of Service Target	LOS D
Site Performance Measure	Delay
Queue in Output	Average
Percentile Queue	95%
Hours per Year	480 h
Include Short Lanes in determining Approach Queue Storage Ratio	No

Parameter Settings - Model Parameters

Passenger Car Equivalents	
Light Vehicles (LV)	1.00 pcu/veh
Heavy Vehicles (HV)	2.00 pcu/veh
Queue Blockage	
Blockage Tolerance	0
Delay and Queue	
Exclude Geometric Delay	Yes
HCM Delay Formula	Yes
HCM Queue Formula	Yes
Midblock Detection Data	
Effective Detection Zone Length	7.0

Parameter Settings - Cost

Efficiency Parameters

Movement Class	Desired Speed mph	Lower Limit of Speed Efficiency for TTI
Light Vehicles (LV)	-	0.1
Heavy Vehicles (HV)	-	0.1

Vehicle Cost Parameters

Movement Class	Veh Cost Method	Veh Operating Cost [Pump Price of Fuel $/Gal	Fuel Res. Cost Factor	Ratio of Running Cost to Fuel Cost]	Veh Time Cost [Avg. Income $/h	Time Value Factor]
Light Vehicles (LV)	Operating Cost	2.500	0.700	3.00	29.00	0.400
Heavy Vehicles (HV)	Operating Cost	2.500	0.700	3.00	29.00	0.400

Cost Options	
Cost Unit	$

Parameter Settings - Vehicle Parameters

	Mass	Max Power	CO2 to

Movement Class	lb	kW	Fuel Rate
Light Vehicles (LV)	3500.0	120	2.35
Heavy Vehicles (HV)	33000.0	170	2.633

Parameter Settings - Fuel Consumption

Movement Class	fi	A	B	Beta
Light Vehicles (LV)	1200	16	0.004	0.1
Heavy Vehicles (HV)	2300	200	0.009	0.075

Parameter Settings - CO Emission

Movement Class	fi	A	B	Beta
Light Vehicles (LV)	1620	-138	0.0743	0.294
Heavy Vehicles (HV)	25000	320	-0.06	0.04

Parameter Settings - HC Emission

Movement Class	fi	A	B	Beta
Light Vehicles (LV)	340	-9	0.0031	0.029
Heavy Vehicles (HV)	3000	1	-0.0016	0.0013

Parameter Settings - NOx Emission

Movement Class	fi	A	B	Beta
Light Vehicles (LV)	300	-14	0.0068	0.166
Heavy Vehicles (HV)	44000	2820	0.21	1.9

Parameter Settings - Advanced

Platoon Dispersion Model	
fpf	0.80
fpmin	1.00
fpmax	1.25
Lpmin	200.0 ft
Lpmax	1000.0 ft
n	0.60
Exit (Downstream) Short Lane Model	
Minimum Downstream Utilisation Ratio	20 %
Minimum Downstream Distance	100 ft
Distance for Full Lane Utilisation	660 ft
Calibration Parameter	1.2

LANE SUMMARY

Site: 101 [Warm Springs & Lewis - 2042 Un-Adjusted PM (Site Folder: 2042 Un-Adjusted PM)]

Warm Springs & Lewis
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
SouthEast: Warm Springs													
Lane 1[d]	572	3.0	1277	0.448	100	7.3	LOS A	3.1	79.2	Full	1600	0.0	0.0
Approach	572	3.0		0.448		7.3	LOS A	3.1	79.2				
North: Lewis Street													
Lane 1[d]	297	3.0	873	0.340	100	7.9	LOS A	1.7	42.3	Full	1600	0.0	0.0
Approach	297	3.0		0.340		7.9	LOS A	1.7	42.3				
West: Warm Springs													
Lane 1[d]	510	3.0	1033	0.494	100	9.3	LOS A	3.1	78.6	Full	1600	0.0	0.0
Approach	510	3.0		0.494		9.3	LOS A	3.1	78.6				
Intersection	1378	3.0		0.494		8.2	LOS A	3.1	79.2				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

SouthEast: Warm Springs

Mov. From SE To Exit:	L1 W	R1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	408	164	572	3.0	1277	0.448	100	NA	NA
Approach	408	164	572	3.0		0.448			

North: Lewis Street

Mov. From N To Exit:	L1 SE	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	248	49	297	3.0	873	0.340	100	NA	NA
Approach	248	49	297	3.0		0.340			

West: Warm Springs

Mov. From W To Exit:	L2 N	R1 SE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	46	464	510	3.0	1033	0.494	100	NA	NA
Approach	46	464	510	3.0		0.494			

	Total	%HV	Deg.Satn (v/c)
Intersection	1378	3.0	0.494

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Warm Springs Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Lewis Street Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Warm Springs Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

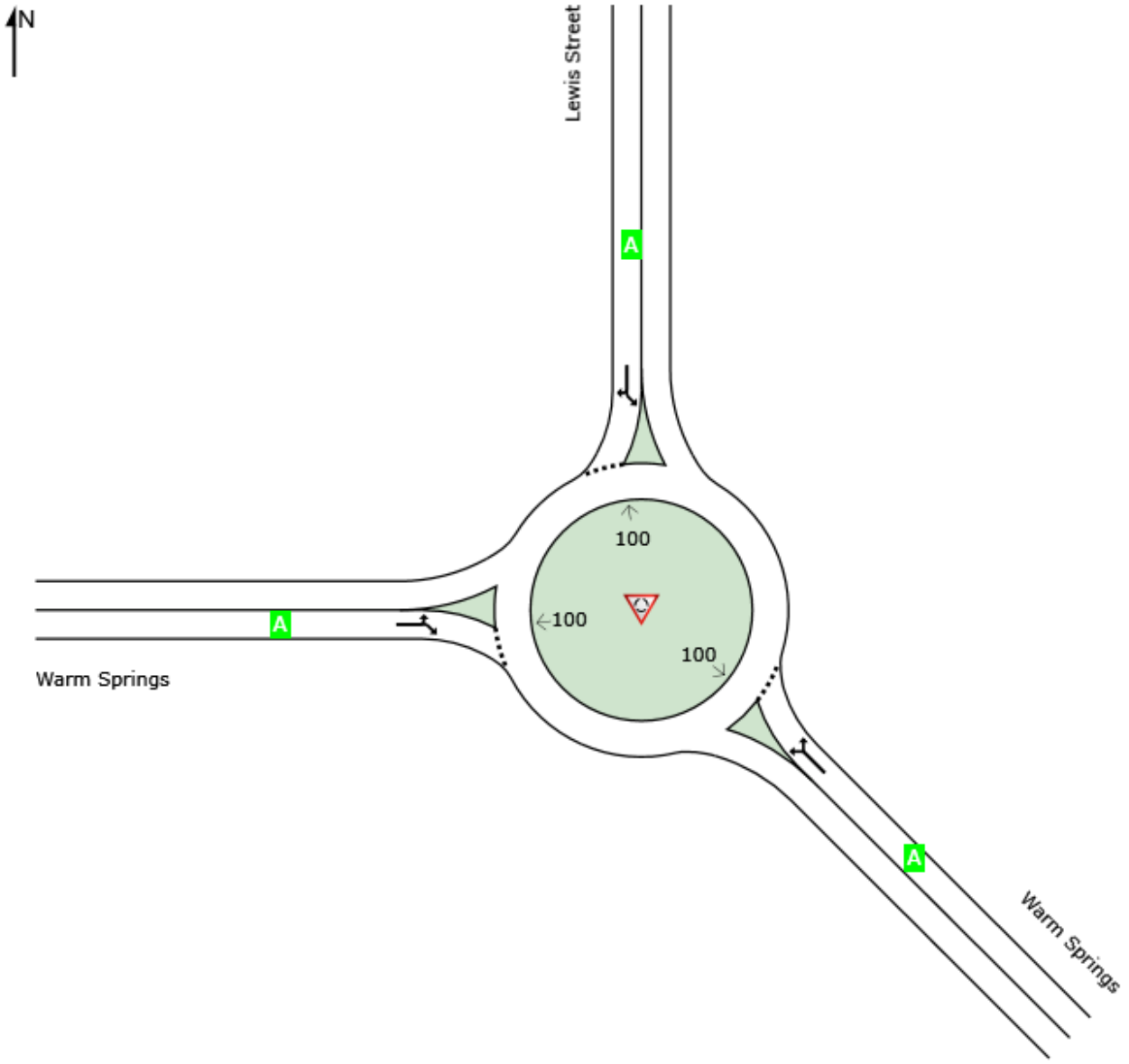
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 101 [Warm Springs & Lewis - 2042 Un-Adjusted PM (Site Folder: 2042 Un-Adjusted PM)]

Warm Springs & Lewis
Site Category: (None)
Roundabout

	Approaches			Intersection
	Southeast	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

INPUT REPORT

Site: 101 [Warm Springs & Lewis - 2042 Un-Adjusted PM]

Warm Springs & Lewis
Site Category: (None)
Roundabout

Intersection - Site Data	
Site Name	Warm Springs & Lewis - 2042 Un-Adjusted PM
Site ID	101
Site Category	(None)
Site Title	Warm Springs & Lewis

Intersection - Site Properties	
Site (Intersection) Type	Roundabout
Setup Name	US HCM (Customary)
Base Setup	NA
Drive Rule	Right-hand side of the road
HCM Version	Yes
Units	US
First Created	----------
Date	1/26/2022 3:35:14 PM
Created By	LMENG
Organisation	HDR, INC.
Version	9.0.3.9771
Last Modified	----------
Date	8/12/2022 12:25:27 PM
Modified By	BFOCHT
Organisation	HDR, INC.
Version	9.0.3.9771

Intersection - Approach & Exit Data

Location	Name	Type	No. of App. Lanes	No. of Exit Lanes	Approach Distance ft	Extra Bunching (Site Analysis) %	Extra Bunching (Network Analysis) %	Exit Distance ft	Approach Area Type Control	Area Type Factor
SouthEast	Warm Springs	Two-way	1	1	1600.0	0	–	–	–	–
North	Lewis Street	Two-way	1	1	1600.0	0	–	–	–	–
West	Warm Springs	Two-way	1	1	1600.0	0	–	–	–	–

Movement Definitions - Included Movement Classes

Name	ID	Model Designation	Type
Light Vehicles	LV	Light Vehicle	Standard
Heavy Vehicles	HV	Heavy Vehicle	Standard

Movement Definitions - Origin-Destination Movements

To Approach	Turn	OD Mov ID
From: SouthEast	Warm Springs	
West	L1	3ax
North	R1	18ax
From: North	Lewis Street	
SouthEast	L1	7a
West	R2	14

From: West	Warm Springs	
North	L2	5
SouthEast	R1	12a
Approach	U-Turn Before Intersection	Exclude U-Turn Before Intersection From Signal Analysis
SouthEast	-	-
North	-	-
West	-	-

Lane Geometry - Lane Configuration

Leg	Item	Configuration	Type	Control	Slip/ Bypass Control	Length ft	Width ft	Grade %	Full Lane [ID	Col]	[Front Width ft	Back Width ft	Island Fill Style	Cnct To	For Ped Stgn	Short Splitter Isl]
SouthEast	Warm Springs															
	Exit Lane 1	Full-Length	–	–	–	1600	13	0			–	–	–	–	–	–
	Rou Splt Isl 1	–	–	–	–	–	–	–	–	–	-	0	Solid	–	Yes	Yes
	App. Lane 1	Full-Length	Normal	Yield	–	1600	13	0			–	–	–	–	–	–
North	Lewis Street															
	Exit Lane 1	Full-Length	–	–	–	1600	13	0			–	–	–	–	–	–
	Rou Splt Isl 1	–	–	–	–	–	–	–	–	–	-	0	Solid	–	Yes	Yes
	App. Lane 1	Full-Length	Normal	Yield	–	1600	13	0			–	–	–	–	–	–
West	Warm Springs															
	Exit Lane 1	Full-Length	–	–	–	1600	13	0			–	–	–	–	–	–
	Rou Splt Isl 1	–	–	–	–	–	–	–	–	–	-	0	Solid	–	Yes	Yes
	App. Lane 1	Full-Length	Normal	Yield	–	1600	13	0			–	–	–	–	–	–

Lanes are numbered from left to right in the direction of travel.

Lane Geometry - Lane Disciplines

To Approach	Turn	Free Queue Distance ft	Movement Class(es)
From: SouthEast	App. Lane 1		
West	L1	0	LV, HV
North	R1	0	LV, HV
From: North	App. Lane 1		
SouthEast	L1	0	LV, HV
West	R2	0	LV, HV
From: West	App. Lane 1		
North	L2	0	LV, HV
SouthEast	R1	0	LV, HV

Lane Geometry - Lane Data

Approach Lane Data

Approach Lane	Basic Satn Flow tcu/h	Util Ratio %	Satn Speed mph	Capacity Adj %	Use Given Cap Adj in Network Analysis	Set As Dominant Lane	Include SLip/ ByPass Lane in Entry Lane Count	Apply Satn Flow Est	Short Lane Capacity	Delay Model Param
SouthEast	Warm Springs									
App. Lane 1	–	–	–	0.0	No	–	–	–	–	–
North	Lewis Street									

App. Lane 1	–	–	–	0.0	No	–	–	–	–	–
West	Warm Springs									
App. Lane 1	–	–	–	0.0	No	–	–	–	–	–

Merge Analysis

Exit Lane	Merge Lane Number	Apply Merge Analysis	Merge Type	Percent Opposing in Short Lane %	Percent Opposing in Merge Lane %	Critical Gap sec	Follow-up Headway sec	Minimum Departures veh/min
SouthEast	Warm Springs							
Exit Lane 1	–	–	–	–	–	–	–	–
North	Lewis Street							
Exit Lane 1	–	–	–	–	–	–	–	–
West	Warm Springs							
Exit Lane 1	–	–	–	–	–	–	–	–

Lane Movements - Flow Proportions

Exit Lane	To Exit Leg SouthEast %	North %	West %
Light Vehicles (LV)			
From: SouthEast	App. Lane 1		
Exit Lane 1	–	100	100
From: North	App. Lane 1		
Exit Lane 1	100	–	100
From: West	App. Lane 1		
Exit Lane 1	100	100	–
Heavy Vehicles (HV)			
From: SouthEast	App. Lane 1		
Exit Lane 1	–	100	100
From: North	App. Lane 1		
Exit Lane 1	100	–	100
From: West	App. Lane 1		
Exit Lane 1	100	100	–

Lane Movements - Blockage Calibration

Exit Lane	To Exit Leg SouthEast	North	West
From: SouthEast	App. Lane 1		
Exit Lane 1	–	1.0	1.0
From: North	App. Lane 1		
Exit Lane 1	1.0	–	1.0
From: West	App. Lane 1		
Exit Lane 1	1.0	1.0	–

Roundabouts - Options

Roundabout Model Options	
Roundabout Capacity Model	US HCM 6
Roundabout LOS Method	Same as Sign Control
Exclude Geometric Delay	Yes
HCM Delay Formula	Yes
Apply the SIDRA Model for Unbalanced Flow Conditions for HCM 2010	–
Apply the SIDRA Model for Unbalanced Flow Conditions for HCM 6	No
Other Roundabout Models	
FHWA 2000	No

Use Urban Roundabout	Compact	–
HCM 2000		No
NAASRA 1986		No

Roundabouts - Geometry

Location	Name	Circ. Lanes	Circ. Width ft	Island Diameter ft	Inscribed Diameter ft	Entry Radius ft	Entry Angle °	Raindrop Design	Circ Trans Line	Downstream Circ Lanes
SouthEast	Warm Springs	1	20.0	100.0	–	65.0	30.0	No	No	–
North	Lewis Street	1	20.0	100.0	–	65.0	30.0	No	No	–
West	Warm Springs	1	20.0	100.0	–	65.0	30.0	No	No	–

HCM 6 Roundabout Capacity Model Parameters

Location	Name	Single L.Circ: Single L.Entry Para. A	Single L.Circ: Single L.Entry Para. B	Single L.Circ: Multi L.Entry Para. A	Single L.Circ: Multi L.Entry Para. B	Multi L.Circ: Single L.Entry Para. A	Multi L.Circ: Single L.Entry Para. B	Multi L.Circ: Dominant Lane Para. A	Multi L.Circ: Dominant Lane Para. B	Multi L.Circ: Subdominant Lane Para. A	Multi L.Circ: Subdominant Lane Para. B
SouthEast	Warm Springs	1380.0	0.001020	1420.0	0.000910	1420.0	0.000850	1420.0	0.000850	1350.0	0.000920
North	Lewis Street	1380.0	0.001020	1420.0	0.000910	1420.0	0.000850	1420.0	0.000850	1350.0	0.000920
West	Warm Springs	1380.0	0.001020	1420.0	0.000910	1420.0	0.000850	1420.0	0.000850	1350.0	0.000920

HCM 6 Roundabout Model Calibration

Location	Name	Model Calib. Factor (HCM6)	Entry/Circ. Flow Adjust. (HCM6)
SouthEast	Warm Springs	1.00	None
North	Lewis Street	1.00	None
West	Warm Springs	1.00	None

Pedestrians - Pedestrian Movements

Unit Time for Volumes: 60 minutes
Peak Flow Period: 15 minutes

Main Crossing/ Slip/Bypass Lane Crossing	Volume ped	Peak Flow %	Flow Scale %	Growth Rate %
No Ped Movements				

Pedestrians - Pedestrian Movement Data

Main Crossing/ Slip/ Bypass Lane Crossing	Mov. ID	Crossing Distance ft	Conflict Zone Length ft	Oppng Ped.Fac.	P.Deg. Satn	Walking Speed ft/sec	App. Trav. Distance ft	Downst. Distance ft	Queue Space ft
No Ped Movements									

Volumes - Vehicle Volumes

Unit Time for Volumes: 60 minutes
Peak Flow Period: 15 minutes
Volume Data Method: Total and %

Movement Class	To Exit Leg SouthEast veh	North veh	West veh
From: SouthEast	Warm Springs		
Total (veh)	–	151.0	375.0
LV (%)	–	97.000	97.000
HV (%)	–	3.000	3.000
From: North	Lewis Street		
Total (veh)	228.0	–	45.0
LV (%)	97.000	–	97.000
HV (%)	3.000	–	3.000
From: West	Warm Springs		
Total (veh)	427.0	42.0	–
LV (%)	97.000	97.000	–
HV (%)	3.000	3.000	–

Volumes - Volume Factors

To Approach	Peak Flow Factor %	Flow Scale %	Growth Rate %/year
Light Vehicles (LV)			
From: SouthEast	Warm Springs		
West	92.0	100.00	2.00
North	92.0	100.00	2.00
From: North	Lewis Street		
SouthEast	92.0	100.00	2.00
West	92.0	100.00	2.00
From: West	Warm Springs		
North	92.0	100.00	2.00
SouthEast	92.0	100.00	2.00
Heavy Vehicles (HV)			
From: SouthEast	Warm Springs		
West	92.0	100.00	2.00
North	92.0	100.00	2.00
From: North	Lewis Street		
SouthEast	92.0	100.00	2.00
West	92.0	100.00	2.00
From: West	Warm Springs		
North	92.0	100.00	2.00
SouthEast	92.0	100.00	2.00

Gap Acceptance - Gap Acceptance Data

Gap Acceptance Data

Opposed Movement		Critical Gap sec	Follow-up Headway sec	Minimum Departures veh/min	Exiting Flow Effect %	% Opp. By Nearest Lane %	Opng. Peds (UnSig)
SouthEast	Warm Springs						
L1		–	–	2.50	0	0.00	Prg(Flow)
R1		–	–	2.50	0	0.00	Prg(Flow)
North	Lewis Street						
L1		–	–	2.50	0	0.00	Prg(Flow)
R2		–	–	2.50	0	0.00	Prg(Flow)
West	Warm Springs						
L2		–	–	2.50	0	0.00	Prg(Flow)
R1		–	–	2.50	0	0.00	Prg(Flow)

Gap Acceptance - Settings

Gap Acceptance Options
Gap Acceptance Capacity Model : –

Merge Analysis & Zebra Crossing Analysis Parameters				
Parameters	Zebra Crossing on Slip/ Bypass Lane	Midblock Zebra Crossing	Merge Analysis [Exit Short Lane	Merge Lane]
Light Vehicles				
Gap Acceptance Factor	1.0	1.0	1.0	1.0
Opposing Vehicle Factor	–	–	1.0	1.0
Continuous Lane Capacity	–	–	1800	1800
Heavy Vehicles				
Gap Acceptance Factor	2.0	2.0	2.0	2.0
Opposing Vehicle Factor	–	–	2.0	2.0
Continuous Lane Capacity	–	–	1800	1800

Vehicle Movement Data - Path Data

Turn	Approach Cruise Speed mph	Exit Cruise Speed mph	Negotiation Speed mph	Negotiation Distance ft	Downstream Distance ft	Negotiation Radius ft
Light Vehicles (LV)						
From: SouthEast Warm Springs						
L1	40.0	40.0	–	–	–	–
R1	40.0	40.0	–	–	–	–
From: North Lewis Street						
L1	40.0	40.0	–	–	–	–
R2	40.0	40.0	–	–	–	–
From: West Warm Springs						
L2	40.0	40.0	–	–	–	–
R1	40.0	40.0	–	–	–	–
Heavy Vehicles (HV)						
From: SouthEast Warm Springs						
L1	40.0	40.0	–	–	–	–
R1	40.0	40.0	–	–	–	–
From: North Lewis Street						
L1	40.0	40.0	–	–	–	–
R2	40.0	40.0	–	–	–	–
From: West Warm Springs						
L2	40.0	40.0	–	–	–	–
R1	40.0	40.0	–	–	–	–

Vehicle Movement Data - Calibration

Turn	Queue Space ft	Vehicle Length ft	Vehicle Occupancy pers/veh	Turn Veh Effect [Factor	Radius] ft	Gap Accp Factor	Opng. Veh Factor	Prac. Deg. Of Satn.
Light Vehicles (LV)								
From: SouthEast Warm Springs								
L1	25.00	17.00	1.20	1.05	–	1	1	–
R1	25.00	17.00	1.20	1.05	–	1	1	–
From: North Lewis Street								
L1	25.00	17.00	1.20	1.05	–	1	1	–
R2	25.00	17.00	1.20	1.18	–	1	1	–
From: West Warm Springs								
L2	25.00	17.00	1.20	1.05	–	1	1	–
R1	25.00	17.00	1.20	1.05	–	1	1	–
Heavy Vehicles (HV)								
From: SouthEast Warm Springs								
L1	45.00	36.00	1.20	1.05	–	2	2	–
R1	45.00	36.00	1.20	1.05	–	2	2	–
From: North Lewis Street								

L1	45.00	36.00	1.20	1.05	–	2	2	–
R2	45.00	36.00	1.20	1.18	–	2	2	–
From: West	Warm Springs							
L2	45.00	36.00	1.20	1.05	–	2	2	–
R1	45.00	36.00	1.20	1.05	–	2	2	–

Site Demand & Sensitivity

Analysis Method: None

Parameter Settings - Options

General Options	
Site Level of Service Method	Delay & v/c (HCM 6)
Site Level of Service Target	LOS D
Pedestrian Level of Service Target	LOS D
Site Performance Measure	Delay
Queue in Output	Average
Percentile Queue	95%
Hours per Year	480 h
Include Short Lanes in determining Approach Queue Storage Ratio	No

Parameter Settings - Model Parameters

Passenger Car Equivalents	
Light Vehicles (LV)	1.00 pcu/veh
Heavy Vehicles (HV)	2.00 pcu/veh
Queue Blockage	
Blockage Tolerance	0
Delay and Queue	
Exclude Geometric Delay	Yes
HCM Delay Formula	Yes
HCM Queue Formula	Yes
Midblock Detection Data	
Effective Detection Zone Length	7.0

Parameter Settings - Cost

Efficiency Parameters

Movement Class	Desired Speed mph	Lower Limit of Speed Efficiency for TTI
Light Vehicles (LV)	-	0.1
Heavy Vehicles (HV)	-	0.1

Vehicle Cost Parameters

Movement Class	Veh Cost Method	Veh Operating Cost [Pump Price of Fuel $/Gal	Fuel Res. Cost Factor	Ratio of Running Cost to Fuel Cost]	Veh Time Cost [Avg. Income $/h	Time Value Factor]
Light Vehicles (LV)	Operating Cost	2.500	0.700	3.00	29.00	0.400
Heavy Vehicles (HV)	Operating Cost	2.500	0.700	3.00	29.00	0.400

Cost Options	
Cost Unit	$

Parameter Settings - Vehicle Parameters

	Mass	Max Power	CO2 to

Movement Class	lb	kW	Fuel Rate
Light Vehicles (LV)	3500.0	120	2.35
Heavy Vehicles (HV)	33000.0	170	2.633

Parameter Settings - Fuel Consumption

Movement Class	fi	A	B	Beta
Light Vehicles (LV)	1200	16	0.004	0.1
Heavy Vehicles (HV)	2300	200	0.009	0.075

Parameter Settings - CO Emission

Movement Class	fi	A	B	Beta
Light Vehicles (LV)	1620	-138	0.0743	0.294
Heavy Vehicles (HV)	25000	320	-0.06	0.04

Parameter Settings - HC Emission

Movement Class	fi	A	B	Beta
Light Vehicles (LV)	340	-9	0.0031	0.029
Heavy Vehicles (HV)	3000	1	-0.0016	0.0013

Parameter Settings - NOx Emission

Movement Class	fi	A	B	Beta
Light Vehicles (LV)	300	-14	0.0068	0.166
Heavy Vehicles (HV)	44000	2820	0.21	1.9

Parameter Settings - Advanced

Platoon Dispersion Model	
fpf	0.80
fpmin	1.00
fpmax	1.25
Lpmin	200.0 ft
Lpmax	1000.0 ft
n	0.60
Exit (Downstream) Short Lane Model	
Minimum Downstream Utilisation Ratio	20 %
Minimum Downstream Distance	100 ft
Distance for Full Lane Utilisation	660 ft
Calibration Parameter	1.2

LANE SUMMARY

Site: 101 [Warm Springs Re-Alg. - 2042 Un-Adjusted AM (Site Folder: 2042 Un-Adjusted AM)]

Warm Springs Re-Aligned Roundabout
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Warm Springs													
Lane 1[d]	690	3.0	1224	0.564	100	9.5	LOS A	4.5	116.1	Full	1600	0.0	0.0
Approach	690	3.0		0.564		9.5	LOS A	4.5	116.1				
East: 10th Street													
Lane 1[d]	97	3.0	693	0.140	100	6.7	LOS A	0.6	14.2	Full	1600	0.0	0.0
Approach	97	3.0		0.140		6.7	LOS A	0.6	14.2				
North: Lewis Street													
Lane 1[d]	157	3.0	881	0.178	100	5.9	LOS A	0.8	19.6	Full	1600	0.0	0.0
Approach	157	3.0		0.178		5.9	LOS A	0.8	19.6				
West: Warm Springs													
Lane 1[d]	365	3.0	1138	0.321	100	6.3	LOS A	1.7	44.5	Full	1600	0.0	0.0
Approach	365	3.0		0.321		6.3	LOS A	1.7	44.5				
Intersection	1309	3.0		0.564		7.9	LOS A	4.5	116.1				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Warm Springs

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	333	268	89	690	3.0	1224	0.564	100	NA	NA
Approach	333	268	89	690	3.0		0.564			

East: 10th Street

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	26	40	30	97	3.0	693	0.140	100	NA	NA
Approach	26	40	30	97	3.0		0.140			

North: Lewis Street

Mov. From N	L2	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane

To Exit:	E	S	W			veh/h	v/c	%	%	No.
Lane 1	14	115	27	157	3.0	881	0.178	100	NA	NA
Approach	14	115	27	157	3.0		0.178			

West: Warm Springs

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	26	46	293	365	3.0	1138	0.321	100	NA	NA
Approach	26	46	293	365	3.0		0.321			

	Total	%HV	Deg.Satn (v/c)
Intersection	1309	3.0	0.564

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Warm Springs Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: 10th Street Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Lewis Street Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Warm Springs Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

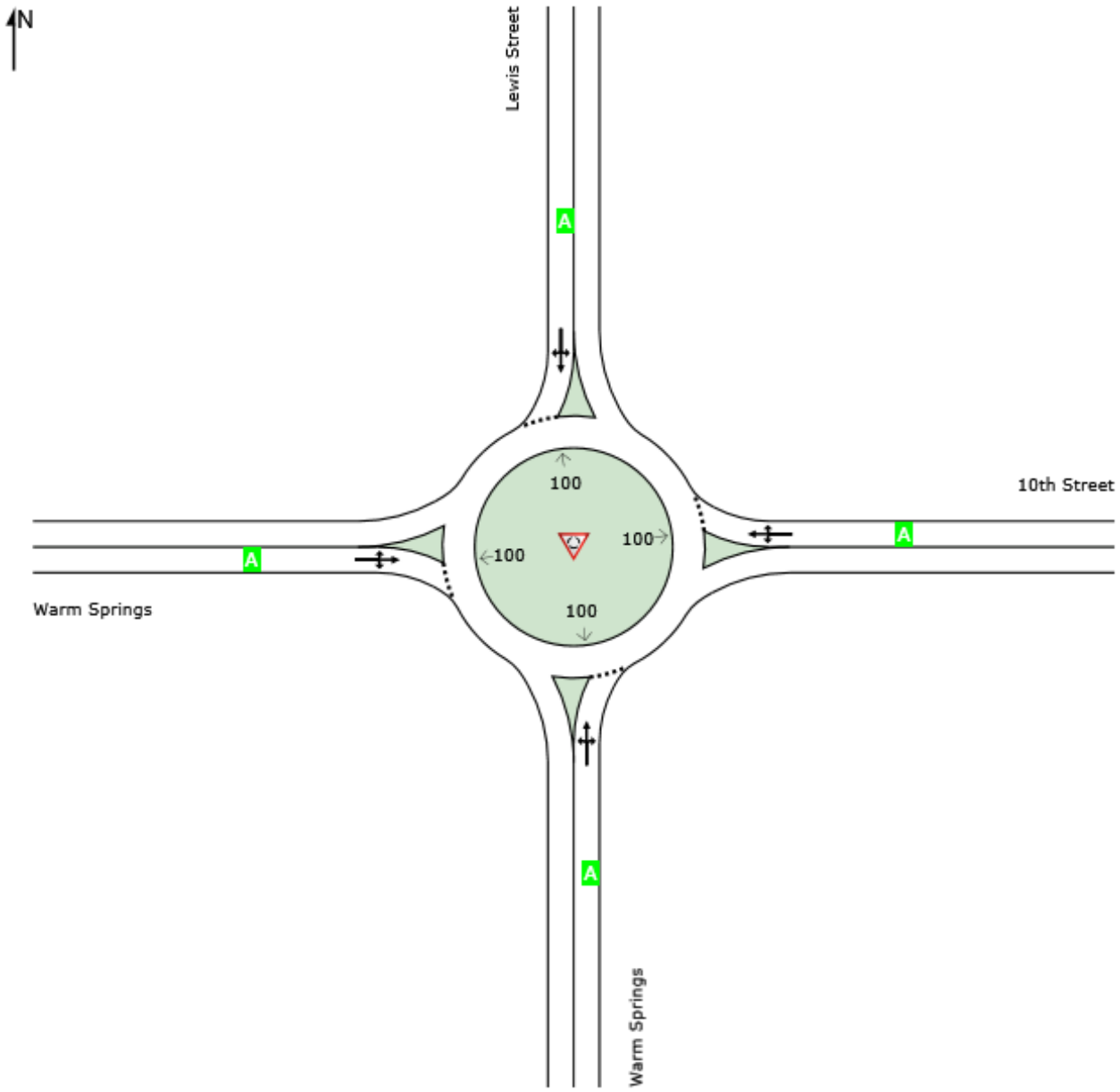
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 101 [Warm Springs Re-Alg. - 2042 Un-Adjusted AM (Site Folder: 2042 Un-Adjusted AM)]

Warm Springs Re-Aligned Roundabout
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

INPUT REPORT

Site: 101 [Warm Springs Re-Alg. - 2042 Un-Adjusted AM]

Warm Springs Re-Aligned Roundabout
Site Category: (None)
Roundabout

Intersection - Site Data	
Site Name	Warm Springs Re-Alg. - 2042 Un-Adjusted AM
Site ID	101
Site Category	(None)
Site Title	Warm Springs Re-Aligned Roundabout

Intersection - Site Properties	
Site (Intersection) Type	Roundabout
Setup Name	US HCM (Customary)
Base Setup	NA
Drive Rule	Right-hand side of the road
HCM Version	Yes
Units	US
First Created	----------
Date	1/26/2022 3:35:14 PM
Created By	LMENG
Organisation	HDR, INC.
Version	9.0.3.9771
Last Modified	----------
Date	8/12/2022 12:09:35 PM
Modified By	BFOCHT
Organisation	HDR, INC.
Version	9.0.3.9771

Intersection - Approach & Exit Data

Location	Name	Type	No. of App. Lanes	No. of Exit Lanes	Approach Distance ft	Extra Bunching (Site Analysis) %	Extra Bunching (Network Analysis) %	Exit Distance ft	Approach Area Type Control	Area Type Factor
South	Warm Springs	Two-way	1	1	1600.0	0	–	–	–	–
East	10th Street	Two-way	1	1	1600.0	0	–	–	–	–
North	Lewis Street	Two-way	1	1	1600.0	0	–	–	–	–
West	Warm Springs	Two-way	1	1	1600.0	0	–	–	–	–

Movement Definitions - Included Movement Classes

Name	ID	Model Designation	Type
Light Vehicles	LV	Light Vehicle	Standard
Heavy Vehicles	HV	Heavy Vehicle	Standard

Movement Definitions - Origin-Destination Movements

To Approach	Turn	OD Mov ID
From: South	Warm Springs	
West	L2	3
North	T1	8
East	R2	18
From: East	10th Street	
South	L2	1

West	T1	6
North	R2	16
From: North	Lewis Street	
East	L2	7
South	T1	4
West	R2	14
From: West	Warm Springs	
North	L2	5
East	T1	2
South	R2	12

Approach	U-Turn Before Intersection	Exclude U-Turn Before Intersection From Signal Analysis
South	-	-
East	-	-
North	-	-
West	-	-

Lane Geometry - Lane Configuration

Leg	Item	Configuration	Type	Control	Slip/ Bypass Control	Length ft	Width ft	Grade %	Full Lane [ID	Col]	[Front Width ft	Island Back Width ft	Fill Style	Cnct To	For Ped Stgn	Short Splitter Isl]
South	Warm Springs															
	Exit Lane 1	Full-Length	–	–	–	1600	13	0			–	–	–	–	–	–
	Rou Splt Isl 1	–	–	–	–	–	–	–	–	–	-	0	Solid	–	Yes	Yes
	App. Lane 1	Full-Length	Normal	Yield	–	1600	13	0			–	–	–	–	–	–
East	10th Street															
	Exit Lane 1	Full-Length	–	–	–	1600	13	0			–	–	–	–	–	–
	Rou Splt Isl 1	–	–	–	–	–	–	–	–	–	-	0	Solid	–	Yes	Yes
	App. Lane 1	Full-Length	Normal	Yield	–	1600	13	0			–	–	–	–	–	–
North	Lewis Street															
	Exit Lane 1	Full-Length	–	–	–	1600	13	0			–	–	–	–	–	–
	Rou Splt Isl 1	–	–	–	–	–	–	–	–	–	-	0	Solid	–	Yes	Yes
	App. Lane 1	Full-Length	Normal	Yield	–	1600	13	0			–	–	–	–	–	–
West	Warm Springs															
	Exit Lane 1	Full-Length	–	–	–	1600	13	0			–	–	–	–	–	–
	Rou Splt Isl 1	–	–	–	–	–	–	–	–	–	-	0	Solid	–	Yes	Yes
	App. Lane 1	Full-Length	Normal	Yield	–	1600	13	0			–	–	–	–	–	–

Lanes are numbered from left to right in the direction of travel.

Lane Geometry - Lane Disciplines

To Approach	Turn	Free Queue Distance ft	Movement Class(es)
From: South	App. Lane 1		
West	L2	0	LV, HV
North	T1	0	LV, HV
East	R2	0	LV, HV
From: East	App. Lane 1		
South	L2	0	LV, HV
West	T1	0	LV, HV
North	R2	0	LV, HV
From: North	App. Lane 1		
East	L2	0	LV, HV
South	T1	0	LV, HV

West	R2	0	LV, HV
From: West	App. Lane 1		
North	L2	0	LV, HV
East	T1	0	LV, HV
South	R2	0	LV, HV

Lane Geometry - Lane Data

Approach Lane Data

Approach Lane	Basic Satn Flow tcu/h	Util Ratio %	Satn Speed mph	Capacity Adj %	Use Given Cap Adj in Network Analysis	Set As Dominant Lane	Include SLip/ ByPass Lane in Entry Lane Count	Apply Satn Flow Est	Short Lane Capacity	Delay Model Param
South	Warm Springs									
App. Lane 1	–	–	–	0.0	No	–	–	–	–	–
East	10th Street									
App. Lane 1	–	–	–	0.0	No	–	–	–	–	–
North	Lewis Street									
App. Lane 1	–	–	–	0.0	No	–	–	–	–	–
West	Warm Springs									
App. Lane 1	–	–	–	0.0	No	–	–	–	–	–

Merge Analysis

Exit Lane	Merge Lane Number	Apply Merge Analysis	Merge Type	Percent Opposing in Short Lane %	Percent Opposing in Merge Lane %	Critical Gap sec	Follow-up Headway sec	Minimum Departures veh/min
South	Warm Springs							
Exit Lane 1	–	–	–	–	–	–	–	–
East	10th Street							
Exit Lane 1	–	–	–	–	–	–	–	–
North	Lewis Street							
Exit Lane 1	–	–	–	–	–	–	–	–
West	Warm Springs							
Exit Lane 1	–	–	–	–	–	–	–	–

Lane Movements - Flow Proportions

Exit Lane	To Exit Leg South %	East %	North %	West %
Light Vehicles (LV)				
From: South	App. Lane 1			
Exit Lane 1	–	100	100	100
From: East	App. Lane 1			
Exit Lane 1	100	–	100	100
From: North	App. Lane 1			
Exit Lane 1	100	100	–	100
From: West	App. Lane 1			
Exit Lane 1	100	100	100	–
Heavy Vehicles (HV)				
From: South	App. Lane 1			
Exit Lane 1	–	100	100	100
From: East	App. Lane 1			
Exit Lane 1	100	–	100	100
From: North	App. Lane 1			

Exit Lane 1	100	100	–	100
From: West	App. Lane 1			
Exit Lane 1	100	100	100	–

Lane Movements - Blockage Calibration

Exit Lane	To Exit Leg South	East	North	West
From: South	App. Lane 1			
Exit Lane 1	–	1.0	1.0	1.0
From: East	App. Lane 1			
Exit Lane 1	1.0	–	1.0	1.0
From: North	App. Lane 1			
Exit Lane 1	1.0	1.0	–	1.0
From: West	App. Lane 1			
Exit Lane 1	1.0	1.0	1.0	–

Roundabouts - Options

Roundabout Model Options	
Roundabout Capacity Model	US HCM 6
Roundabout LOS Method	Same as Sign Control
Exclude Geometric Delay	Yes
HCM Delay Formula	Yes
Apply the SIDRA Model for Unbalanced Flow Conditions for HCM 2010	–
Apply the SIDRA Model for Unbalanced Flow Conditions for HCM 6	No
Other Roundabout Models	
FHWA 2000	No
Use Urban Compact Roundabout	–
HCM 2000	No
NAASRA 1986	No

Roundabouts - Geometry

Location	Name	Circ. Lanes	Circ. Width ft	Island Diameter ft	Inscribed Diameter ft	Entry Radius ft	Entry Angle °	Raindrop Design	Circ Trans Line	Downstream Circ Lanes
South	Warm Springs	1	20.0	100.0	–	65.0	30.0	No	No	–
East	10th Street	1	20.0	100.0	–	65.0	30.0	No	No	–
North	Lewis Street	1	20.0	100.0	–	65.0	30.0	No	No	–
West	Warm Springs	1	20.0	100.0	–	65.0	30.0	No	No	–

HCM 6 Roundabout Capacity Model Parameters

Location	Name	Single L.Circ: Single L.Entry Para. A	Single L.Circ: Single L.Entry Para. B	Single L.Circ: Multi L.Entry Para. A	Single L.Circ: Multi L.Entry Para. B	Multi L.Circ: Single L.Entry Para. A	Multi L.Circ: Single L.Entry Para. B	Multi L.Circ: Dominant Lane Para. A	Multi L.Circ: Dominant Lane Para. B	Multi L.Circ: Subdominant Lane Para. A	Multi L.Circ: Subdominant Lane Para. B
South	Warm Springs	1380.0	0.001020	1420.0	0.000910	1420.0	0.000850	1420.0	0.000850	1350.0	0.000920
East	10th Street	1380.0	0.001020	1420.0	0.000910	1420.0	0.000850	1420.0	0.000850	1350.0	0.000920
North	Lewis Street	1380.0	0.001020	1420.0	0.000910	1420.0	0.000850	1420.0	0.000850	1350.0	0.000920
West	Warm Springs	1380.0	0.001020	1420.0	0.000910	1420.0	0.000850	1420.0	0.000850	1350.0	0.000920

HCM 6 Roundabout Model Calibration

Location	Name	Model Calib. Factor (HCM6)	Entry/Circ. Flow Adjust. (HCM6)
South	Warm Springs	1.00	None
East	10th Street	1.00	None
North	Lewis Street	1.00	None
West	Warm Springs	1.00	None

Pedestrians - Pedestrian Movements

Unit Time for Volumes: 60 minutes
Peak Flow Period: 15 minutes

Main Crossing/ Slip/Bypass Lane Crossing	Volume ped	Peak Flow %	Flow Scale %	Growth Rate %
No Ped Movements				

Pedestrians - Pedestrian Movement Data

Main Crossing/ Slip/ Bypass Lane Crossing	Mov. ID	Crossing Distance ft	Conflict Zone Length ft	Oppng Ped.Fac.	P.Deg. Satn	Walking Speed ft/sec	App. Trav. Distance ft	Downst. Distance ft	Queue Space ft
No Ped Movements									

Volumes - Vehicle Volumes

Unit Time for Volumes: 60 minutes
Peak Flow Period: 15 minutes
Volume Data Method: Total and %

Movement Class	To Exit Leg: South veh	East veh	North veh	West veh
From: South	Warm Springs			
Total (veh)	–	82.0	247.0	306.0
LV (%)	–	97.000	97.000	97.000
HV (%)	–	3.000	3.000	3.000
From: East	10th Street			
Total (veh)	24.0	–	28.0	37.0
LV (%)	97.000	–	97.000	97.000
HV (%)	3.000	–	3.000	3.000
From: North	Lewis Street			
Total (veh)	106.0	13.0	–	25.0

LV (%)	97.000	97.000	–	97.000
HV (%)	3.000	3.000	–	3.000
From: West	Warm Springs			
Total (veh)	270.0	42.0	24.0	–
LV (%)	97.000	97.000	97.000	–
HV (%)	3.000	3.000	3.000	–

Volumes - Volume Factors

To Approach	Peak Flow Factor %	Flow Scale %	Growth Rate %/year
Light Vehicles (LV)			
From: South	Warm Springs		
West	92.0	100.00	2.00
North	92.0	100.00	2.00
East	92.0	100.00	2.00
From: East	10th Street		
South	92.0	100.00	2.00
West	92.0	100.00	2.00
North	92.0	100.00	2.00
From: North	Lewis Street		
East	92.0	100.00	2.00
South	92.0	100.00	2.00
West	92.0	100.00	2.00
From: West	Warm Springs		
North	92.0	100.00	2.00
East	92.0	100.00	2.00
South	92.0	100.00	2.00
Heavy Vehicles (HV)			
From: South	Warm Springs		
West	92.0	100.00	2.00
North	92.0	100.00	2.00
East	92.0	100.00	2.00
From: East	10th Street		
South	92.0	100.00	2.00
West	92.0	100.00	2.00
North	92.0	100.00	2.00
From: North	Lewis Street		
East	92.0	100.00	2.00
South	92.0	100.00	2.00
West	92.0	100.00	2.00
From: West	Warm Springs		
North	92.0	100.00	2.00
East	92.0	100.00	2.00
South	92.0	100.00	2.00

Gap Acceptance - Gap Acceptance Data

Gap Acceptance Data

Opposed Movement		Critical Gap sec	Follow-up Headway sec	Minimum Departures veh/min	Exiting Flow Effect %	% Opp. By Nearest Lane %	Opng. Peds (UnSig)
South	Warm Springs						
L2		–	–	2.50	0	0.00	Prg(Flow)
T1		–	–	2.50	0	0.00	Prg(Flow)
R2		–	–	2.50	0	0.00	Prg(Flow)
East	10th Street						
L2		–	–	2.50	0	0.00	Prg(Flow)
T1		–	–	2.50	0	0.00	Prg(Flow)
R2		–	–	2.50	0	0.00	Prg(Flow)
North	Lewis Street						
L2		–	–	2.50	0	0.00	Prg(Flow)
T1		–	–	2.50	0	0.00	Prg(Flow)
R2		–	–	2.50	0	0.00	Prg(Flow)

West	Warm Springs					
L2		–	–	2.50	0	0.00 Prg(Flow)
T1		–	–	2.50	0	0.00 Prg(Flow)
R2		–	–	2.50	0	0.00 Prg(Flow)

Gap Acceptance - Settings

Gap Acceptance Options

Gap Acceptance Capacity Model : –

Merge Analysis & Zebra Crossing Analysis Parameters

Parameters	Zebra Crossing on Slip/ Bypass Lane	Midblock Zebra Crossing	Merge Analysis [Exit Short Lane	Merge Lane]
Light Vehicles				
Gap Acceptance Factor	1.0	1.0	1.0	1.0
Opposing Vehicle Factor	–	–	1.0	1.0
Continuous Lane Capacity	–	–	1800	1800
Heavy Vehicles				
Gap Acceptance Factor	2.0	2.0	2.0	2.0
Opposing Vehicle Factor	–	–	2.0	2.0
Continuous Lane Capacity	–	–	1800	1800

Vehicle Movement Data - Path Data

Turn	Approach Cruise Speed mph	Exit Cruise Speed mph	Negotiation Speed mph	Negotiation Distance ft	Downstream Distance ft	Negotiation Radius ft
Light Vehicles (LV)						
From: South	Warm Springs					
L2	40.0	40.0	–	–	–	–
T1	40.0	40.0	–	–	–	–
R2	40.0	40.0	–	–	–	–
From: East	10th Street					
L2	40.0	40.0	–	–	–	–
T1	40.0	40.0	–	–	–	–
R2	40.0	40.0	–	–	–	–
From: North	Lewis Street					
L2	40.0	40.0	–	–	–	–
T1	40.0	40.0	–	–	–	–
R2	40.0	40.0	–	–	–	–
From: West	Warm Springs					
L2	40.0	40.0	–	–	–	–
T1	40.0	40.0	–	–	–	–
R2	40.0	40.0	–	–	–	–
Heavy Vehicles (HV)						
From: South	Warm Springs					
L2	40.0	40.0	–	–	–	–
T1	40.0	40.0	–	–	–	–
R2	40.0	40.0	–	–	–	–
From: East	10th Street					
L2	40.0	40.0	–	–	–	–
T1	40.0	40.0	–	–	–	–
R2	40.0	40.0	–	–	–	–
From: North	Lewis Street					
L2	40.0	40.0	–	–	–	–
T1	40.0	40.0	–	–	–	–
R2	40.0	40.0	–	–	–	–
From: West	Warm Springs					
L2	40.0	40.0	–	–	–	–
T1	40.0	40.0	–	–	–	–
R2	40.0	40.0	–	–	–	–

Vehicle Movement Data - Calibration

Turn	Queue Space ft	Vehicle Length ft	Vehicle Occupancy pers/veh	Turn Veh Effect [Factor	Radius] ft	Gap Accp Factor	Opng. Veh Factor	Prac. Deg. Of Satn.
Light Vehicles (LV)								
From: South	Warm Springs							
L2	25.00	17.00	1.20	1.05	–	1	1	–
T1	25.00	17.00	1.20	1	–	1	1	–
R2	25.00	17.00	1.20	1.18	–	1	1	–
From: East	10th Street							
L2	25.00	17.00	1.20	1.05	–	1	1	–
T1	25.00	17.00	1.20	1	–	1	1	–
R2	25.00	17.00	1.20	1.18	–	1	1	–
From: North	Lewis Street							
L2	25.00	17.00	1.20	1.05	–	1	1	–
T1	25.00	17.00	1.20	1	–	1	1	–
R2	25.00	17.00	1.20	1.18	–	1	1	–
From: West	Warm Springs							
L2	25.00	17.00	1.20	1.05	–	1	1	–
T1	25.00	17.00	1.20	1	–	1	1	–
R2	25.00	17.00	1.20	1.18	–	1	1	–
Heavy Vehicles (HV)								
From: South	Warm Springs							
L2	45.00	36.00	1.20	1.05	–	2	2	–
T1	45.00	36.00	1.20	1	–	2	2	–
R2	45.00	36.00	1.20	1.18	–	2	2	–
From: East	10th Street							
L2	45.00	36.00	1.20	1.05	–	2	2	–
T1	45.00	36.00	1.20	1	–	2	2	–
R2	45.00	36.00	1.20	1.18	–	2	2	–
From: North	Lewis Street							
L2	45.00	36.00	1.20	1.05	–	2	2	–
T1	45.00	36.00	1.20	1	–	2	2	–
R2	45.00	36.00	1.20	1.18	–	2	2	–
From: West	Warm Springs							
L2	45.00	36.00	1.20	1.05	–	2	2	–
T1	45.00	36.00	1.20	1	–	2	2	–
R2	45.00	36.00	1.20	1.18	–	2	2	–

Site Demand & Sensitivity

Analysis Method: None

Parameter Settings - Options

General Options	
Site Level of Service Method	Delay & v/c (HCM 6)
Site Level of Service Target	LOS D
Pedestrian Level of Service Target	LOS D
Site Performance Measure	Delay
Queue in Output	Average
Percentile Queue	95%
Hours per Year	480 h
Include Short Lanes in determining Approach Queue Storage Ratio	No

Parameter Settings - Model Parameters

Passenger Car Equivalents	
Light Vehicles (LV)	1.00 pcu/veh
Heavy Vehicles (HV)	2.00 pcu/veh
Queue Blockage	

Blockage Tolerance	0
Delay and Queue	
Exclude Geometric Delay	Yes
HCM Delay Formula	Yes
HCM Queue Formula	Yes
Midblock Detection Data	
Effective Detection Zone Length	7.0

Parameter Settings - Cost

Efficiency Parameters

Movement Class	Desired Speed mph	Lower Limit of Speed Efficiency for TTI
Light Vehicles (LV)	-	0.1
Heavy Vehicles (HV)	-	0.1

Vehicle Cost Parameters

Movement Class	Veh Cost Method	Veh Operating Cost [Pump Price of Fuel $/Gal	Fuel Res. Cost Factor	Ratio of Running Cost to Fuel Cost]	Veh Time Cost [Avg. Income $/h	Time Value Factor]
Light Vehicles (LV)	Operating Cost	2.500	0.700	3.00	29.00	0.400
Heavy Vehicles (HV)	Operating Cost	2.500	0.700	3.00	29.00	0.400

Cost Options

Cost Unit	$

Parameter Settings - Vehicle Parameters

Movement Class	Mass lb	Max Power kW	CO2 to Fuel Rate
Light Vehicles (LV)	3500.0	120	2.35
Heavy Vehicles (HV)	33000.0	170	2.633

Parameter Settings - Fuel Consumption

Movement Class	fi	A	B	Beta
Light Vehicles (LV)	1200	16	0.004	0.1
Heavy Vehicles (HV)	2300	200	0.009	0.075

Parameter Settings - CO Emission

Movement Class	fi	A	B	Beta
Light Vehicles (LV)	1620	-138	0.0743	0.294
Heavy Vehicles (HV)	25000	320	-0.06	0.04

Parameter Settings - HC Emission

Movement Class	fi	A	B	Beta
Light Vehicles (LV)	340	-9	0.0031	0.029
Heavy Vehicles (HV)	3000	1	-0.0016	0.0013

Parameter Settings - NOx Emission

Movement Class	fi	A	B	Beta
Light Vehicles (LV)	300	-14	0.0068	0.166
Heavy Vehicles (HV)	44000	2820	0.21	1.9

Parameter Settings - Advanced

Platoon Dispersion Model	
fpf	0.80

fpmin	1.00
fpmax	1.25
Lpmin	200.0 ft
Lpmax	1000.0 ft
n	0.60
Exit (Downstream) Short Lane Model	
Minimum Downstream Utilisation Ratio	20 %
Minimum Downstream Distance	100 ft
Distance for Full Lane Utilisation	660 ft
Calibration Parameter	1.2

LANE SUMMARY

Site: 101 [Warm Springs Re-Alg. - 2042 Un-Adjusted PM (Site Folder: 2042 Un-Adjusted PM)]

Warm Springs Re-Aligned Roundabout
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Warm Springs													
Lane 1[d]	527	3.0	1182	0.446	100	7.7	LOS A	2.9	73.9	Full	1600	0.0	0.0
Approach	527	3.0		0.446		7.7	LOS A	2.9	73.9				
East: 10th Street													
Lane 1[d]	126	3.0	767	0.164	100	6.4	LOS A	0.7	17.3	Full	1600	0.0	0.0
Approach	126	3.0		0.164		6.4	LOS A	0.7	17.3				
North: Lewis Street													
Lane 1[d]	297	3.0	838	0.354	100	8.4	LOS A	1.7	43.8	Full	1600	0.0	0.0
Approach	297	3.0		0.354		8.4	LOS A	1.7	43.8				
West: Warm Springs													
Lane 1[d]	511	3.0	991	0.515	100	10.0	LOS B	3.6	93.3	Full	1600	0.0	0.0
Approach	511	3.0		0.515		10.0	LOS B	3.6	93.3				
Intersection	1461	3.0		0.515		8.5	LOS A	3.6	93.3				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Warm Springs

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	347	142	38	527	3.0	1182	0.446	100	NA	NA
Approach	347	142	38	527	3.0		0.446			

East: 10th Street

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	39	61	26	126	3.0	767	0.164	100	NA	NA
Approach	39	61	26	126	3.0		0.164			

North: Lewis Street

Mov. From N	L2	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane

To Exit:	E	S	W			veh/h	v/c	%	%	No.
Lane 1	13	235	49	297	3.0	838	0.354	100	NA	NA
Approach	13	235	49	297	3.0		0.354			

West: Warm Springs

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	41	65	404	511	3.0	991	0.515	100	NA	NA
Approach	41	65	404	511	3.0		0.515			

	Total	%HV	Deg.Satn (v/c)
Intersection	1461	3.0	0.515

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Warm Springs Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: 10th Street Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Lewis Street Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Warm Springs Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

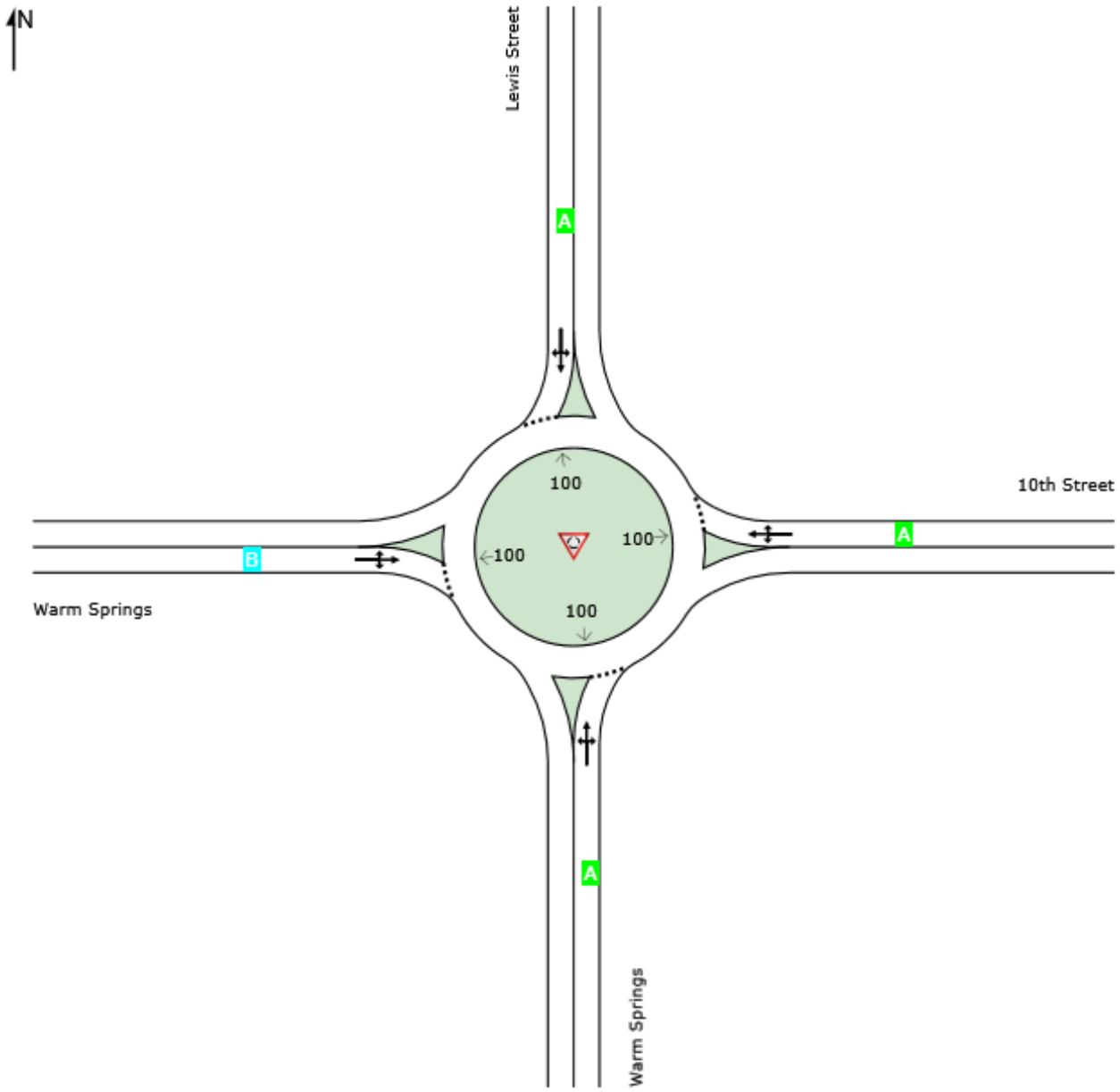
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 101 [Warm Springs Re-Alg. - 2042 Un-Adjusted PM (Site Folder: 2042 Un-Adjusted PM)]

Warm Springs Re-Aligned Roundabout
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	B	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

INPUT REPORT

Site: 101 [Warm Springs Re-Alg. - 2042 Un-Adjusted PM]

Warm Springs Re-Aligned Roundabout
Site Category: (None)
Roundabout

Intersection - Site Data	
Site Name	Warm Springs Re-Alg. - 2042 Un-Adjusted PM
Site ID	101
Site Category	(None)
Site Title	Warm Springs Re-Aligned Roundabout

Intersection - Site Properties	
Site (Intersection) Type	Roundabout
Setup Name	US HCM (Customary)
Base Setup	NA
Drive Rule	Right-hand side of the road
HCM Version	Yes
Units	US
First Created	----------
Date	1/26/2022 3:35:14 PM
Created By	LMENG
Organisation	HDR, INC.
Version	9.0.3.9771
Last Modified	----------
Date	8/12/2022 12:23:53 PM
Modified By	BFOCHT
Organisation	HDR, INC.
Version	9.0.3.9771

Intersection - Approach & Exit Data

Location	Name	Type	No. of App. Lanes	No. of Exit Lanes	Approach Distance ft	Extra Bunching (Site Analysis) %	Extra Bunching (Network Analysis) %	Exit Distance ft	Approach Area Type Control	Area Type Factor
South	Warm Springs	Two-way	1	1	1600.0	0	–	–	–	–
East	10th Street	Two-way	1	1	1600.0	0	–	–	–	–
North	Lewis Street	Two-way	1	1	1600.0	0	–	–	–	–
West	Warm Springs	Two-way	1	1	1600.0	0	–	–	–	–

Movement Definitions - Included Movement Classes

Name	ID	Model Designation	Type
Light Vehicles	LV	Light Vehicle	Standard
Heavy Vehicles	HV	Heavy Vehicle	Standard

Movement Definitions - Origin-Destination Movements

To Approach	Turn	OD Mov ID
From: South	Warm Springs	
West	L2	3
North	T1	8
East	R2	18
From: East	10th Street	
South	L2	1

West	T1	6
North	R2	16
From: North	Lewis Street	
East	L2	7
South	T1	4
West	R2	14
From: West	Warm Springs	
North	L2	5
East	T1	2
South	R2	12

Approach	U-Turn Before Intersection	Exclude U-Turn Before Intersection From Signal Analysis
South	-	-
East	-	-
North	-	-
West	-	-

Lane Geometry - Lane Configuration

Leg	Item	Configuration	Type	Control	Slip/ Bypass Control	Length ft	Width ft	Grade %	Full Lane [ID	Col]	[Front Width ft	Island Back Width ft	Fill Style	Cnct To	For Ped Stgn	Short Splitter Isl]
South	Warm Springs															
	Exit Lane 1	Full-Length	–	–	–	1600	13	0			–	–	–	–	–	–
	Rou Splt Isl 1	–	–	–	–	–	–	–	–	–	-	0	Solid	–	Yes	Yes
	App. Lane 1	Full-Length	Normal	Yield	–	1600	13	0			–	–	–	–	–	–
East	10th Street															
	Exit Lane 1	Full-Length	–	–	–	1600	13	0			–	–	–	–	–	–
	Rou Splt Isl 1	–	–	–	–	–	–	–	–	–	-	0	Solid	–	Yes	Yes
	App. Lane 1	Full-Length	Normal	Yield	–	1600	13	0			–	–	–	–	–	–
North	Lewis Street															
	Exit Lane 1	Full-Length	–	–	–	1600	13	0			–	–	–	–	–	–
	Rou Splt Isl 1	–	–	–	–	–	–	–	–	–	-	0	Solid	–	Yes	Yes
	App. Lane 1	Full-Length	Normal	Yield	–	1600	13	0			–	–	–	–	–	–
West	Warm Springs															
	Exit Lane 1	Full-Length	–	–	–	1600	13	0			–	–	–	–	–	–
	Rou Splt Isl 1	–	–	–	–	–	–	–	–	–	-	0	Solid	–	Yes	Yes
	App. Lane 1	Full-Length	Normal	Yield	–	1600	13	0			–	–	–	–	–	–

Lanes are numbered from left to right in the direction of travel.

Lane Geometry - Lane Disciplines

To Approach	Turn	Free Queue Distance ft	Movement Class(es)
From: South	App. Lane 1		
West	L2	0	LV, HV
North	T1	0	LV, HV
East	R2	0	LV, HV
From: East	App. Lane 1		
South	L2	0	LV, HV
West	T1	0	LV, HV
North	R2	0	LV, HV
From: North	App. Lane 1		
East	L2	0	LV, HV
South	T1	0	LV, HV

West	R2	0	LV, HV
From: West	App. Lane 1		
North	L2	0	LV, HV
East	T1	0	LV, HV
South	R2	0	LV, HV

Lane Geometry - Lane Data

Approach Lane Data

Approach Lane	Basic Satn Flow (tcu/h)	Util Ratio (%)	Satn Speed (mph)	Capacity Adj (%)	Use Given Cap Adj in Network Analysis	Set As Dominant Lane	Include SLip/ ByPass Lane in Entry Lane Count	Apply Satn Flow Est	Short Lane Capacity	Delay Model Param
South	Warm Springs									
App. Lane 1	–	–	–	0.0	No	–	–	–	–	–
East	10th Street									
App. Lane 1	–	–	–	0.0	No	–	–	–	–	–
North	Lewis Street									
App. Lane 1	–	–	–	0.0	No	–	–	–	–	–
West	Warm Springs									
App. Lane 1	–	–	–	0.0	No	–	–	–	–	–

Merge Analysis

Exit Lane	Merge Lane Number	Apply Merge Analysis	Merge Type	Percent Opposing in Short Lane (%)	Percent Opposing in Merge Lane (%)	Critical Gap (sec)	Follow-up Headway (sec)	Minimum Departures (veh/min)
South	Warm Springs							
Exit Lane 1	–	–	–	–	–	–	–	–
East	10th Street							
Exit Lane 1	–	–	–	–	–	–	–	–
North	Lewis Street							
Exit Lane 1	–	–	–	–	–	–	–	–
West	Warm Springs							
Exit Lane 1	–	–	–	–	–	–	–	–

Lane Movements - Flow Proportions

Exit Lane	To Exit Leg South (%)	East (%)	North (%)	West (%)
Light Vehicles (LV)				
From: South	App. Lane 1			
Exit Lane 1	–	100	100	100
From: East	App. Lane 1			
Exit Lane 1	100	–	100	100
From: North	App. Lane 1			
Exit Lane 1	100	100	–	100
From: West	App. Lane 1			
Exit Lane 1	100	100	100	–
Heavy Vehicles (HV)				
From: South	App. Lane 1			
Exit Lane 1	–	100	100	100
From: East	App. Lane 1			
Exit Lane 1	100	–	100	100
From: North	App. Lane 1			

Exit Lane 1	100	100	–	100
From: West	App. Lane 1			
Exit Lane 1	100	100	100	–

Lane Movements - Blockage Calibration

Exit Lane	To Exit Leg South	East	North	West
From: South	App. Lane 1			
Exit Lane 1	–	1.0	1.0	1.0
From: East	App. Lane 1			
Exit Lane 1	1.0	–	1.0	1.0
From: North	App. Lane 1			
Exit Lane 1	1.0	1.0	–	1.0
From: West	App. Lane 1			
Exit Lane 1	1.0	1.0	1.0	–

Roundabouts - Options

Roundabout Model Options	
Roundabout Capacity Model	US HCM 6
Roundabout LOS Method	Same as Sign Control
Exclude Geometric Delay	Yes
HCM Delay Formula	Yes
Apply the SIDRA Model for Unbalanced Flow Conditions for HCM 2010	–
Apply the SIDRA Model for Unbalanced Flow Conditions for HCM 6	No
Other Roundabout Models	
FHWA 2000	No
Use Urban Compact Roundabout	–
HCM 2000	No
NAASRA 1986	No

Roundabouts - Geometry

Location	Name	Circ. Lanes	Circ. Width ft	Island Diameter ft	Inscribed Diameter ft	Entry Radius ft	Entry Angle °	Raindrop Design	Circ Trans Line	Downstream Circ Lanes
South	Warm Springs	1	20.0	100.0	–	65.0	30.0	No	No	–
East	10th Street	1	20.0	100.0	–	65.0	30.0	No	No	–
North	Lewis Street	1	20.0	100.0	–	65.0	30.0	No	No	–
West	Warm Springs	1	20.0	100.0	–	65.0	30.0	No	No	–

HCM 6 Roundabout Capacity Model Parameters

Location	Name	Single L.Circ: Single L.Entry Para. A	Single L.Circ: Single L.Entry Para. B	Single L.Circ: Multi L.Entry Para. A	Single L.Circ: Multi L.Entry Para. B	Multi L.Circ: Single L.Entry Para. A	Multi L.Circ: Single L.Entry Para. B	Multi L.Circ: Dominant Lane Para. A	Multi L.Circ: Dominant Lane Para. B	Multi L.Circ: Subdominant Lane Para. A	Multi L.Circ: Subdominant Lane Para. B
South	Warm Springs	1380.0	0.001020	1420.0	0.000910	1420.0	0.000850	1420.0	0.000850	1350.0	0.000920
East	10th Street	1380.0	0.001020	1420.0	0.000910	1420.0	0.000850	1420.0	0.000850	1350.0	0.000920
North	Lewis Street	1380.0	0.001020	1420.0	0.000910	1420.0	0.000850	1420.0	0.000850	1350.0	0.000920
West	Warm Springs	1380.0	0.001020	1420.0	0.000910	1420.0	0.000850	1420.0	0.000850	1350.0	0.000920

HCM 6 Roundabout Model Calibration

Location	Name	Model Calib. Factor (HCM6)	Entry/Circ. Flow Adjust. (HCM6)
South	Warm Springs	1.00	None
East	10th Street	1.00	None
North	Lewis Street	1.00	None
West	Warm Springs	1.00	None

Pedestrians - Pedestrian Movements

Unit Time for Volumes: 60 minutes
Peak Flow Period: 15 minutes

Main Crossing/ Slip/Bypass Lane Crossing	Volume ped	Peak Flow %	Flow Scale %	Growth Rate %
No Ped Movements				

Pedestrians - Pedestrian Movement Data

Main Crossing/ Slip/ Bypass Lane Crossing	Mov. ID	Crossing Distance ft	Conflict Zone Length ft	Oppng Ped.Fac.	P.Deg. Satn	Walking Speed ft/sec	App. Trav. Distance ft	Downst. Distance ft	Queue Space ft
No Ped Movements									

Volumes - Vehicle Volumes

Unit Time for Volumes: 60 minutes
Peak Flow Period: 15 minutes
Volume Data Method: Total and %

Movement Class	To Exit Leg: South veh	East veh	North veh	West veh
From: South	Warm Springs			
Total (veh)	–	35.0	131.0	319.0
LV (%)	–	97.000	97.000	97.000
HV (%)	–	3.000	3.000	3.000
From: East	10th Street			
Total (veh)	36.0	–	24.0	56.0
LV (%)	97.000	–	97.000	97.000
HV (%)	3.000	–	3.000	3.000
From: North	Lewis Street			
Total (veh)	216.0	12.0	–	45.0

LV (%)	97.000	97.000	–	97.000
HV (%)	3.000	3.000	–	3.000
From: West	Warm Springs			
Total (veh)	372.0	60.0	38.0	–
LV (%)	97.000	97.000	97.000	–
HV (%)	3.000	3.000	3.000	–

Volumes - Volume Factors

To Approach	Peak Flow Factor %	Flow Scale %	Growth Rate %/year
Light Vehicles (LV)			
From: South	Warm Springs		
West	92.0	100.00	2.00
North	92.0	100.00	2.00
East	92.0	100.00	2.00
From: East	10th Street		
South	92.0	100.00	2.00
West	92.0	100.00	2.00
North	92.0	100.00	2.00
From: North	Lewis Street		
East	92.0	100.00	2.00
South	92.0	100.00	2.00
West	92.0	100.00	2.00
From: West	Warm Springs		
North	92.0	100.00	2.00
East	92.0	100.00	2.00
South	92.0	100.00	2.00
Heavy Vehicles (HV)			
From: South	Warm Springs		
West	92.0	100.00	2.00
North	92.0	100.00	2.00
East	92.0	100.00	2.00
From: East	10th Street		
South	92.0	100.00	2.00
West	92.0	100.00	2.00
North	92.0	100.00	2.00
From: North	Lewis Street		
East	92.0	100.00	2.00
South	92.0	100.00	2.00
West	92.0	100.00	2.00
From: West	Warm Springs		
North	92.0	100.00	2.00
East	92.0	100.00	2.00
South	92.0	100.00	2.00

Gap Acceptance - Gap Acceptance Data

Gap Acceptance Data

Opposed Movement		Critical Gap sec	Follow-up Headway sec	Minimum Departures veh/min	Exiting Flow Effect %	% Opp. By Nearest Lane %	Opng. Peds (UnSig)
South	Warm Springs						
L2		–	–	2.50	0	0.00	Prg(Flow)
T1		–	–	2.50	0	0.00	Prg(Flow)
R2		–	–	2.50	0	0.00	Prg(Flow)
East	10th Street						
L2		–	–	2.50	0	0.00	Prg(Flow)
T1		–	–	2.50	0	0.00	Prg(Flow)
R2		–	–	2.50	0	0.00	Prg(Flow)
North	Lewis Street						
L2		–	–	2.50	0	0.00	Prg(Flow)
T1		–	–	2.50	0	0.00	Prg(Flow)
R2		–	–	2.50	0	0.00	Prg(Flow)

West	Warm Springs					
L2		–	–	2.50	0	0.00 Prg(Flow)
T1		–	–	2.50	0	0.00 Prg(Flow)
R2		–	–	2.50	0	0.00 Prg(Flow)

Gap Acceptance - Settings

Gap Acceptance Options

Gap Acceptance Capacity Model : –

Merge Analysis & Zebra Crossing Analysis Parameters

Parameters	Zebra Crossing on Slip/ Bypass Lane	Midblock Zebra Crossing	Merge Analysis [Exit Short Lane	Merge Lane]
Light Vehicles				
Gap Acceptance Factor	1.0	1.0	1.0	1.0
Opposing Vehicle Factor	–	–	1.0	1.0
Continuous Lane Capacity	–	–	1800	1800
Heavy Vehicles				
Gap Acceptance Factor	2.0	2.0	2.0	2.0
Opposing Vehicle Factor	–	–	2.0	2.0
Continuous Lane Capacity	–	–	1800	1800

Vehicle Movement Data - Path Data

Turn	Approach Cruise Speed mph	Exit Cruise Speed mph	Negotiation Speed mph	Negotiation Distance ft	Downstream Distance ft	Negotiation Radius ft
Light Vehicles (LV)						
From: South	Warm Springs					
L2	40.0	40.0	–	–	–	–
T1	40.0	40.0	–	–	–	–
R2	40.0	40.0	–	–	–	–
From: East	10th Street					
L2	40.0	40.0	–	–	–	–
T1	40.0	40.0	–	–	–	–
R2	40.0	40.0	–	–	–	–
From: North	Lewis Street					
L2	40.0	40.0	–	–	–	–
T1	40.0	40.0	–	–	–	–
R2	40.0	40.0	–	–	–	–
From: West	Warm Springs					
L2	40.0	40.0	–	–	–	–
T1	40.0	40.0	–	–	–	–
R2	40.0	40.0	–	–	–	–
Heavy Vehicles (HV)						
From: South	Warm Springs					
L2	40.0	40.0	–	–	–	–
T1	40.0	40.0	–	–	–	–
R2	40.0	40.0	–	–	–	–
From: East	10th Street					
L2	40.0	40.0	–	–	–	–
T1	40.0	40.0	–	–	–	–
R2	40.0	40.0	–	–	–	–
From: North	Lewis Street					
L2	40.0	40.0	–	–	–	–
T1	40.0	40.0	–	–	–	–
R2	40.0	40.0	–	–	–	–
From: West	Warm Springs					
L2	40.0	40.0	–	–	–	–
T1	40.0	40.0	–	–	–	–
R2	40.0	40.0	–	–	–	–

Vehicle Movement Data - Calibration

Turn	Queue Space ft	Vehicle Length ft	Vehicle Occupancy pers/veh	Turn Veh Effect [Factor	Radius] ft	Gap Accp Factor	Opng. Veh Factor	Prac. Deg. Of Satn.
Light Vehicles (LV)								
From: South	Warm Springs							
L2	25.00	17.00	1.20	1.05	–	1	1	–
T1	25.00	17.00	1.20	1	–	1	1	–
R2	25.00	17.00	1.20	1.18	–	1	1	–
From: East	10th Street							
L2	25.00	17.00	1.20	1.05	–	1	1	–
T1	25.00	17.00	1.20	1	–	1	1	–
R2	25.00	17.00	1.20	1.18	–	1	1	–
From: North	Lewis Street							
L2	25.00	17.00	1.20	1.05	–	1	1	–
T1	25.00	17.00	1.20	1	–	1	1	–
R2	25.00	17.00	1.20	1.18	–	1	1	–
From: West	Warm Springs							
L2	25.00	17.00	1.20	1.05	–	1	1	–
T1	25.00	17.00	1.20	1	–	1	1	–
R2	25.00	17.00	1.20	1.18	–	1	1	–
Heavy Vehicles (HV)								
From: South	Warm Springs							
L2	45.00	36.00	1.20	1.05	–	2	2	–
T1	45.00	36.00	1.20	1	–	2	2	–
R2	45.00	36.00	1.20	1.18	–	2	2	–
From: East	10th Street							
L2	45.00	36.00	1.20	1.05	–	2	2	–
T1	45.00	36.00	1.20	1	–	2	2	–
R2	45.00	36.00	1.20	1.18	–	2	2	–
From: North	Lewis Street							
L2	45.00	36.00	1.20	1.05	–	2	2	–
T1	45.00	36.00	1.20	1	–	2	2	–
R2	45.00	36.00	1.20	1.18	–	2	2	–
From: West	Warm Springs							
L2	45.00	36.00	1.20	1.05	–	2	2	–
T1	45.00	36.00	1.20	1	–	2	2	–
R2	45.00	36.00	1.20	1.18	–	2	2	–

Site Demand & Sensitivity

Analysis Method: None

Parameter Settings - Options

General Options	
Site Level of Service Method	Delay & v/c (HCM 6)
Site Level of Service Target	LOS D
Pedestrian Level of Service Target	LOS D
Site Performance Measure	Delay
Queue in Output	Average
Percentile Queue	95%
Hours per Year	480 h
Include Short Lanes in determining Approach Queue Storage Ratio	No

Parameter Settings - Model Parameters

Passenger Car Equivalents	
Light Vehicles (LV)	1.00 pcu/veh
Heavy Vehicles (HV)	2.00 pcu/veh
Queue Blockage	

Blockage Tolerance	0
Delay and Queue	
Exclude Geometric Delay	Yes
HCM Delay Formula	Yes
HCM Queue Formula	Yes
Midblock Detection Data	
Effective Detection Zone Length	7.0

Parameter Settings - Cost

Efficiency Parameters

Movement Class	Desired Speed mph	Lower Limit of Speed Efficiency for TTI
Light Vehicles (LV)	-	0.1
Heavy Vehicles (HV)	-	0.1

Vehicle Cost Parameters

Movement Class	Veh Cost Method	Veh Operating Cost [Pump Price of Fuel $/Gal	Fuel Res. Cost Factor	Ratio of Running Cost to Fuel Cost]	Veh Time Cost [Avg. Income $/h	Time Value Factor]
Light Vehicles (LV)	Operating Cost	2.500	0.700	3.00	29.00	0.400
Heavy Vehicles (HV)	Operating Cost	2.500	0.700	3.00	29.00	0.400

Cost Options

Cost Unit	$

Parameter Settings - Vehicle Parameters

Movement Class	Mass lb	Max Power kW	CO2 to Fuel Rate
Light Vehicles (LV)	3500.0	120	2.35
Heavy Vehicles (HV)	33000.0	170	2.633

Parameter Settings - Fuel Consumption

Movement Class	fi	A	B	Beta
Light Vehicles (LV)	1200	16	0.004	0.1
Heavy Vehicles (HV)	2300	200	0.009	0.075

Parameter Settings - CO Emission

Movement Class	fi	A	B	Beta
Light Vehicles (LV)	1620	-138	0.0743	0.294
Heavy Vehicles (HV)	25000	320	-0.06	0.04

Parameter Settings - HC Emission

Movement Class	fi	A	B	Beta
Light Vehicles (LV)	340	-9	0.0031	0.029
Heavy Vehicles (HV)	3000	1	-0.0016	0.0013

Parameter Settings - NOx Emission

Movement Class	fi	A	B	Beta
Light Vehicles (LV)	300	-14	0.0068	0.166
Heavy Vehicles (HV)	44000	2820	0.21	1.9

Parameter Settings - Advanced

Platoon Dispersion Model

fpf	0.80

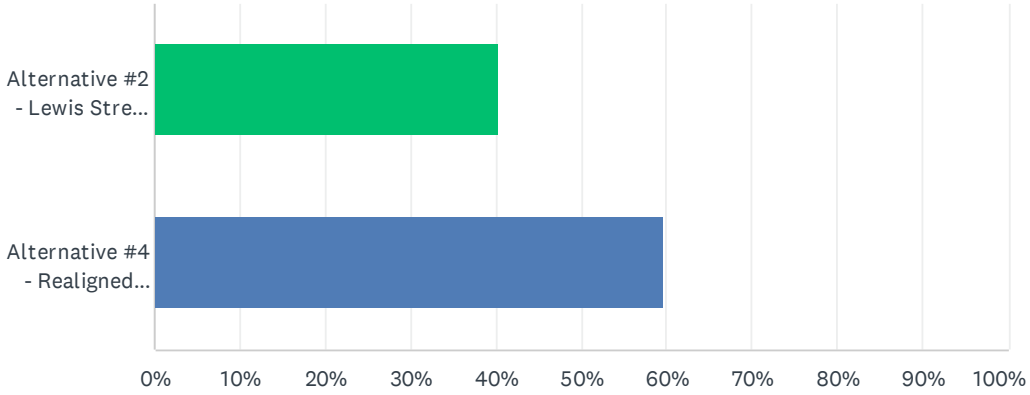
fpmin	1.00
fpmax	1.25
Lpmin	200.0 ft
Lpmax	1000.0 ft
n	0.60
Exit (Downstream) Short Lane Model	
Minimum Downstream Utilisation Ratio	20 %
Minimum Downstream Distance	100 ft
Distance for Full Lane Utilisation	660 ft
Calibration Parameter	1.2

F

Second Public Meeting Summary

Q1 Which option do you prefer?

Answered: 151 Skipped: 0



ANSWER CHOICES	RESPONSES	
Alternative #2 - Lewis Street Roundabout	40.40%	61
Alternative #4 - Realigned Roundabout	59.60%	90
Total Respondents: 151		

Q2 What do you like most about your preferred choice?

Answered: 113 Skipped: 38

#	RESPONSES	DATE
1	better sight lines at 10th street	10/17/2022 10:05 AM
2	Least amount of change to surrounding areas.	10/17/2022 9:43 AM
3	Simple	10/17/2022 7:04 AM
4	Thinking that maybe we don't need such a large roundabout in this location perhaps the smaller 3 way will work fine and be less impactful to other streets.	10/16/2022 9:46 PM
5	simpler, cheaper	10/16/2022 6:03 PM
6	the sharp turn off of 10th is avoided. safer for people walking and biking.	10/16/2022 1:53 PM
7	Solves all the traffic and safety problems	10/16/2022 9:10 AM
8	There isn't that much traffic coming from 10th. And this looks like it would be the less expensive option.	10/16/2022 9:05 AM
9	It takes care of the difficult sight lines at 10th street, but at what cost? There is no discussion of costs and I'm concerned that this solution will be much more costly! If there were a way to realigned the roads at 10th street without taking private property that would be a better solution!	10/16/2022 7:54 AM
10	I works	10/16/2022 12:27 AM
11	It will better disperse the traffic and allow it to flow helping eliminate congestion at that intersection.	10/15/2022 11:27 PM
12	Looks like it will flow better	10/15/2022 10:24 PM
13	Seems more logical and balanced for traffic safety. Also will look better. Provides for better future growth of 10th street.	10/15/2022 8:38 PM
14	Affordable housing	10/15/2022 8:03 PM
15	Illuminates unprotected turns	10/15/2022 7:17 PM
16	I had to choose in order to submit. This survey is missing other choices and the cost of these should be available to evaluate.	10/15/2022 6:04 PM
17	Straightforward	10/15/2022 5:58 PM
18	better flow of traffic	10/15/2022 5:57 PM
19	That it has less impact on private property and will be less expensive	10/15/2022 5:05 PM
20	Access to 10th st	10/15/2022 4:47 PM
21	reduces number of interruptions on warm springs. consolidate into one traffic circle	10/15/2022 4:25 PM
22	Least invasive, roundabouts are excellent.	10/15/2022 4:13 PM
23	Better alignment and less confusion.	10/15/2022 3:15 PM
24	I feel it will make traffic flow better than alternative 2	10/15/2022 1:53 PM
25	better pedestrian safety	10/15/2022 1:08 PM
26	Eliminates blind turns and congestion on tenth by Basecamp and Ketchum auto	10/15/2022 1:07 PM
27	Not as annoying.	10/15/2022 1:06 PM
28	If you're going to fix it, fix it fully. Not partially.	10/15/2022 12:57 PM

29	It will allow me to drive much faster.	10/15/2022 12:48 PM
30	Less renovation to surrounding properties	10/15/2022 12:47 PM
31	It keeps 10th street still intact.	10/15/2022 12:40 PM
32	Ease to go any direction without left turns into oncoming traffic	10/15/2022 12:07 PM
33	#4 is more functional and that landowner is doing nothing with their valuable property, which could solve many housing issues for Ketchum, they deserve to have an eminent domain taking.	10/15/2022 11:58 AM
34	It addresses the access problem from 10th street and Lewis Street to access warm springs road without creating more angles and disrupting the Albertson property.	10/15/2022 9:45 AM
35	affordability, likely online sooner	10/15/2022 9:43 AM
36	2 is enough	10/15/2022 9:24 AM
37	I will nolt have to make a left turn into traffic from 10th street	10/15/2022 8:22 AM
38	10th street needs to be included into the roundabout design. The Basecamp gas station obscures the view of traffic coming down Warm Springs road from Highway 75, especially from cars on 10th street. It’s dangerous now, and you’re always guessing if it’s safe to pull onto ERm Springs Road.	10/15/2022 6:58 AM
39	Roundabout but calm	10/15/2022 5:48 AM
40	I like how it includes 10th st.	10/14/2022 9:52 PM
41	It includes 10th Strret	10/14/2022 7:03 PM
42	Less impactful on private property	10/14/2022 6:11 PM
43	Coming down 10th to get to Hemingway in the morning is too dangerous now - you can hardly see cars coming behind gas station.	10/14/2022 4:03 PM
44	Planning farther ahead	10/14/2022 3:00 PM
45	Roundabouts can be stressful to negotiate, especially in snowy/slippery conditions. Having three streets come into the roundabout should cause less problems than having four streets come into the roundabout.	10/14/2022 2:51 PM
46	I like both. #4 because it alleviates frequently difficult left turn from 10th onto Warm Springs.	10/14/2022 2:40 PM
47	Less impactful to private property.	10/14/2022 2:29 PM
48	It addresses all impacted intersections; but there must be some guidance/support for any displaced property owners (Alberstons?)	10/14/2022 2:24 PM
49	Clean. Easy to understand flow. No impact to current property owner (still have hopes that one day soon the owners will see this property as a perfect spot for community housing)	10/14/2022 2:24 PM
50	It will be a better flow for the left turning traffic from 10th to Lewis	10/14/2022 2:23 PM
51	Better traffic flow from Hwy 75	10/14/2022 2:02 PM
52	It improves the visibility situation on 10th. Alternative 2 doesn’t seem to do that. Also seems more seamless.	10/14/2022 1:25 PM
53	Removes a blind corner	10/14/2022 1:20 PM
54	improves blind spots at the basecamp left turn on 10th street	10/12/2022 12:50 PM
55	Neither but the "survey" did not allow that as an option, you had to check one of your comments would not post - it is not clear what has been presented as the actual problem, which makes it impossible to determine if this will solve the problem. Statements such as "enhance public realm" and "traffic calming" are not quantifiable terms to define a problem and its resolution. One of the main problems with the appearance and traffic flow issues on 10th Street are public roadways being used as storage areas for auto repair businesses. Resolving that issue would not cost the city anything and would vastly increase the connectivity of 10th Street. Putting concrete or other structures in the middle of the roadway has not been shown to	10/11/2022 3:38 PM

	be effective in the past, i.e., remember the median that was installed by the Elkhorn traffic light	
56	It has less of an impact to private property.	10/11/2022 3:37 PM
57	ease of access to gas station	10/11/2022 10:29 AM
58	It provides ease of access to the main routes most utilized and in need of improvement for traffic flow and safety without impacting private property. Tenth street coming westbound from 75 gets far less access, so impact to private property seems less justifiable (and less needed) in my opinion.	10/11/2022 6:56 AM
59	Much less confusion with motorists unfamiliar with the intersection and better for small cars with big trucks.	10/10/2022 6:17 PM
60	Less disruptive	10/10/2022 4:05 PM
61	This seems more likely to execute and that will make sense for the street space.	10/10/2022 11:02 AM
62	If there was a stop light or other way to manage the flow of traffic from 10th street to highway 75 then the realignment would make more sense.	10/10/2022 9:49 AM
63	Better traffic flow	10/9/2022 11:14 PM
64	Better traffic flow	10/9/2022 2:25 PM
65	It i simply less reconfiguration, less construction, less large, less city like. Although both options are too city like.	10/9/2022 12:05 PM
66	less costly	10/9/2022 11:00 AM
67	Traffic from 10 street E flows into the roundabout, instead of there being traffic trying to negotiate the roundabout exit trying to cross Warm Springs rd or turn southbound. Better road alignment and sight lines in general.	10/9/2022 8:47 AM
68	It doesn't require the government to our base land from the Albertsons family which would be very expensive.	10/9/2022 7:00 AM
69	I like the 3-way Lewis street roundabout since folks who are trying to go left onto WS off of Lewis can simply turn right, go around the roundabout, and head the way they want. This seems like the easiest solution and people can still use the roundabout off of Lewis without making it a massive and therefore time wasting roundabout with 4 lanes feeding into it.	10/9/2022 6:25 AM
70	Doing something useful with that abandoned lot	10/8/2022 7:56 PM
71	Least expense to city…	10/8/2022 3:58 PM
72	If its going to get done do it all the way!	10/8/2022 3:07 PM
73	The gradual turn form 10th.	10/8/2022 10:20 AM
74	It takes out the 10th street debacle. Ideally it will also offer wider than average sidewalks or a true "bike path" extension and put non car traffic first.	10/8/2022 10:15 AM
75	Less confusing	10/8/2022 9:19 AM
76	Better traffic long term	10/8/2022 8:58 AM
77	Less confusing	10/8/2022 8:30 AM
78	Roundabouts are far more efficient, I like this option that creates a better thoroughfare and has less impact on existing property.	10/8/2022 8:12 AM
79	Takes care of all intersections And let Albertsons build a grocery store!! The location suits it, it has parking!	10/8/2022 7:40 AM
80	Much better Access to/from WS and 75 Main Street	10/7/2022 8:56 PM
81	It accounts for the traffic at the 10th st intersection as well as Lewis st	10/7/2022 7:34 PM
82	straight forward, less invasive to private property - less expensive and equally effective.	10/7/2022 7:29 PM
83	I don't like either. If the Albertsons lot is going to be housing and the YMCA lots then there will	10/7/2022 6:59 PM

	be a lot more pedestrians. Round abhors are not pedestrian friendly, they’re super intimidating and dangerous.	
84	Not as over constructed. More reasonable.	10/7/2022 6:29 PM
85	As a result of the access from Highway 75	10/7/2022 5:58 PM
86	It would make ketchum Automotive not be on the busiest street in the core. The city has allowed them to make 10th a dangerous situation for many years.	10/7/2022 5:46 PM
87	includes all 4 intersecting roads	10/7/2022 5:24 PM
88	It helps with the line of sight issues at 10th St that are so scary and it’s one less intersection for those going down WS Rd	10/7/2022 5:22 PM
89	That private land is just sitting there being useless to the community.	10/7/2022 5:12 PM
90	More route options that are safer and more efficient.	10/7/2022 4:51 PM
91	It seems guaranteed that people in this valley are going to STRUGGLE to learn roundabouts. A four way roundabout seems more complex to me.	10/7/2022 4:27 PM
92	10th street inclusion, safety	10/7/2022 4:22 PM
93	includes the traffic on 10th street. might help parking for autos at Ketchum Auto. small use of Alberstons LLC's awkward corner. open up more business on 10th.	10/7/2022 4:17 PM
94	It focuses on the streets and intersection where there are problems	10/7/2022 4:16 PM
95	Fewer difficult left hand turns	10/7/2022 4:05 PM
96	Better traffic control	10/7/2022 4:01 PM
97	Crossing to the south by Base Camp is a nightmare. #4 solves that too...total no brainer.	10/7/2022 3:59 PM
98	It looks less expensive	10/7/2022 3:51 PM
99	less impact to private property	10/7/2022 3:50 PM
100	Better for traffic flow	10/7/2022 3:49 PM
101	more in scale with small town leaves more room for the development of parcel labeled Albertson's LLC...affordable housing?	10/7/2022 3:38 PM
102	It eliminates the dangerous traffic that occurs in and out of the base camp gas station by rerouting the traffic that comes from 10st	10/7/2022 3:33 PM
103	Test	10/7/2022 3:20 PM
104	Traffic flow and safety	10/7/2022 2:17 PM
105	It addresses both intersections.	10/7/2022 1:59 PM
106	Combines the 10th street intersection to reduce potential conflicts	10/7/2022 1:56 PM
107	better sight lines. turning left onto warm springs from 10th is a challenge to see around the gas station	10/7/2022 12:41 PM
108	Alternative #4 makes the most sense for traffic management - while allowing for bikes and pedestrians.	10/7/2022 12:37 PM
109	Coming down 10th street; I can never make a left turn to go to Moss Nursery.....or if I was on Lewis Street....stick you neck out there and "could get hit" by on coming cars. This round about will be very important to the city in the future years with the school and fire department.	10/7/2022 12:04 PM
110	I think #4 is better suited for long-term traffic issues. #2 is half ass in my opinion. just a temporary fix.	10/7/2022 11:58 AM
111	Solves issue coming off 10th to Warm Springs and vice versa better. That is a horrible intersection presently. Many missed accidents with cars trying to pull out of 10th quickly	10/7/2022 11:29 AM
112	Solves the blind spot at 10th street	10/7/2022 11:27 AM
113	Should hold up longer in the future. As Ketchum develops there will be more traffic between 75	10/7/2022 11:19 AM

	and the LI zone and 4 addresses that. If we don't do that in this iteration, it will be another Ketchum cheap out mistake.	

Q3 What do you dislike about the other option?

Answered: 91 Skipped: 60

#	RESPONSES	DATE
1	Wipes out existing buildings on 10th Street.	10/17/2022 9:43 AM
2	Complex	10/17/2022 7:04 AM
3	Maybe just too large overall for this area if the smaller one will work well enough.	10/16/2022 9:46 PM
4	too complicated, too expensive	10/16/2022 6:03 PM
5	keeps the sharp turn where people tend to accelerate quickly to avoid getting hit. dangerous for people walking/biking.	10/16/2022 1:53 PM
6	Doesn’t address the lack of visibility for drivers on 10th st.	10/16/2022 9:10 AM
7	I like option 4 too, but 3 look like it can be completed faster and for less money.	10/16/2022 9:05 AM
8	It ignores the difficult sight lines when exiting 10th onto WS Road.	10/16/2022 7:54 AM
9	Taking private property	10/16/2022 12:27 AM
10	Doesn’t seem as balanced as a roundabout	10/15/2022 8:38 PM
11	No affordable housing	10/15/2022 8:03 PM
12	Still has the 4 way intersection	10/15/2022 7:17 PM
13	Alt 1 is the better of two poor options. Alt 2 leaves land in a circumstance where it would be difficult and costly to develop. What do these options cost?	10/15/2022 6:04 PM
14	Doesn't seem as beneficial to long term planning	10/15/2022 5:57 PM
15	I don't dislike the other option.	10/15/2022 5:05 PM
16	Pulling out on 10 th	10/15/2022 4:47 PM
17	it feels to me that 75% or more of the traffic continues on warm springs, which means that ALL that traffic has to traverse a full 3/4 of the traffic circle. this seems needlessly complicated	10/15/2022 4:25 PM
18	No reason for it to be that big.	10/15/2022 4:13 PM
19	A mix of the two may be confusing to folks.	10/15/2022 3:15 PM
20	I feel there will still be traffic congestion.	10/15/2022 1:53 PM
21	Annoying	10/15/2022 1:06 PM
22	I don’t dislike it, but again if you’re going to fix it, fix it.	10/15/2022 12:57 PM
23	It would slow traffic too much.	10/15/2022 12:48 PM
24	Too much work to propeties	10/15/2022 12:47 PM
25	Higher cost, more private space eaten up	10/15/2022 12:47 PM
26	Eliminating 10th st access to main st.	10/15/2022 12:40 PM
27	Still a challenging intersection at base camp and 10th	10/15/2022 12:07 PM
28	I don’t. They are both great.	10/15/2022 11:58 AM
29	Too convoluted	10/15/2022 9:45 AM
30	cost, time to establish, no need to change 10th St	10/15/2022 9:43 AM
31	Might be more than enough	10/15/2022 9:24 AM

32	I hate making left turns into traffic, which I will still have to do if the roundabout does not include 10th St.	10/15/2022 8:22 AM
33	It doesn’t include 10th street.	10/15/2022 6:58 AM
34	Too large. Too much of an impact bringing 75 traffic down to warm springs by a major route	10/15/2022 5:48 AM
35	Assume 10th St would have a stop sign... You'd be waiting forever to turn south onto Warm Springs rd from 10th St.	10/14/2022 9:52 PM
36	Turning from 10th St onto Warm Springs Road in either direction is difficult as vision is blocked by the gas station.	10/14/2022 7:03 PM
37	Doesn’t solve traffic at 10th coming on to Warm springs road	10/14/2022 4:03 PM
38	Less is not as efficient	10/14/2022 3:00 PM
39	I foresee work trucks coming out of Lewis Street, entering the roundabout heading towards downtown, and then needing to stop in the middle waiting for an opening in the south traveling lane. This could block the main traffic flow heading out Warm Springs and create snow-day collisions.	10/14/2022 2:51 PM
40	Doesn't address the 10th Street intersection. It's frequently difficult left turn from 10th onto Warm Springs.	10/14/2022 2:40 PM
41	Requires a lot more private property.	10/14/2022 2:29 PM
42	Addresses only part of the congestion issues...	10/14/2022 2:24 PM
43	Leaves a blind corner	10/14/2022 1:20 PM
44	doesn't address #2	10/12/2022 12:50 PM
45	Neither but the "survey" did not allow that as an option, you had to check one of your comments would not post - it is not clear what has been presented as the actual problem, which makes it impossible to determine if this will solve the problem. Statements such as "enhance public realm" and "traffic calming" are not quantifiable terms to define a problem and its resolution. One of the main problems with the appearance and traffic flow issues on 10th Street are public roadways being used as storage areas for auto repair businesses. Resolving that issue would not cost the city anything and would vastly increase the connectivity of 10th Street. Putting concrete or other structures in the middle of the roadway has not been shown to be effective in the past, i.e., remember the median that was installed by the Elkhorn traffic light	10/11/2022 3:38 PM
46	It was has more of an impact to private property.	10/11/2022 3:37 PM
47	seems like it would be tough to get to tenth	10/11/2022 10:29 AM
48	The opposite almost exactly to my answer in #2.	10/10/2022 6:17 PM
49	If anything is ever built on the Albertsons' lot it would be very challenging to enter with #4. Also the sight issue isn't resolved since there is still a business access that will be used frequently for the gas station.	10/10/2022 11:02 AM
50	It encourages a faster pace off hwy75 down into Warm Springs corridor because of easier non slowed traffic. It encourages continuation without mindful slowing as we enter WmSpgs residential area & other direction speeding into town.	10/9/2022 12:05 PM
51	more costly	10/9/2022 11:00 AM
52	Doesnt take 10th street into consideration, which is a messy and congested intersection with the gas station traffic.	10/9/2022 8:47 AM
53	It is potentially very expensive.	10/9/2022 7:00 AM
54	How’s through private property, more pavement, I like smaller roundabouts since they seem more efficient and more cars can get into them.	10/9/2022 6:25 AM
55	3 way roundabout is fine too, but better to go all the way	10/8/2022 7:56 PM
56	Expense of both options seems very unnecessary	10/8/2022 3:58 PM

57	Just fixing half the problem and probably create my more confusion	10/8/2022 3:07 PM
58	Often times people are so focused on car traffic they forget about people walking. Also- the left turn from 10th is dangerous for everyone.	10/8/2022 10:20 AM
59	It’s a bandaid on the issue of both of those intersections.	10/8/2022 10:15 AM
60	Takes away private property	10/8/2022 9:19 AM
61	Taking private property	10/8/2022 8:30 AM
62	It looks too big, and assuming the impact to surrounding private property triggers legal action, I don't think it's worth the time, energy or added expense when you have a viable alternative.	10/8/2022 8:12 AM
63	It doesn’t help 10th st at all	10/7/2022 7:34 PM
64	invasive to immediate businesses and property and presumably a much more of an expense.	10/7/2022 7:29 PM
65	Lose more of the Albertsons lot for housing.	10/7/2022 6:59 PM
66	The intersection isn’t that busy. It looks overbuilt and requires changing the entire layout of the thoroughfare.	10/7/2022 6:29 PM
67	Turning off of 10th will still suck.	10/7/2022 5:46 PM
68	not much	10/7/2022 5:24 PM
69	It doesn’t solve the 10th St issue	10/7/2022 5:22 PM
70	Getting out of the gas station and tenth street needs to be improved.	10/7/2022 5:12 PM
71	I don’t dislike it, I just think alternative 4 is more efficient than alternative 2.	10/7/2022 4:51 PM
72	Complexity of a four way, especially in such a small zone	10/7/2022 4:27 PM
73	10th st not included - that is the biggest problem!	10/7/2022 4:22 PM
74	doesn't include 10th st.	10/7/2022 4:17 PM
75	Seems unnecessary complicated	10/7/2022 4:16 PM
76	You still have to try and turn left onto Warm Springs from 10th and you can’t see past the gas station to see if it’s safe	10/7/2022 4:05 PM
77	Doesn't solve all of the problems	10/7/2022 3:59 PM
78	Seems like you’re adding unneeded additional routes	10/7/2022 3:51 PM
79	impact to private property	10/7/2022 3:50 PM
80	Doesn’t solve the issue	10/7/2022 3:49 PM
81	Too large, too massive for small town...too impactful on private property	10/7/2022 3:38 PM
82	It ignores the congestion and blind corners in and around base camp gas station.	10/7/2022 3:33 PM
83	Test	10/7/2022 3:20 PM
84	Still have to pull out onto WS Road from 10th street. Yikes!	10/7/2022 2:17 PM
85	Doesn’t address saddle road problem.	10/7/2022 1:59 PM
86	Does not streamline access and causes two areas of traffic concerns	10/7/2022 1:56 PM
87	same as above	10/7/2022 12:41 PM
88	Alternative #3 seems short-sighted, it does not allow for future growth.	10/7/2022 12:37 PM
89	#2 looks sloppy.	10/7/2022 11:58 AM
90	Doesn’t solve 10th street issues	10/7/2022 11:29 AM
91	Still a blind spot at 10th	10/7/2022 11:27 AM

Q4 Is there anything we missed/haven't considered?

Answered: 64 Skipped: 87

#	RESPONSES	DATE
1	If go with #2, can coming off 10th Street be restricted to right-turns only, to minimize traffic delays and/or wrecks from people trying to turn left or go straight?	10/17/2022 9:43 AM
2	what does the traffic patterns suggest ass far as overall size of roundabout, seems like the 4 way may be too large for this location if the smaller one accomplishes what is most needed.	10/16/2022 9:46 PM
3	added convenience and efficiency (and safety) for fire department in response to certain calls	10/16/2022 6:03 PM
4	On #2: Move the south section of the road WEST from the south end of round-a-bout to better align with the road from Ketchum. It would require taking several feet from the very wide parking area in front of the group of stores that includes Janie's photos. Once done, 10th Ave road & stop sign on the east side of 10th could be moved forward to give drivers a better sight line to see cars heading north on WS road.	10/16/2022 7:54 AM
5	You say #4 will impact private property. That is unfortunate.	10/15/2022 10:24 PM
6	No	10/15/2022 8:38 PM
7	Affordable housing	10/15/2022 8:03 PM
8	Nope love adding a roundabout! Makes us all safer!	10/15/2022 7:17 PM
9	Why no choice for do nothing? Alternate traffic patterns? Cost should be available in the choice description…	10/15/2022 6:04 PM
10	Just hope it’s easy for bikes and pedestrians.	10/15/2022 4:47 PM
11	would be nice to see an alternative that has warm springs traffic flow smoothly and consistently and moves the peripheral traffic (lewis and 10th) off the main artery to cut down on the total amount of traffic and to ease the flow. think of a summer Friday when thousands of RV's and huge trailers are trying to go north...and they all have to go around 3/4 of the traffic circle.	10/15/2022 4:25 PM
12	Na	10/15/2022 3:15 PM
13	Bike and pedestrian options are extremely important as well. This is a dangerous and confusing intersection for pedestrian and bike traffic as well	10/15/2022 3:08 PM
14	Purchasing and removing the 1007 building and straightening the road	10/15/2022 1:07 PM
15	Not doing it at all. Use the money to increase the affordable housing chances.	10/15/2022 1:06 PM
16	Pretty much everything. But you do you.	10/15/2022 12:48 PM
17	Not to me	10/15/2022 12:40 PM
18	I would buy the Albertsons property even with #4. Nick.Thomson@KinshipCapital.com (full time Ketchum resident)	10/15/2022 11:58 AM
19	Be sore snow removal is not an issue and the round about is large enough for large trailer trucks	10/15/2022 9:45 AM
20	Creating this solution in either scenario is much better than doing nothing!	10/15/2022 9:24 AM
21	We must look forward and realize there will be increased traffic. # 4 makes more sense.	10/15/2022 6:58 AM
22	what are the projected costs? why does a mandatory question fail to included options to answer no change or undecided?	10/14/2022 3:49 PM
23	What is truck apron? I'm 'thinking' it would be a very tight turn.	10/14/2022 3:00 PM
24	I believe that the main reason for these plans is to make it easier for traffic from Lewis St to	10/14/2022 2:51 PM

	get onto Warm Springs Rd which is the major traffic flow. An alternative would be to connect Lewis directly to the proposed revision of 10th street so that it bypasses this intersection entirely and routes southbound traffic from Lewis St directly up to the highway thereby avoiding impacting Warm Springs Rd altogether. The lesser amount of traffic from Lewis heading towards Warm Springs neighborhoods would head north on Lewis and connect to Warm Springs by taking Northwood Way to Saddle Rd and then to the YMCA intersection. This would provide a free flow of traffic between Lewis St and downtown as well as heading south towards Hailey via 10th St to Hwy 75 without impacting Warm Springs Rd or the current intersection. The lesser amount of Lewis St traffic heading out Warm Springs would be re-routed by just a couple of blocks by using Northwood Way to Saddle Rd. This solution eliminates the congestion at the Warm Springs Rd and Lewis St intersection, provides for a continued smooth flow of traffic on Warm Springs Rd, and provides Lewis St with smooth access to Hwy 75 going north or south. The couple of extra blocks to access Warm Springs neighborhoods from Lewis street is a small price to pay for the other advantages. We live in the Warm Springs area and already use the Saddle Rd/ Northwood Way route to access Lewis St because it avoids the problem intersection. I think having a roundabout on the major access to the Warm Springs area is asking for trouble on winter days with slick roads.	
25	Not sure.	10/14/2022 2:29 PM
26	Possibly: (1)use of the additional non-traffic surface created by the 4th alternative and the impact on the business (gas station) now cut off from direct access to the former main traffic flow. (2) review of any parking considerations/needs in that area; (3) Hopefully there is an involvement of merchants/landlords impacted so they feel their concerns/interests/dreams are heard and feel part of the process for betterment of the whole area. Listen to them! Maybe there is a more comprehensive assessment needed for the whole area.	10/14/2022 2:24 PM
27	3 way stop…WS Rd to town/Lewis St/WS Rd heading out towards Y (put stop sign just before the turn off to Lewis). Still have free right coming from town onto Lewis.	10/14/2022 2:24 PM
28	Neither but the "survey" did not allow that as an option, you had to check one of your comments would not post - it is not clear what has been presented as the actual problem, which makes it impossible to determine if this will solve the problem. Statements such as "enhance public realm" and "traffic calming" are not quantifiable terms to define a problem and its resolution. One of the main problems with the appearance and traffic flow issues on 10th Street are public roadways being used as storage areas for auto repair businesses. Resolving that issue would not cost the city anything and would vastly increase the connectivity of 10th Street. Putting concrete or other structures in the middle of the roadway has not been shown to be effective in the past, i.e., remember the median that was installed by the Elkhorn traffic light	10/11/2022 3:38 PM
29	I wonder how it affects the busses for the school	10/11/2022 10:29 AM
30	You have not provided the overall cost to the community along with these two options. To make an informed decision, this should be provided (including costs associated with taking the private property, whether through eminent domain or through purchase from the property owner).	10/11/2022 6:56 AM
31	N/A	10/10/2022 6:17 PM
32	Addressing the 10th street corridor. Evaluation of traffic in and out of the Basecamp gas station.	10/10/2022 9:49 AM
33	We are constantly putting bandaids on situations, rarely getting to the root cause; therefore we do not solve problems but exacerbate them. We must reclaim the culture of Ketchum. 'Ketchum time' is all but disappeared. New people expect their city ways to carry over here without realizing what they are doing. Too fast, too money focused, too entitled makes Ketchum into a city of greed & fast paced lifestyle. It's not just about being kind as city propaganda states. It's about being a small town with values of neighbors, a ski town & outdoor lifestyles where the more affluent & the less affluent coexists harmoniously, where we consider others all the time as humans. Period. Slow down in every way on every level including in vehicles. A tiny decrease in your speed allows the left hand turning car that you can easily see time to make that turn without any fuss or major infrastructure changes. if we constantly accommodate the newcomers we become just like anyplace else. We loose our magic our charm. This is not about stopping 'progress' or living in a vacuum it is about preserving our culture. Listen to this!!!!!	10/9/2022 12:05 PM

34	Need a crosswalk on Warm Springs at 10th.	10/9/2022 11:00 AM
35	You're asking questions of the public without providing full information to the public. Statements like: "is more impactful on private property" don't paint a comprehensive picture. What would it cost? How would the transaction work? How would alt 4 proceed? Is one option less expensive than the other? By how much (estimated)? Etc.	10/9/2022 7:00 AM
36	You haven't stated the cost difference between the two. Won't that be important for everyone's decision?	10/8/2022 7:56 PM
37	Status quo is just wonderful	10/8/2022 3:58 PM
38	I couldn't make the meetings, so I don't know the full changes.	10/8/2022 10:20 AM
39	Expanding the sidewalks and non motorized path areas. The explosion of e bikes and scooters needs to be addressed and made room for.	10/8/2022 10:15 AM
40	This is a waste of time. Without more information, such as cost, traffic, impacts on private property, etc, you've asked me which picture I like best. This is an uninformed, useless pick. I hope you don't pay attention to this survey.	10/8/2022 8:01 AM
41	No left turns out of the industrial area, route that traffic to 75. Or Monorail from Ketchum to Hailey	10/7/2022 8:10 PM
42	Police enforcement of existing speed limits instead of this project that's unneeded	10/7/2022 7:54 PM
43	No	10/7/2022 7:34 PM
44	no	10/7/2022 7:29 PM
45	Increased density = more pedestrians	10/7/2022 6:59 PM
46	The intersection of warm springs and Broadway. Way heavier traffic and pedestrian use. Extremely unsafe with lack of cross walks or 40th stop to slow downhill traffic.	10/7/2022 6:29 PM
47	Driver Education would be a good start.	10/7/2022 5:46 PM
48	snow removal?	10/7/2022 5:24 PM
49	Pedestrian/sidewalk options along 10th street going up the hill towards Knob Hill and along warm springs in front of Grumpy's.	10/7/2022 4:51 PM
50	How will bikes get through? This may be solved for an just not seeing it from these graphics	10/7/2022 4:27 PM
51	ideally reviewing ability to turn north on warm springs from the 8th, 9th, 10th streets…it's so hard with cars coming down fast from main and lots of traffic the other direction too...hopefully this will help but anything else to make those turns more visible/safe would be good	10/7/2022 4:22 PM
52	You have done a good job with due diligence. Thanks	10/7/2022 4:05 PM
53	Not sure	10/7/2022 3:59 PM
54	What if you just added a light	10/7/2022 3:51 PM
55	where wii the mountain ride bus stop/stops be relocated? Also pedestrian crosswalk safety to access the bus stop in new location	10/7/2022 3:50 PM
56	Mutli-lane roundabout	10/7/2022 3:49 PM
57	concrete median on both alternatives will be subject to snowplow damage! traffic flow to Warm Springs off Main St. now seems to work well...making 10th Street as another major entry to and from Warm Springs could create traffic issues on Main St. and 10th...unintended consequence?	10/7/2022 3:38 PM
58	Where will the bus stops be and how might this affect the route?	10/7/2022 3:33 PM
59	Test	10/7/2022 3:20 PM
60	Thoughtful landscaping - you have an opportunity to make it even more carbon-emissions-lowering by planting thoughtfully.	10/7/2022 2:17 PM
61	Taking down the power lines on warm springs road.	10/7/2022 1:59 PM

62	Definitely- bike access is hugely important and does not appear to be addressed. Access at the existing crossing (between park side and the LI) should be prioritized to keep the flow and safety that currently exists (plan looks to create a problem by making a jog where the path intersects with ws road). And bicycle access through tenth, northwood way and warm springs road should be identified on the plan and should be equally safe even as it will not be the preferred bike path route. It should still be accessible and safe for people to get to and from the LI on bikes, especially since we as a community want to be known as a bike-friendly town and also want to support reducing car trips.	10/7/2022 1:56 PM
63	The City must work hard to convince the residence in formed about this situation and win their vote.	10/7/2022 12:04 PM
64	Is anything being done to improve problems at Main and Warm Springs fork?	10/7/2022 11:29 AM

G

Final Concept Exhibits

WARM SPRINGS ROAD

LEWIS STREET

MAIN STREET

10TH STREET

9TH STREET

TENTH ST LIGHT INDUSTRY OWNERS

101
STEPHENSON TRUST

1000
ALBERTSON'S LLC

PARKSIDE VILLAGE CONDO

NEW DRIVEWAY

RELOCATE BUS STOP

1007
ELMAR GRABHER

980
PLACEHOLDER LLC

IMPROVEMENTS CONTINUE TO 9TH STREET

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED RIGHT OF WAY (ROW)
- PROPOSED CURB & GUTTER
- NEW PAVEMENT
- NEW CONCRETE MEDIAN
- NEW TRUCK APRON
- NEW LANDSCAPING/IMPROVED AREA
- NEW MULTI-USE PATHWAY OR SIDEW

ALTERNATIVE 2
WARM SPRINGS ROAD & LEWIS STREET ROUNDABOUT

FIGURE 1

WARM SPRINGS ROAD

101
STEPHENSON TRUST

LEWIS STREET

1000
ALBERTSON'S LLC

TENTH ST LIGHT
INDUSTRY OWNERS

MAIN STREET

10TH STREET

9TH STREET

PARKSIDE VILLAGE
CONDO

1007
ELMAR GRABHER

980
PLACEHOLDER
LLC

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED RIGHT OF WAY (ROW)
- PROPOSED ROW AREA

ALTERNATIVE 2
WARM SPRINGS ROAD & LEWIS STREET ROUNDABOUT

FIGURE 1

WARM SPRINGS ROAD

101
STEPHENSON TRUST

LEWIS STREET

1000
ALBERTSON'S LLC

TENTH ST LIGHT INDUSTRY OWNERS

MAIN STREET

PARKSIDE VILLAGE CONDO

NEW DRIVEWAY

1007
ELMAR GRABHER

9TH STREET

BUSINESS ACCESS

980
PLACEHOLDER LLC

IMPROVEMENTS CONTINUE TO 9TH STREET

10TH STREET

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED RIGHT OF WAY (ROW)
- PROPOSED CURB & GUTTER
- NEW PAVEMENT
- NEW CONCRETE MEDIAN
- NEW TRUCK APRON
- NEW LANDSCAPING/IMPROVED AREA
- NEW MULTI-USE PATHWAY OR SIDEWALK
- PUBLIC ROW TO BE IMPROVED

ALTERNATIVE 4
WARM SPRINGS ROAD & 10TH/LEWIS STREET ROUNDABOUT

FIGURE 2

WARM SPRINGS ROAD

101
STEPHENSON TRUST

LEWIS STREET

1000
ALBERTSON'S LLC

TENTH ST LIGHT
INDUSTRY OWNERS

MAIN STREET

PARKSIDE VILLAGE
CONDO

NEW DRIVEWAY

1007
ELMAR GRABHER

9TH STREET

BUSINESS ACCESS

980
PLACEHOLDER
LLC

IMPROVEMENTS
CONTINUE
TO 9TH STREET

10TH STREET

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED RIGHT OF WAY (ROW)
- PROPOSED ROW AREA
- PUBLIC ROW TO BE IMPROVED

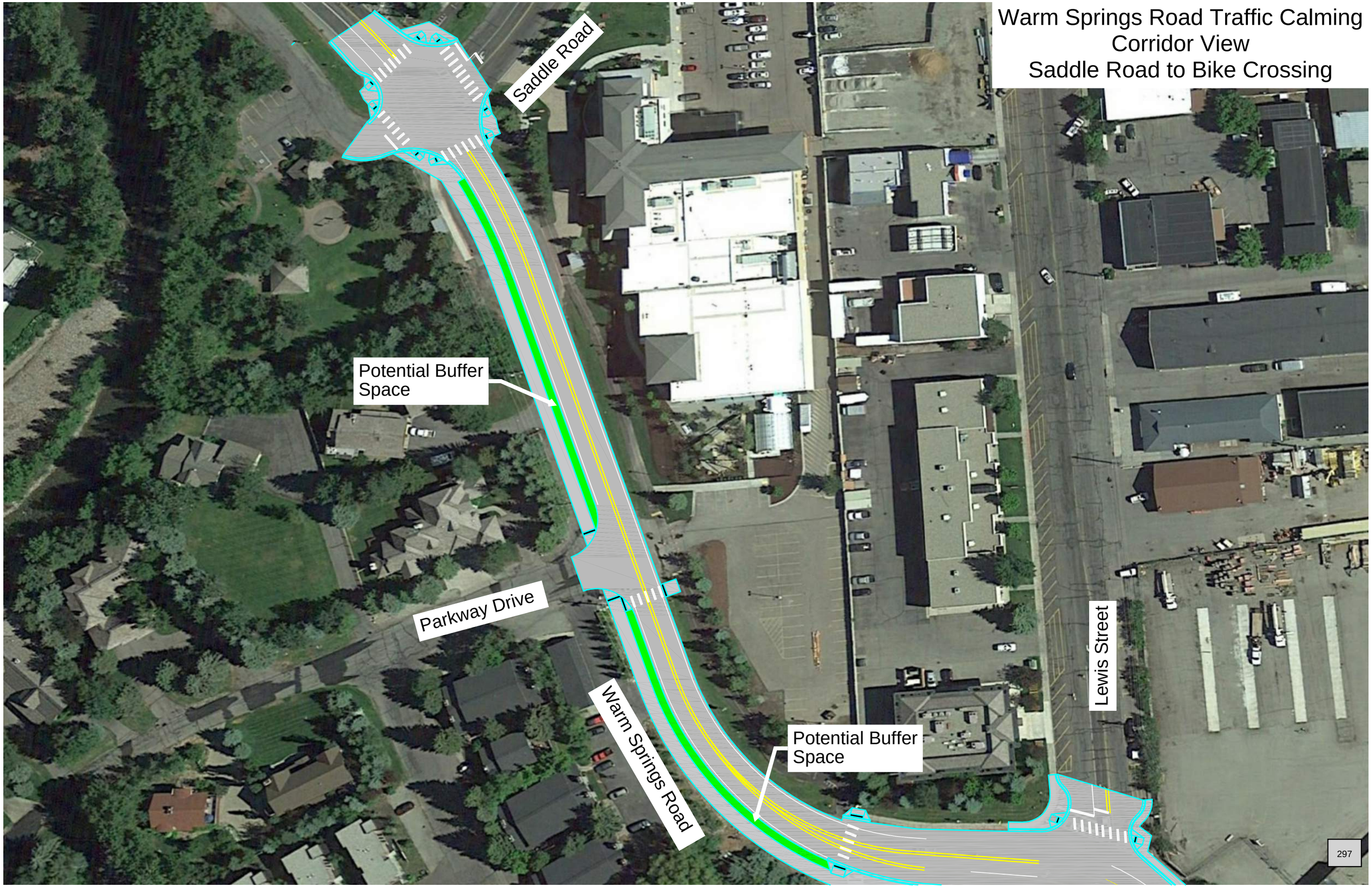
ALTERNATIVE 4
WARM SPRINGS ROAD & 10TH/LEWIS STREET ROUNDABOUT

FIGURE 2

H

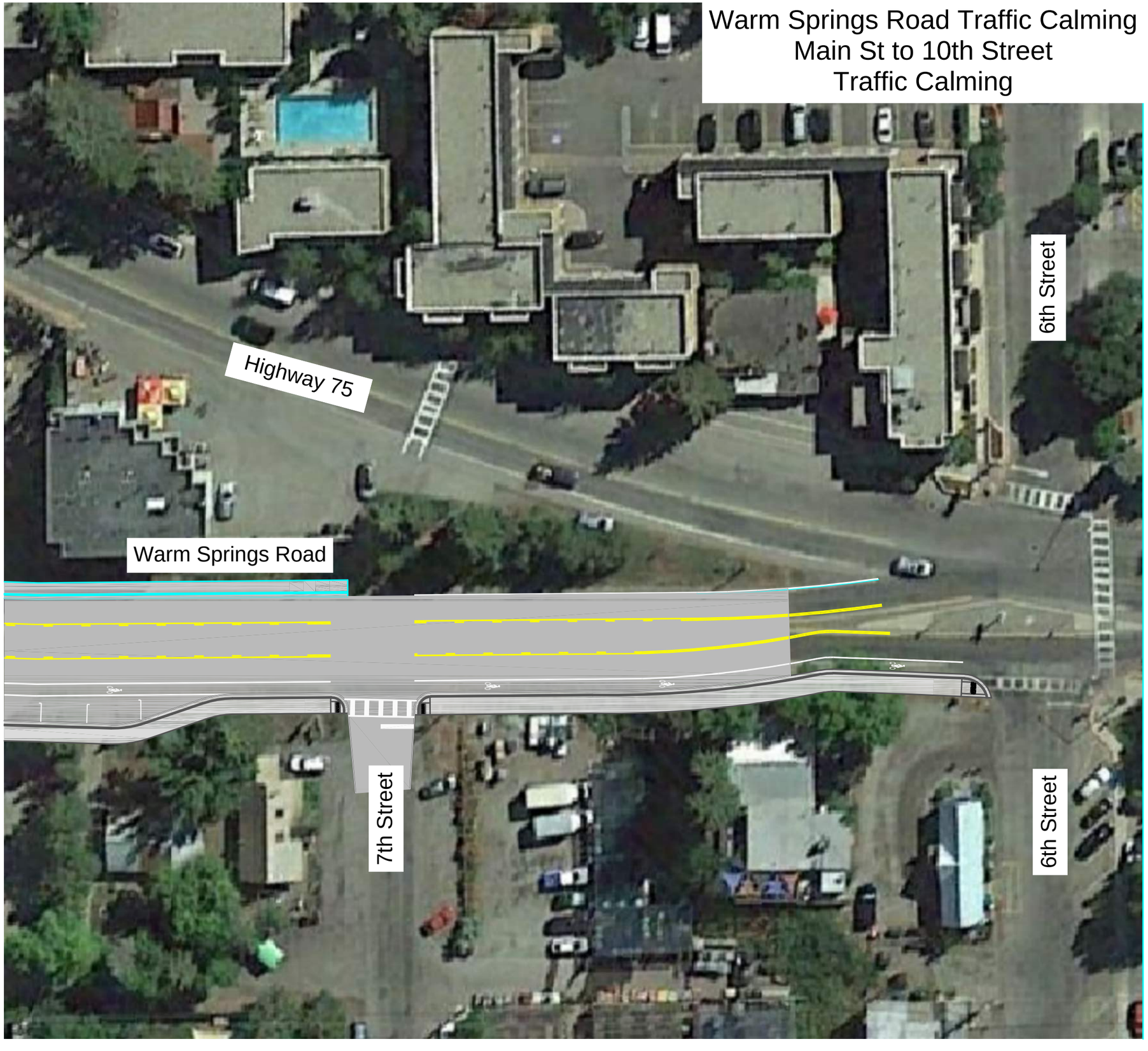
Additional Improvement Concepts

Warm Springs Road Traffic Calming Corridor View
Saddle Road to Bike Crossing

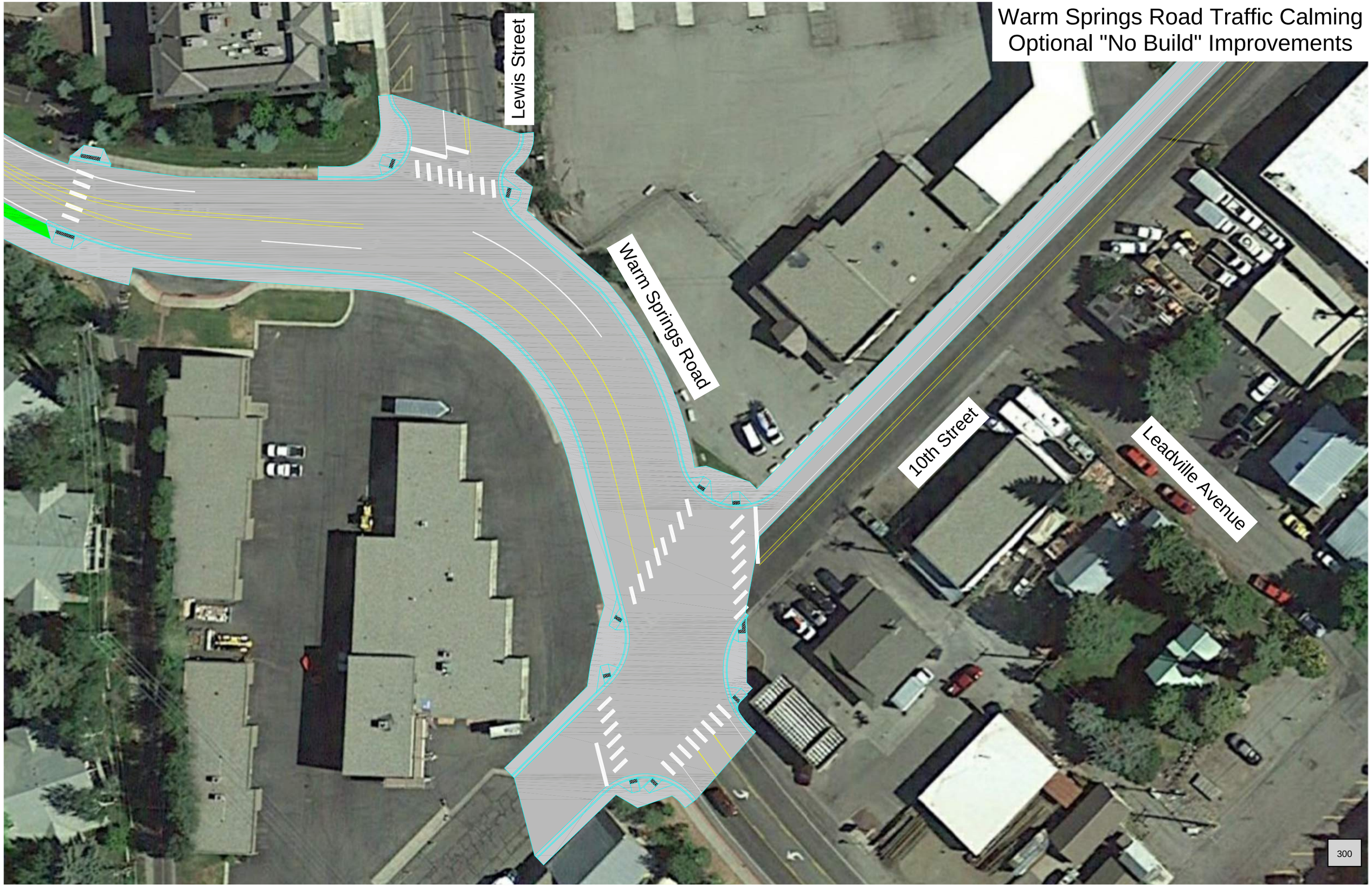


Warm Springs Road Traffic Calming
Main St to 10th Street
Traffic Calming

Warm Springs Road Traffic Calming
Main St to 10th Street
Traffic Calming



Warm Springs Road Traffic Calming
Optional "No Build" Improvements

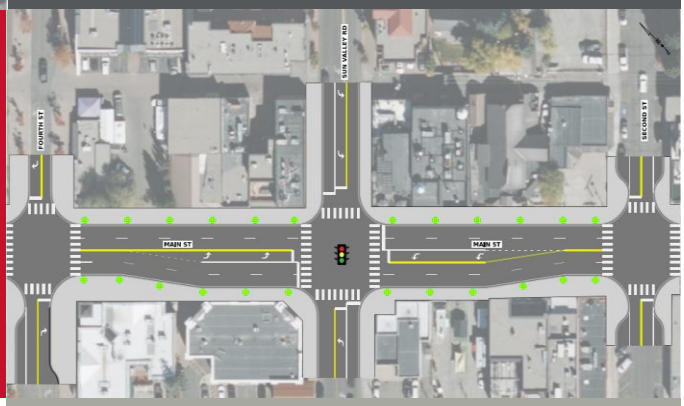


Draft Main Street Alternatives Analysis Report

City of Ketchum

Ketchum, Idaho

November 21, 2022



Executive Summary

The City of Ketchum, Idaho (City) *Master Transportation Plan* (2020)[1] identified the opportunity to reduce the number of vehicle travel lanes on Main Street (State Highway 75 [SH-75]) from four lanes to three lanes, with a travel lane in each direction and a center median lane that can provide dedicated left-turn pockets. This configuration has the potential to reduce pedestrian vehicle conflicts and expand the sidewalks. As noted in the *Master Transportation Plan,* some potential drawbacks to the lane reconfiguration could include reduced roadway capacity for general vehicular traffic, emergency vehicles, mail trucks, and transit vehicles. These vehicles may be delayed with increased traffic volumes in the single through lane, left-turn lanes may be hard to access during high demand periods, and it may create some issues with snow removal.

The goals of this project are to improve vehicle progression on the corridor without shifting traffic to local streets, improve pedestrian and bike facilities and crossings, and enhance the streetscape and pedestrian realm. The purpose of this report is to document the alternatives analysis and the decision-making process that led to a recommended alternative.

Existing Conditions

The Main Street corridor is within the Downtown Core neighborhood and the Community Core – specifically Retail Core – Districts within the Ketchum zoning map. These designations match the land uses on the ground, which is evident by a thriving main street corridor. The City's *2014 Comprehensive Plan*[2] identifies potential gateways to the City located at River Street and 6th Street along Main Street

Of the six blocks that make up the Main Street corridor, some blocks are more successful at providing a public realm that supports the walkable, vibrant downtown feel associated with Ketchum than others. For instance, the blocks along Main Street from 4th to 6th Streets have a strong public realm supporting pedestrians with amenities such as identity and wayfinding signage, landscaping, larger sidewalks, benches, and bike racks. However, moving north or south, the amenities along the blocks oscillate between having a less comfortable and safe public realm and providing certain desirable elements.

The project team analyzed crashes between 2016 and 2020 to assess the safety of the corridor. There were 25 crashes at intersections on Main Street. The most frequent crash type was rear end (13 crashes), and the most frequent contributing circumstance was following too close (8 crashes). Most of the crashes were property damage only (PDO) (15 crashes), with two suspected serious injury (A Injury) crashes, four minor injury (B Injury), and four possible injury (C injury) crashes.

During the 5-year study period, there were 18 non-intersection related crashes on Main Street. The most frequent crash type was rear end (9 crashes), and the most frequent contributing circumstance was following too close (4 crashes). Most of the crashes were PDO (11 crashes),

[1] City of Ketchum, Master Transportation Plan. March 15, 2021.
[2] City of Ketchum. 2014 Comprehensive Plan. February 18, 2014. Available online: https://www.ketchumidaho.org/planning-building/page/comprehensive-plan

with two suspected serious injury (A Injury) crashes, and five possible injury crashes (C Crashes).

Corridor intersection traffic operations are operating at a level of service (LOS) D or better in both the AM and PM peak hours. During the summer peak travel periods, some intersections experience longer delays; however, the LOS remains above LOS D for all intersections. The following are existing inefficiencies identified on the corridor:

- Movements experience long queue lengths that may back up several blocks.
- The Sun Valley Road intersection is currently split phased on the north-south (Main Street) movements, meaning the movements occur separately from each other and are not timed concurrently. This impedes two-way progression on the corridor and increases the cycle length at the intersection, which in turn, increases delays.
- The pedestrian scramble at Sun Valley Road increases the signal cycle length. At the pedestrian clearance, time is calculated using the diagonal distance across the intersection instead of the shorter distance on the legs of the intersection.
- The signals on the corridor are not interconnected, which does not allow for implementing a coordinated signal timing plan. This limits vehicle progression through the corridor as green bands are unlikely to line up.
- The southbound travel lanes must merge from two lanes to one lane between River Street and 1st Street. Drivers were observed getting into the continuous left lane before 1st Street to avoid having to perform the merge maneuver before River Street. This creates an underutilization of lanes at the 1st Street intersection, degrading operations and capacity at the intersection.
- The "split" of Main Street at the 6th Street intersection causes some confusion due to the lack of proper pavement markings and way finding signage in advance of the intersection.

Initial Future Conditions Analysis

HDR calculated a 1.44 percent historical growth rate to represent traffic volume growth based on historical data from Idaho Transportation Department's (ITD) Automated Traffic Recorders (ATRs) on SH-75. The project team selected 2042 as the design year for the purposes of this analysis and LOS D was set for the target LOS threshold based on ITD's requirements in their *Roadway Design Manual*[3]. HDR initially analyzed the following four scenarios.

[3] Idaho Transportation Department. Roadway Design Manual. August 2013. Available online: https://apps.itd.idaho.gov/apps/manuals/roadwaydesign/files/Roadwaydesignprintable.pdf

No.	Volumes Used	Scenario	Main Street Cross Section	Signal Operations	Peak Hour Factor
1	2042 Average	No-Build	Two lanes in each direction, no dedicated turn lanes at intersections	Existing signal timing parameters	0.92
2	2042 Summer				
3	2042 Average	Build	One lane in each direction, dedicated left-turn lane at each intersection on Main Street	100 second cycle length, flashing yellow arrows (FYA) for left turns	
4	2042 Summer				

In the No-Build scenarios 1 and 2, the corridor is expected to operate poorly as queue lengths at Sun Valley Road begin to approach 600 feet. Northbound traffic at Sun Valley Road is expected to exceed capacity and experience delays.

At first glance, reducing the number of lanes from four to three and adding flashing yellow arrows (FYAs) for left turns, analyzed in scenarios 3 and 4, appears to improve the LOS along the corridor. For example, the Sun Valley Road/Main Street intersection operations improve from a LOS F in the PM peak hour to LOS C with these improvements. However, the estimated queue lengths at the intersections can exceed 1,000 feet in some cases with the reconfigured cross section. These excessive queues are significantly longer than those estimated under the No-Build scenarios and would back up from one signal through the upstream signalized intersections, causing significant congestion and potential gridlock.

Side street queue lengths also increase from the No-build to the Build scenarios under average conditions and get even worse under summer conditions. Short city block lengths, on-street parking, and a single lane in each direction limit the amount of storage available on the side streets. Overall, these results indicate that there is significant operational improvement by removing the split phasing at Sun Valley Road and installing left-turn lanes with FYAs. The closely spaced intersections prevent the large volume of traffic from being stored, ultimately creating congestion.

The project team then analyzed three additional scenarios using 2042 summer volumes.

- Scenario 5: Add left-turn lanes on Main Street at Sun valley Road, removing split phasing and pedestrian scramble.
- Scenario 6: Prohibit left-turn movements from Main Street, except at Sun Valley Road, where left-turn lanes are added.
- Scenario 7: Install a five-lane section along Main Street with left-turn lanes at each intersection.

When compared to the No-Build or three-lane scenarios, scenarios 5, 6, and 7 decrease congestion on the corridor and reduce travel times. Each alternative provides better LOS, less congestion/gridlock, and better progression and travel time for vehicles and pedestrians. The

shorter cycle lengths with these scenarios would shorten the wait times for pedestrians at intersections. Scenario 7 achieves vehicle progression goals; however, it's adverse impacts include removing parking along the corridor and limiting opportunities to install curb extensions on Main Street to shorten the pedestrian crossings.

Initial Recommendations and Limitations of the Analysis

HDR presented the findings of the deterministic analysis to the City Council on April 11, 2022. HDR recommended against pursuing the three-lane section due to the significant impacts to motorized vehicle flow and travel time. Congestion on Main Street could cause traffic to use adjacent streets to get through town, increasing volumes, congestion, and conflicts on local streets. Instead, HDR recommended the City pursue adding left-turn lanes at the Sun Valley Road Intersection (Scenario 5).

The City Council asked for a visual representation of the corridor operations to understand the potential impacts of the different lane reconfiguration scenarios. HDR explained the limitations of the macroscopic methodologies and recommended a microsimulation analysis to improve the confidence of the analysis and provide videos of the operations.

Interim Improvements

At the City's request, HDR and the project team implemented short-term solutions to enhance the corridor operations in the interim period.

- The project team coordinated with ITD to interconnect the signals in order to implement a coordinated signal timing plan.
- The City and ITD agreed to remove the pedestrian scramble.
- HDR developed signal timing plans for the AM and PM peak hours to reduce the number of stops and increase progression during the peak hours. Additionally, HDR recalculated the pedestrian clearance intervals to increase pedestrian safety.
- ITD is currently designing a project south of Ketchum that is scheduled to be built before improvements on Main Street and would provide an opportunity to revise the location of the merge taper between 1st Street and River Street to be south of River Street.

Microsimulation Analysis

Based on the City Council feedback, the project team developed specific alternatives to analyze with Vissim software:

- Existing conditions
- Alternative 1: No-Build
- Alternative 2: Adding left-turn lanes at Sun Valley Road
- Alternative 3: Three-lane section

Comparing the Alternatives

Alternative 3 provides many benefits to the pedestrian and public realms, but at a significant cost to traffic flow. This alternative would increase vehicle congestion and would not serve all traffic during the peak periods. This level of congestion could push traffic onto neighboring streets, increasing conflicts and negating large safety benefits from the potential lane reconfiguration. This alternative also would not meet ITD's LOS D threshold for state highways.

Although the three-lane section could decrease the number of lanes pedestrians need to cross the roadway, vehicle congestion would be likely to reduce gaps pedestrians have to cross at unsignalized intersections. Side streets would be expected to see large increases in vehicle queue lengths as vehicles are unable to enter the Main Street due to a lack of gaps.

Alternative 2, which removes parking for two blocks to add turn lanes at the Sun Valley Road intersection, would serve all estimated traffic during the design year. Estimated travel times for future vehicles would be similar to existing conditions. By removing the split phasing, the bottle neck at Sun Valley Road would be removed and all other intersections on the corridor could increase operational efficiency for both pedestrians and vehicles. The safety benefits of Alternative 2 may not be as great as for Alternative 3; however, the remaining intersections could still see improvements to the pedestrian and public realms with bulb-outs and wider sidewalks.

Recommendation and Costs

Alternative 2 is recommended over the Alternative 3 (three-lane configuration). Alternative 2 best serves vehicular traffic and improves traffic operations, it meets ITD's LOS D threshold, and provides excess capacity. Excess capacity allows some contingency for performance i.e., suggesting that if Ketchum sees a greater increase in vehicle traffic than estimated, this alternative would best be able to handle that increase. Although the opportunity to widen the pedestrian space is not as great as with Alternative 3, there would still be opportunities to enhance the public realm, improve the placemaking feel of Ketchum's Main Street, and further enhance the corridor's safety performance. Final conceptual exhibits are presented in **Appendix F**.

The project team developed an opinion of probable cost based upon the conceptual exhibits. ITD has programmed a project to resurface Main Street in the near future and the estimated costs assume that ITD will pay for the resurfacing, including base material. The Alternative 2 probable costs are summarized in the following table.

Cost	Amount
Engineering Fee:	$353,000
Construction Costs:	$3,880,000
Right-of-way Costs:	$10,000
Total Project Costs:	$4,243,000

Next Steps

The City should coordinate with ITD to get approval for the recommended Alternative 2. Additionally, the City should coordinate the improvement designs to align with an upcoming ITD maintenance project on SH-75. Coordination will decrease the amount of mobilization required to improve the roadway and reduce the impacts to the public. The curb extensions and a raised intersection will need to be evaluated in coordination with ITD during design to evaluate truck turning movements and stormwater needs in detail.

The City should also pursue grant opportunities to fund the improvements. Outreach for stakeholder participation in the grant pursuits should occur, including with Mountain Rides, Blaine County School District, and the Ketchum Urban Renewal Agency.

Contents

Figures

Tables

Appendicies

Acronyms/Abbreviations

Acronyms and abbreviations used more than once in the report text.

AADT	annual average daily traffic
ADA	Americans with Disabilities Act
ATR	automated traffic recorders
City	City of Ketchum
CMF	crash modification factor
EPDO	equivalent property damage only
FYA	flashing yellow arrow
HCM	Highway Capacity Manual
ITD	Idaho Transportation Department
LHTAC	Local Highway Technical Assistance Council
LOS	level of service
LPI	leading pedestrian interval
MP	mile post
mph	miles per hour
NACTO	National Association of City Transportation Officials
PDO	property damage only
PHB	pedestrian hybrid beacon
PROWAG	Public Rights-of-Way Accessibility Guidelines
RRFB	rectangular rapid flashing beacon
SH-75	State Highway 75
v/c	volume to capacity ratio
vpd	vehicles per day

1 Introduction

1.1 Background and Purpose

The City of Ketchum, Idaho (City) *Master Transportation Plan* (2020)[4] identified the opportunity to reconfigure Main Street (State Highway 75 [SH-75]) to reduce the number of vehicle travel lanes from the existing four lanes to three, with a travel lane in each direction and a center median lane that can provide dedicated left-turn pockets. This configuration has the potential to reduce pedestrian/vehicle conflicts and expand the sidewalks. As noted in the *Master Transportation Plan,* some potential drawbacks to the lane reconfiguration could include reduced roadway capacity for vehicular traffic; mail trucks and transit vehicles may stop traffic in the single through lane; left-turn lanes may be hard to access during high demand periods; and it may create some issues with snow removal.

The goals of this project are to improve vehicle progression on the corridor without shifting traffic to local streets, improve pedestrian and bike facilities and crossings, and enhance the streetscape and pedestrian realm. The purpose of this report is to document the alternatives analysis and the decision-making process that led to a recommended alternative that balances the need for improved public environment with the future traffic volume demand on Main Street.

1.2 Study Area

The study area (shown in Figure 1) begins at the intersection of Main Street and River Street and continues six blocks north to the 6th Street intersection where Main Street splits into Warm Springs Road to the northwest and Main Street to the northeast. Main Street runs through the core of Downtown Ketchum. The adjacent land use is zoned as Retail Core, featuring several small businesses, restaurants, and hotels. Main Street is also known as SH-75 and is owned by the Idaho Transportation Department (ITD). The highway connects southern Idaho to the Sawtooth Valley in central Idaho and serves as a commuter route for individuals working in Ketchum or Sun Valley communities. Ketchum is a

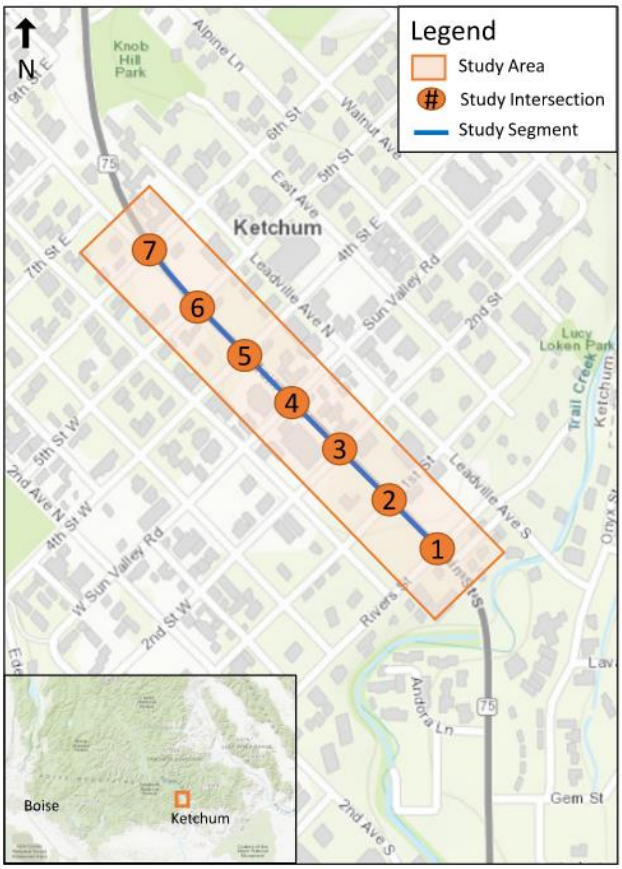


Figure 1. Study Area

[4] City of Ketchum, Master Transportation Plan. March 15, 2021.

resort, destination city with regional traffic generators, including two ski hills and outdoor recreational locations to the north and south.

1.3 Study Process

The study process followed the general procedure outlined in Figure 2. The project team performed an initial evaluation of existing conditions in the study area that considered existing traffic operations using deterministic methodologies, determined safety issues and needs, and examined the public realm needs. In coordination with ITD, the project team identified short-term improvements that could be implemented during the study to improve operations until a larger project could be completed. Signal timing improvements were analyzed and implemented in coordination with ITD under a separate project for the City.

Next, the project team analyzed different scenarios using a deterministic methodology to identify potential alternatives along the corridor. After consulting with the City Council, the team advanced three alternatives to a microsimulation analysis and presented the results of the microsimulation and additional safety opportunities at a public meeting where residents could evaluate the alternatives, ask questions, and provide feedback. An online survey accompanied the public meeting for those unable to attend the in-person meeting. Finally, the project team revised the alternatives, as necessary, prepared a final report, and presented it to the City Council for adoption.

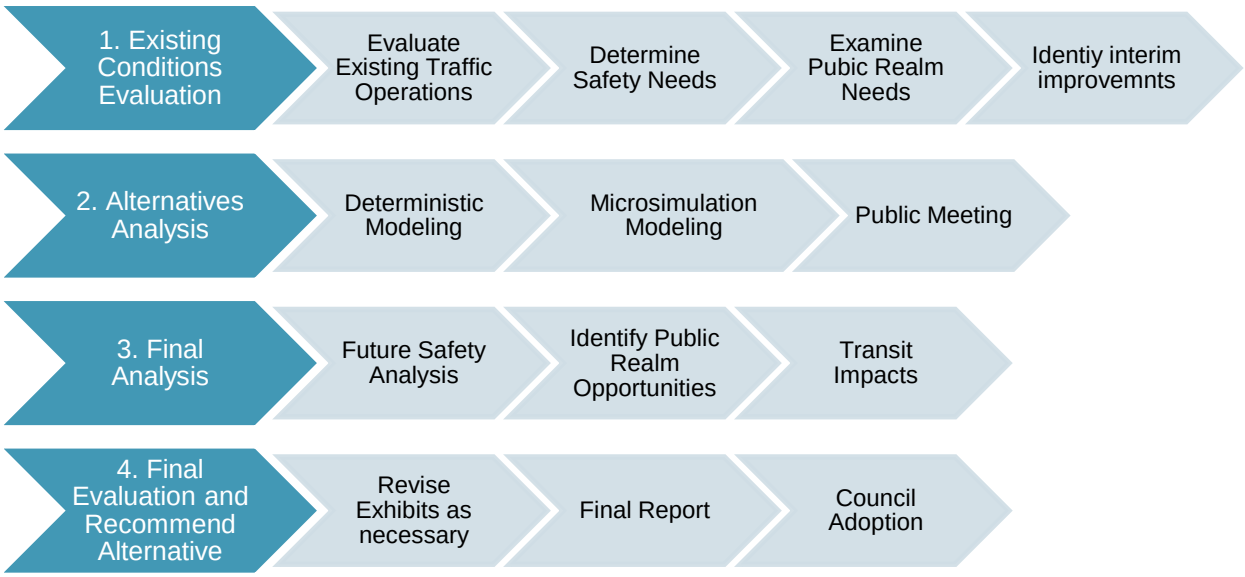


Figure 2. Study Process

1.4 Organization of Report

Following the introduction in Section 1, this report is also organized following the general structure of the study process shown in Figure 2.

- Section 2 describes existing conditions and determines needs;
- Section 3 presents the forecasted travel models and presents the deterministic modeling results;
- Section 4 describes the interim improvements;
- Section 5 discusses the microsimulation analysis;
- Section 6 details the safety evaluation and presents safety recommendations for each alternative;
- Section 7 summarizes the public meeting; and
- Section 8 compares alternatives, recommends a preferred alternative, presents a cost estimate, and discusses next steps.

2 Existing Conditions Evaluation

2.1 Land Use

The Main Street corridor is entirely within the Downtown Core neighborhood and the Community Core – specifically Retail Core – districts within the Ketchum zoning map. These designations match the land uses on the ground, as evident by a thriving main street corridor. The City's *2014 Comprehensive Plan*[5] identifies potential gateways to the city located at River Street and 6th Street along Main Street that are intended to let travelers to know they are entering an important part of Ketchum. Though it is evident that a traveler is entering a special district as a result of the walkable, Main Street land uses, no specific gateway elements exist. This stretch of town is a major part of the heart of Ketchum, supporting small businesses, restaurants, tourist destinations, and local life.

This corridor is expected to continue with commercial land uses in the future as it provides a core identity to the town. The

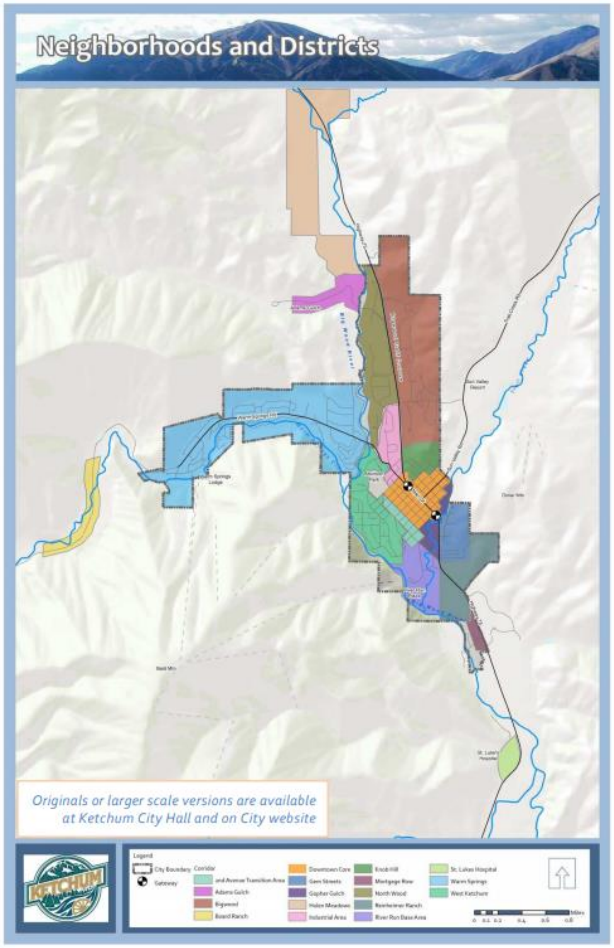


Figure 3. Ketchum Neighborhoods and Districts

[5] City of Ketchum. 2014 Comprehensive Plan. February 18, 2014. Available online: https://www.ketchumidaho.org/planning-building/page/comprehensive-plan

2014 Comprehensive Plan points to a slight differentiation in land uses along this stretch, with a specific focus on the portion between 1st and 5th Streets acting as the Retail Core. The areas bookending that segment are designated as either Commercial Employment or Mixed-Use Commercial, indicating a slightly decreased focus in the Main Street retail environment but a continuation of the diverse mix of uses that comprise much of the rest of downtown. With the construction of the mixed-use building on the south side of Main Street between River and 1st Streets, and the potential development diagonally across the intersection east of River Street, this distinction is not likely evident to most users. Similar change is possible west of 5th Street as well. As a result, the larger stretch between River and 6th Streets largely feels like one place type.

2.2 Public Realm

Of the six blocks that make up the Main Street corridor between River and 6th Streets, some blocks are more successful than others at providing a public realm that supports the walkable, vibrant downtown feel associated with Ketchum. However, more challenging than the success of any given block is the inconsistency of the public realm along the stretch. For instance, the blocks along Main Street from 4th to 6th Streets have a strong public realm supporting pedestrians with amenities such as identity and wayfinding signage, landscaping, larger sidewalks, benches, and bike racks. This stretch feels consistent and promotes a cohesive feel to the corridor (Figure 4). However, moving north or south, the amenities along the blocks oscillate between having a less comfortable and safe public realm and providing certain desirable elements (Figure 5).

Figure 4. Successful Public Realm

Figure 5. Challenged Public Realm

Areas with an inadequate public realm along the corridor currently consists of small, attached sidewalks that share limited space with retail shops, either making walking uncomfortable or lending to a cramped feeling for the adjacent establishments. Many areas along the corridor have limited or no amenities such as trash receptables or benches, as well as limited or no landscaping or tree canopy. The investment in a consistent tree canopy is one of the most successful methods of creating a desirable and safe walking environment. This public realm inconsistency from block to block prevents the downtown core from being unified from a pedestrian point of view and creates smaller segments of the street, rather than one combined corridor. Even the stronger segments of the corridor are limited in their space and amenities,

pointing to an opportunity to reconsider the entire corridor's streetscape in the future. A potential reconfiguration of the roadway may provide a rare opportunity to attempt a larger overhaul.

2.3 Transit Facilities

Mountain Rides is the local transit authority maintaining bus routes throughout the City. Main Street serves as one of the main connection points for the bus system with several different lines running along the roadway. Stops are present in both directions at the 4th Street intersection near the Wells Fargo and at the 1st Street intersection near the Limelight Hotel and Kentwood Lodges. A single Mountain Rides sign delineates the stops but the stops themselves do not feature shelters, safety lighting, or other enhancements.

In conversations with Mountain Rides, the merge taper between 1st Street and River Street makes it difficult for busses to merge back into traffic after picking up passengers.

2.4 Existing Traffic Operations

2.4.1 Existing Intersection Control

The Main Street corridor features a variety of intersection controls along the six blocks. Sun Valley Road, 1st Street, and 5th Street are all signal controlled. 2nd Street and River Street are two-way stop controlled (TWSC) on the side streets and uncontrolled on Main Street. 4th Street is a right out on the side streets with a pedestrian hybrid beacon (PHB) or high intensity activated crosswalk (HAWK) beacon to stop traffic on Main Street for pedestrian crossings.

The Sun Valley Road intersection with Main Street is currently split phased on the north-south (Main Street) movements, meaning these movements occur separately from each other and are not timed concurrently. The east and west (Sun Valley Road) movements feature dedicated left-turn lanes with three section green-arrow signal heads allowing for a protected left-turn phase to occur. Until recently, no pedestrian movements were allowed at Sun Valley Road during vehicular movements but pedestrians were allowed to cross in any direction, even diagonally, during an exclusive pedestrian phase. This pedestrian phase is known as a "pedestrian scramble" or "barn dance" where all vehicles are stopped while pedestrians cross the intersection. As noted in Section 4 of this report, the pedestrian scramble was decommissioned as part of the interim improvements.

The 1st and 5th Street intersections with Main Street are two-phase intersections, meaning the northbound and southbound traffic (Main Street traffic) has a green light to proceed and then the east and westbound traffic proceeds. No exclusive left-turn phases exist and the pedestrian phases occur with the corresponding vehicle through movements. The 4th Street PHB is timed to operate twice during the Sun Valley Road cycle; however, poor compliance is observed with both pedestrians and vehicles, and this causes additional delay and queuing along Main Street.

2.4.2 Existing Volume Development

The project team took traffic counts on August 31, 2021 and identified an AM peak hour beginning at 8:00am and a PM peak hour beginning at 4:15pm. In the AM peak, the northbound movements are the largest traffic volumes throughout the corridor. Conversely, the PM peak is

characterized by commuters traveling southbound, with larger volumes at the southern end of the corridor. Additionally, in the PM peak hour, the number of vehicles taking the westbound left turn at Sun Valley Road increases by a factor of approximately 2.5 times the volume in the AM peak. Traffic counts are provided in **Appendix A**.

The City is a resort destination community with travel patterns that vary throughout the year. The City does not have any automated traffic recorder (ATR) stations of their own, but ITD has two ATRs at the following locations to estimate seasonal variations on SH-75 near Ketchum:

- ATR #28 – SH-75 @ mile post (MP) 135.95 (7.6 miles north of the SH-75 Spur junction)
- ATR #68 – SH-75 @ MP 119.4 (2.9 miles north of Bullion Street in Hailey, ID)

Using data from the ATRs, the project team analyzed traffic volumes on SH-75 for fluctuations throughout a given year. The highest traffic volumes were observed in the summer months, averaging over 15,000 vehicles per day (vpd) in June, July, and August at ATR #68 and around 2,400 vpd at ATR #28. The lowest traffic volumes were observed in the winter months of December, January, and February with volumes less than 12,000 vpd at ATR #68 and less than 900 vpd at ART #28. There is a significant drop in volume on the highway from north and south of Ketchum. Table 1 shows the average monthly seasonal factors determined from the historical ATR data. Volumes from 2020 are not included in the analysis due to the Covid-19 pandemic and associated shutdowns.

Table 1. Monthly Seasonal Factors (MSFs)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg MSF	0.90	0.94	0.88	0.85	0.93	1.11	1.24	1.19	1.08	1.03	0.88	0.98
w/o 2020	**0.89**	**0.93**	**0.89**	**0.89**	**0.94**	**1.11**	**1.24**	**1.18**	**1.06**	**1.02**	**0.88**	**0.97**

The seasonal adjustments results are calculated by dividing the August 2021 count by a factor of 1.18. This represents an 18 percent decrease in volumes to represent a typical day. Figure 4 details the results of the volume adjustments.

Figure 6. Main Street AM and PM Peak Hour Turning Movement Counts

2.4.3 Capacity and Level of Service

Capacity is defined as the maximum rate at which vehicles can pass through a given point in an hour under prevailing conditions. Intersection capacity is measured by evaluating the critical lane groups that experience the most delay for stop-controlled intersections. A volume to capacity (v/c) ratio less than 0.85 generally indicates that adequate capacity is available, and vehicles are not expected to experience significant queues or delays. As the v/c ratio approaches 1.0, traffic flow may become unstable and significant delay and queuing conditions may occur. Once the demand exceeds capacity, defined as a v/c ratio greater than 1.0, traffic flow is unstable and excessive delay and queuing is expected. The concept of level of service (LOS) was developed to correlate numerical traffic operational data to subjective descriptions of traffic performance at intersections. LOS is defined as the system of six designated ranges, from “A” (best) to “F” (worst), used to evaluate performance. Table 2 presents the Highway

Capacity Manual (HCM)[6] thresholds based on delay at stop-controlled and signalized intersections.

Table 2. LOS Thresholds for Motor Vehicles at Intersections

LOS	Stop Control Intersection Control Delay (seconds/vehicle)	Signalized Intersection Control Delay (seconds/vehicle)
A	≤ 10	≤ 10
B	10 – 15	10 – 20
C	15 – 25	20 - 35
D	25 – 35	35 - 55
E	35 – 50	55 - 80
F	> 50	> 80

Source: National Academies Press. Highway Capacity Manual, 6th Ed. A Guide for Multimodal Mobility Analysis.

The project team used Synchro 11 software to model and analyze study area intersections under existing conditions, and HCM 6th Edition and HCM 2000 analysis methods to produce the analysis reports.

2.4.4 Existing Corridor Inefficiencies

The corridor had several operational inefficiencies that affect intersection performance that were modeled in the initial deterministic analysis. A separate signal timing update occurred parallel to this analysis and HDR worked with City staff and ITD to implement some mitigation measures, described in Section 4. The inefficiencies include:

- The Sun Valley Road intersection is currently split phased on the north-south (Main Street) movements, meaning the movements occur separately from each other and are not timed concurrently. This impedes two-way progression on the corridor and increases the cycle length at the intersection, which intern increases delay;
- The pedestrian scramble at Sun Valley Road increases the signal cycle length. At the pedestrian clearance, time is calculated using the diagonal distance across the intersection instead of the shorter distance on the legs of the intersection;
- Although the signals along the corridor are closely spaced, they are not interconnected, which does not allow for a coordinated signal timing plan to be implemented. This limits vehicle progression through the corridor as green bands are unlikely to line up;
- The southbound travel lanes must merge from two lanes to one lane between River Street and 1st Street. Drivers were observed getting into the continuous left lane before 1st Street to avoid having to perform the merge maneuver before River Street. This creates an underutilization of lanes at the 1st Street intersection, degrading operations and capacity at the intersection; and

[6] National Academies Press. Highway Capacity Manual, Sixth Edition: A Guide for Multimodal Mobility Analysis.

- The "split" of Main Street at the 6th Street intersection causes some confusion due to the lack of proper pavement markings and way finding signage in advance of the intersection.

2.4.5 Summer Peak Existing Traffic Operations

Given the large variability of traffic volumes during the summer months compared to other months, the project team analyzed the intersections with the unadjusted August volumes for comparison with the seasonally adjusted volumes.

Table 3. Summer Peak Existing Traffic Operations

Intersection	Overall Intersection LOS	Movement				
		Lane Group	Delay (s)	LOS	95th Percentile Queue Length (feet)	V/C Ratio
1, River / Main	C (D)	NET/L/R	18.1 (24.7)	C (C)	4.4 (15.4)	0.072 (0.199)
		SWT/L/R	23.4 (28.9)	C (D)	2.2 (4.4)	0.033 (0.053)
		NWT/L/R	8.2 (10.5)	A (B)	2.2 (2.2)	0.032 (0.022)
		SET/L/R	0 (8.4)	A (A)	0 (0)	0 (0.004)
2, First / Main	A (A)	NET/L/R	16.7 (15.1)	B (B)	15.4 (50.6)	0.19 (0.34)
		SET/L	3.2 (7.7)	A (A)	13.2 (77)	0.16 (0.39)
		SET/R	3.2 (7.7)	A (A)	13.2 (72.6)	0.17 (0.42)
		NWT/L	4.7 (6.6)	A (A)	46.2 (50.6)	0.40 (0.26)
		NWT/R	4.7 (6.6)	A (A)	44 (44)	0.44 (0.29)
		SWT/L/R	17 (16.8)	B (B)	22 (99)	0.26 (0.58)
3, Second / Main	C (B)	NET/L/R	16.6 (14)	C (B)	4.4 (4.4)	0.052 (0.087)
		SWT/L/R	19.3 (14)	C (B)	2.2 (2.2)	0.044 (0.049)
		SET/L	9.1 (8.2)	A (A)	0 (0)	0.005 (0.004)
		SET/R	0 (0)	A (A)	0 (0)	0 (0)
		NWT/L	8 (9.1)	A (A)	2.2 (2.2)	0.025 (0.024)
		NWT/R	0.1 (0.1)	A (A)	0.1 (0)	0 (0)
4, Sun Valley / Main*	D (D)	NWT/L/R	57.6 (52.4)	E (D)	#345 (#250)	0.95 (0.83)
		NEL	47.3 (51.1)	D (D)	48 (66)	0.43 (0.44)
		NET/R	43.8 (48.5	D (D)	88 (122)	0.42 (0.52
		SWL	48.8 (50.2)	D (D)	90 (199)	0.37 (0.41)
		SWT/R	43.2 (44.7)	D (D)	95 (153)	0.37 (0.41)
		SET/L/R	28.3 (41.5)	C (D)	138 (281)	0.41 (0.73)

Intersection	Overall Intersection LOS	Movement				
		Lane Group	Delay (s)	LOS	95th Percentile Queue Length (feet)	V/C Ratio
5, Fourth / Main*	A (A)	SET/L/R	0.1 (0.2)	A (A)	0 (0)	0.14 (0.21)
		NWT/L/R	0.1 (0.1)	A (A)	0 (0)	0.19 (0.14)
		NER	0 (0)	A (A)	0 (0)	0.01 (0.01)
		SWR	0 (0)	A (A)	0 (0)	0.03 (0.04)
6, Fifth / Main	A (A)	NET/L/R	19.5 (19.2)	B (B)	72 (61.6)	0.43 (0.45)
		NWT/L	3.9 (4)	A (A)	33 (26.4)	0.27 (0.19)
		NWT/R	4 (4.1)	A (A)	33 (24.2)	0.28 (0.21)
		SET/L	3.7 (4.9)	A (A)	24.2 (50.6)	0.23 (0.35)
		SET/R	3.8 (5.2)	A (A)	26.4 (50.6)	0.24 (0.37)
		SWT/L/R	18.5 (19.5)	B (B)	31 (63.8)	0.22 (0.51)
7, Sixth / Main	B (B)	NEL	10.2 (10.9)	B (B)	2.2 (2.2)	0.023 (0.036)
		SWL	10.2 (9.8)	B (A)	2.2 (4.4)	0.03 (0.051)

AM (PM) results
= 95th percentile volume exceeds capacity, queue may be longer
*Indicates that HCM 2000 was used due to pedestrian phase methodology not being supported

Table 3 represents the overall operations of intersections during the month of August, which is projected to see higher than average traffic due to tourism in the Ketchum region. Overall, the intersections operate well during each peak hour under existing conditions with some left-turning movements that have longer than desirable delays. The intersection of Main Street and Sun Valley Road operates poorly during the PM peak hour as the existing pedestrian scramble phase causes added delay to the intersection. In addition, the Main Street and Sun Valley Road intersection had significant delay of over 50 seconds for the NWT and left-turn movements onto Main Street in the AM and PM peaks. The NWT AM peak had the longest delay of 57.6 seconds at LOS E. The overall for this intersection is LOS D. The River and Main Street intersection also experienced high delays for the NEL and SWL movements. The delay for these movements was about 21 seconds in the AM and 26 seconds in the PM. The intersection has an overall LOS C for the AM peak and LOS D for the PM peak. Several queue lengths from intersections are estimated to be long and impact adjacent intersections. Detailed reports are provided in **Appendix B**.

2.4.6 Seasonally-Adjusted Traffic Operations

Table 4. Seasonally Adjusted Traffic Operations

Intersection	Overall Intersection LOS	Movement				
		Lane Group	Delay (s)	LOS	95th Percentile Queue Length (feet)	V/C Ratio
1, River / Main	C (C)	NET/L/R	14.6 (19.5)	B (C)	2.2 (11)	0.045 (0.136)
		SWT/L/R	19.7 (22.3)	C (C)	2.2 (2.2)	0.022 (0.034)
		NWT/L/R	8 (9.7)	A (A)	2.2 (2.2)	0.026 (0.016)
		SET/L/R	0 (8.2)	A (A)	0 (0)	0 (0.003)
2, First / Main	A (A)	NET/L/R	16.7 (15.4)	B (B)	13.2 (41.8)	0.17 (0.31)
		SET/L	2.9 (6.1)	A (A)	11 (55)	0.13 (0.32)
		SET/R	3 (6.4)	A (A)	11 (50.6)	0.14 (0.34)
		NWT/L	3.9 (5.4)	A (A)	33 (33)	0.34 (0.22)
		NWT/R	4.3 (5.6)	A (A)	33 (30.8)	0.37 (0.24)
		SWT/L/R	16.9 (16.8)	B (B)	19.8 (81.4)	0.13 (0.54)
3, Second / Main	C (B)	NET/L/R	14.4 (12.5)	B (B)	2.2 (4.4)	0.038 (0.063)
		SWT/L/R	15.7 (12.4)	C (B)	2.2 (4.4)	0.028 (0.054)
		SET/L	8.7 (8)	A (A)	0 (0)	0.003 (0.003)
		SET/R	0 (0)	A (A)	0 (0)	0 (0)
		NWT/L	7.9 (8.7)	A (A)	2.2 (4.4)	0.021 (0.019)
		NWT/R	0 (0.1)	A (A)	0 (0)	0 (0)
4, Sun Valley / Main*	D (D)	NWT/L/R	46.4 (47)	D (D)	#252 (178)	0.39 (0.43)
		NEL	56.2 (51.9)	E (D)	43 (58)	0.57 (0.49)
		NET/R	46.4 (47)	D (D)	76 (105)	0.39 (0.43)
		SWL	47.1 (50.4)	D (D)	78 (168)	0.55 (0.68)
		SWT/R	42.4 (44.2)	D (D)	81 (129)	0.30 (0.36)
		SET/L/R	26.3 (36.1)	C (D)	113 (229)	0.33 (0.59)
5, Fourth / Main*	A (A)	SET/L/R	0.1 (0.1)	A (A)	0 (0)	0.11 (0.18)
		NWT/L/R	0.1 (0.1)	A (A)	0 (0)	0.16 (0.11)
		NER	0 (0)	A (A)	0 (0)	0.01 (0.01)
		SWR	0 (0)	A (A)	0 (0)	0.02 (0.04)
6, Fifth / Main	A (A)	NET/L/R	19.6 (19.2)	B (B)	63 (72)	0.39 (0.41)
		NWT/L	3.3 (4.4)	A (A)	24.2 (11)	0.20 (0.16)
		NWT/R	3.5 (3.6)	A (A)	24.2 (11)	0.23 (0.17)

Intersection	Overall Intersection LOS	Movement				
		Lane Group	Delay (s)	LOS	95th Percentile Queue Length (feet)	V/C Ratio
		SET/L	3.2 (4.2)	A (A)	17.6 (19.8)	0.19 (0.29)
		SET/R	3.3 (4.4)	A (A)	17.6 (19.8)	0.20 (0.31)
		SWT/L/R	18.7 (19.5)	B (B)	29 (59)	0.21 (0.47)
7, Sixth / Main	A (A)	NEL	9.9 (10.4)	A (B)	2.2 (2.2)	0.018 (0.028)
		SWL	9.9 (9.6)	A (A)	2.2 (2.2)	0.024 (0.04)

The seasonal adjusted volume operations reduced the overall delay times (Table 4); however, the Sun Valley Road and Main Street intersection still has significant delays for the NET movement in both the AM and PM peak hours. The intersection has an overall LOS D as generally the queues clear during one signal cycle. All other intersections operate with a LOS C or better during both AM and PM peak hours. Detailed reports are provided in **Appendix B.**

2.5 Crash History & Evaluation

2.5.1 Annual Average Daily Traffic Volume

The project team converted PM peak hour traffic volume data to annual average daily traffic (AADT) by using a conversion factor of 8.70. This factor was developed by comparing the AADT values on Main Street between 4th Street and 5th Street and between 2nd Street and Sun Valley Road to the related PM peak volume. The AADTs were divided by the PM peak hour traffic volumes to estimate a conversion factor from peak to AADT volumes on the corridor. The calculated factors were 8.72 for the segment between 2nd Street and Sun Valley Road and 8.68 for the segment between 4th Street and 5th Street. The average of these two values (8.70) was applied throughout the corridor.

2.5.2 Crash Costs and EPDO Weighting Factor

Average crash costs by severity are used in the existing conditions equivalent property damage only (EPDO) crash analysis. Average crash costs, shown in Table 5**,** are taken from ITD's 2020 traffic crash resource[7]. The costs are economic costs reflecting the tangible (e.g., medical bills, car repairs, towing, legal, loss of productivity, etc.) cost of crashes. The EPDO weighting factors in Table 5 are calculated relative to property damage only (PDO) crash costs (i.e., fatal crash cost of $10,322,433 divided by PDO crash cost of $3,430 equals a weighting factor of 2,968).

[7] Idaho Traffic Crashes 2020 ; https://apps.itd.idaho.gov/Apps/OHS/Crash/20/Analysis.pdf

Table 5. Economical Crash Costs

Crash Severity	Economic Crash Costs	EPDO Weighting Factor
K - Fatal	$ 10,322,433	2,968
A – Suspected Serious Injury	$ 493,671	142
B – Suspected Minor Injury	$ 134,460	39
C – Possible Injury	$ 68,660	20
Property Damage Only (PDO)	$ 3,478	1

The project team conducted a crash analysis on Main Street for the intersections and the blocks (or segments) between the intersections. Crashes are considered intersection crashes if coded as so in the Local Highway Technical Assistance Council (LHTAC) data; otherwise, the crashes are considered segment crashes. Crashes are summarized by frequency, type, and severity.

In addition, the project team ranked intersections and segments separately using a combined ranking of crash frequency, crash rate, and EPDO. EPDO assigns the weighting factors from Table 5 to crashes, by severity, to develop a score that reflects frequency and severity. The combined rank is developed by ranking the intersections and segments three times; according to 1) crash frequency (the number of crashes), 2) crash rate and 3) EPDO. The intersection crash rate is calculated by dividing the crash frequency by the total entering traffic volume from 2016 to 2020. The rankings are summed for each location and the location with the lowest score has the highest potential for safety improvement.

2.5.3 Intersection Crashes

During the 5-year study period (2016-2020) there were 25 crashes at intersections on Main Street between River Street and 6th Street. The most frequent crash type was rear end (13 crashes), and the most frequent contributing circumstance was following too close (8 crashes). Most of the crashes were PDO (15 crashes), with two suspected serious injury (A Injury) crashes, four minor injury (B Injury), and four possible injury (C injury) crashes. Most of the crashes occurred in daylight conditions (21 crashes) and on dry roads (17 crashes).

These types of crash patterns are consistent with congested signalized corridors and poor vehicular progression. The congestion increases the likelihood drivers are following too close and will rear-end another vehicle. Poor vehicular progression also increases the number rear end crashes as drivers behave in a stop-and-go pattern, instead of a consistent flow.

Figure 7 shows the number and severity of crashes at the study intersections. Table 6 shows the crash types at the study intersections, and Table 7 shows most frequent crash contributing circumstances.

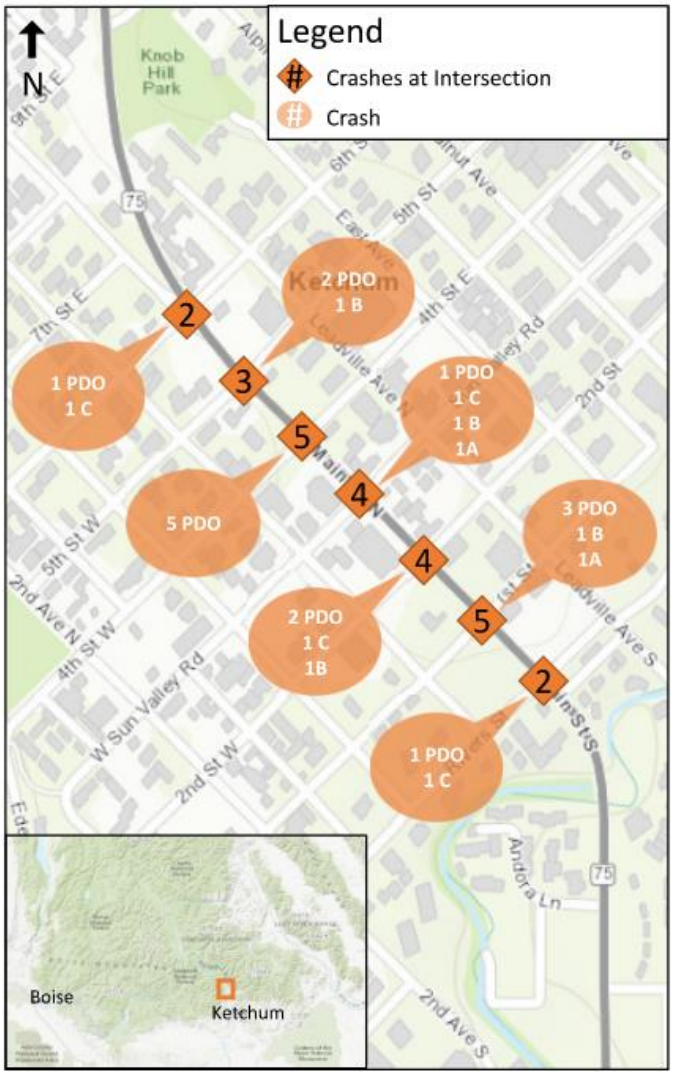


Figure 7. Intersection Crashes by Location and Severity (2016-2020)

Table 6. Intersection Crash Types (2016-2020)

Intersection	Total	Crash Types					
		Rear-end	Side Swipe	Angle	Pedestrian / Pedalcycle	Head on Turning	Road Departure
E River Street / Main Street*	2	1	1				
1st Street / Main Street**	5	1		2	1	1	
2nd Street / Main Street*	4	2	1		1		
Sun Valley Road / Main Street**	4	3	1				
4th Street / Main Street***	5	3	1				1

Intersection	Total	Crash Types					
		Rear-end	Side Swipe	Angle	Pedestrian / Pedalcycle	Head on Turning	Road Departure
5th Street / Main Street**	3	1	2				
6th Street / Main Street****	2	2					
Total	**25**	**13**	**6**	**2**	**2**	**1**	**1**

* Two-way stop-controlled intersection
** Signalized intersection
*** Two-way stop-controlled with rectangular rapid flashing beacon (RRFB) intersection
**** Five-way intersection with two-way stop-controlled

Table 7. Intersection Contributing Circumstances (2016-2020)

Intersection	Total	Circumstances						
		Following Too Close	Failed to Yield	None / Other	Failed to Maintain Lane	Failed to Obey Signal	Inattention	Too Fast for Conditions
E River Street / Main Street*	2	1			1			
1st Street / Main Street**	5	1	1			2	1	
2nd Street / Main Street*	4	2	1	1				
Sun Valley Road / Main Street**	4			2	1			1
4th Street / Main Street***	5	2	1	1	1			
5th Street / Main Street**	3	1	1				1	
6th Street / Main Street****	2	1		1				
Total	**25**	**8**	**4**	**5**	**3**	**2**	**2**	**1**

* Two-way stop-controlled intersection
** Signalized intersection
*** Two-way stop-controlled with rectangular rapid flashing beacon (RRFB) intersection
**** Five-way intersection with two-way stop-controlled

Table 8 shows the frequency, crash rate and EPDO scores for each of the study intersections, and Table 9 shows the resulting ranking and potential for safety improvement. The 1st Street and Sun Valley Road intersections ranked first and second, respectively. They each have experienced one suspected major injury (A injury) crash and rank in the top half of crash frequency.

Table 8. Intersections – Frequency, Crash Rate, EPDO Score (2016-2020)

Intersection	Crash Frequency (Total Crashes from 2016-2020)	Crash Rate (Crashes per Million Entering Vehicles (MEV))	EPDO Score
E River Street / Main Street	2	0.12	21
1st Street / Main Street	5	0.28	184
2nd Street / Main Street	4	0.28	61
Sun Valley Road / Main Street	2	0.25	202
4th Street / Main Street	4	0.37	5
5th Street / Main Street	5	0.18	41
6th Street / Main Street	3	0.13	21

EPDO = equivalent property damage only

Table 9. Intersection - Potential for Safety Improvement (2016-2020)

Intersection	Crash Frequency Rank	Crash Rate Rank	EPDO Score Rank	Combined Score
1st Street / Main Street	1	2	2	5
Sun Valley Road / Main Street	3	4	1	8
2nd Street / Main Street	3	3	3	9
4th Street / Main Street	1	1	7	9
5th Street / Main Street	5	5	4	14
6th Street / Main Street	6	6	5	17
E River Street / Main Street	6	7	5	18

EPDO = equivalent property damage only

2.5.4 Segment Crashes

During the 5-year study period, there were 18 non-intersection related crashes on Main Street between E River Street and 6th Street. The most frequent crash type was rear end (9 crashes), and the most frequent contributing circumstance was following too close (4 crashes). Most of the crashes were PDO (11 crashes), with two suspected serious injury (A Injury) crashes, and five possible injury crashes (C Crashes). Most of the crashes occurred in daylight conditions (17 crashes) and clear sky (17 crashes).

Figure 8 shows the number and severity of crashes at the study segments. Table 10 shows the crash types on each segment, and Table 11 shows most frequent crash contributing circumstances. As with the intersection crashes, these types of crash patterns are consistent with congested signalized corridors and poor vehicular progression. The congestion increases the likelihood drivers are following too close and will rear-end another vehicle. Poor vehicular

progression also increases the number rear end crashes as drivers behave in a stop-and-go pattern, instead of a consistent flow.

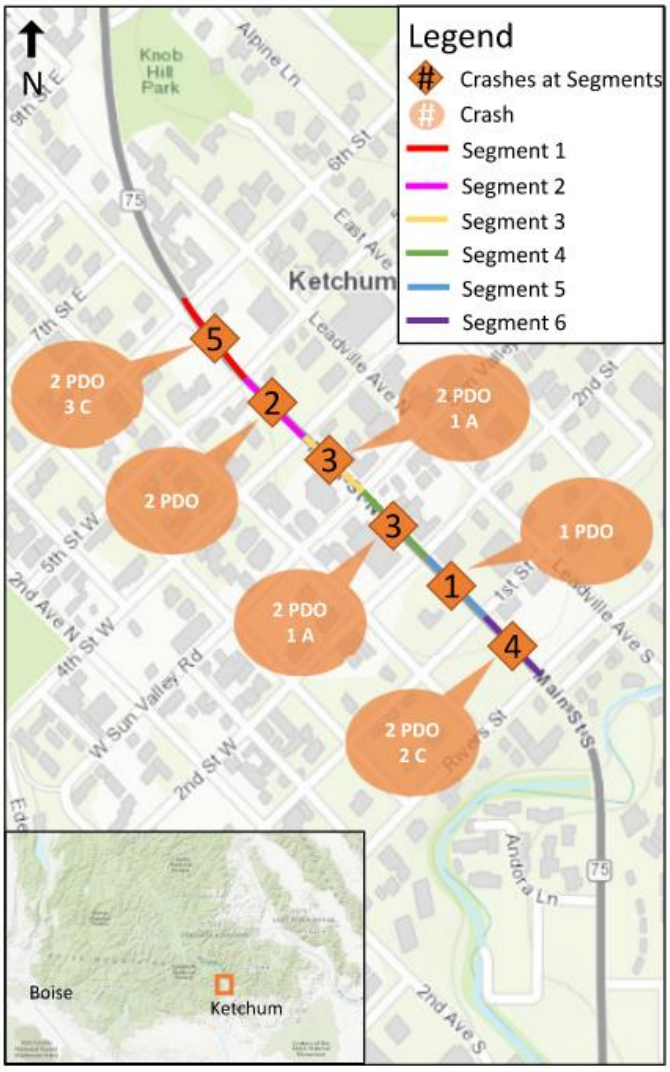


Figure 8. Segment related crashes by location and severity

Table 10. Segment Crash Types (2016-2020)

Intersection	Total	Crash Types							
		Rear-end	Side Swipe Same Direction	Parked Car	Pedestrian / Pedalcycle	Overturn	Same Direction Turning	Backed into	Angle
E River Street to 1st Street	4	3		1					
1st Street to 2nd Street	1	1							
2nd Street to Sun Valley Road	3	3							
Sun Valley Road to 4th Street	3				1			1	1
4th Street to 5th Street	2	1		1					
5th Street to 6th Street	5	1	2			1	1		
Total	**18**	**9**	**2**	**2**	**1**	**1**	**1**	**1**	**1**

Table 11. Segment Contributing Circumstances (2016-2020)

Intersection	Total	Circumstances								
		Following Too Close	None / other	Inattention	Failed to Maintain Lane	Alcohol Impaired	Distraction	Foot Slipped Off or Caught on Pedal	Improper Turn	Failed to Signal
E River Street to 1st Street	4	2		2						
1st Street to 2nd Street	1							1		
2nd Street to Sun Valley Road	3	1	1				1			
Sun Valley Road to 4th Street	3		1			2				
4th Street to 5th Street	2	1	1							
5th Street to 6th Street	5		1		2				1	1
Total	**18**	**4**	**4**	**2**	**2**	**2**	**1**	**1**	**1**	**1**

Table 12 shows the frequency, crash rate and EPDO scores for each of the study segments and Table 14 shows the resulting ranking and potential for safety improvement. Table 13 shows the crash rates and the related critical crash rates using a level of confidence of .95 (K=1.645). Idaho's 2020 crash rate for local roads was 1.653[8]. Critical crash rate was calculated by adding

[8] Idaho Traffic Crashes 2020 ; https://apps.itd.idaho.gov/Apps/OHS/Crash/20/Analysis.pdf

1.653 (Idaho's 2020 crash rate for local roads) to K*(1.653/MVM)$^{1/2}$ +.5/MVMT. Million vehicle miles (MVM) was specific to each segment. Critical crash rates were calculated since the segment lengths are only .05 miles each. The highest ranking for segment crashes is between 5th Street and 6th Street, and it is the only segment to be over the critical crash rate. In addition, the crash rate for the entire Main Street segment is over the calculated critical crash rate.

Table 12. Segment – Frequency, Crash Rate, EPDO Score (2016-2020)

Segment	Crash Frequency (Total Crashes from 2016-2020)	Crash Rate (Crashes per MVM)	EPDO Score
E River Street to 1st Street	4	3.45	42
1st Street to 2nd Street	1	1.09	1
2nd Street to Sun Valley Road	3	3.37	144
Sun Valley Road to 4th Street	3	3.91	144
4th Street to 5th Street	2	2.44	2
5th Street to 6th Street	5	5.26	62

MVM = million vehicle miles; EPDO = equivalent property damage only

Table 13. Segment – Crash rate vs Critical Crash Rate (2016-2020)

Segment	Crash Rate (Crashes per MVM)	Critical Crash Rate (Crashes per MVM)	Over or under Critical Crash Rate
E River Street to 1st Street	3.45	4.05	Under
1st Street to 2nd Street	1.09	4.41	Under
2nd Street to Sun Valley Road	3.37	4.46	Under
Sun Valley Road to 4th Street	3.91	4.72	Under
4th Street to 5th Street	2.44	4.60	Under
5th Street to 6th Street	5.26	4.35	Over
Entire Segment	3.27	2.65	Over

MVM = million vehicle miles

Table 14. Segment - Potential for Safety Improvement (2016-2020)

Segment	Crash Frequency Rank	Crash Rate Rank	EPDO Score Rank	Combined Score
5th Street to 6th Street	1	1	3	5
Sun Valley Road to 4th Street	3	2	1	6
2nd Street to Sun Valley Road	3	4	1	8
E River Street to 1st Street	2	3	4	9
4th Street to 5th Street	5	5	6	15
1st Street to 2nd Street	6	6	5	18

EPDO = equivalent property damage only

2.5.5 Additional Qualitative Safety Issues

The project team learned of safety concerns with the corridor from conversations with City staff, the public at public involvement meetings, and with the City Council. These concerns may not be directly contributing to crashes within the study area, but they do increase the amount of stress that pedestrians, bicyclists, and motorists feel when navigating the area.

Several intersections have multiple approaches to single parcels or long vehicle approaches that could be consolidated. For example, at 1st Street, the access to the Village Market is very long and close to the intersection, which creates more turning conflicts with pedestrians than necessary if the access was consolidated. Additionally, the Veltex property has two access points less than 10 feet away from the intersection, which cause confusion at the intersection. City staff noted that some individuals use the two approaches to avoid the intersection by cutting through the Veltex parking lot. Figure 9 and Figure 10 show the existing conditions at these locations.

Figure 9. Large Access and Lack of ADA/PROWAG Complaint Facilities at 1St Street

Figure 10. Multiple Approaches Close to the 5th Street Intersection

The Main Street Corridor also is lacking facilities that are compliant with the Americans with Disabilities Act (ADA) and Public Rights-of-Way Accessibility Guidelines (PROWAG). Most of the curb ramps do not have truncated domes or wheelchair-accessible pedestrian pushbuttons. This increases the likelihood that visually impaired and wheelchair-dependent users may enter the intersection during a conflicting vehicle movement. Figure 11 shows a non-compliant corner on the corridor.

Figure 11. ADA/PROWAG Noncompliant Corner at Sun Valley Road and Main Street

In conversations with City staff, and during a walking tour, concerns were raised about the ability of northbound traffic seeing pedestrians crossing at the River Street intersection. Vehicular traffic is traversing up a hill and the crosswalk markings on the north side of the intersection are difficult to see. With two new hotels expected to redevelop adjacent lots on the corner, there is concern for an increase in pedestrians and that drivers may not be able to stop in time when a pedestrian is crossing. Figure 12 shows the existing conditions at the River Street Intersection.

Figure 12. River Street Intersection View from the South.

3 Future Conditions and Initial Alternatives

3.1 Study Year and Target LOS

For the purposes of this study, the project team identified year 2042 as the design year for the improvements. Per section A.15 of ITD's *Roadway Design Manual*[9] LOS D is "applicable for Federal-aid construction on State and local highway excluding highways on the National Highway System." Since ITD owns Main Street, the project team set a target LOS D for the operations analysis.

3.2 Forecasted Traffic Patterns

The City of Ketchum does not lie within boundaries of a Municipal Planning Organization (MPO) that would produce a travel demand model that projects trip generation out into the future. Therefore, the project team calculated an average growth rate to represent traffic volume growth.

Traffic volumes on SH-75 were analyzed using historical data from ITD's ATRs to see how they have grown between 1990 and 2019. Due to the Covid 19 pandemic shutdowns, 2020 data was

[9] Idaho Transportation Department (ITD). Roadway Design manual. 2012

again excluded. Historical data from the ATR stations show patterns of steady and rapid growth on SH-75 up to the early 2000s, followed by a steep decline that coincides with the Great Recession. Traffic volumes started increasing again around 2012 and have steadily increased each year approaching the highest volumes seen before the Great Recession. Using the ATR data, the project team calculated a historical annual average growth rate of 1.44 percent for SH-75 and applied it as a regional growth factor for the City of Ketchum. Figure 13 and Figure 14 show the historical patterns of the AADT along SH-75.

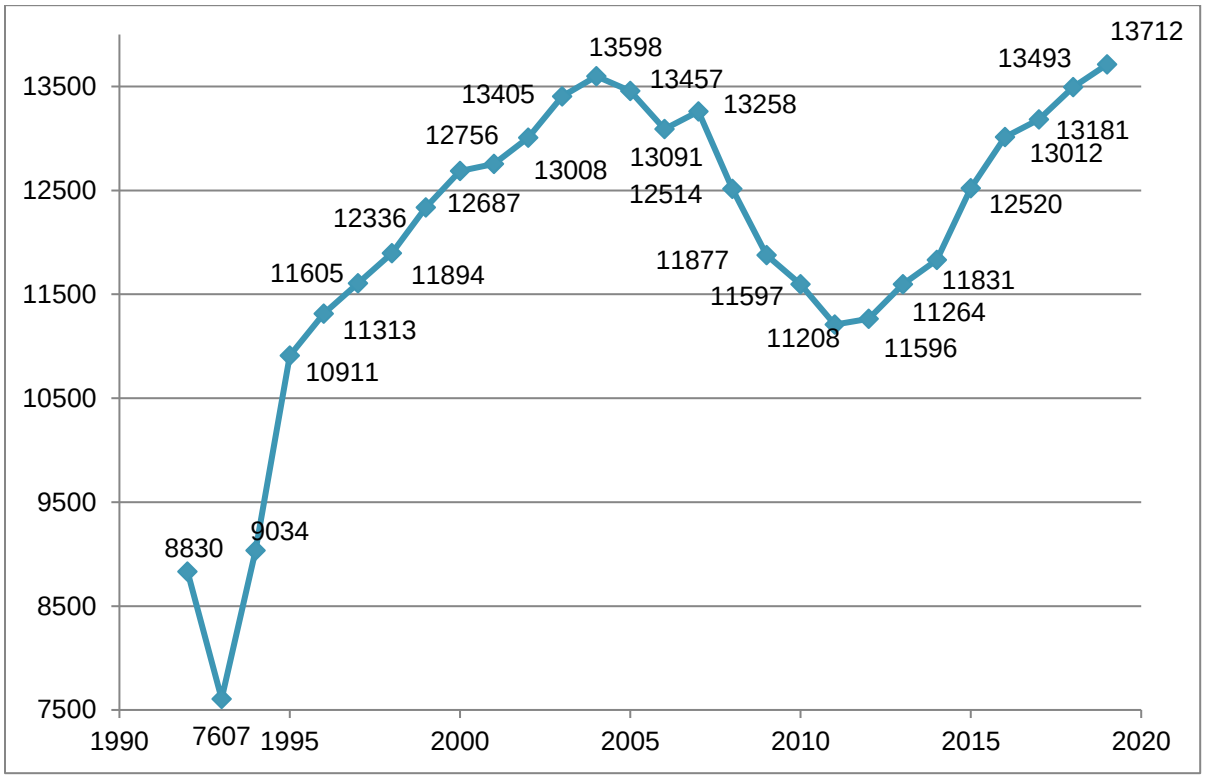


Figure 13. ATR #68 Historic AADT

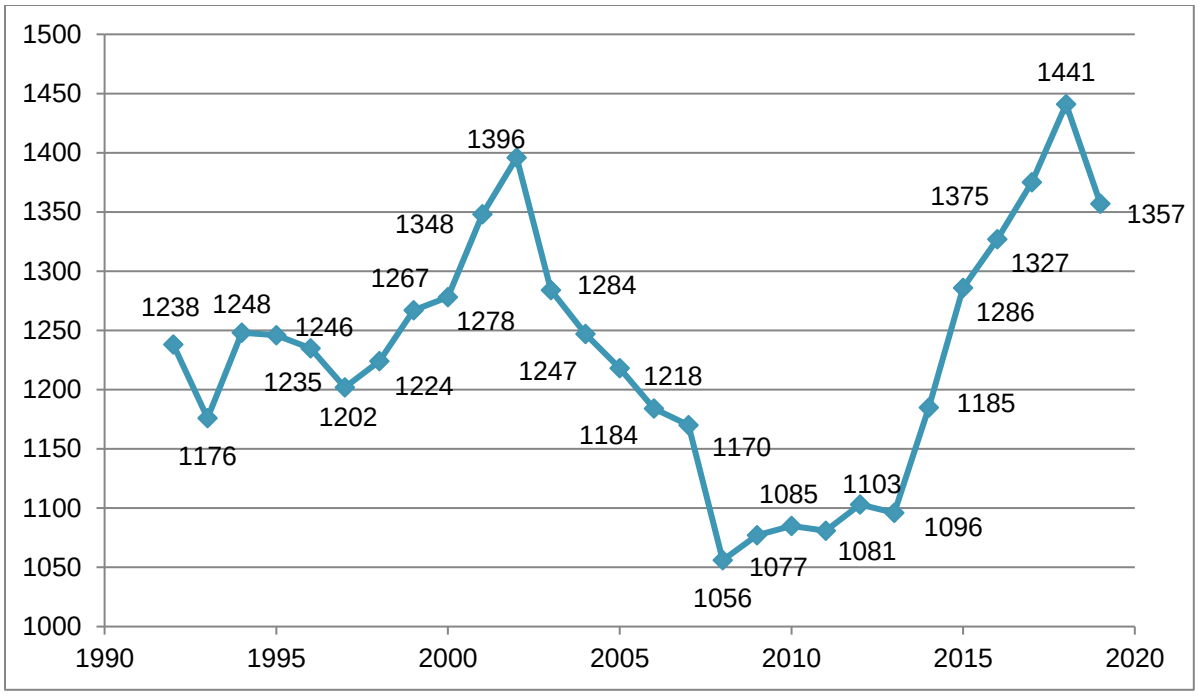


Figure 14. ATR #28 Historic AADT

The project team developed two separate volume scenarios for this study: 1) applying the growth rate to the unadjusted August counts, called the summer volumes, and 2) applying the growth rate to the adjusted counts, called the average volumes. Forecasted traffic volumes for the AM and PM peak hours are provided in Figure 15 and Figure 16.

Figure 15. Average Main Street 2042 Volumes

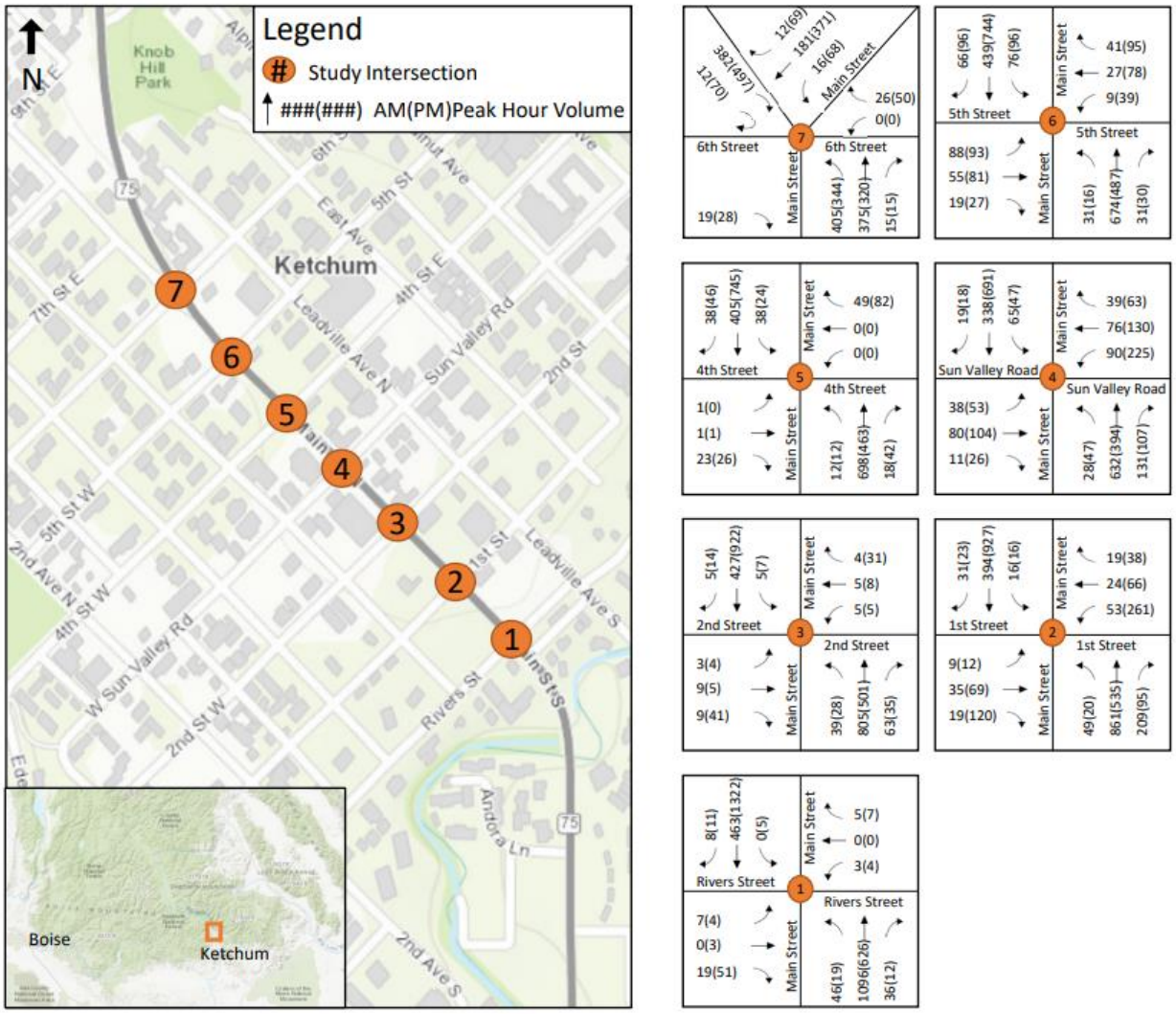


Figure 16. Summer Main Street 2042 Volumes

3.3 Future Scenario Evaluation

The project team developed two scenarios (No-Build and Build 3-lane configuration) along Main Street for both the average and summer volumes conditions for a total of four analysis scenarios (AM and PM peak for each). Table 15 summarizes different analysis scenarios. The analysis results of each are discussed in detail in **Appendix C** – Draft Future Conditions Memo.

Table 15. Main Street Analysis Scenarios

No.	Volumes Used	Scenario	Main Street Cross Section	Signal Operations	Peak Hour Factor
1	2042 Average	No-Build	Two lanes in each direction, no dedicated turn lanes at intersections	Existing signal timing parameters	0.92
2	2042 Summer				
3	2042 Average	Build	One lane in each direction, dedicated left-turn lane at each intersection on Main Street	100 second cycle length, flashing yellow arrows (FYA) for left turns	
4	2042 Summer				

3.3.1 Main Street Scenario 1

The first scenario on Main Street evaluates the existing four-lane section and timing parameters with the 2042 average volumes. Only the Sun Valley Road intersection and River Street intersection perform below ITD's recommended LOS D threshold. Sun Valley Road is estimated to operate at LOS F during the AM peak hour and LOS E during the PM peak hour, largely due to the split phasing of Main Street traffic.

Side street traffic at River Street looking to turn onto Main Street becomes overwhelmed by the large PM peak volumes of southbound traffic and cannot find a gap to turn left. This reduces River Street to an estimated LOS F. The remaining intersections are estimated to operate at an LOS C or better in the AM and PM peak hours. The average speed through the corridor is expected to be 14 miles per hour (mph) in the AM peak and 10 mph in the PM peak.

3.3.2 Main Street Scenario 2

Like the first scenario, the second scenario evaluates the existing four-lane section and timing parameters but with the summer 2042 volumes. Again, the Sun Valley Road and River Street intersections operate below ITD's recommended LOS D threshold. Sun Valley Road is estimated to operate at LOS F in both peak hours with northbound queues approaching 600 feet in the AM peak hour. The northbound traffic is expected to exceed the capacity of the intersection in both the AM and PM peak hours and the southbound traffic is expected to exceed capacity in the PM peak.

River Street continues to operate at LOS F in the PM peak hour, with the remaining intersections operating at an estimated LOS D or better in both peak hours.

The average speed through the corridor is expected to be approximately 8 mph in the morning and 7 mph in the evening peak. The capacity of the corridor is exceeded and over 200 vehicles are estimated to not be served during the peak hours.

3.3.3 Main Street Scenario 3

In scenario three, the 2042 average volumes are analyzed with a three-lane section, one lane in each direction with dedicated left-turn lanes at each intersection along Main Street. Side streets will remain in their existing configurations. The signalized intersections were evaluated with 100-second cycle lengths and flashing yellow arrow (FYA) left-turn operations. Pedestrian clearance

times were reduced due to the smaller crossing distances expected. Sun Valley Road's split phasing and pedestrian scramble phase were replaced with a standard signal phasing.

Overall, the intersections through the corridor are expected to operate at a better LOS in 2042, with the Sun Valley Road intersection experiencing the largest improvement to LOS B in both peak hours.

In terms of the corridor's performance, the average speed through the corridor is expected to be 14 mph in the morning peak and 10 mph in the evening peak. However, the corridor's capacity is exceeded in the evening and 28 vehicles will not be served.

Unfortunately, the LOS and delay benefits expected at the intersections may not be fully realized due to excessive queue lengths. For example, the southbound queue lengths at 1st Street are expected to exceed 330 feet, which would back up traffic through the 2nd Street intersection. 5th Street's estimated queue lengths are also large in the evening peak with southbound traffic backing up nearly 370 feet, which would clog the 6th Street intersection. The HCM's methodology analyzes intersections in isolation and does not consider queue spillback. It's expected that these large queue lengths would interfere with upstream intersection operations, degrading their LOS. Therefore, reported LOS and delay benefits should be read with caution and within the context of the queue lengths.

3.3.4 Main Street Scenario 4

The final scenario on Main Street analyzes the same roadway cross section as Scenario 3, but with the 2042 summer volumes. Signal operations, pedestrian clearances, and phasing are also the same as in Scenario 3.

With the increase in volumes in the summer months, River Street, 1st Street, and 2nd Street are expected to operate at LOS E or LOS F during the peak hours. The traffic at River Street and 2nd Street, both stop-controlled intersections, struggle to find a gap to turn left onto Main Street, increasing delays. In the case of the signalized operations at 1st Street, it is estimated to operate at LOS E in the PM peak hour with the southbound movements experiencing LOS F. The remaining intersections are expected to operate at an acceptable LOS.

As with Scenario 3, the LOS and delay benefits experienced at the intersection may not be fully realized due to excessive queue lengths. For example, at 1st Street, the PM peak southbound traffic experiences an estimated queue length of 1,309 feet. This long of a queue would back traffic up nearly to 6th Street, blocking the other intersections on the corridor. Similarly, the queued northbound traffic at 1st Street in the morning is expected to back up 721 feet, extending beyond River Street.

3.3.5 Main Street Initial Scenarios Comparison

At first glance, reducing the number of lanes from four to three and adding FYA for left turns, analyzed in scenarios 3 and 4, appears to improve the LOS along the corridor. For example, the Sun Valley Road/Main Street intersection operations improve from an LOS F in the PM peak hour to an LOS C with these improvements. However, when looking at the estimated queue lengths at the intersections, they can exceed 1,000 feet in some cases with the reconfigured

cross section. These excessive queues are significantly longer than those estimated under the No-Build scenarios and would back up from one signal through the upstream signalized intersections, causing significant congestion and potential gridlock.

The HCM capacity analysis methodology and the reported measures of effectiveness (MOE) generally do not consider how closely spaced signals interact with one another. Long queue lengths from one signalized intersection would interfere with another's operations, ultimately increasing delay and reducing LOS. By separating the left-turn traffic from the through traffic and adding FYA left-turn operations along Main Street in the 2042 Build scenario, traffic flow tends to improve, but there simply is not enough room on Main Street to store the queued traffic without blocking adjacent intersections.

Side street queue lengths also increase from the No-Build to the Build alternatives under average conditions and get even worse under summer conditions. Short city block lengths, on-street parking, and a single lane in each direction limit the amount of storage available on the side streets. Operations at the stop-controlled intersections are not expected to improve in the Build scenario and delays are expected to increase during the summer peak.

Overall, these results indicate that there is significant operational improvement by removing the split phasing at Sun Valley Road and installing left-turn lanes with FYA. The closely spaced intersections prevent the large volume of traffic from being stored, ultimately creating congestion.

3.4 Additional Scenarios

In consultation with City staff, the project team evaluated the following three additional scenarios, using 2042 summer volumes, to quantify the potential benefits and trade-offs to improve the corridor

- Scenario 5: Add left-turn lanes on Main Street at Sun Valley Road, removing split phasing and pedestrian scramble.
- Scenario 6: Prohibit left-turn movements from Main Street, except at Sun Valley Road where left-turn lanes are added.
- Scenario 7: Install a five-lane section along Main Street with left-turn lanes at each intersection.

Scenario results are summarized below. Summary tables and detailed reports are provided in **Appendix C**.

3.4.1 Main Street Scenario 5 – Add Left-Turn Lanes at Sun Valley Road

In this scenario, parking is removed along two blocks at the Sun Valley Road intersection to add a left-turn lane in each direction on Main Street. The split phasing and pedestrian scramble are removed creating an intersection with traditional phasing. The results show a marked decrease in queue lengths, with queue lengths at Sun Valley Road at less than 65 feet.

3.4.2 Main Street Scenario 6 – Add Left Turns at Sun Valley Road and Prohibit at Other Intersections

This scenario is similar to Scenario 5 in that it adds turn lanes on Main Street at the Sun Valley Road intersection, but it also prohibits left turns at the 1st and 5th street intersections. This pushes all left-turning traffic from Main Street to the Sun Valley Road intersection. This scenario also decreases queue lengths along the corridor, but slightly increases travel times as compared to Scenario 5.

3.4.3 Main Street Scenario 7 – Create a 5-lane Section along Main Street

The final scenario removes parking along the entirety of Main Street to add left-turn lanes at each intersection. The configuration removes the split phasing and pedestrian scramble at the Sun Valley Road intersection. It improves operations to LOS A at 1st Street, Sun Valley Road and 5th Street in the AM peak hour. In the PM peak hour, Sun Valley Road and 5th Street are expected to operate at an LOS B, while 1st Street operates at an LOS C. Travel times for this scenario are expected to be higher than scenarios 5 and 6, but less than the three-lane scenario.

3.4.4 Comparing Additional Scenarios

When compared to the No-Build or three-lane scenarios, scenarios 5, 6, and 7 decrease congestion on the corridor and reduce travel times. Each scenario provides better LOS, less congestion/gridlock, and better progression and travel time for vehicles and pedestrians. The shorter cycle lengths with these scenarios will shorten the wait times for pedestrians at intersections. Scenario 7 achieves vehicle progression goals; however, it produces the greatest impact by removing parking along the corridor. The Scenario 7 configuration may also limit opportunities to install curb extensions on Main Street to shorten the pedestrian crossings.

Figure 17 shows a comparison of the travel times between the three-lane scenario and the other scenarios. During the PM peak hour, the three-lane configuration southbound travel time is nearly double the other alternatives. Adding the left turns at Sun Valley Road reduces the travel times the most. Scenarios 6 and 7 also reduce travel times; however, they have a greater impact on the public in turn restrictions or removing more parking than Scenario 5. Average speeds, shown in Figure 18, are lowest in the three-lane scenario due to the increase in congestion and limited capacity of the roadway.

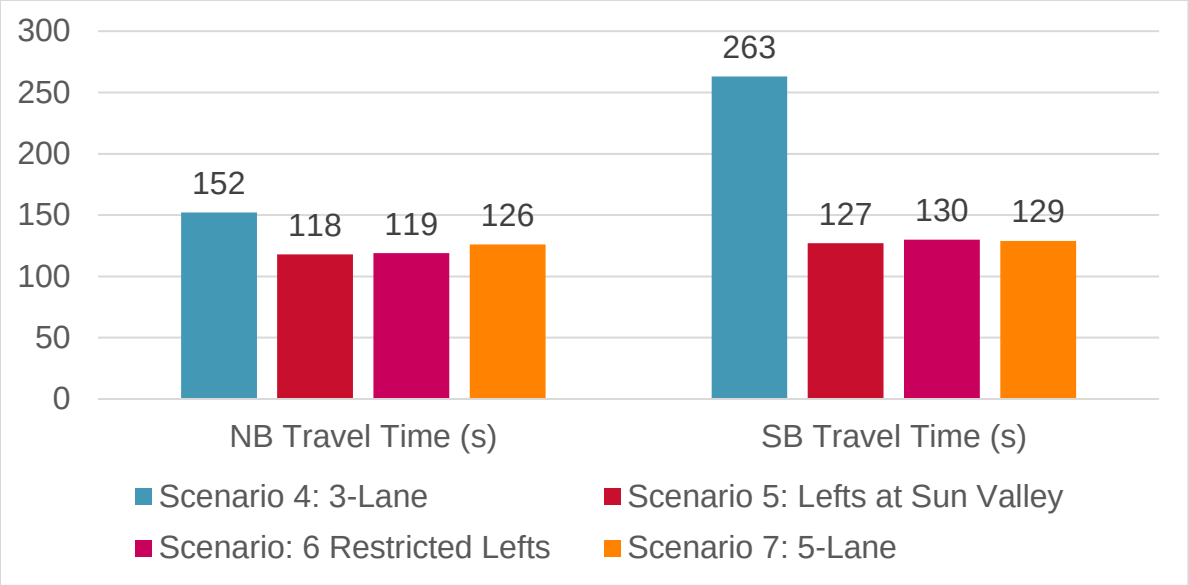


Figure 17. PM Peak Travel Time Comparison of Additional Scenarios

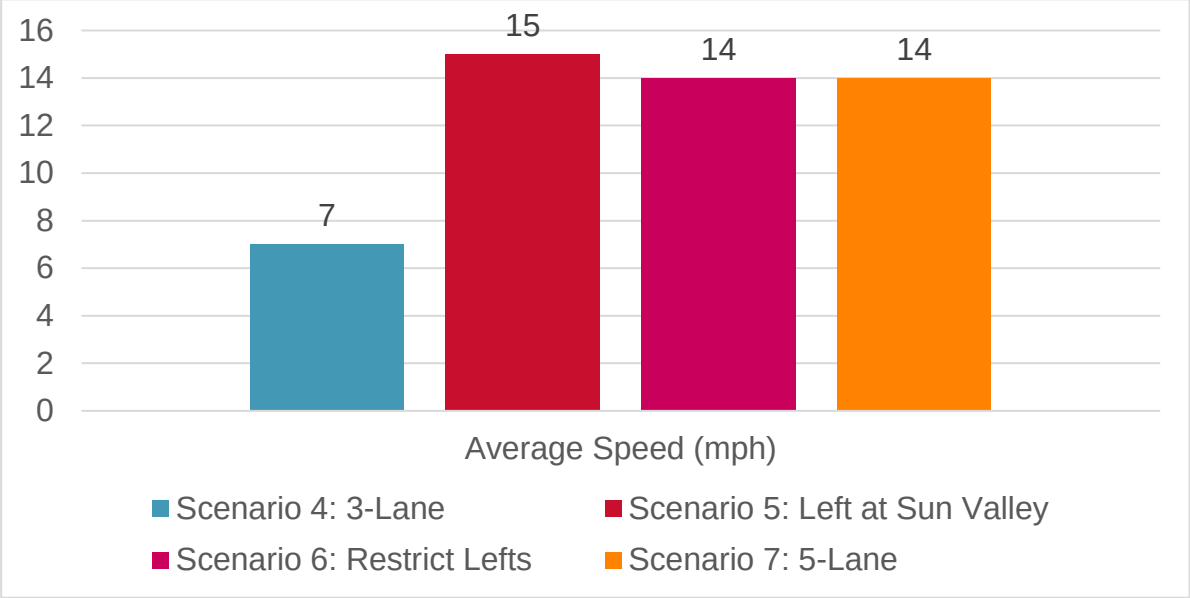


Figure 18. PM Peak Average Speed Comparison of Additional Scenarios

3.5 Initial Recommendation and Limitations of the Analysis

HDR presented the findings of the deterministic analysis to the City Council on April 11, 2022. HDR recommended against pursuing the three-lane section due to the significant impacts to motorized vehicle flow and travel time. Congestion on Main Street could cause traffic to use adjacent streets to get through town, increasing volumes, congestion, and conflicts on local streets. Instead, HDR recommended the City pursue adding left-turn lanes at the Sun Valley Road Intersection, similar to scenario 5, and HDR provided a conceptual rendering, shown in Figure 19.

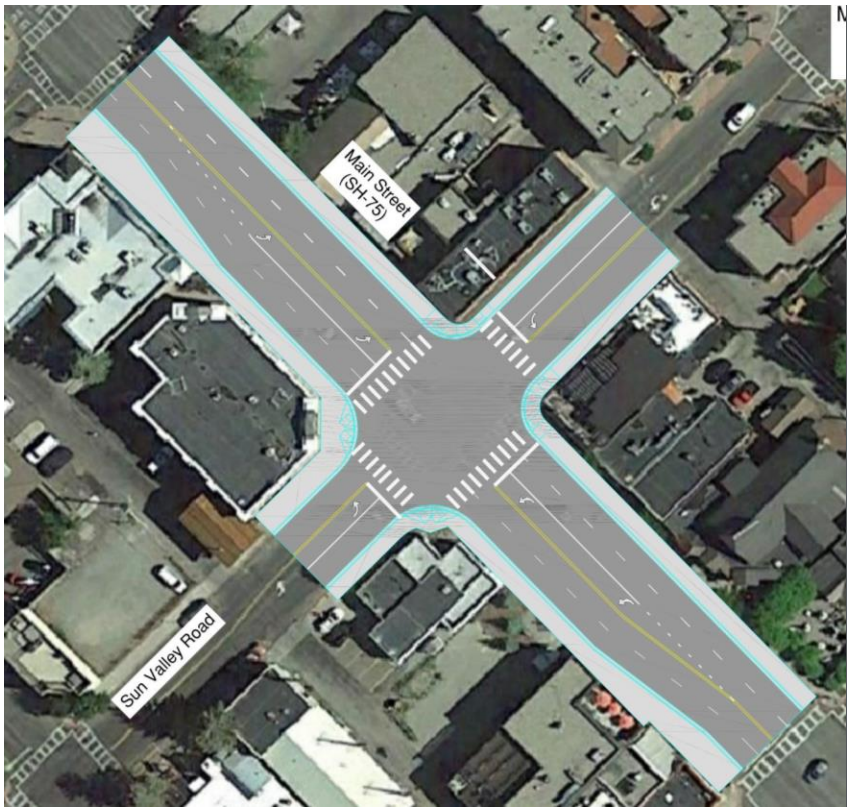


Figure 19. Conceptual Rendering of Adding Left Turns at Sun Valley Road

The above results were performed using HCM methodologies, which are deterministic in nature. The methodologies use parameters, including volume, saturation flow rates, signal timing settings, and others to estimate a statistical model representing traffic. This methodology, employed in Synchro, is usually accurate enough for basic projects, but generally does not consider the immediate influences of adjacent intersection or impacts to individual drivers. Deterministic analysis also does not produce a visual representation of the operations.

The City Council asked for a visual representation of the corridor operations to understand the potential impacts of the different lane reconfiguration scenarios. HDR explained the limitations of the macroscope methodologies and recommended performing a microsimulation analysis to improve the confidence of the analysis and provide videos of the operations.

4 Interim Improvements

At the City's request, HDR and the project team implemented short-term solutions to enhance the corridor operations in the interim period. These improvements were in response to inefficiencies previously identified in Section 2.4.4.

- The project team coordinated with ITD to interconnect the signals to implement a coordinated signal timing plan.

- The City and ITD agreed to remove the pedestrian scramble. While good in its intentions to provide more opportunities for pedestrians to cross Main Street, the scramble added undo delay to vehicles along the corridor.
- HDR developed signal timing plans for the AM and PM peak hours to reduce the number of stops and increase progression during the peak hours. Additionally, HDR recalculated the pedestrian clearance intervals to increase pedestrian safety.
- ITD is currently designing a project south of Ketchum that is scheduled to be built before improvements on Main Street and would provide an opportunity to revise the location of the merge taper between 1st Street and River Street to be south of River Street. This would allow drivers to stay in their lanes for a longer period of time before merging and reduce the impact of the merge on the 1st Street signal.

5 Microsimulation Analysis

The project team performed a microsimulation analysis using Vissim software. The microsimulation is a higher-grade analysis than the previously described deterministic analysis that treats vehicles individually instead of in flow relationship equations. This level of analysis creates a higher confidence in vehicle-to-vehicle interaction and a visual example of estimated operations can be produced. The project team analyzed the following specific alternatives:

- Existing Conditions
- Alternative 1: No-Build
- Alternative 2: Adding Main Street left-turn lanes at Sun Valley Road
- Alternative 3: Three-lane section

The Existing Conditions alternative and Alternative 1 were developed under the following assumptions:

- the pedestrian scramble was removed,
- the new signal timing plans were implemented,
- the merge taper was moved south of River Street, and
- Left turns were protected only and FYA's were not used.

Each alternative evaluated August 2042 volumes grown by the 1.44 percent average annual growth rate and no seasonal adjustments were made to traffic volumes.

In Vissim, the intersection LOS is computed from a microsimulation analysis that is reported as an "estimated LOS." Vissim quantifies overall intersection delays more realistically than typical equation based HCM methods because it models the entire network and how operations at one intersection influences adjacent intersection as it tracks individual vehicle movements and interactions. The estimated LOS for existing conditions is based on HCM criteria and thresholds for signalized and unsignalized intersections. The overall intersection delay and LOS for signalized intersections is based on the total control delay of all movements. The overall intersection delay and LOS for unsignalized intersections is based on the worst stop-controlled movement per HCM standards. Detailed measures of effectiveness tables for individual

movements are provided in **Appendix D**. Unlike in the deterministic analysis, FYAs were not considered for left-turn lanes.

5.1 Existing Conditions Alternative

Like the earlier analysis, the existing conditions are modeled using August 2022 volumes with results shown in Table 16. Each intersection is operating at an estimated LOS C or better in the AM peak hour. The average delay at the Sun Valley Road intersection is at 31 seconds with northbound and southbound queue lengths at approximately 240 feet, or nearly the entire block. In the PM peak hour, each intersection operates at LOS D or better with 40 seconds of average vehicle delay at the Sun Valley Road intersection. At 1st Street and Sun Valley Road, the queue lengths are estimated to be at or exceeding 300 feet both westbound and southbound.

Table 16. Existing Conditions Microsimulation Results

Intersection	Traffic Control	AM Peak		PM Peak	
		Delay (sec/veh)	Estimated LOS	Delay (sec/veh)	Estimated LOS
SH-75 and 6th St	Unsignalized	6.5	A	7.4	A
SH-75 and 5th St	Signalized	9.3	A	9.9	A
SH-75 and 4th St	Unsignalized	15.5	C	15.4	C
SH-75 and Sun Valley Rd	Signalized	31.4	C	38.2	D
SH-75 and 2nd St	Unsignalized	12.0	B	13.1	B
SH-75 and 1st St	Signalized	7.0	A	18.2	B
SH-75 and River Rd	Unsignalized	16.2	C	24.8	C

sec/veh = seconds per vehicle; LOS = level of service

5.2 Alternative 1: No-Build

In the 2042 No-Build conditions, each intersection operates at an LOS C or better in the AM peak with delays at Sun Valley Road approaching 31.3 seconds. The 6th Street intersection performs the worst in the PM peak with an average delay of 146.7 seconds and an LOS F. Although the average delay at the Sun Valley Road intersection is only 47.4 seconds per vehicle, the westbound left turn is estimated to experience delays exceeding 80 seconds at LOS F and queue lengths approaching 590 feet. The 1st Street intersection is expected to have queue lengths exceed 500 feet in the PM peak hour. Table 17 shows a LOS summary for each of the intersections.

Table 17. Alternative 1: No-Build Microsimulation Results

Intersection	Traffic Control	AM Peak		PM Peak	
		Delay (sec/veh)	Estimated LOS	Delay (sec/veh)	Estimated LOS
SH-75 and 6th St	Unsignalized	7.1	A	146.7	F
SH-75 and 5th St	Signalized	11.3	B	24.6	C
SH-75 and 4th St	Unsignalized	15.7	C	48.2	E
SH-75 and Sun Valley Rd	Signalized	33.9	C	47.4	D
SH-75 and 2nd St	Unsignalized	19.4	C	16.9	C
SH-75 and 1st St	Signalized	9.3	A	20.3	C
SH-75 and River Rd	Unsignalized	30.8	D	28.7	D

sec/veh = seconds per vehicle; LOS = level of service

5.3 Alternative 2: Install Left-Turn Lanes at Sun Valley

In Alternative 2, the 2042 volumes are analyzed with left-turn lanes added at the Sun Valley Road intersection. During the AM peak hour, each intersection performs above ITD's LOS D threshold, with River Street performing the worst at LOS D and 31.0 seconds of average delay. In the PM peak hour, each intersection performs at an LOS C or better with River Street again operating the worst at LOS D with 32.2 seconds of delay. The westbound left-turn lane at Sun Valley Road has a queue length of 413 feet in the PM peak hour, but only experiences an average delay of 49.1 seconds. Queue lengths for the 1st Street westbound movements again exceed 500 feet. Table 18 shows a LOS summary for each intersection.

Table 18. Alternative 2: Install Left-Turn Lanes at Sun Valley Microsimulation Results

Intersection	Traffic Control	AM Peak		PM Peak	
		Delay (sec/veh)	Estimated LOS	Delay (sec/veh)	Estimated LOS
SH-75 and 6th St	Unsignalized	7.1	A	9.1	A
SH-75 and 5th St	Signalized	10.6	B	12.6	B
SH-75 and 4th St	Unsignalized	7.5	A	16.6	C
SH-75 and Sun Valley Rd	Signalized	22.9	C	28.1	C
SH-75 and 2nd St	Unsignalized	15.8	C	13.8	B
SH-75 and 1st St	Signalized	8.1	A	16.3	B
SH-75 and River Rd	Unsignalized	31.0	D	32.2	D

sec/veh = seconds per vehicle; LOS = level of service

5.4 Alternative 3: Three-Lane Section

In Alternative 3, the 2042 volumes are analyzed with the roadway lanes configured into one lane in each direction and left-turn lanes at each of the intersections. During the AM peak hour, the River Street intersection operates at an LOS F with 69.7 seconds of delay. The remaining

intersections operate at LOS D or better. In the PM peak hour, the operations at the 6th Street intersection severely degrade. Delay is expected to exceed 11 minutes at this intersection. Main Street splits at 6th Street with SH-75 going northeast and Warm Springs Road going northwest. In the PM peak hour, these two lanes must merge down to one between 6th Street and 5th Street; however, there is such a large number of vehicles that this merge causes a more severe delay at the intersection.

Table 19. Alternative 3: Three-Lane Section Microsimulation Results

Intersection	Traffic Control	AM Peak		PM Peak	
		Delay (sec/veh)	Estimated LOS	Delay (sec/veh)	Estimated LOS
SH-75 and 6th St	Unsignalized	7.5	A	668.3	F
SH-75 and 5th St	Signalized	22.5	C	52.2	D
SH-75 and 4th St	Unsignalized	18.8	C	27.4	D
SH-75 and Sun Valley Rd	Signalized	26.5	C	37.4	D
SH-75 and 2nd St	Unsignalized	41.5	E	46.8	E
SH-75 and 1st St	Signalized	16.3	B	36.2	D
SH-75 and River Rd	Unsignalized	82.5	F	45.3	E

sec/veh = seconds per vehicle; LOS = level of service

Unlike the other three alternatives, the three-lane section does not fully serve the forecasted vehicle demand. In the VISSIM simulations, the model only serves about 81 to 89 percent of the forecasted vehicle traffic. This is due to both no room for vehicles to turn onto Main Street and the long wait north of 6th Street. Figure 20 and Figure 21 show the long queue lengths and congestion.

Figure 20. Alternative 3 Long Queue Lengths – South End

Figure 21. Alternative 3 Long Queue Lengths - North End

5.5 Travel Times and Average Speeds

Figure 22 and Figure 23 summarize the estimated travel times of each alternative under 2042 conditions and the existing conditions (2022) model. The travel time segments are assumed to begin and end 500 feet north of 6th Street and 500 feet south of River Street.

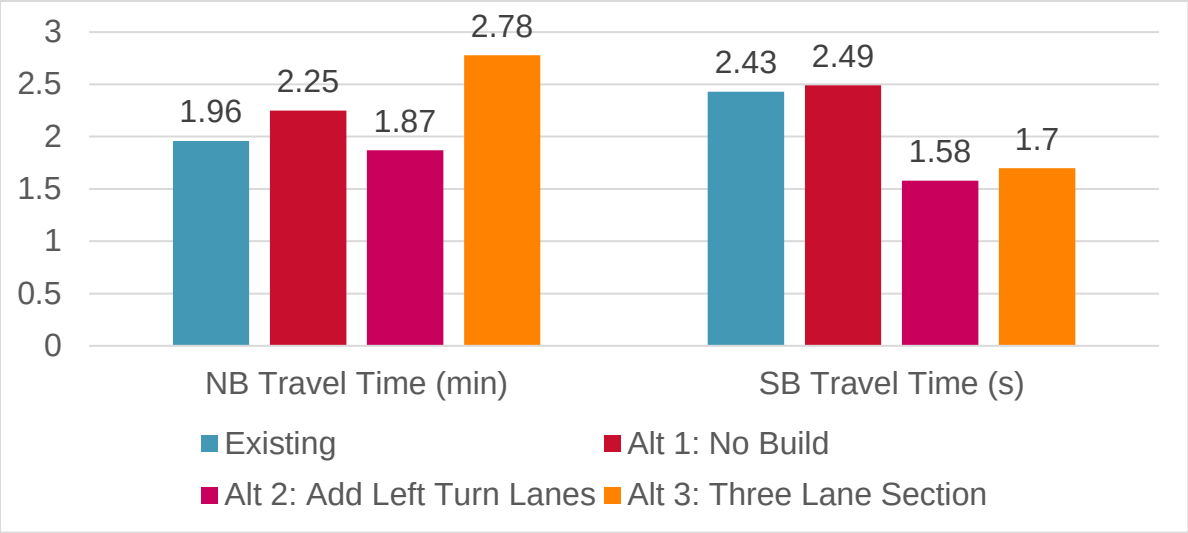


Figure 22. AM Peak Microsimulation Travel Time Comparison

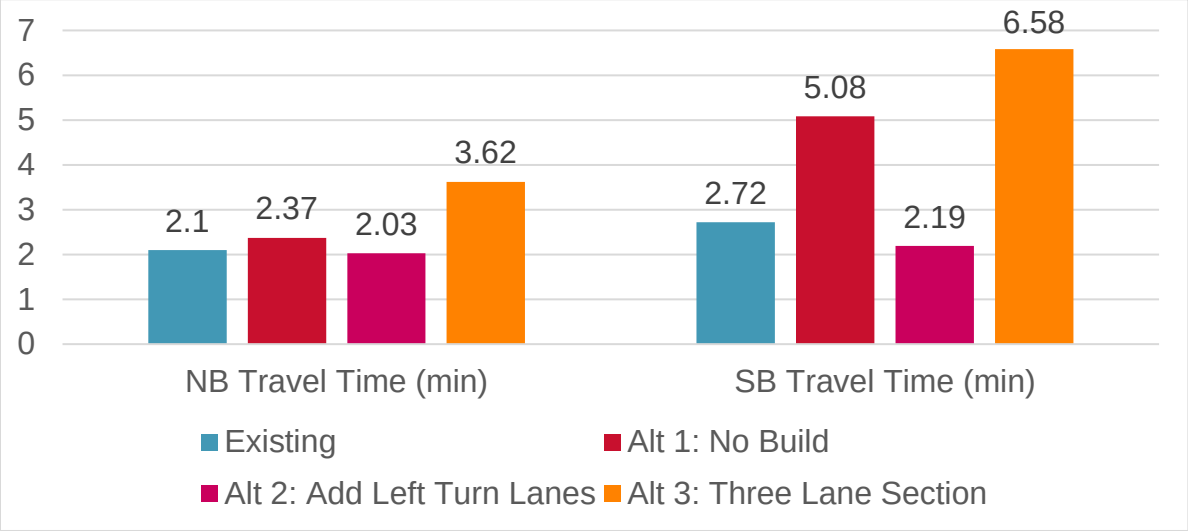


Figure 23. PM Peak Microsimulation Travel Time Comparison

Table 20 outlines the differences in travel times between the alternatives. Alterative 2 decreases the total travel time when compared to the other alternatives.

Table 20. Microsimulation Travel Time Comparison

Travel Time Segments		Difference (minutes)			
Peak Hour	Direction	Alt 1: No-Build vs Existing	Alt 2: Add Left-Turn Lanes vs Alt 1: No-Build	Alt 3: Three-Lane Section vs Alt 1: No-Build	Alt 2: Add Left Turns vs Alt 3: Three-Lane Section
AM	NB	0.29	-0.37	0.54	-0.91
	SB	0.06	-0.91	-0.79	-0.12
PM	NB	0.27	-0.34	1.25	-1.59
	SB	2.36	-2.88	1.51	-4.39

Figure 24 and Figure 25 present the average vehicle speed through the corridor. In both the AM and PM peaks, the average speed is highest in Alternative 2, although still below the posted speed limit. The added left-turn lanes allow for removing the split phasing, which provides better two-way progression. In turn, more vehicles can proceed through the corridor without stopping. The three-lane section is considerably slower than other alternatives in the PM peak hour, nearly slowing vehicles to a crawl in the southbound direction.

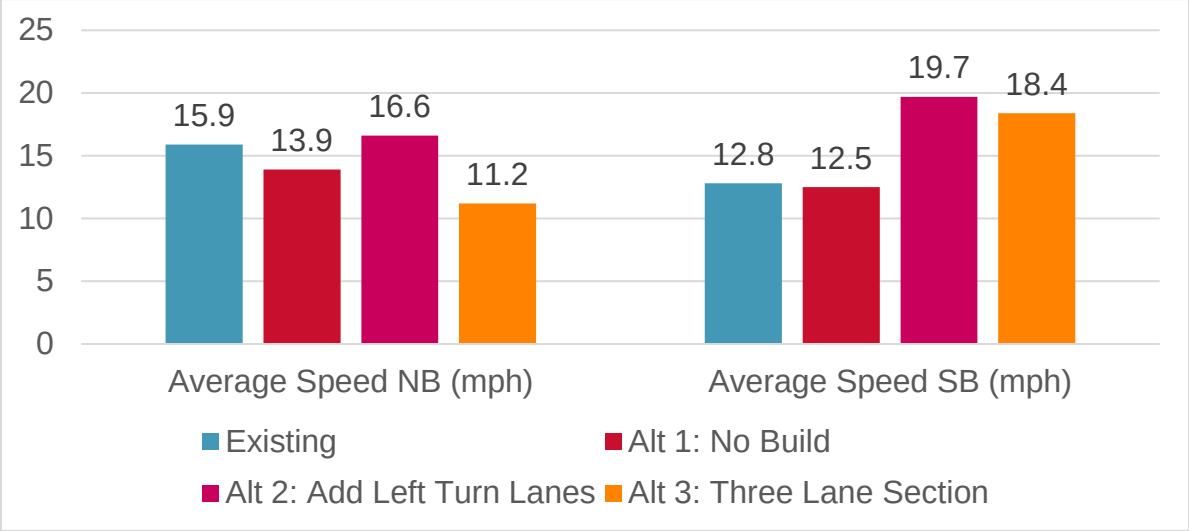


Figure 24. Microsimulation AM Peak Average Speed Comparison

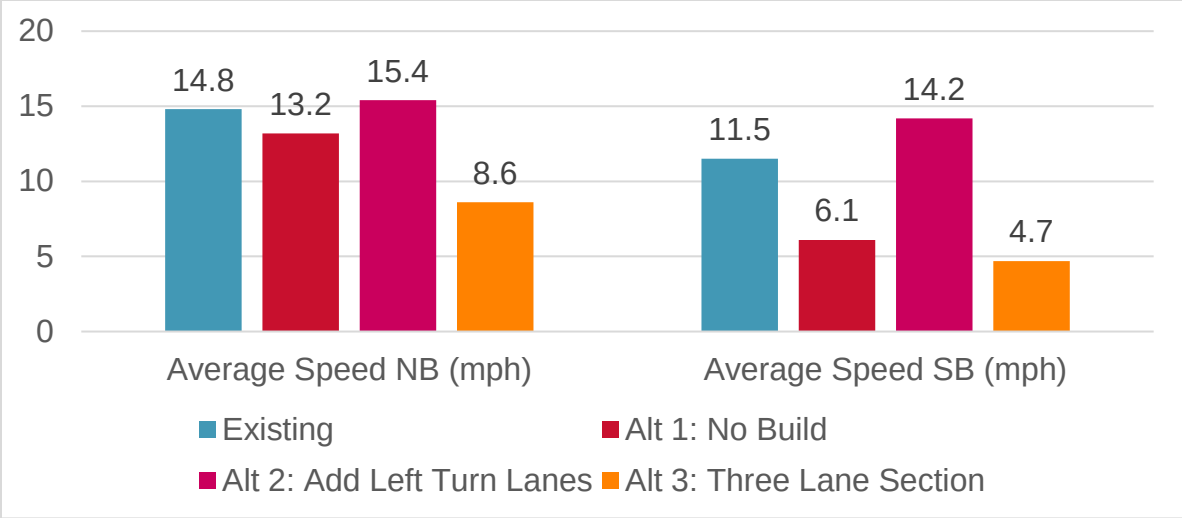


Figure 25. Microsimulation PM Peak Average Speed Comparison

6 Safety and Public Realm Enhancements

6.1 Safety and Public Realm Enhancements

The project team evaluated the corridor for recommendations that could be applied to either Alternative 2 or Alternative 3 to further enhance corridor safety. Following are the recommended treatments as part of the project.

6.1.1 Narrow the Travel Lanes from 12 Feet to 11 Feet

The existing travel lanes are 12 feet wide. These could reasonably be reduced to 11 feet, thereby providing 4 feet to increase the pedestrian space (2 feet on each side). Reducing the parking lane width from 8.5 feet to 8 feet from the face to curb would give an additional half-foot to the pedestrian realm on each side of the roadway. Figure 26 and Figure 27 are conceptual drawings of the increased pedestrian space. The reduced travel lane width would reinforce slower speeds and calm traffic through the corridor.

Figure 26. Additional Sidewalk Concept

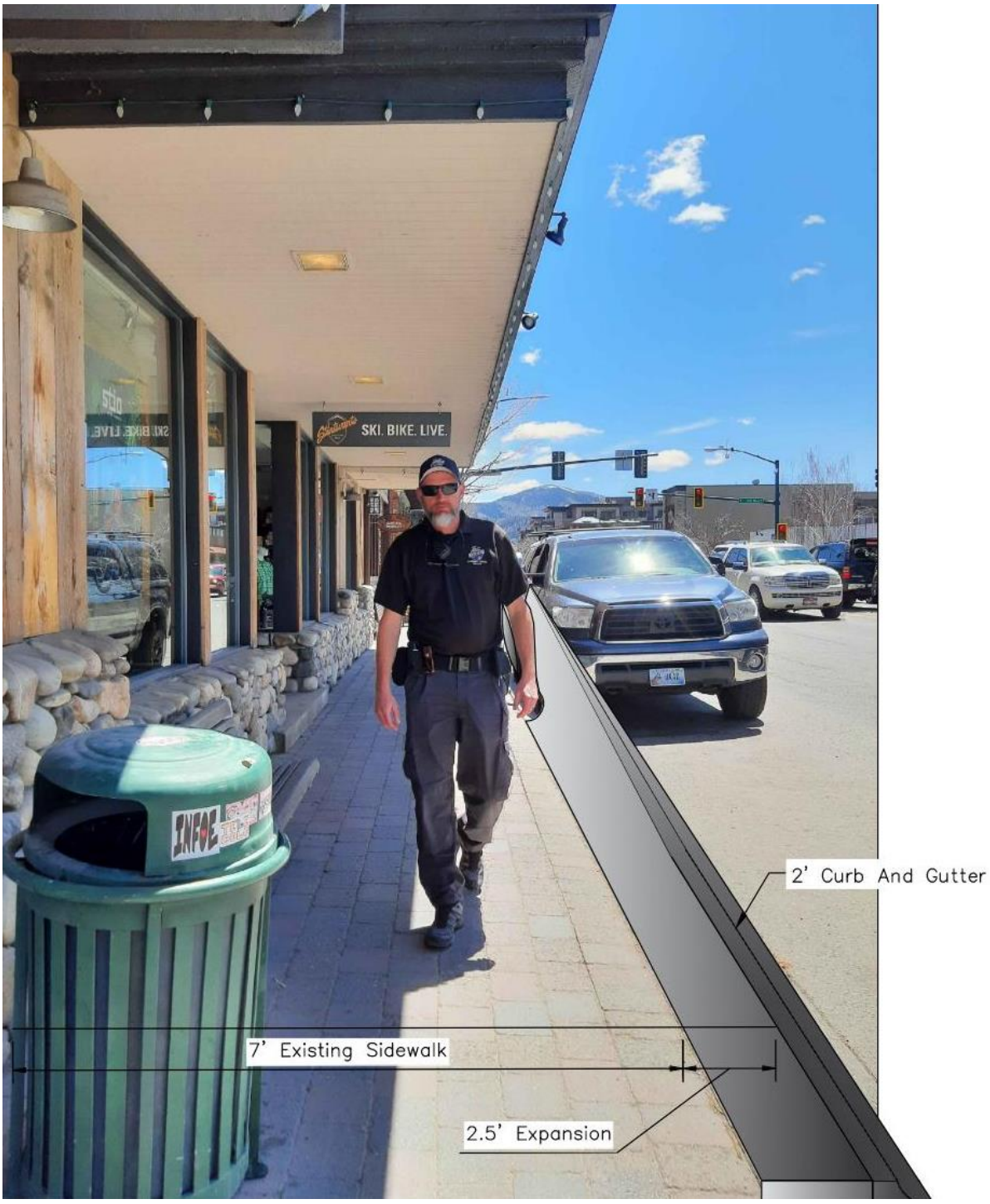


Figure 27. Additional Sidewalk Concept

6.1.2 Provide Bulb-Outs at Intersections

Bulb-outs, also known as curb extensions, shorten the pedestrian crossing distance by extending the curb out into the adjacent parking lane. Bulb-outs increase pedestrian safety by increasing their visibility as they are no longer hidden to drivers behind adjacent parked

vehicles. Figure 28 is a National Association of City Transportation Officials (NACTO) rendering of a bulb-out. The extra curb space can be used to provide placemaking signs or landscaping along the corridor to enhance the public realm. As shown in Figure 29, there are bulb-outs presently at the 4th Street intersection. Similar bulb-outs could be implemented with minimal impacts to parking along the rest of the corridor.

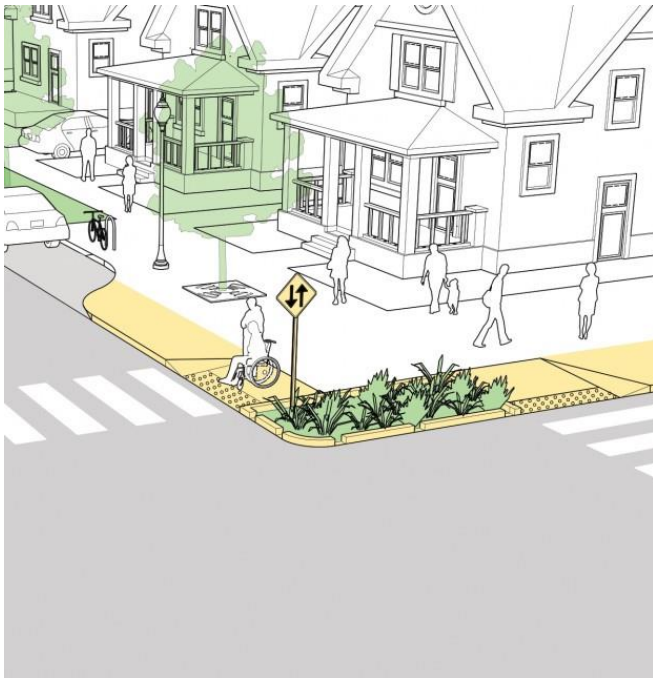


Figure 28. NACTO Bulb-out Rendering

Figure 29. Existing Bulb-out at 4th Street

6.1.3 Public Realm Improvements

The extra space afforded by narrowing the lanes and providing bulb-outs where applicable, may allow the City to install public realm improvements that would provide a place-making feel and redefine the downtown area. These can include specialty landscaping, identifying signage, banner poles, artwork and sculpture, tree-lined street, and enhancing seating options. Some examples are shown below in Figure 30.

Figure 30. Example Public Realm Improvements

6.1.4 Raised Intersection at Sun Valley Road

A raised intersection may be explored at Sun Valley Road to improve the pedestrian experience along the corridor (Figure 31). According to the NACTO *Urban Street Design Guide*[10], "Raised intersections create a safe, slow-speed crossing and public space…they reinforce slow speeds and encourage motorist to yield to pedestrians at the crosswalk." This type of intersection treatment may keep speeds low along the Main Street corridor, helping facilitate a calmer presence along the corridor.

[10] National Association of City Transportation Officials. 2013. *Urban Street Design Guide*.

Figure 31. NACTO Raised Intersection Rendering

The Sun Valley Road intersection features corners without truncated domes and curb ramps with steep grades, making the intersection out of compliance with ADA/PROWAG guidelines. The intersection is also likely to prove challenging to bring into compliance because the building entrances and sidewalk height on the northeast corner are higher above the roadway than is typical. Installing ramps may prove challenging as the grades and tight corner do not allow much flexibility. However, a raised intersection could be feasible because instead of lowering the pedestrian to the level of the roadway, the roadway would rise to the pedestrian. Then, the sidewalk would not need to ramp down unnecessarily steep grades and long pedestrian ramp runs can potentially be avoided.

This intersection treatment would need to be evaluated in coordination with ITD during design to ensure that the design vehicles can safely traverse the intersection. Additionally, drainage may be an issue as the raised intersection would change the drainage patterns of the intersection.

6.1.5 Leading Pedestrian Interval

According to the NACTO's *Urban Street Design Guide,* "A leading pedestrian interval (LPI) typically gives pedestrians a 3-7 second head start when entering an intersection with a corresponding green signal in the same direction of travel." The LPI enhances pedestrian visibility as they establish their presence in the crosswalk prior to the vehicles getting a green. This can be implemented with any of the alternatives and would need to be evaluated in coordination with ITD when programing the signal timing.

6.2 Future Safety Evaluation

The project team used the Federal Highway Administration's (FHWA's) Crash Modification Factor (CMF) Clearinghouse[11] to identify the potential change in crash frequency or severity associated with the possible intersection changes and/or changes to the number of lanes on Main Street. CMFs were selected based on study similarities to Main Street's roadway conditions and star rating (i.e., minimum of three stars). Each CMF also needed to include all crash types and crash severities. When there were no CMFs available for the specific situation, a qualitative discussion is provided.

6.2.1 Alternative 1: No-Build

Few opportunities existing within the No-Build alternative. The City and ITD could implement a LPI, which according to CFM ID 9910 (5 stars) shows a 16 percent decrease in crashes when LPIs are used on either all crossings or only across the minor roadway.

6.2.2 Alternative 2: Adding Left-Turn Lanes

The following CMFs can be applied to Alternative 2:

- CMF ID 153 (3 stars) shows a 20 percent decrease in crashes when prohibiting on-street parking.
- CFM ID 9910 (5 stars) shows a 16 percent decrease in crashes when LPI are used on either all crossings or only across the minor roadway.
- Installing a raised intersection at the Sun Valley Road intersection may help keep Main Street's speeds low.
- Bulb-outs have been shown to increase safety by decreasing the pedestrian crossing distance, reducing speeds caused by a decreased roadway width, and increasing pedestrian visibility to drivers.
- Install a rectangular rapid flashing beacon (RRFB) at the River Street intersection and disallow crossings on the south side of the intersection. This would enhance the visibility of pedestrians at the intersection and help alleviate the issues caused by the steep grade on the south side of the intersection as described in Section 2.5.5 and Figure 12.

6.2.3 Alternative 3: Three-Lane Section

The following CMFs can be applied to Alternative 3:

- CMF ID 2841 (5 stars) estimates a 47 percent reduction in crashes when converting the existing four-lane roadway to a three-lane roadway.
- CFM ID 9910 (5 stars) shows a 16 percent decrease in crashes when LPIs are used on either all crossings or only across the minor roadway.
- Installing a raised intersection at the Sun Valley Road intersection may help keep Main Street speeds low.

[11] FHWA CMF Clearinghouse, http://www.cmfclearinghouse.org/index.cfm

- Bulb-outs have been shown to increase safety by decreasing the pedestrian crossing distance, reducing speeds caused by a decreased roadway width, and increasing pedestrian visibility to drivers.
- Install a rectangular rapid flashing beacon (RRFB) at the River Street intersection and disallow crossings on the south side of the intersection. This would enhance the visibility of pedestrians at the intersection and help alleviate the issues caused by the steep grade on the south side of the intersection as described in Section 2.5.5 and Figure 12.

6.3 Future Transit Impact

6.3.1 Alternative 1: No-Build

Alternative 1 would provide no or minimal benefit to the transit network. There are no dedicated bus lanes on Main Street and congestion is shown to get worse in the design year; therefore, the decrease in travel times along the corridor would negatively impact the headways of Mountain Rides. Additionally, with the pedestrian realm and sidewalk remaining unchanged, there is little opportunity to enhance the bus stops.

6.3.2 Alternative 2: Adding Left-Turn Lanes at Sun Valley

Alternative 2 would improve the transit operations on Main Street. Travel times along the corridor in the design year are expected to be similar to today's travel times, meaning Mountain Ride's headways are expected to improve or not be impacted by the change. The changes proposed to the public realm would allow an opportunity to enhance bus stops along the corridor and improve the ridership experience.

6.3.3 Alternative 3: Three-lane Section

Alternative 3 would be mixed in its impact to transit. The potential narrowing of the roadway may allow for more room on the sidewalk to enhance bus stops like Alternative 2. The drastic increase in congestion would negatively impact transit operations along the corridor. As congestion and travel times increase, bus headways would increase as they may be stuck in long queues of vehicles. Without another direct alternative route through town, busses would need to travel either across or through Main Street likely preventing an alternate bus route from being effective.

7 Public Meeting Summary

A public meeting was held on October 3, 2022, followed by 2-week online public comment period. The public meeting consisted of three separate presentations (one each in the morning, mid-day, and evening) that outlined the results of the microsimulation analysis, showed videos of the estimated operations for each alternative, and presented the benefits and draw backs of each alternative. For individuals who could not attend the meetings in person, an online form was made available to provide feedback. Additionally, the public meeting included a presentation and survey on a concept study project concerning the Lewis Street and 10th Street intersections on Warm Springs Road.

No every person at the in person public meeting answered every question. The results of the in person public meetings were as follows:

- When asked if the city should choose the “No Build” alternative, 33 percent (4 of 12 attendees) said “yes”, 8% were neutral (1 of 12), and 58 percent (7 of 12) said “No”
- When asked if the city should explore the “Left turn Lanes” alternative: Sixty-three percent (7 of 11) said “yes”, 18 percent (2 of 11) were neutral and 18 percent (2 of 11) said “No”
- When asked if the city should explore the “lane reconfiguration” alternative: 18 percent (2 of 12) said “yes”, 25 percent (4 of 12) were neutral and 58 percent (7 of 12) said “No”

A total of 151 respondents filled out the online survey and not every respondent answered every question. The online results were as follows:

- When asked if the city should explore the “No Build” alternative, 44 percent (41 of 93) said “yes”, 23 percent (21 of 93) were neutral, 31 percent (29 of 93) said “No”, and 2% (2 of 93) responded other.
- When asked if the city should explore the “Left turn Lanes” alternative, 42 percent (39 of 93) said “yes”, 15 percent (14 of 93) were neutral, 39% (36 of 93) said “No”, and 4% (4 of 93) responded other.
- When asked if the city should explore the “Lane Reconfiguration” alternative, 22 percent (20 of 93) said “yes”, 16 percent (15 of 93) were neutral, 61 percent (57 of 93) said “No”, and 1 percent (1 of 93) responded other.

A summary of the public involvement results is provided in **Appendix E**.

8 Recommendations and Additional Opportunities

8.1 Comparing the Alternatives

Alternative 3 provides many benefits to the pedestrian and public realms, but at a significant cost to vehicle traffic flow. Based on historical growth rates, this alternative produces congestion and does not serve all traffic during future peak periods. This level of congestion could push traffic onto neighboring streets, increasing conflicts and negating large safety benefits from the potential lane reconfiguration. This alterative also does not meet ITD’s LOS D threshold.

Although the three-lane section may decrease the number of lanes pedestrians need to cross the roadway, vehicle congestion is likely to reduce gaps pedestrians will have to cross at unsignalized intersections. Side streets are expected to see large increases in vehicle queue lengths as vehicles are unable to enter Main Street due to a lack of gaps. The 6th Street intersection is especially problematic with delays exceeding 11 minutes.

Alternative 2, which removes parking for two blocks to add turn lanes at the Sun Valley Road intersection, serves all estimated traffic during the design year. Estimated travel times for future vehicles are similar to existing conditions. By removing the split phasing, the bottle neck at Sun Valley Road is removed and all other intersections on the corridor are able to increase operational efficiency for both pedestrians and vehicles. The safety benefits of Alternative 2 may not be as great as for Alternative 3; however, many safety improvements discussed in Section 6 can be implemented along the corridor to enhance pedestrian and multi-modal safety. The remaining intersections could still see improvements to the pedestrian and public realms with bulb-outs and wider sidewalks.

8.2 Recommendation

Alternative 2 is recommended over Alternative 3. Alternative 2 serves vehicular traffic and improves traffic operations; it meets ITD's LOS D threshold for improvements on a state highway; and provides excess capacity. Excess capacity allows some contingency for performance i.e., suggesting that if Ketchum sees a greater increase in vehicle traffic than estimated, this alternative would best be able to handle that increase. Although the opportunity to widen the pedestrian space is not as great as with Alternative 3, there are still opportunities to enhance the public realm, improve the placemaking feel of Ketchum's Main Street, and further enhance corridor safety performance. Final conceptual exhibits are provided in **Appendix F**. During design, the city should implement enhancements discussed in Section 6 of this report.

8.3 Opinion of Probable Costs

8.3.1 Opinion of the Probable Cost of the Recommended Alternative

The project team developed cost estimates based upon the conceptual exhibits. ITD has programmed a project to resurface Main Street in the near future and the cost estimate assumes that ITD will pay for the resurfacing, including base material. Three costs are estimated: engineering fee, construction costs, and right-of-way costs. The Alternative 2 probable costs are summarized in Table 21.

Table 21. Opinion Of Probable Costs

Cost	Amount
Engineering Fee:	$353,000
Construction Costs:	$3,880,000
Right-of-way Costs:	$10,000
Total Project Costs:	$4,243,000

The costs assume the following:

- All costs are in current (2022 dollars)
- Curb, gutter, and sidewalk will be removed and replaced along the length of the corridor.
- The pedestrian realm will be expanded by narrowing the travel lanes to 11 feet and the extra space given to the sidewalk.

- Tree cells will be installed to improve the tree canopy and provide a sustainable option for stormwater treatment.
- The traffic signal at the Sun Valley Road intersection will be completely rebuilt and no signal materials will be salvaged.
- The traffic signals at 1st Street and 5th Street as well as the PHB at 4th Street will be removed and reset as needed as their components are likely to be able to be reused.
- Bulb-outs will be installed at every intersection except at Sun Valley Road where vehicle turning movements may preclude their installation.
- ITD will pay for the raised intersection at Sun Valley Road as part of their improvements.
- 20 percent of the construction costs are assumed for contingency items that may arise.
- 10 percent of the construction costs are assumed for the engineer fee to complete the City's portion of the work.
- The right-of-way costs are estimated for the unlikely event of an easement or other access to a private property require complete construction.

8.3.2 Opportunities to Reduce Costs

As previously stated, the cost to construct the preferred alternative includes replacing sidewalk and installing bulb-outs at each intersection. This substantially increases project costs; however, the City may reduce total project costs by limiting the number of bulb-outs installed and not narrowing the travel lanes. This would decrease the benefits to the public realm and pedestrians.

The tree cell system is estimated to improve the tree canopy on Main Street; however, drainage benefits may be redundant with the existing storm sewer system in place. Excavation and material costs can be reduced by eliminating the tree cells from the concept.

8.4 Additional Opportunities

The following minor opportunities exist to enhance the corridor and provide longevity to the recommended improvements.

- Install mast arms long enough to add future dedicated left-turn lanes at 1st Street. Although the analysis indicates that future queue lengths and delays are acceptable, if the City experiences more growth than estimated, the longer mast arms would decrease costs associated with adding left-turn lanes on 1st Street.
- The City should look at controlling access at businesses along the corridor to mitigate conflicts and reduce confusion at the intersections. Coordination with the Village Market and the Valtrex property will be necessary.
- Enhance the wayfinding in advance of the 6th Street intersection to help non-locals identify which lane they need to be in before Main Street splits.

8.5 Next Steps

City staff should review this report for completeness and provide any comments. HDR will revise and resubmit the report for adoption by the City Council. After adoption, the City should pursue grant opportunities to fund the improvements. Outreach for stakeholder participation in the grant pursuits should occur, including with Mountain Rides, Blaine County School District, and the Ketchum Urban Renewal Agency.

The City should coordinate with ITD to get approval for the preferred alternative. ITD owns Main Street and will have final say on the implementation of any chosen alternative. Additionally, the City should coordinate design improvements to align with an upcoming maintenance project on SH-75. Coordination will decrease the amount of mobilization required to improve the roadway and reduce impacts to the public. The curb extensions and raised intersection will need to be evaluated in coordination with ITD during design to evaluate truck turning movements and stormwater needs in detail.

City of Ketchum

December 1, 2022

Mayor Bradshaw and City Councilors
City of Ketchum
Ketchum, Idaho

Mayor Bradshaw and City Councilors:

RECOMMENDATION TO ACQUIRE PREFABRICATED HOUSING

Recommendation and Summary

The arrival of snow means an increased cost of preparing Lewis Street to accommodate previously owned, prefabricated housing. The Meadows mobile home park has adequate space and utilities to house the park models and families until mid-May, by which time Lewis Street would be ready. Staff recommends ground leasing the land at the Meadows – most of the cost will be offset by tenant payments – and acquired pre-owned park models that can then be relocated to the Lewis Street lot. An alternative is waiting through the winter for Lewis Street to be ready and acquiring and placing park models directly there.

The reasons for the recommendation are as follows:

- Acquiring housing is a long-term investment that can be divested or transitioned to alternative locations, as needed. The Housing Action Plan specifies supporting this type of investment.
- The city currently has adequate funds for this from FY22 expense savings and revenue performance.

"I move to approve the temporary ground lease at the Meadows and acquisition of park models"

Context

The Ketchum Housing Action Plan outlines the following related objectives:
Goal 3: Expand + Improve Services to Create Housing Stability
Action 8: Identify and support physical housing options for unhoused and at-risk households:

- *Explore purchasing RV's and prefabricated homes for transitional purposes.*

Due to the arrival of snow, the cost of setting up utilities at Lewis Street increased significantly. Given this, staff sought alternative temporary locations for setting up park models / tiny homes. The Meadows has adequate sites available immediately with utility hookups: These sites would be available until May 15th. Staff anticipates Lewis Street being ready to receive these homes in late April or early May.

Ground leasing sites in the Meadows is a temporary, different cost structure then Lewis Street. As a master leaser of multiple sites, the ground lease per site would be $800, including utilities. We anticipate households to pay an average of $650 per month – based on the maximum amount recommended to charge the households Blaine County Charitable Fund is already working with (30% of their income). This signifies $5,400 needed to cover the remaining cost of the ground leases for six months for six sites.

If or when prefabricated models are on Lewis Street, there would be no ground lease, so those tenant payments would go towards paying down the upfront cost of the investment at an average of $30,000 for each pre-owned park model. The investment in six units, equaling about $180,000 in acquisition and about $90,000 to set up Lewis Street, would be paid off in under six years unless the units are resold before then.

BREAKOUT OF ANTICIPATED SETUP COSTS

DESCRIPTION	BUDGET
Demolition - City to self perform	$0
Site Grading	$6,000
IP electrical upgrades	$13,000
Onsite electrical upgrades - 6 meter pack	$9,000
Onsite electrical connections	$10,000
Fence/screening	$6,000
Main Sewer Service Connection and 6 service lines	$10,000
Sewer Service Lines- 6 units	$0
Main Water Service Line Connection and servie lines	$10,000
Water Service Line Connections - 6 Units	$0
Construction Traffic Control - City to self perform	$0
Striping - City to self perform	$0
Signage - City to self perform	$0
Approach work - asphalt - City to self perform	$0
Light pole base	$0
Snowmelt	$0
Drainage Improvements	$3,000
Park Model Delivery to Meadows	$0
Park Model Set-up at Meadows (electrical, water, sewer. skirting)	$5,000
Park Model relocation to Lewis St. - City to self perform	$0
Park Model Connection - Electrical	$3,000
Park Model Connection - Water	$3,000
Park Model Connection - Sewer	$3,000
Construction Contingency (10%)	$8,100
TOTAL	$89,100

Staff will review costs with Council during the meeting. For the sake of achieving the City's housing goals, staff recommend purchasing the units now to be temporarily placed in the Meadows and then relocating those units to Lewis Street once that is ready.

Sustainability impact
Ability to house employees and community participants locally decreases commuter vehicular trips.

Financial Impact
Funds will come from FY22 budget expense savings and revenues performing stronger than forecasted.

City of Ketchum

December 5, 2022

Mayor Bradshaw and City Councilors
City of Ketchum
Ketchum, Idaho

Mayor Bradshaw and City Councilors:

Provide feedback regarding recommended priority Sidewalk Projects for 2023

Recommendation and Summary

City staff is recommending the following 2023 sidewalk priorities:

- Rebuild Fourth Street corridor (both pavers and curb)
- Fifth Street from Main Street (alley) to Leadville
- Main Street bulb-outs should ITD advance rebuild of roadway

"I move to approve the recommended 2023 sidewalk projects."

Introduction & Background

Staff is recommending the above priorities based on the following reasoning:

- Fourth Street: Maintenance of the pavers is very labor intensive for the streets department. This distracts from other spring/summer street maintenance tasks such as crack sealing. The current pavers have a low lifecycle and degrade quickly causing trip hazards. The Council recently approved a new city standard paver with a much longer life cycle. The goal would be to complete the entire corridor should budget allow. If that is not possible, staff would propose a block-by-block strategy starting at Walnut Street working west.
- Fifth Street: There is not currently a sidewalk facility from Main Street to Leadville. This is a key pedestrian corridor. Recently, private construction has commenced in the area which will be required to complete a new sidewalk from Main Street to the alley. Staff is proposing to complete from the alley to Leadville. This will require removing a tree that is currently in the public right of way (see attached). Staff is also evaluating whether the large above ground planters can be reduced or removed on the north corner of Leadville and Fifth Street as they create a significant sight distance barrier for drivers on Leadville.
- Main Street: The city has requested the Idaho Transportation Department (ITD) advance the rebuilding of Main Street to 2022 from 2024 due to its current unsafe condition. ITD is currently working through the design, but initial geotechnical tests have indicated the road will require a full rebuild similar to Sun Valley Road. ITD has not solidified whether they will be able to execute in 2022, but should they be able to complete, the city would be required to fund the majority of any sidewalk enhancements. ITD will fund a very small portion associated with ADA ramps. The recently completed Main Street Transportation Enhancement Report by HDR outlined future sidewalk bulb-outs at First Street, Sun Valley Road, Fifth Street and Sixth Street.

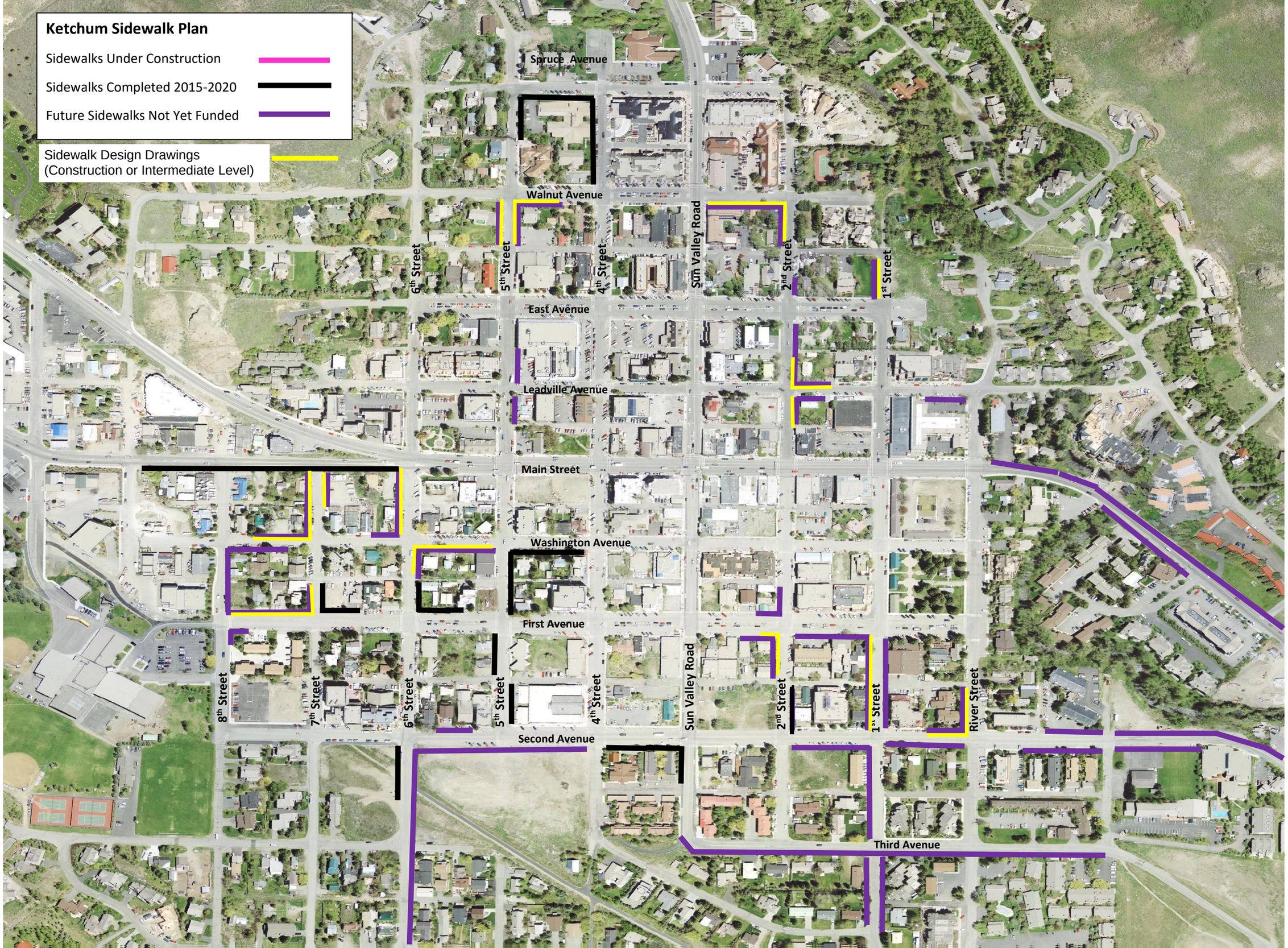
Should the City Council affirm the priorities outlined above, staff will proceed with design and bidding for construction.

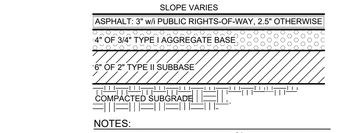
Staff did complete an analysis of other pending downtown private development that might pose other partnership projects such as the Fifth Street example. Three projects are moving through the entitlement process adjacent to Second Street between Main Street and East Avenue. There is the potential for public funding in FY24 to sync up with those projects in order to complete a full sidewalk network. A package of other sidewalk projects (attached) was previously designed, however staff is not recommending those projects at this time due to budget constraints. Staff is also evaluating the feasibility of rebuilding the sidewalk on 2nd Street from Main Street to Washington due to its very narrow width and the presence of a delivery ramp that prevents the sidewalk from being ADA compliant.

Sustainability Impact
Improvements to pedestrian facilities increases alternative mobility choices.

Financial Impact
There is currently $375,212 available for miscellaneous sidewalk projects. The FY23 CIP also allocates $374,100 for Main Street sidewalk enhancements. City staff would recommend approaching KURA to inquire if they would be willing to allocate a similar amount.

Attachments
Master Sidewalk Map
Concept Design and Engineer Estimate for Fifth Street
Map of other sidewalk projects not recommended at this time


Ketchum Sidewalk Plan
Sidewalks Under Construction
Sidewalks Completed 2015-2020
Future Sidewalks Not Yet Funded
Sidewalk Design Drawings
(Construction or Intermediate Level)
Spruce Avenue
Walnut Avenue
East Avenue
Leadville Avenue
Main Street
Washington Avenue
First Avenue
Second Avenue
Third Avenue
6th Street
5th Street
4th Street
Sun Valley Road
2nd Street
1st Street
8th Street
7th Street
River Street

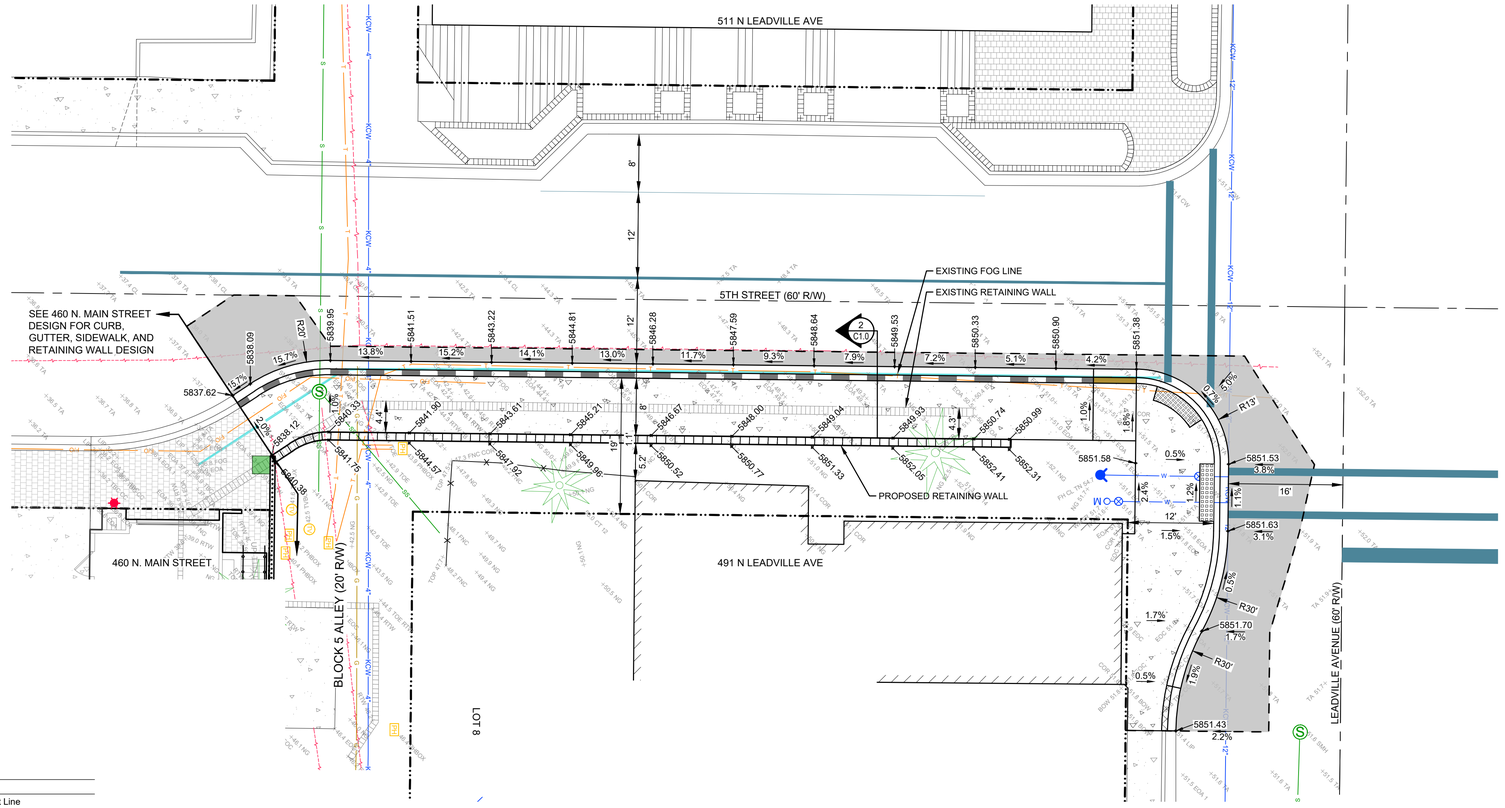


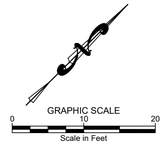
NOTES:

1. SUBBASE CAN BE 2" TYPE II OR ¾" TYPE I CRUSHED AGGREGATE BASE COURSE.
2. MATERIALS SHALL CONFORM WITH CURRENT ISPWC STANDARDS, DIVISION 800 AGGREGATES AND ASPHALT.
3. PAVEMENT SECTION MAY BE MODIFIED IF A PROJECT SPECIFIC GEOTECHNICAL REPORT, STAMPED BY A LICENSED ENGINEER, IS PROVIDED.

1 / C1.0 TYPICAL STREET ASPHALT SECTION

N.T.S.





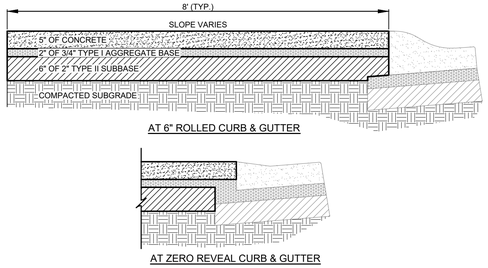
LEGEND

EXISTING ITEMS

- Right-of-way
- Centerline
- 5' Contour Interval
- 1' Contour Interval
- Curb & Gutter
- FNC = Fence Line
- Building
- RTW = Retaining Wall
- Fog Line (Road Paint)
- Concrete Sidewalk
- CT = Conifer Tree
- FOB = Fiber Optic Line
- GM = Gas Main
- GMTR = Gas Meter
- TVB = Cable TV Buried
- TVBOX = Cable TV Riser
- PHB = Buried Telephone Line
- PHBOX = Telephone Riser
- BP, PB = Buried Power Line
- Sewer Main
- SS = Sewer Service
- SMH = Sewer Manhole
- Ketchum City Water Line (12")
- Ketchum City Water Line (4")
- WS = Water Service
- WMT = Water Meter
- FH = Fire Hydrant
- WV = Water Valve
- BOW = Back of Walk
- CC = Curb Cut
- CL = Centerline
- COR = Corner
- EOA = Edge of Asphalt
- EOC = Edge of Concrete
- FF = Finished Floor
- GB = Grade Break
- IC = Illegible Cap
- LIP = Lip of Gutter
- NC = No Cap
- NG = Natural Ground
- TA = Top of Asphalt
- TBC = Top Back of Curb
- TOE = Toe of Slope
- TOP = Top of Slope

PROPOSED ITEMS

- Sawcut Line
- Road Paint
- 5' Contour Interval
- 1' Contour Interval
- 6" Rolled Curb & Gutter
- Zero Reveal Curb & Gutter
- Curb Transition (6" Rolled to Zero Reveal)
- Curb Transition (6" Vertical to Zero Reveal)
- Truncated Dome
- Asphalt Repair
- Concrete Sidewalk
- RTW = Retaining Wall
- 2.1% Grade
- 5851.59 Spot Elevation



AT 6" ROLLED CURB & GUTTER

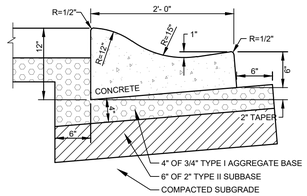
AT ZERO REVEAL CURB & GUTTER

NOTES:

1. SUBBASE CAN BE 2" TYPE II OR ¾" TYPE I CRUSHED AGGREGATE BASE COURSE.
2. MATERIALS SHALL CONFORM WITH CURRENT ISPWC STANDARDS, DIVISION 800 AGGREGATES AND ASPHALT.
3. PAVEMENT SECTION MAY BE MODIFIED IF A PROJECT SPECIFIC GEOTECHNICAL REPORT, STAMPED BY A LICENSED ENGINEER, IS PROVIDED.
4. 1/2-INCH PREFORMED EXPANSION JOINT MATERIAL (AASHTO M 213) AT TERMINAL POINTS OF RADII.
5. CONTINUOUS PLACEMENT PREFERRED, SCORE INTERVALS 10-FEET MAXIMUM SPACING (8-FEET W/SIDEWALK).

2 / C1.0 TYPICAL CONCRETE SIDEWALK SECTION

N.T.S.

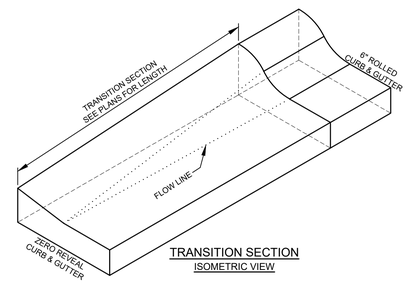


NOTES:

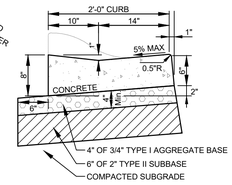
1. SUBBASE CAN BE 2" TYPE II OR ¾" TYPE I CRUSHED AGGREGATE BASE COURSE.
2. MATERIALS SHALL CONFORM WITH CURRENT ISPWC STANDARDS, DIVISION 800 AGGREGATES AND ASPHALT.
3. PAVEMENT SECTION MAY BE MODIFIED IF A PROJECT SPECIFIC GEOTECHNICAL REPORT, STAMPED BY A LICENSED ENGINEER, IS PROVIDED.
4. 1/2-INCH PREFORMED EXPANSION JOINT MATERIAL (AASHTO M 213) AT TERMINAL POINTS OF RADII.
5. CONTINUOUS PLACEMENT PREFERRED, SCORE INTERVALS 10-FEET MAXIMUM SPACING (8-FEET W/SIDEWALK).

3 / C1.0 6" CONCRETE ROLLED CURB & GUTTER

N.T.S.



TRANSITION SECTION
ISOMETRIC VIEW



ZERO REVEAL CURB & GUTTER

NOTES:

1. SUBBASE CAN BE 2" TYPE II OR ¾" TYPE I CRUSHED AGGREGATE BASE COURSE.
2. MATERIALS SHALL CONFORM WITH CURRENT ISPWC STANDARDS, DIVISION 800 AGGREGATES AND ASPHALT.
3. PAVEMENT SECTION MAY BE MODIFIED IF A PROJECT SPECIFIC GEOTECHNICAL REPORT, STAMPED BY A LICENSED ENGINEER, IS PROVIDED.
4. 1/2-INCH PREFORMED EXPANSION JOINT MATERIAL (AASHTO M 213) AT TERMINAL POINTS OF RADII.
5. CONTINUOUS PLACEMENT PREFERRED, SCORE INTERVALS 10-FEET MAXIMUM SPACING (8-FEET W/SIDEWALK).

4 / C1.0 TYPICAL CURB TRANSITION DETAIL

N.T.S.

KETCHUM SIDEWALK IMPROVEMENT PLAN
FIFTH ST (BLOCK 5 ALLEY TO LEADVILLE AVE.)

LOCATED WITHIN SEC 13, T4N, R17E & SEC 18, T4N, R18E, BM, CITY OF KETCHUM, BLAINE COUNTY, IDAHO
PREPARED FOR THE CITY OF KETCHUM

PROJECT INFORMATION
P:\ad\kpc\1318-187 5th St Swale\dwg\Construction\1318-187_ENG-2.dwg 08/03/22 7:30:31 AM

PRELIMINARY NOT FOR CONSTRUCTION

DESIGNED BY
CT
DRAWN BY
SMF
CHECKED BY

GALENA ENGINEERING, INC.
Civil Engineers & Land Surveyors
317 N. River Street
Hailey, Idaho 83333
(208) 788-1705
email galena@galena-engineering.com

PURPOSE: ISSUE FOR PRELIMINARY REVIEW

NO	DATE	BY	REVISIONS

C1.0

2022 CITY OF KETCHUM SIDEWALK IMPROVEMENTS
5TH ST (MAIN ST TO LEADVILLE)
Engineer's Construction and Engineering Cost Estimate

#	REF	Item	Unit	Qnty	Unit Cost	Item Cost
CONSTRUCTION CONTRACTOR BID ITEMS						
1		Contractor mobilization (12% of Construction Bid Items)	ls	1	$15,100.65	$15,100.65
2		Traffic Control and Detours	ls	1	$7,550.33	$7,550.33
3		Sawcut asphalt			Incidental to Asphalt Removal	
4		Existing Asphalt Removal	sy	239	$8.25	$1,971.75
5		Remove And Dispose of Concrete	sf	207	$17.50	$3,622.50
6		Site clearing and grubbing	sy	65	$9.00	$585.00
7		Remove and dispose of tree and root ball system	ea	1	$300.00	$300.00
8		Relocate fire hydrant			Incidental to Item C11	
9		Remove and dispose of exiaring retaining Wall	ea	1	$10,000.00	$10,000.00
10		Remove and dispose landscape wall	lf	0	$15.00	$0.00
11		Relocate Utilities (by others). Contractor to coordinate work with utility owner.			By Utility Company	
12		Excavation	cy	148	$30.00	$4,440.00
CONSTRUCTION CONTRACTOR BID ITEMS CONTINUED						
13		ITD SP-3 HMA, 1/2" gradation, PG58-28	ton	20	$125.00	$2,500.00
14		Concrete 6" rolled curb and gutter	lf	107	$70.00	$7,490.00
15		Concrete curb transition (6" rolled to zero reveal)	lf	18	$75.00	$1,350.00
16		Concrete zero reveal curb and gutter	lf	53	$70.00	$3,710.00
17		Concrete curb transition (0" rolled to 6" vertical)	lf	6	$75.00	$450.00
18		Construct concrete sidewalk: Flat work	sy	158	$82.50	$13,035.00
19		2"(-) crushed aggregate subbase	ton	89	$33.00	$2,928.36
20		3/4"(-) crushed aggregate base (4" compacted depth)	ton	41	$33.00	$1,348.17
21		Pavement Striping (12" crosswalk striping)	lf	142	$3.00	$426.00
22		Pavement Striping (4" parking)	lf	294	$1.00	$294.00
23		Pavement Striping (Thermoplastic crosswalk/stop bar, 24" wide)	lf	23	$6.00	$138.00
24		Cast Iron Truncated Dome Detectable Warning Insert	sf	30	$75.00	$2,250.00
25		Construct H-piles and boards retaining wall < 4' high	lf	105	$400.00	$42,000.00
26		Install Street light	ea	2	$12,500.00	$25,000.00
27		Erosion and Sediment Control	ls	1	$2,000.00	$2,000.00
	A	**CONSTRUCTION CONTRACTOR BID ITEMS SUBTOTAL**				**$148,490.00**
28	B	Contractor Bid Items Contingency Subtotal @ 10%)	ls	1	$14,849.00	$14,850.00
	C	**CONTRACTOR CONSTRUCTION SUBTOTAL (A+B = Subtotal)**				**$163,340.00**
CONSTRUCTION ACTIVITIES ENGINEERING						
29		Construction Staking (1.5% of Construction Subtotal)	ls	1	$2,450.00	$2,450.00
30		Construction Observation (1% of Construction Subtotal)	ls	1	$1,630.00	$1,630.00
31		Construction Materials Testing Field Sampling and Lab Work	ls	1	$1,500.00	$1,500.00
32		Contract Documents Review and Support (0.5% of Construction	ls	1	$820.00	$820.00
	D	**CONSTRUCTION ACTIVITITIES ENGINEERING ITEMS SUBTOTAL**				**$6,400.00**
		TOTAL (C + D)				**$169,700.00**

KETCHUM 2022 SIDEWALK INFILL
MARCH 2022

CONSTRUCTION NOTES

1. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE MOST CURRENT EDITION OF THE "IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION" (ISPWC) AND CITY OF KETCHUM STANDARDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND KEEPING A COPY OF THE ISPWC AND CITY OF KETCHUM STANDARDS ON SITE DURING CONSTRUCTION.

2. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN ON THE PLANS IN AN APPROXIMATE WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXISTING UTILITIES PRIOR TO COMMENCING AND DURING THE CONSTRUCTION. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH RESULT FROM HIS FAILURE TO ACCURATELY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. CONTRACTOR SHALL CALL DIGLINE (1-800-342-1585) TO LOCATE ALL EXISTING UNDERGROUND UTILITIES A MINIMUM OF 48 HOURS IN ADVANCE OF EXCAVATION.

3. CONTRACTOR SHALL COORDINATE RELOCATIONS OF DRY UTILITY FACILITIES (POWER, CABLE, PHONE, TV) WITH THE APPROPRIATE UTILITY FRANCHISE.

4. THE CONTRACTOR SHALL CLEAN UP THE SITE AFTER CONSTRUCTION SO THAT IT IS IN A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION.

5. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION (THIS MAY INCLUDE ENCROACHMENT PERMITS AND NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION GENERAL PERMIT (CGP) PERMIT COVERAGE).

6. ALL CLEARING & GRUBBING SHALL CONFORM TO ISPWC SECTION 201.

7. ALL EXCAVATION & EMBANKMENT SHALL CONFORM TO ISPWC SECTION 202. SUBGRADE SHALL BE EXCAVATED AND SHAPED TO LINE, GRADE, AND CROSS-SECTION SHOWN ON THE PLANS. THE SUBGRADE SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D-698. THE CONTRACTOR SHALL WATER OR AERATE SUBGRADE AS NECESSARY TO OBTAIN OPTIMUM MOISTURE CONTENT. IN-LIEU OF DENSITY MEASUREMENTS, THE SUBGRADE MAY BE PROOF-ROLLED TO THE APPROVAL OF THE ENGINEER.
   - PROOF-ROLLING: AFTER EXCAVATION TO THE SUBGRADE ELEVATION AND PRIOR TO PLACING COURSE GRAVEL, THE CONTRACTOR SHALL PROOF ROLL THE SUBGRADE WITH A 5-TON SMOOTH DRUM ROLLER, LOADED WATER TRUCK, OR LOADED DUMP TRUCK, AS ACCEPTED BY THE ENGINEER. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF UNSUITABLE SUBGRADE MATERIAL AREAS, AND/OR AREAS NOT CAPABLE OF COMPACTION ACCORDING TO THESE SPECIFICATIONS. UNSUITABLE OR DAMAGED SUBGRADE IS WHEN THE SOIL MOVES, PUMPS AND/OR DISPLACES UNDER ANY TYPE OF PRESSURE INCLUDING FOOT TRAFFIC LOADS.
   - IF, IN THE OPINION OF THE ENGINEER, THE CONTRACTOR'S OPERATIONS RESULT IN DAMAGE TO, OR PROTECTION OF, THE SUBGRADE, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, REPAIR THE DAMAGED SUBGRADE BY OVER-EXCAVATION OF UNSUITABLE MATERIAL TO FIRM SUBSOIL, LINE EXCAVATION WITH GEOTEXTILE FABRIC, AND BACKFILL WITH PIT RUN GRAVEL.

8. ALL 2" MINUS GRAVEL SHALL CONFORM TO ISPWC 802, TYPE II (ITD STANDARD 703.04, 2"), SHALL BE PLACED IN CONFORMANCE WITH ISPWC SECTION 801 AND COMPACTED PER SECTION 202. MINIMUM COMPACTION OF PLACED MATERIAL SHALL BE 90% OF MAXIMUM LABORATORY DENSITY AS DETERMINED BY AASHTO T-99.

9. ALL 3/4" MINUS CRUSHED GRAVEL SHALL CONFORM TO ISPWC 802, TYPE I (ITD STANDARD 703.04, 3/4" B), SHALL BE PLACED IN CONFORMANCE WITH ISPWC SECTION 802 AND COMPACTED PER SECTION 202. MINIMUM COMPACTION OF PLACED MATERIAL SHALL BE 95% OF MAXIMUM LABORATORY DENSITY AS DETERMINED BY AASHTO T-99 OR ITD T-91.

10. ALL ASPHALTIC CONCRETE PAVEMENT WORK SHALL CONFORM TO ISPWC SECTION(S) 805, 810, AND 811 FOR CLASS II PAVEMENT. ASPHALT AGGREGATE SHALL BE 1/2" (13MM) NOMINAL SIZE CONFORMING TO TABLE 803B IN ISPWC SECTION 803. ASPHALT BINDER SHALL BE PG 58-28 CONFORMING TO TABLE A-1 IN ISPWC SECTION 805.

11. ASPHALT SAWCUTS SHALL BE AS INDICATED ON THE DRAWINGS, OR 24" INCHES FROM EDGE OF EXISTING ASPHALT, IF NOT INDICATED OTHERWISE SO AS TO PROVIDE A CLEAN PAVEMENT EDGE FOR MATCHING. NO WHEEL CUTTING SHALL BE ALLOWED.

12. TRAFFIC CONTROL SHALL BE PER THE TRAFFIC CONTROL PLAN. CONTRACTOR WILL NEED TO MAINTAIN ACCESS TO ALL PRIVATE PROPERTIES, UNLESS OTHERWISE COORDINATE WITH THE PROPERTY OWNER THROUGH THE CITY ENGINEER.

13. ALL CONCRETE WORK SHALL CONFORM TO ISPWC SECTIONS 701, 703, AND 705. ALL CONCRETE SHALL BE 3,000 PSI MINIMUM, 28 DAY, AS DEFINED IN ISPWC SECTION 703, TABLE 1. IMMEDIATELY AFTER PLACEMENT PROTECT CONCRETE BY APPLYING MEMBRANE-FORMING CURING COMPOUND, TYPE 2, CLASS A PER ASTM C 309-94. APPLY CURING COMPOUND PER MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS.

14. ALL TRENCHING SHALL CONFORM TO ISPWC STANDARD DRAWING SD-301. TRENCHES SHALL BE BACKFILLED AND COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99.

15. PER IDAHO CODE § 55-1613, THE CONTRACTOR SHALL RETAIN AND PROTECT ALL MONUMENTS, ACCESSORIES TO CORNERS, BENCHMARKS AND POINTS SET IN CONTROL SURVEYS; ALL MONUMENTS, ACCESSORIES TO CORNERS, BENCHMARKS AND POINTS SET IN CONTROL SURVEYS THAT ARE LOST OR DISTURBED BY CONSTRUCTION SHALL BE REESTABLISHED AND RE-MONUMENTED, AT THE EXPENSE OF THE AGENCY OR PERSON CAUSING THEIR LOSS OR DISTURBANCE AT THEIR ORIGINAL LOCATION OR BY SETTING OF A WITNESS CORNER OR REFERENCE POINT OR A REPLACEMENT BENCHMARK OR CONTROL POINT, BY OR UNDER THE DIRECTION OF A PROFESSIONAL LAND SURVEYOR.

16. CONSTRUCTION OF WATER MAINS AND ALL OTHER RELATED APPURTENANCES SHALL BE IN ACCORDANCE WITH THE IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION (ISPWC), IDAPA 58.01.08, IDAHO RULES FOR PUBLIC DRINKING WATER SYSTEMS AND THE CITY OF KETCHUM UTILITIES DEPARTMENT STANDARDS.

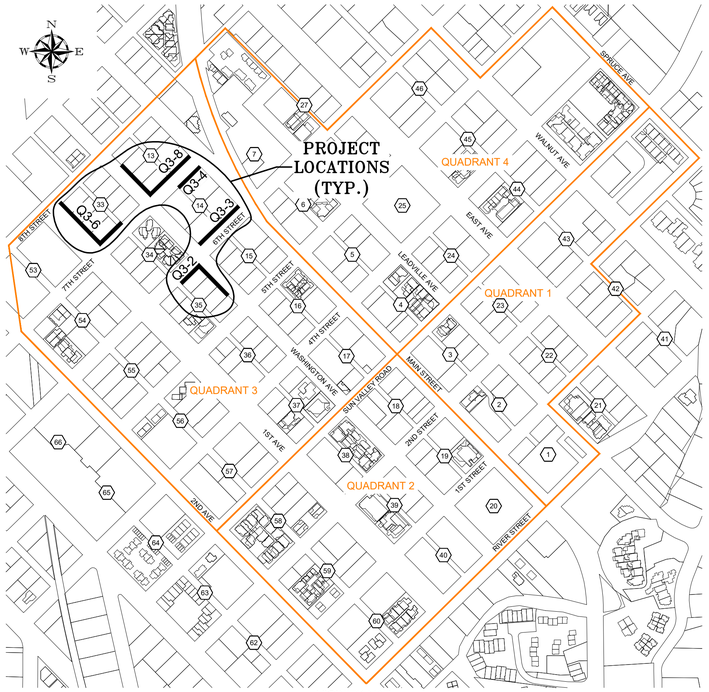
17. CONTRACTOR SHALL PRESSURE TEST, DISINFECT, AND CONDUCT BIOLOGICAL TESTING IN ACCORDANCE WITH THE IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION (ISPWC), AMERICAN WATER WORKS ASSOCIATION (AWWA) STANDARDS, AND THE PRESSURE TESTING, DISINFECTION, AND MICROBIOLOGICAL TESTING PROCEDURES.

18. ALL WATER SUPPLY FIXTURES, FITTINGS, PIPING, AND ALL RELATED APPURTENANCES SHALL BE ANSI/NSF STD. 61 COMPLIANT.

19. ALL WATER SUPPLY FIXTURES, FITTINGS, PIPING, AND ALL RELATED APPURTENANCES SHALL COMPLY WITH THE LOW LEAD ACT REQUIRING ALL MATERIALS TO HAVE A LEAD CONTENT EQUAL TO OR LESS THAT 0.25%.

20. THE CONTRACTOR SHALL USE ANSI/NSF STANDARD 60 CHEMICALS AND COMPOUNDS DURING INSTALLATION & DISINFECTION OF POTABLE WATER MAIN.

21. EXISTING CONDITIONS AND BOUNDARY INFORMATION SHOWN HEREON ARE PER A SURVEY CONDUCTED BY GALENA ENGINEERING. TOPOGRAPHIC INFORMATION IS AS IT EXISTED ON THE DATE THE FIELD SURVEY WAS PERFORMED (05/22/19).



VICINITY MAP
N.T.S.

SHEET INDEX

LEGEND

EXISTING ITEMS

- PROPERTY LINE
- CENTERLINE OF RIGHT-OF-WAY
- RTW = RETAINING WALL
- FNC = FENCE LINE
- EOG = EDGE OF GRAVEL
- PB = BURIED POWER LINE
- OVERHEAD POWER LINE
- KCW 12" = KETCHUM CITY WATER LINE (12")
- KCW 10" = KETCHUM CITY WATER LINE (10")
- KCW 8" = KETCHUM CITY WATER LINE (8")
- KCW 6" = KETCHUM CITY WATER LINE (6")
- KSW 10" = KETCHUM SPRING LINE (10")
- KSW 8" = KETCHUM SPRING LINE (8")
- KSW 4" = KETCHUM SPRING LINE (4")
- KSW 4" = KETCHUM SPRING LINE (4"-ABANDONED)
- WS = WATER SERVICE
- S = 8" SEWER MAIN
- SS = SS = SEWER SERVICE
- G = GM = GAS MAIN
- GS = GAS SERVICE
- T = PHB = BURIED TELEPHONE LINE
- SD = STORM DRAIN
- 5' CONTOUR INTERVAL
- 1' CONTOUR INTERVAL
- DRIPLINE OF VEGETATION
- GUARD RAIL
- HAND RAIL
- CURB & GUTTER
- EDGE OF ASPHALT
- PAVERS
- CONCRETE
- BUILDING
- FOUND ALUMINUM CAP
- FOUND 5/8" REBAR
- FH = FIRE HYDRANT
- WV = WATER VALVE
- WTMTR = WATER METER
- VB = VALVE BOX
- FO = FIBER OPTIC VAULT
- GV = GAS VALVE
- GAS = GMKR = GAS MARKER
- TV = TVBOX = TV RISER
- PH = PHBOX = TELEPHONE RISER
- PM = PHMH = TELEPHONE MANHOLE
- SIGN
- S = SMH = SEWER MANHOLE
- SCO = SEWER CLEANOUT
- W = WMH = WATER MANHOLE
- PITMETER
- CB = CATCH BASIN
- DWELL = DRY WELL
- SDMH = STORM DRAIN MANHOLE
- E = PMH = POWER MANHOLE
- LIGHT
- PP = POWER POLE
- GUY = GUYWIRE
- PB = PBOX = POWER BOX
- PBOX* = SUBSURFACE POWER BOX
- DT = DECIDUOUS TREE
- CT = CONIFER TREE

- AP = ANGLE POINT
- BEG = BEGINNING
- BLDG = BUILDING
- BOW = BACK OF WALK
- CC = CURB CUT
- CL = CENTER LINE
- CLUST = CLUSTER
- COR = CORNER
- DAY = DAYLIGHT
- DFF = DECK FINISHED FLOOR
- DY = DOUBLE YELLOW LINE
- EOA = EDGE OF ASPHALT
- EOC = EDGE OF CONCRETE
- EOP = EDGE OF PAVERS
- FF = FINISHED FLOOR
- FL = FLOW LINE
- GB = GRADE BREAK
- GRG = GARAGE
- HDR = HEADER (WOOD RETAINING WALL/CURB)
- INT = INTERSECTION
- LIP = LIP OF GUTTER
- NG = NATURAL GROUND
- PC = POINT OF CURVATURE
- PI = POINT OF INTERSECTION
- PT = POINT OF TANGENCY
- TBC = TOP BACK OF CURB
- TOE = TOE OF SLOPE
- TOP = TOP OF SLOPE
- TP = TOP OF PAVEMENT
- TW = TOP OF WALL
- T-WELL = TREE WELL
- TBW = TOP BACK OF WALK
- WM = WATERMAIN
- X-WALK = CROSSWALK

PROPOSED ITEMS

- NEW ASPHALT
- ASPHALT TO BE REMOVED
- CONCRETE SIDEWALK
- CONCRETE 6" ROLLED CURB
- CONCRETE VERTICAL CURB
- CURB TRANSITION (ZERO REVEAL TO TYPICAL 6" VERTICAL)
- CURB TRANSITION (6" VERTICAL TO ROLLED CURB)
- ZERO REVEAL CURB & GUTTER
- CURB PAINTED RED
- RETAINING WALL WITH GUARD RAIL
- ADA ACCESS TRUNCATED DOME
- SIGN
- FIRE HYDRANT
- WATER VALVE
- WATER FITTINGS W/ THRUST BLOCK
- HAND RAIL
- 5' CONTOUR INTERVAL
- 1' CONTOUR INTERVAL
- PAVERS
- CONCRETE TO BE REMOVED
- AREA TO BE GRUBBED
- D = DRYWELL
- SD = STORM DRAIN
- CATCH BASIN
- SAWCUT LINE
- APPROXIMATE LIMITS OF DISTURBANCE
- ROAD PAINT
- 2.0% GRADE
- LIP 50.00 = SPOT ELEVATION
- STREET LIGHT
- ADA ACCESS RAMP / LANDING

COVER SHEET
KETCHUM 2022 SIDEWALK INFILL

PREPARED FOR CITY OF KETCHUM

PROJECT INFORMATION
P:\sidskpro\1318-174 sidewalks\dwg\Construction\1318-174_Eng_2020-02(Cover).dwg 02/28/22 10:33:27 AM

PROFESSIONAL ENGINEER REGISTERED 7986 STATE OF IDAHO CHRISTOPHER T. CROCKETT
PRELIMINARY NOT FOR CONSTRUCTION

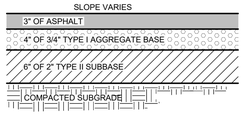
CT/JCL DESIGNED BY
CT DRAWN BY
JCL CHECKED BY

GALENA ENGINEERING, INC.
Civil Engineers & Land Surveyors
317 N. River Street
Hailey, Idaho 83333
(208) 788-1705
email galena@galena-engineering.com

PURPOSE: BID SET (03/03/2022)

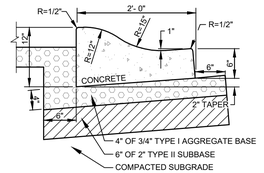
NO	DATE	BY	REVISIONS

C0.1



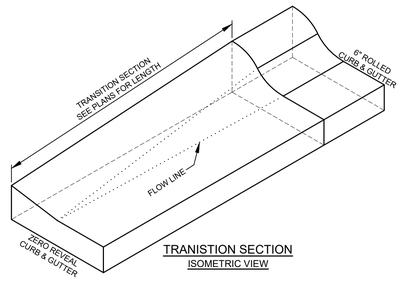
NOTES:
1. SUBBASE CAN BE 2" TYPE II OR ¾" TYPE I CRUSHED AGGREGATE BASE COURSE.
2. MATERIALS SHALL CONFORM WITH CURRENT ISPWC STANDARDS, DIVISION 800 AGGREGATES AND ASPHALT.
3. PAVEMENT SECTION MAY BE MODIFIED IF A PROJECT SPECIFIC GEOTECHNICAL REPORT, STAMPED BY A LICENSED ENGINEER, IS PROVIDED.

1 / C0.2 **TYPICAL STREET ASPHALT SECTION**
N.T.S.

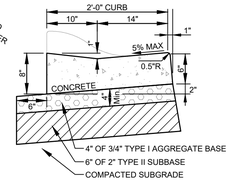


NOTES:
1. SUBBASE CAN BE 2" TYPE II OR ¾" TYPE I CRUSHED AGGREGATE BASE COURSE.
2. MATERIALS SHALL CONFORM WITH CURRENT ISPWC STANDARDS, DIVISION 800 AGGREGATES AND ASPHALT.
3. PAVEMENT SECTION MAY BE MODIFIED IF A PROJECT SPECIFIC GEOTECHNICAL REPORT, STAMPED BY A LICENSED ENGINEER, IS PROVIDED.
4. 1/2-INCH PREFORMED EXPANSION JOINT MATERIAL (AASHTO M 213) AT TERMINAL POINTS OF RADII.
5. CONTINUOUS PLACEMENT PREFERRED, SCORE INTERVALS 10-FEET MAXIMUM SPACING (8-FEET W/SIDEWALK).

2d / C0.2 **6" CONCRETE ROLLED CURB & GUTTER**
N.T.S.



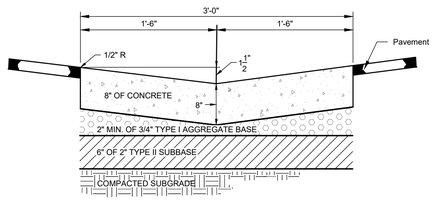
TRANISTION SECTION
ISOMETRIC VIEW



ZERO REVEAL CURB & GUTTER

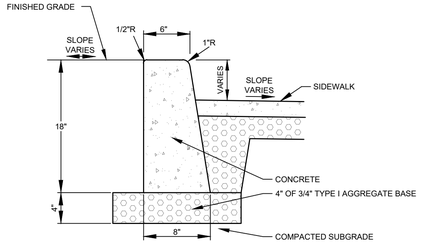
NOTES:
1. SUBBASE CAN BE 2" TYPE II OR ¾" TYPE I CRUSHED AGGREGATE BASE COURSE.
2. MATERIALS SHALL CONFORM WITH CURRENT ISPWC STANDARDS, DIVISION 800 AGGREGATES AND ASPHALT.
3. PAVEMENT SECTION MAY BE MODIFIED IF A PROJECT SPECIFIC GEOTECHNICAL REPORT, STAMPED BY A LICENSED ENGINEER, IS PROVIDED.
4. 1/2-INCH PREFORMED EXPANSION JOINT MATERIAL (AASHTO M 213) AT TERMINAL POINTS OF RADII.
5. CONTINUOUS PLACEMENT PREFERRED, SCORE INTERVALS 10-FEET MAXIMUM SPACING (8-FEET W/SIDEWALK).

2b / C0.2 **TYPICAL CURB TRANSITION DETAIL**
N.T.S.



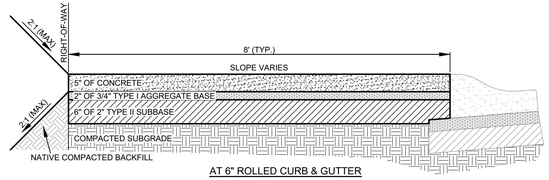
NOTES:
1. SUBBASE CAN BE 2" TYPE II OR ¾" TYPE I CRUSHED AGGREGATE BASE COURSE.
2. MATERIALS SHALL CONFORM WITH CURRENT ISPWC STANDARDS, DIVISION 800 AGGREGATES AND ASPHALT.
3. PAVEMENT SECTION MAY BE MODIFIED IF A PROJECT SPECIFIC GEOTECHNICAL REPORT, STAMPED BY A LICENSED ENGINEER, IS PROVIDED.
4. 1/2-INCH PREFORMED EXPANSION JOINT MATERIAL (AASHTO M 213) AT TERMINAL POINTS OF RADII.
5. CONTINUOUS PLACEMENT PREFERRED, SCORE INTERVALS 10-FEET MAXIMUM SPACING.

2c / C0.2 **36" CONCRETE VALLEY GUTTER**
N.T.S.

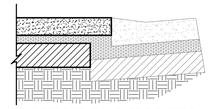


NOTES:
1. SUBBASE CAN BE 2" TYPE II OR ¾" TYPE I CRUSHED AGGREGATE BASE COURSE.
2. MATERIALS SHALL CONFORM WITH CURRENT ISPWC STANDARDS, DIVISION 800 AGGREGATES AND ASPHALT.
3. PAVEMENT SECTION MAY BE MODIFIED IF A PROJECT SPECIFIC GEOTECHNICAL REPORT, STAMPED BY A LICENSED ENGINEER, IS PROVIDED.
4. 1/2-INCH PREFORMED EXPANSION JOINT MATERIAL (AASHTO M 213) AT TERMINAL POINTS OF RADII.
5. CONTINUOUS PLACEMENT PREFERRED, SCORE INTERVALS 10-FEET MAXIMUM SPACING (8-FEET W/SIDEWALK).

2d / C0.2 **CONCRETE VERTICAL CURB**
N.T.S.



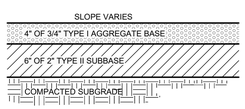
AT 6" ROLLED CURB & GUTTER



AT ZERO REVEAL CURB & GUTTER

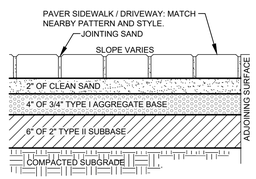
NOTES:
1. SUBBASE CAN BE 2" TYPE II OR ¾" TYPE I CRUSHED AGGREGATE BASE COURSE.
2. MATERIALS SHALL CONFORM WITH CURRENT ISPWC STANDARDS, DIVISION 800 AGGREGATES AND ASPHALT.
3. PAVEMENT SECTION MAY BE MODIFIED IF A PROJECT SPECIFIC GEOTECHNICAL REPORT, STAMPED BY A LICENSED ENGINEER, IS PROVIDED.
4. 1/2-INCH PREFORMED EXPANSION JOINT MATERIAL (AASHTO M 213) AT TERMINAL POINTS OF RADII.
5. CONTINUOUS PLACEMENT PREFERRED, SCORE INTERVALS 10-FEET MAXIMUM SPACING (8-FEET W/SIDEWALK).

3 / C0.2 **TYPICAL CONCRETE SIDEWALK SECTION**
N.T.S.



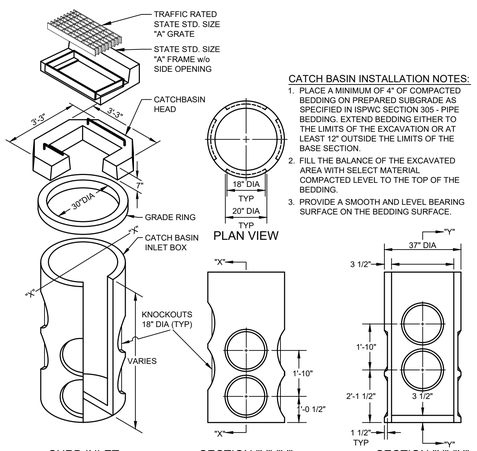
NOTES:
1. SUBBASE CAN BE 2" TYPE II OR ¾" TYPE I CRUSHED AGGREGATE BASE COURSE.
2. MATERIALS SHALL CONFORM WITH CURRENT ISPWC STANDARDS, DIVISION 800 AGGREGATES AND ASPHALT.
3. PAVEMENT SECTION MAY BE MODIFIED IF A PROJECT SPECIFIC GEOTECHNICAL REPORT, STAMPED BY A LICENSED ENGINEER, IS PROVIDED.

4 / C0.2 **TYPICAL GRAVEL SECTION**
N.T.S.



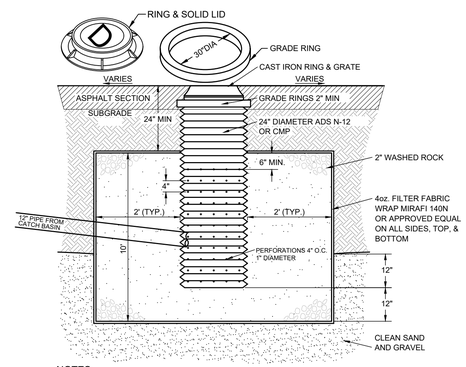
NOTES:
1. SUBBASE CAN BE 2" TYPE II OR ¾" TYPE I CRUSHED AGGREGATE BASE COURSE.
2. MATERIALS SHALL CONFORM WITH CURRENT ISPWC STANDARDS, DIVISION 800 AGGREGATES AND ASPHALT.
3. PAVEMENT SECTION MAY BE MODIFIED IF A PROJECT SPECIFIC GEOTECHNICAL REPORT, STAMPED BY A LICENSED ENGINEER, IS PROVIDED.

5 / C0.2 **PAVER DETAIL**
N.T.S.



CATCH BASIN INSTALLATION NOTES:
1. PLACE A MINIMUM OF 4" OF COMPACTED BEDDING ON PREPARED SUBGRADE AS SPECIFIED IN ISPWC SECTION 305 - PIPE BEDDING. EXTEND BEDDING EITHER TO THE LIMITS OF THE EXCAVATION OR AT LEAST 12" OUTSIDE THE LIMITS OF THE BASE SECTION.
2. FILL THE BALANCE OF THE EXCAVATED AREA WITH SELECT MATERIAL COMPACTED LEVEL TO THE TOP OF THE BEDDING.
3. PROVIDE A SMOOTH AND LEVEL BEARING SURFACE ON THE BEDDING SURFACE.

6 / C0.2 **30" DIAMETER CATCH BASIN**
N.T.S.



NOTES:
1. THE BED SHALL BE EXCAVATED A MINIMUM OF 24" INTO CLEAN SAND AND GRAVEL.
2. MAXIMUM DEPTH SHALL NOT EXCEED 12 FEET.
3. IF CLEAN SAND AND GRAVEL IS NOT ENCOUNTERED WITHIN 12 FEET, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER.
4. GRATE OR SOLID LID AS APPROVED BY CITY OF KETCHUM.

7 / C0.2 **DRYWELL DETAIL (6'X6')**
N.T.S.

DETAIL SHEET
KETCHUM 2022 SIDEWALK INFILL

PREPARED FOR CITY OF KETCHUM

PROJECT INFORMATION
P:\sdskproj\1318-174 sidewalks\dwg\Construction\1318-174_Eng_2020-02(Cover).dwg 02/28/22 10:33:27 AM

PROFESSIONAL ENGINEER
REGISTERED
7986
STATE OF IDAHO
C LOOMIS
PRELIMINARY NOT FOR CONSTRUCTION

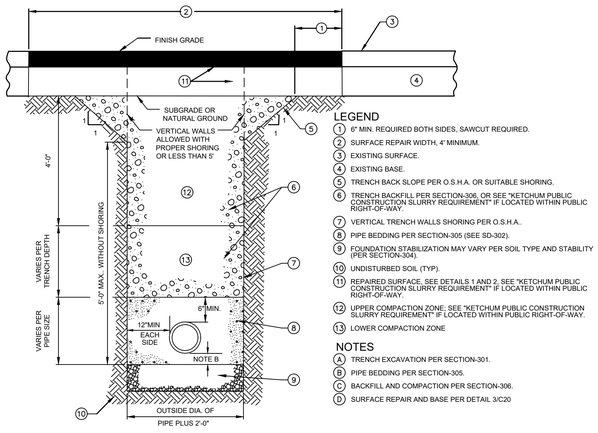
CT/JCL
DESIGNED BY
CT
DRAWN BY
JCL
CHECKED BY

GALENA ENGINEERING, INC.
Civil Engineers & Land Surveyors
317 N. River Street
Hailey, Idaho 83333
(208) 788-1705
email galena@galena-engineering.com

PURPOSE: BID SET (03/03/2022)

NO	DATE	BY	REVISIONS

C0.2



LEGEND

1. 6" MIN. REQUIRED BOTH SIDES, SAWCUT REQUIRED.
2. SURFACE REPAIR WIDTH, 4' MINIMUM.
3. EXISTING SURFACE.
4. EXISTING BASE.
5. TRENCH BACK SLOPE PER O.S.H.A. OR SUITABLE SHORING.
6. TRENCH BACKFILL PER SECTION-306, OR SEE "KETCHUM PUBLIC CONSTRUCTION SLURRY REQUIREMENT" IF LOCATED WITHIN PUBLIC RIGHT-OF-WAY.
7. VERTICAL TRENCH WALLS SHORING PER O.S.H.A..
8. PIPE BEDDING PER SECTION-305 (SEE SD-302).
9. FOUNDATION STABILIZATION MAY VARY PER SOIL TYPE AND STABILITY (PER SECTION-304).
10. UNDISTURBED SOIL (TYP).
11. REPAIRED SURFACE, SEE DETAILS 1 AND 2, SEE "KETCHUM PUBLIC CONSTRUCTION SLURRY REQUIREMENT" IF LOCATED WITHIN PUBLIC RIGHT-OF-WAY.
12. UPPER COMPACTION ZONE: SEE "KETCHUM PUBLIC CONSTRUCTION SLURRY REQUIREMENT" IF LOCATED WITHIN PUBLIC RIGHT-OF-WAY.
13. LOWER COMPACTION ZONE

NOTES

- A. TRENCH EXCAVATION PER SECTION-301.
- B. PIPE BEDDING PER SECTION-305.
- C. BACKFILL AND COMPACTION PER SECTION-306.
- D. SURFACE REPAIR AND BASE PER DETAIL 3/C20

KETCHUM PUBLIC CONSTRUCTION SLURRY REQUIREMENT

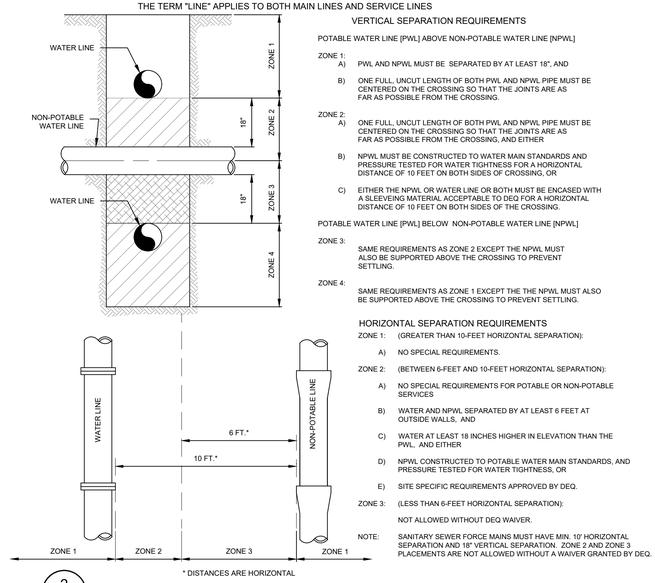
IN AREAS WHERE IT IS NECESSARY TO CUT THE ASPHALT PAVEMENT AND DIG A TRENCH FOR BURIAL OF CONDUIT CABLE OR OTHER CITY UTILITY, THE TRENCH SHALL BE BACKFILLED WITH A LEAN CONCRETE MIX TO THE BOTTOM OF FINISH SURFACE MATERIAL WITH THE FOLLOWING PROPORTIONS OF MATERIALS:

COARSE AGGREGATE (¾" MINUS)	:	2,600 LBS
SAND	:	800 LBS
PORTLAND CEMENT	:	94 LBS
WATER	:	11 GAL (MAX.)

WATER CONTENT IS MAXIMUM AND MAY BE REDUCING DOWNWARD. CARES SHALL BE TAKEN TO ASSURE THAT EXCESS WATER IS NOT PRESENT IN THE MIXING DRUM PRIOR TO CHARGING THE MIXER WITH MATERIALS. THOROUGH MIXING WILL BE REQUIRED PRIOR TO DISCHARGE.

NO COMPACTION, VIBRATION OR FINISHING IS REQUIRED. THE LEAN CONCRETE MIX SHALL BE STRUCK OFF AT OR BELOW THE ELEVATION OF THE PLANTMIX SURFACING WITH A SQUARE-NOSE SHOVEL OR SIMILAR HAND TOOL. THE BACKFILL MIX SHALL BE ALLOWED TO SET FOR A MINIMUM OF 2 HOURS BEFORE THE PERMANENT PLANTMIX SURFACING IS PLACED TO COMPLETE THE TRENCH REPAIR. TEMPORARY PLACEMENT OF ASPHALT COLD MIX SURFACING MAY BE NECESSARY TO ACCOMMODATE TRAFFIC WITHIN THE FIRST 2 HOURS OF BACKFILL PLACEMENT PRIOR TO COMPLETING THE PERMANENT REPAIR.

1 / C0.3 TYPICAL TRENCH SECTION
N.T.S.



VERTICAL SEPARATION REQUIREMENTS

POTABLE WATER LINE [PWL] ABOVE NON-POTABLE WATER LINE [NPWL]

ZONE 1:
- A) PWL AND NPWL MUST BE SEPARATED BY AT LEAST 18", AND
- B) ONE FULL, UNCUT LENGTH OF BOTH PWL AND NPWL PIPE MUST BE CENTERED ON THE CROSSING SO THAT THE JOINTS ARE AS FAR AS POSSIBLE FROM THE CROSSING.

ZONE 2:
- A) ONE FULL, UNCUT LENGTH OF BOTH PWL AND NPWL PIPE MUST BE CENTERED ON THE CROSSING SO THAT THE JOINTS ARE AS FAR AS POSSIBLE FROM THE CROSSING, AND EITHER
- B) NPWL MUST BE CONSTRUCTED TO WATER MAIN STANDARDS AND PRESSURE TESTED FOR WATER TIGHTNESS FOR A HORIZONTAL DISTANCE OF 10 FEET ON BOTH SIDES OF CROSSING, OR
- C) EITHER THE NPWL OR WATER LINE OR BOTH MUST BE ENCASED WITH A SLEEVEING MATERIAL ACCEPTABLE TO DEQ FOR A HORIZONTAL DISTANCE OF 10 FEET ON BOTH SIDES OF THE CROSSING.

POTABLE WATER LINE [PWL] BELOW NON-POTABLE WATER LINE [NPWL]

ZONE 3:
SAME REQUIREMENTS AS ZONE 2 EXCEPT THE NPWL MUST ALSO BE SUPPORTED ABOVE THE CROSSING TO PREVENT SETTLING.

ZONE 4:
SAME REQUIREMENTS AS ZONE 1 EXCEPT THE THE NPWL MUST ALSO BE SUPPORTED ABOVE THE CROSSING TO PREVENT SETTLING.

HORIZONTAL SEPARATION REQUIREMENTS

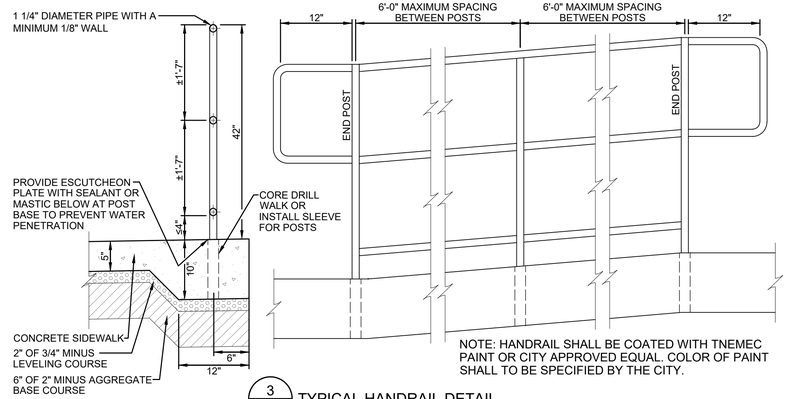
ZONE 1: (GREATER THAN 10-FEET HORIZONTAL SEPARATION):
- A) NO SPECIAL REQUIREMENTS.

ZONE 2: (BETWEEN 6-FEET AND 10-FEET HORIZONTAL SEPARATION):
- A) NO SPECIAL REQUIREMENTS FOR POTABLE OR NON-POTABLE SERVICES
- B) WATER AND NPWL SEPARATED BY AT LEAST 6 FEET AT OUTSIDE WALLS, AND
- C) WATER AT LEAST 18 INCHES HIGHER IN ELEVATION THAN THE PWL, AND EITHER
- D) NPWL CONSTRUCTED TO POTABLE WATER MAIN STANDARDS, AND PRESSURE TESTED FOR WATER TIGHTNESS, OR
- E) SITE SPECIFIC REQUIREMENTS APPROVED BY DEQ.

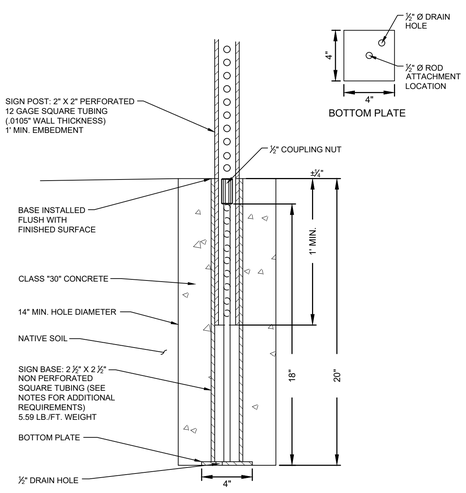
ZONE 3: (LESS THAN 6-FEET HORIZONTAL SEPARATION):
NOT ALLOWED WITHOUT DEQ WAIVER.

NOTE: SANITARY SEWER FORCE MAINS MUST HAVE MIN. 10' HORIZONTAL SEPARATION AND 18" VERTICAL SEPARATION. ZONE 2 AND ZONE 3 PLACEMENTS ARE NOT ALLOWED WITHOUT A WAIVER GRANTED BY DEQ.

2 / C0.3 POTABLE AND NON-POTABLE WATER LINE (NPWL) SEPARATION
N.T.S.



3 / C0.3 TYPICAL HANDRAIL DETAIL
N.T.S.

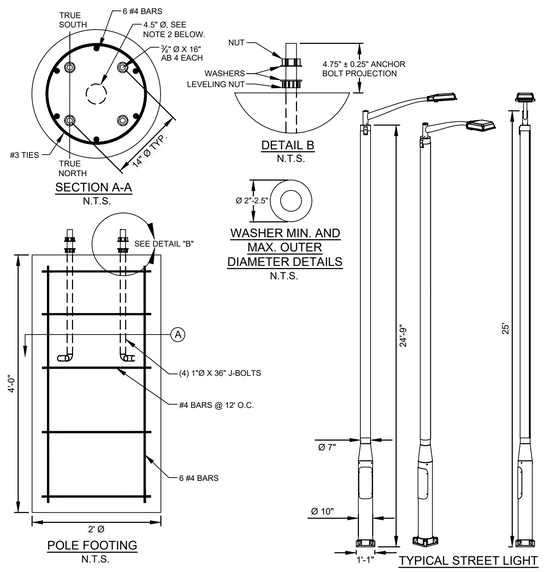


NOTES:

1. BASES SHALL BE INSTALLED TO BE FLUSH WITH SURFACE.
2. ALL INSTALLATIONS SHALL HAVE 14" Ø MINIMUM FOUNDATION OR GROUTED INTO SOLID ROCK.
3. ALL STREET SIGNS SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THE MUTCD.
4. SIGN PLACEMENT SHALL BE APPROVED BY THE CITY OF KETCHUM.
5. CITY TO PROVIDE BASES.

SIGN BASE MATERIAL & DIMENSION REQUIREMENTS
2 ½" OUTSIDE TUBE STEEL (20" LENGTH)
2 ½" INSIDE TUBE STEEL
⅜" THICK
INTERNAL ROD MATERIAL & DIMENSION REQUIREMENTS
½" COLD ROLLED ROD (18" LENGTH)
½" COUPLING NUTS
BOTTOM PLATE MATERIAL & DIMENSION REQUIREMENTS
4" X 4" X ¼" STEEL STRAP

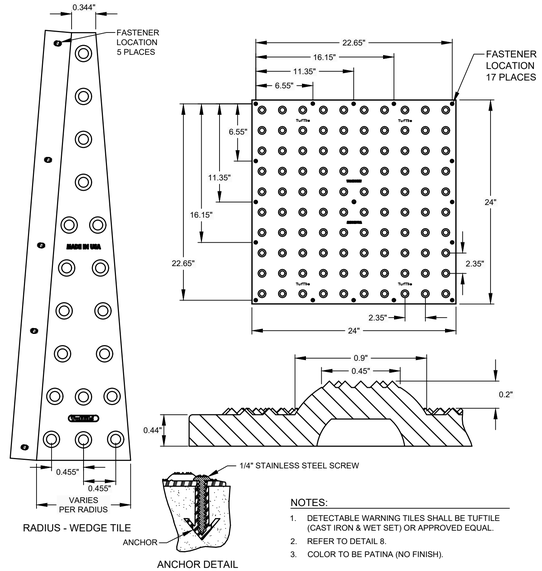
4 / C0.3 TYPICAL SIGN BASE
N.T.S.



NOTES:

1. STREET LIGHT IS SOLARONE RFS DESIGN 158 LFP OR APPROVED EQUAL.
2. ANY CONDUITS AND/OR GROUNDING WIRES MUST BE HARDWIRED AND CONTAINED WITHIN A 4.5" Ø CIRCLE CENTERED ON THE FOUNDATION. GROUNDING ELECTRODE WIRE AND AC SUPPLY WIRE (IF REQUIRED) ARE 5' MIN. ABOVE THE BASE.
3. ANCHOR BOLT ORIENTATION TO TRUE NORTH/SOUTH IS ONLY RELEVANT FOR OFF-GRID SOLAR POLES. DISREGARD FOR GRID-TIED POLES.
4. GROUNDING WIRE MUST BE 60" FROM BASE SO IT CAN REACH THE GROUNDING LUG INSIDE THE POLE.
5. STREET LIGHT SHALL BE 25' IN HEIGHT OR AS APPROVED BY CITY OF KETCHUM.

5 / C0.3 TYPICAL STREET LIGHT
N.T.S.



NOTES:

1. DETECTABLE WARNING TILES SHALL BE TUFTILE (CAST IRON & WET SET) OR APPROVED EQUAL.
2. REFER TO DETAIL 8.
3. COLOR TO BE PATINA (NO FINISH).

6 / C0.3 DETECTABLE WARNING PLATE
N.T.S.

DETAIL SHEET
KETCHUM 2022 SIDEWALK INFILL

PREPARED FOR CITY OF KETCHUM

PROJECT INFORMATION
P:\sdskproj\1318-174 sidewalks\dwg\Construction\1318-174_Eng_2020-02(Cover).dwg 02/28/22 10:33:27 AM

PRELIMINARY NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER REGISTERED 7986 STATE OF IDAHO CHRISTOPHER T. CRAIG LOOMIS

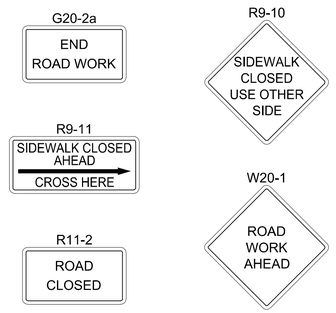
CT/JCL DESIGNED BY
CT DRAWN BY
JCL CHECKED BY

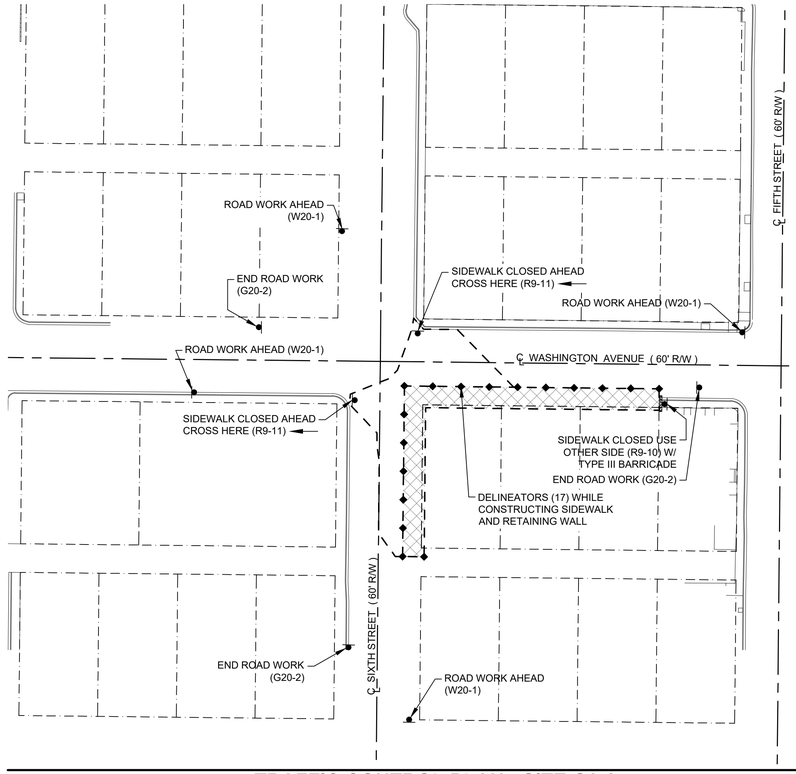
GALENA ENGINEERING, INC.
Civil Engineers & Land Surveyors
317 N. River Street
Hailey, Idaho 83333
(208) 788-1705
email galena@galena-engineering.com

PURPOSE: BID SET (03/03/2022)

NO	DATE	BY	REVISIONS

C0.3

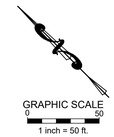




TRAFFIC CONTROL PLAN: SITE Q3-2
SOUTH CORNER OF THE INTERSECTION OF 6TH ST. AND WASHINGTON AVE.

NOTES

1. ALL SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE CURRENT MUTCD. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE NUMBER OF BARRICADES, SIGNS, AND MANPOWER TO PREVENT ALL PUBLIC ACCESS TO THE CONSTRUCTION AREA.
2. THE CONTRACTOR SHALL PROVIDE, ERECT, AND MAINTAIN ALL TRAFFIC CONTROL DEVICES AS REQUIRED BY THESE PROJECT DOCUMENTS. THE OVERALL EFFECTIVENESS UNDER BOTH DAY AND NIGHT CONDITIONS AND THE PLACEMENT OF THESE INSTALLATIONS SHALL BE MAINTAINED, AND ADJUSTMENTS AND CLEANING DONE TO ENSURE OPTIMUM PERFORMANCE OF THE TRAFFIC CONTROL DEVICES.
3. THE CONTRACTOR SHALL SUBMIT ANY CHANGES TO THE CONTROL PLAN FOR APPROVAL BY OWNER AND THE CITY ENGINEER. NO CHANGES TO THE TRAFFIC CONTROL PLAN SHALL BE IMPLEMENTED UNTIL APPROVAL OR CHANGES ARE RECEIVED IN WRITING.
4. THE CONTRACTOR SHALL COVER EXISTING TRAFFIC CONTROL SIGNS IN CONSTRUCTION ZONE.
5. THE CONTRACTOR SHALL COORDINATE CLOSURE OF DRIVEWAYS WITH OWNERS, IF NECESSARY.
6. THE CONTRACTOR SHALL COORDINATE CLOSURE OF STREET / INTERSECTION WITH THE STREET DEPARTMENT WHEN THE INTERSECTION IS RECONSTRUCTED.



LEGEND

- PROPERTY LINE
- CENTERLINE OF RIGHT-OF-WAY
- TEMPORARY TRAFFIC CONTROL SIGN
- EXPECTED LIMITS OF PROJECT
- DELINEATORS
- TYPE III BARRICADE

SIGN SUMMARY		
TYPE	DESCRIPTION	QUANTITY
G20-2	END ROAD WORK	4
R9-10	SIDEWALK CLOSED USE OTHER SIDE	1
R9-11	SIDEWALK CLOSED AHEAD CROSS HERE	2
W20-1	ROAD WORK AHEAD	4
	DELINEATORS	17
	TYPE III BARRICADE	1

TRAFFIC CONTROL PLAN
KETCHUM 2022 SIDEWALK INFILL - SITE Q3-2
SOUTH CORNER OF THE INTERSECTION OF 6TH ST. AND WASHINGTON AVE.

PREPARED FOR CITY OF KETCHUM

PROJECT INFORMATION
P:\sdskproj\1318-174 sidewalks\dwg\Construction\1318-174_Eng_2020-02(q3-2 full wall).dwg 03/03/22 8:06:06 AM

PROFESSIONAL ENGINEER
REGISTERED
7986
03/03/22
STATE OF IDAHO
JEFF C. LOOMIS
PRELIMINARY NOT FOR CONSTRUCTION

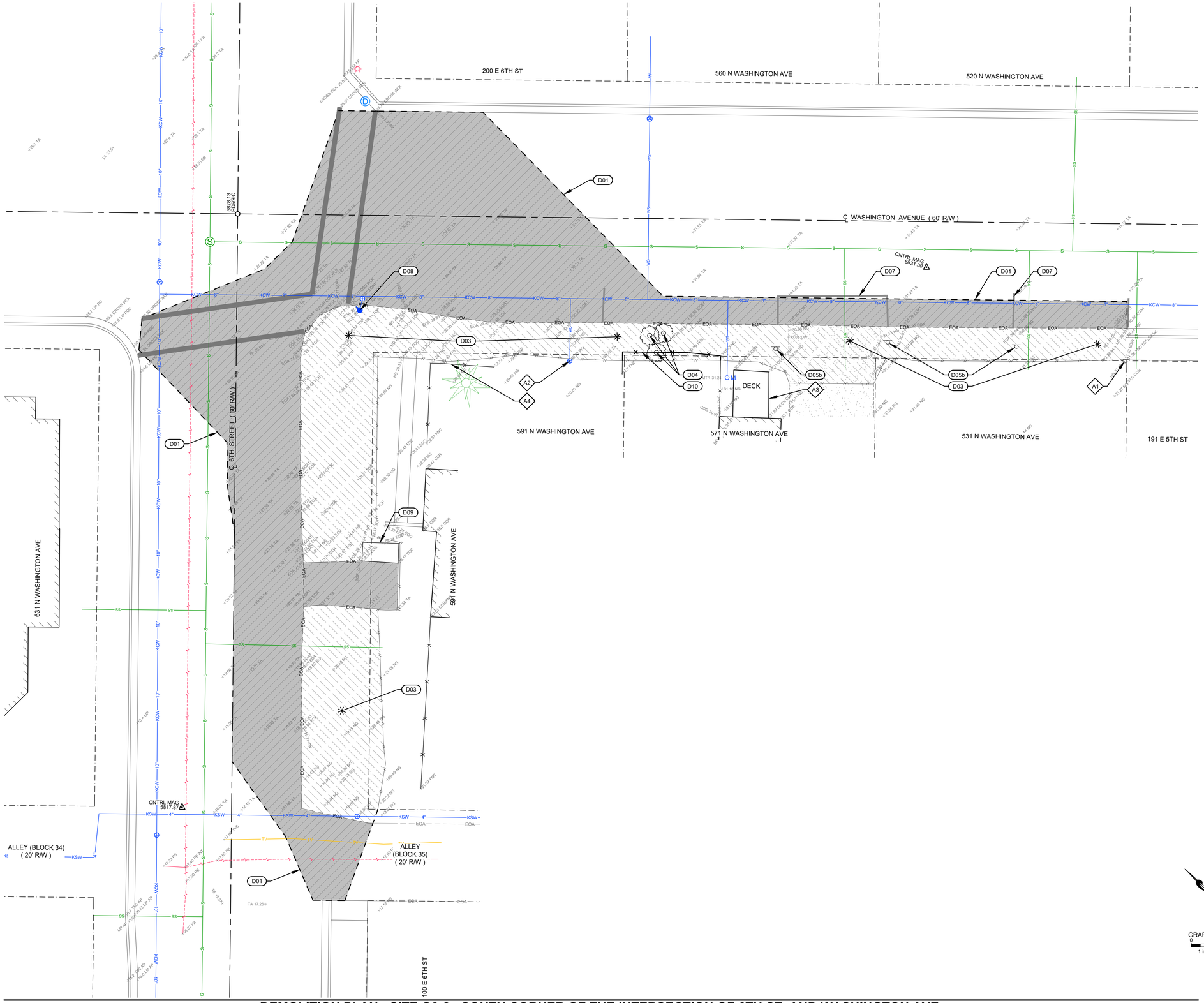
CT/JCL
DESIGNED BY
CT
DRAWN BY
JCL
CHECKED BY

GALENA ENGINEERING, INC.
Civil Engineers & Land Surveyors
317 N. River Street
Hailey, Idaho 83333
(208) 788-1705
email galena@galena-engineering.com

PURPOSE: BID SET (03/03/2022)

NO	DATE	BY	REVISIONS

Q3-2.0



GRAPHIC SCALE
0 10
1 inch = 10 ft.

DEMOLITION KEY NOTES

- D01 SAWCUT ASPHALT AS SHOWN TO PROVIDE CLEAN VERTICAL EDGE. REMOVE AND DISPOSE OF ASPHALT.
- D03 GRUB SITE
- D04 REMOVE AND DISPOSE OF TREE AND ROOT BALL SYSTEM
- D05 REMOVE SIGN:
  a. RETAIN AND RETURN TO OWNER.
  b. RETAIN SIGN. TO BE RELOCATED TO NEW SIDEWALK (SEE CORRESPONDING SIDEWALK DESIGN SHEET).
- D07 OBLITERATE PAVEMENT MARKINGS
- D08 RELOCATE FIRE HYDRANT (SEE CORRESPONDING SIDEWALK DESIGN SHEET FOR NEW LOCATION).
- D09 REMOVE AND DISPOSE OF STRUCTURE:
  a. REMOVE AND DISPOSE OF ENCROACHING STRUCTURE OR SAWCUT PORTION ENCROACHING AND TIE INTO NEW WALL. COORDINATE DEMOLITION OF STRUCTURE WITH OWNER AND STRUCTURAL ENGINEER.
- D10 REMOVE AND RETAIN FENCE.
- A RETAIN AND PROTECT
  1. SIGN
  2. WATER VALVE
  3. WOOD DECK
  4. FENCE

DEMOLITION PLAN
KETCHUM 2022 SIDEWALK INFILL - SITE Q3-2
SOUTH CORNER OF THE INTERSECTION OF 6TH ST. AND WASHINGTON AVE.

PREPARED FOR CITY OF KETCHUM

PROJECT INFORMATION
P:\sdskproj\1318-174 sidewalks4\dwg\Construction\1318-174_Eng_2020-02\q3-2 full wall.dwg 03/03/22 8:06:06 AM

PRELIMINARY NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER
REGISTERED
7986
03/03/22
STATE OF IDAHO
JEFFREY C. LOOMIS

CT/JCL
DESIGNED BY
CT
DRAWN BY
JCL
CHECKED BY

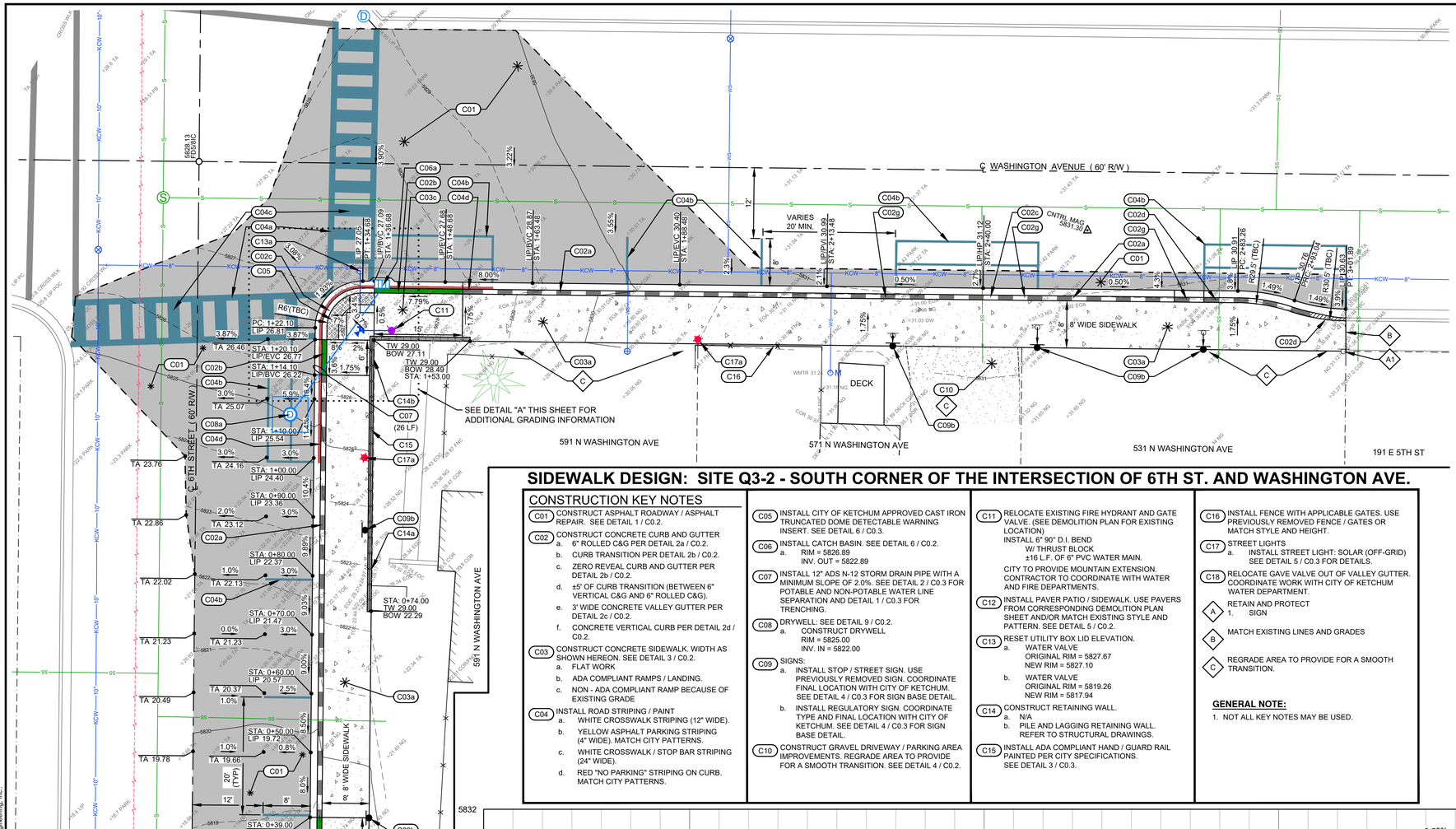
GALENA ENGINEERING, INC.
Civil Engineers & Land Surveyors
317 N. River Street
Hailey, Idaho 83333
(208) 788-1705
email galena@galena-engineering.com

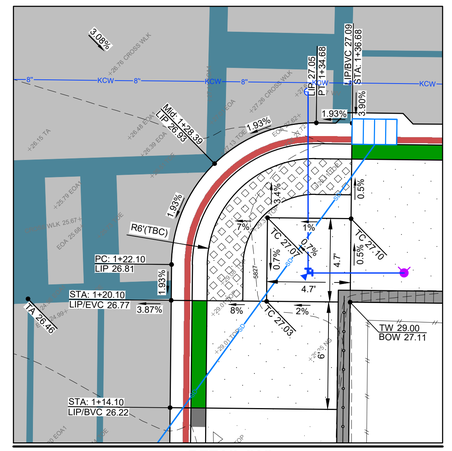
PURPOSE: BID SET (03/03/2022)

NO	DATE	BY	REVISIONS

Q3-2.1

DEMOLITION PLAN: SITE Q3-2 - SOUTH CORNER OF THE INTERSECTION OF 6TH ST. AND WASHINGTON AVE.





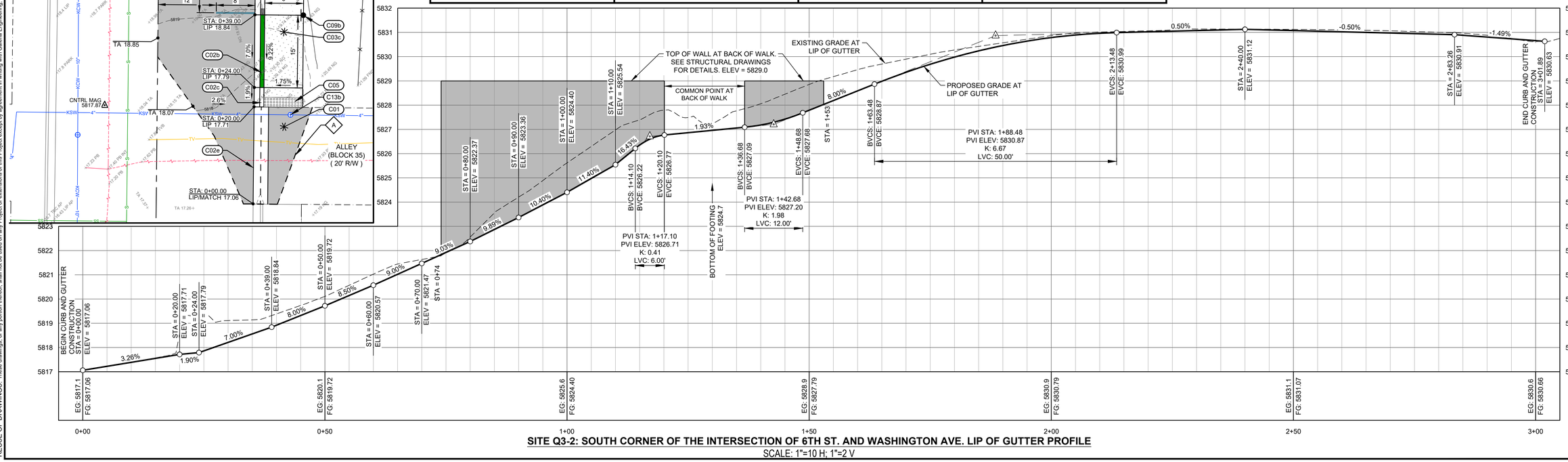
SIDEWALK DESIGN: SITE Q3-2 - SOUTH CORNER OF THE INTERSECTION OF 6TH ST. AND WASHINGTON AVE.

CONSTRUCTION KEY NOTES

- **C01** CONSTRUCT ASPHALT ROADWAY / ASPHALT REPAIR. SEE DETAIL 1 / C0.2.
- **C02** CONSTRUCT CONCRETE CURB AND GUTTER
  - a. 6" ROLLED C&G PER DETAIL 2a / C0.2.
  - b. CURB TRANSITION PER DETAIL 2b / C0.2.
  - c. ZERO REVEAL CURB AND GUTTER PER DETAIL 2b / C0.2.
  - d. ±5' OF CURB TRANSITION (BETWEEN 6" VERTICAL C&G AND 6" ROLLED C&G).
  - e. 3' WIDE CONCRETE VALLEY GUTTER PER DETAIL 2c / C0.2.
  - f. CONCRETE VERTICAL CURB PER DETAIL 2d / C0.2.
- **C03** CONSTRUCT CONCRETE SIDEWALK. WIDTH AS SHOWN HEREON. SEE DETAIL 3 / C0.2.
  - a. FLAT WORK
  - b. ADA COMPLIANT RAMPS / LANDING.
  - c. NON - ADA COMPLIANT RAMP BECAUSE OF EXISTING GRADE
- **C04** INSTALL ROAD STRIPING / PAINT
  - a. WHITE CROSSWALK STRIPING (12" WIDE).
  - b. YELLOW ASPHALT PARKING STRIPING (4" WIDE). MATCH CITY PATTERNS.
  - c. WHITE CROSSWALK / STOP BAR STRIPING (24" WIDE).
  - d. RED "NO PARKING" STRIPING ON CURB. MATCH CITY PATTERNS.
- **C05** INSTALL CITY OF KETCHUM APPROVED CAST IRON TRUNCATED DOME DETECTABLE WARNING INSERT. SEE DETAIL 6 / C0.3.
- **C06** INSTALL CATCH BASIN. SEE DETAIL 6 / C0.2.
  - a. RIM = 5826.89
  - INV. OUT = 5822.89
- **C07** INSTALL 12" ADS N-12 STORM DRAIN PIPE WITH A MINIMUM SLOPE OF 2.0%. SEE DETAIL 2 / C0.3 FOR POTABLE AND NON-POTABLE WATER LINE SEPARATION AND DETAIL 1 / C0.3 FOR TRENCHING.
- **C08** DRYWELL: SEE DETAIL 9 / C0.2.
  - a. CONSTRUCT DRYWELL
  - RIM = 5825.00
  - INV. IN = 5822.00
- **C09** SIGNS:
  - a. INSTALL STOP / STREET SIGN. USE PREVIOUSLY REMOVED SIGN. COORDINATE FINAL LOCATION WITH CITY OF KETCHUM. SEE DETAIL 4 / C0.3 FOR SIGN BASE DETAIL.
  - b. INSTALL REGULATORY SIGN. COORDINATE TYPE AND FINAL LOCATION WITH CITY OF KETCHUM. SEE DETAIL 4 / C0.3 FOR SIGN BASE DETAIL.
- **C10** CONSTRUCT GRAVEL DRIVEWAY / PARKING AREA IMPROVEMENTS. REGRADE AREA TO PROVIDE FOR A SMOOTH TRANSITION. SEE DETAIL 4 / C0.2.
- **C11** RELOCATE EXISTING FIRE HYDRANT AND GATE VALVE. (SEE DEMOLITION PLAN FOR EXISTING LOCATION)
  INSTALL 6" 90° D.I. BEND
  W/ THRUST BLOCK
  ±16 L.F. OF 6" PVC WATER MAIN.
  CITY TO PROVIDE MOUNTAIN EXTENSION. CONTRACTOR TO COORDINATE WITH WATER AND FIRE DEPARTMENTS.
- **C12** INSTALL PAVER PATIO / SIDEWALK. USE PAVERS FROM CORRESPONDING DEMOLITION PLAN SHEET AND/OR MATCH EXISTING STYLE AND PATTERN. SEE DETAIL 5 / C0.2.
- **C13** RESET UTILITY BOX LID ELEVATION.
  - a. WATER VALVE
  - ORIGINAL RIM = 5827.67
  - NEW RIM = 5827.10
  - b. WATER VALVE
  - ORIGINAL RIM = 5819.26
  - NEW RIM = 5817.94
- **C14** CONSTRUCT RETAINING WALL.
  - a. N/A
  - b. PILE AND LAGGING RETAINING WALL. REFER TO STRUCTURAL DRAWINGS.
- **C15** INSTALL ADA COMPLIANT HAND / GUARD RAIL PAINTED PER CITY SPECIFICATIONS. SEE DETAIL 3 / C0.3.
- **C16** INSTALL FENCE WITH APPLICABLE GATES. USE PREVIOUSLY REMOVED FENCE / GATES OR MATCH STYLE AND HEIGHT.
- **C17** STREET LIGHTS
  - a. INSTALL STREET LIGHT: SOLAR (OFF-GRID) SEE DETAIL 5 / C0.3 FOR DETAILS.
- **C18** RELOCATE GAVE VALVE OUT OF VALLEY GUTTER. COORDINATE WORK WITH CITY OF KETCHUM WATER DEPARTMENT.
- **A** RETAIN AND PROTECT
  1. SIGN
- **B** MATCH EXISTING LINES AND GRADES
- **C** REGRADE AREA TO PROVIDE FOR A SMOOTH TRANSITION.

GENERAL NOTE:

1. NOT ALL KEY NOTES MAY BE USED.



SITE Q3-2: SOUTH CORNER OF THE INTERSECTION OF 6TH ST. AND WASHINGTON AVE. LIP OF GUTTER PROFILE
SCALE: 1"=10 H; 1"=2 V

SITE IMPROVEMENT PLAN
KETCHUM 2022 SIDEWALK INFILL - SITE Q3-2
SOUTH CORNER OF THE INTERSECTION OF 6TH ST. AND WASHINGTON AVE.

PREPARED FOR CITY OF KETCHUM

PROJECT INFORMATION
P:\sdskproj\1318-174 sidewalks\dwg\Construction\1318-174_Eng_2020-02(q3-2 full wall).dwg 03/03/22 8:06:06 AM

PROFESSIONAL ENGINEER REGISTERED 7986 STATE OF IDAHO C. LOOMIS — PRELIMINARY NOT FOR CONSTRUCTION

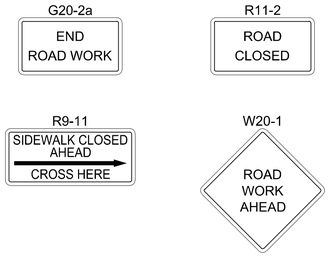
CT/JCL DESIGNED BY
CT DRAWN BY
JCL CHECKED BY

GALENA ENGINEERING, INC.
Civil Engineers & Land Surveyors
317 N. River Street
Hailey, Idaho 83333
(208) 788-1705
email galena@galena-engineering.com

NO	DATE	BY	REVISIONS

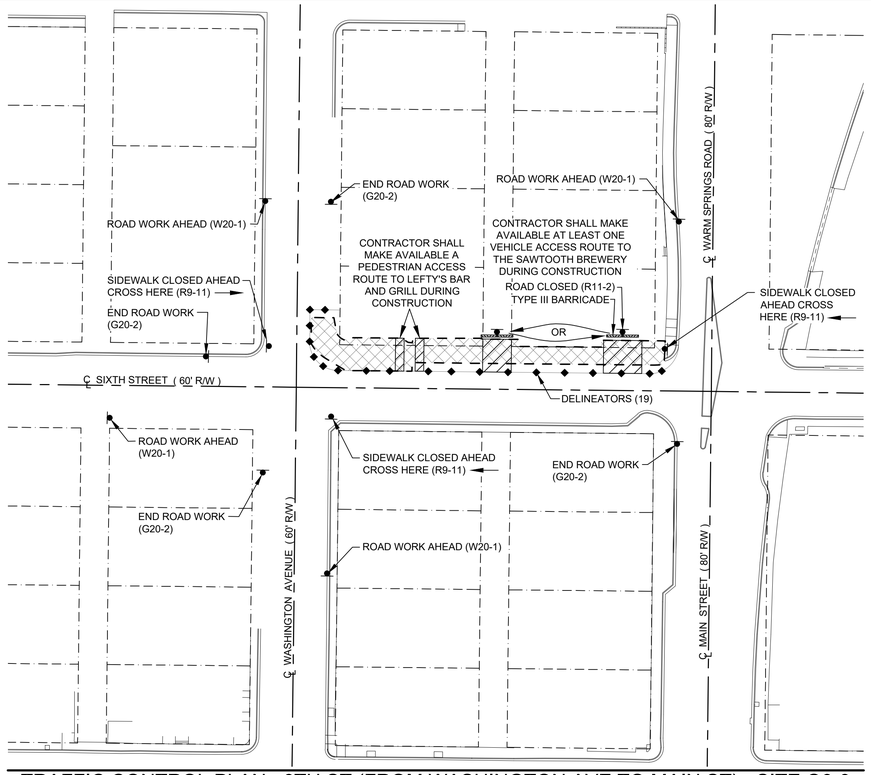
PURPOSE: BID SET (03/03/2022)

Q3-2.2



NOTES

1. ALL SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE CURRENT MUTCD. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE NUMBER OF BARRICADES, SIGNS, AND MANPOWER TO PREVENT ALL PUBLIC ACCESS TO THE CONSTRUCTION AREA.
2. THE CONTRACTOR SHALL PROVIDE, ERECT, AND MAINTAIN ALL TRAFFIC CONTROL DEVICES AS REQUIRED BY THESE PROJECT DOCUMENTS. THE OVERALL EFFECTIVENESS UNDER BOTH DAY AND NIGHT CONDITIONS AND THE PLACEMENT OF THESE INSTALLATIONS SHALL BE MAINTAINED, AND ADJUSTMENTS AND CLEANING DONE TO ENSURE OPTIMUM PERFORMANCE OF THE TRAFFIC CONTROL DEVICES.
3. THE CONTRACTOR SHALL SUBMIT ANY CHANGES TO THE CONTROL PLAN FOR APPROVAL BY OWNER AND THE CITY ENGINEER. NO CHANGES TO THE TRAFFIC CONTROL PLAN SHALL BE IMPLEMENTED UNTIL APPROVAL OR CHANGES ARE RECEIVED IN WRITING.
4. THE CONTRACTOR SHALL COVER EXISTING TRAFFIC CONTROL SIGNS IN CONSTRUCTION ZONE.
5. THE CONTRACTOR SHALL COORDINATE CLOSURE OF DRIVEWAYS WITH OWNERS, IF NECESSARY.

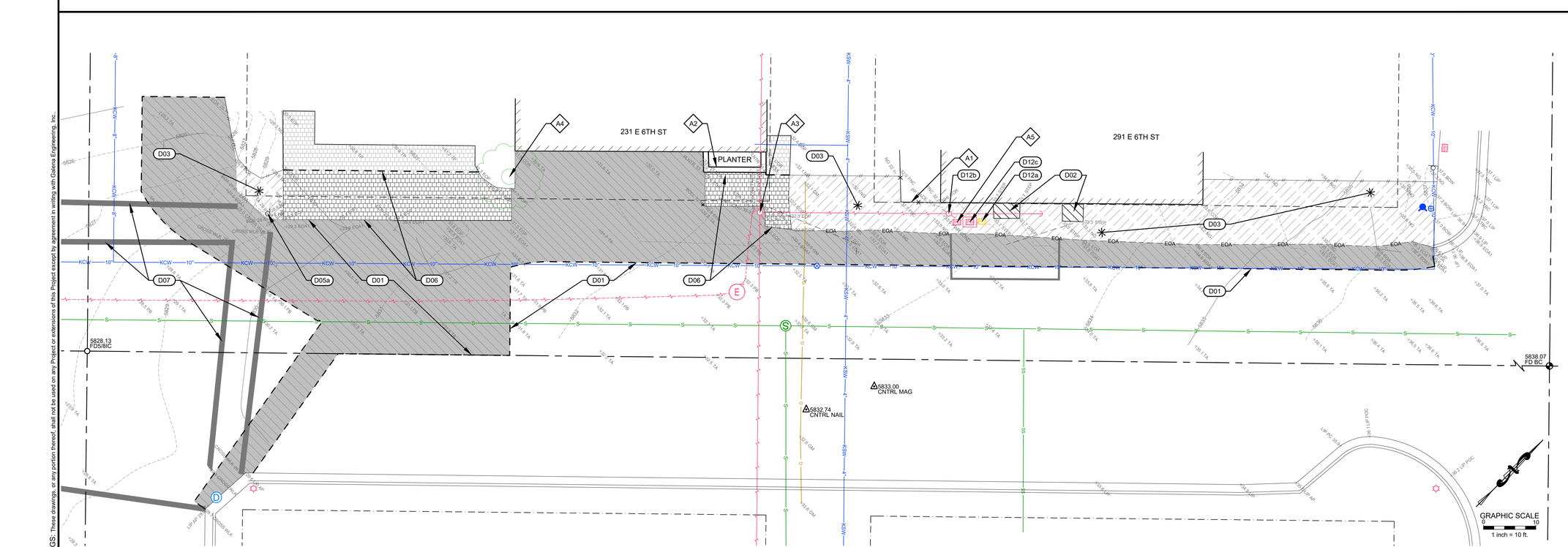


TRAFFIC CONTROL PLAN: 6TH ST (FROM WASHINGTON AVE TO MAIN ST) - SITE Q3-3

LEGEND

- PROPERTY LINE
- CENTERLINE OF RIGHT-OF-WAY
- TEMPORARY TRAFFIC CONTROL SIGN
- EXPECTED LIMITS OF PROJECT
- DELINEATORS
- TYPE III BARRICADE

SIGN SUMMARY		
TYPE	DESCRIPTION	QUANTITY
G20-2	END ROAD WORK	4
R9-11	SIDEWALK CLOSED AHEAD CROSS HERE	3
R11-2	ROAD CLOSED	1
W20-1	ROAD WORK AHEAD	4
	DELINEATORS	19
	TYPE III BARRICADE	2



DEMOLITION PLAN: 6TH ST (FROM WASHINGTON AVE TO MAIN ST) - SITE Q3-3

DEMOLITION SCHEDULE

- D01 SAWCUT ASPHALT AS SHOWN TO PROVIDE CLEAN VERTICAL EDGE. REMOVE AND DISPOSE OF ASPHALT.
- D02 REMOVE AND DISPOSE OF CONCRETE CURB AND/OR SIDEWALK AND/OR RETAINING WALL. (UTILIZE EXISTING JOINTS WHERE POSSIBLE)
- D03 GRUB SITE
- D05 REMOVE SIGN:
  a. RETAIN AND RETURN TO OWNER.
  b. RETAIN SIGN. TO BE RELOCATED TO NEW SIDEWALK (SEE CORRESPONDING SIDEWALK DESIGN SHEET).
- D06 REMOVE PAVERS. REUSE QUANTITY AS NECESSARY FOR REGRADING (SEE CORRESPONDING SIDEWALK DESIGN SHEET). RETURN REMAINING PAVERS TO OWNER.
- D07 OBLITERATE PAVEMENT MARKINGS
- D12 RELOCATE UTILITIES (BY OTHERS).
  a. TELEPHONE RISER: CONTRACTOR TO COORDINATE WORK WITH UTILITY OWNER.
  b. POWER POWER POLE AND GUY WIRE: CONTRACTOR TO COORDINATE WORK WITH IDAHO POWER.
  c. CONTROL BOX: CONTRACTOR TO COORDINATE WORK WITH CITY OF KETCHUM AND/OR IDAHO POWER.
- A RETAIN AND PROTECT
  1. FENCE
  2. LANDSCAPE PLANTER
  3. UTILITY POLE
  4. TREE
  5. UTILITY BOX (IDAHO POWER HANDHOLE?)

TRAFFIC CONTROL AND DEMOLITION PLAN

KETCHUM 2022 SIDEWALK INFILL: SITE Q3-3
6TH ST (FROM WASHINGTON AVE TO MAIN ST)

PREPARED FOR CITY OF KETCHUM

PROJECT INFORMATION
P:\sd\dwg\1318-174 sidewalkdsng\Construction\1318-174_Eng_2020-02(q3-3).dwg 02/13/22 12:38:09 PM

PRELIMINARY NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER REGISTERED STATE OF IDAHO CHRIS T. TOMLINSON 7986 CHRISTOPHER C. LOOMIS

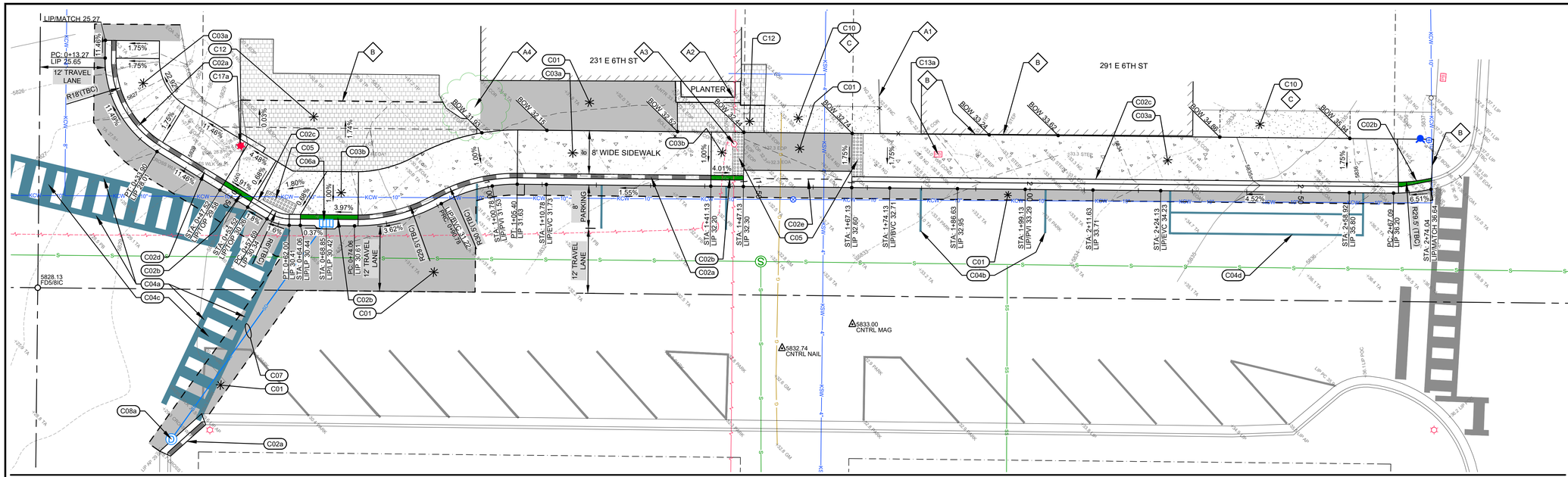
CT/JCL
DESIGNED BY
CT
DRAWN BY
JCL
CHECKED BY

GALENA ENGINEERING, INC.
Civil Engineers & Land Surveyors
317 N. River Street
Hailey, Idaho 83333
(208) 788-1705
email galena@galena-engineering.com

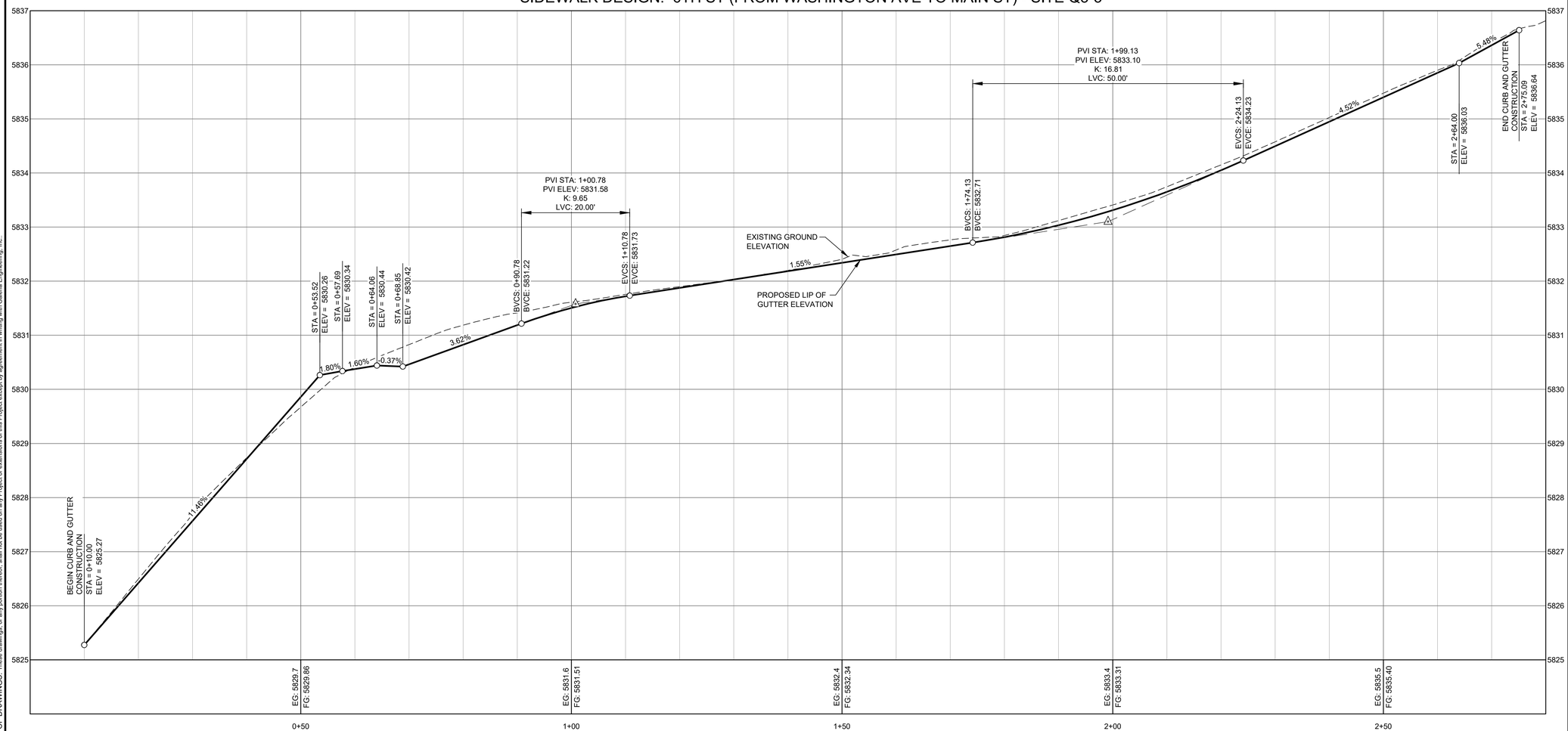
NO	DATE	BY	REVISIONS

PURPOSE: BID SET (03/03/2022)

Q3-3.0



SIDEWALK DESIGN: 6TH ST (FROM WASHINGTON AVE TO MAIN ST) - SITE Q3-3



SITE Q3-3: 6TH ST (FROM WASHINGTON AVE TO MAIN ST) LIP OF GUTTER PROFILE

SCALE: 1"=10 H; 1"=1 V

CONSTRUCTION SCHEDULE

- C01 CONSTRUCT ASPHALT ROADWAY / ASPHALT REPAIR. SEE DETAIL 1 / C0.2.
- C02 CONSTRUCT CONCRETE CURB AND GUTTER
  - a. 6" ROLLED C&G PER DETAIL 2a / C0.2.
  - b. CURB TRANSITION PER DETAIL 2b / C0.2.
  - c. ZERO REVEAL CURB AND GUTTER PER DETAIL 2b / C0.2.
  - d. ±5' OF CURB TRANSITION (BETWEEN 6" VERTICAL C&G AND 6" ROLLED C&G).
  - e. 3' WIDE CONCRETE VALLEY GUTTER PER DETAIL 2c / C0.2.
  - f. CONCRETE VERTICAL CURB PER DETAIL 2d / C0.2.
- C03 CONSTRUCT CONCRETE SIDEWALK. WIDTH AS SHOWN HEREON. SEE DETAIL 3 / C0.2.
  - a. FLAT WORK
  - b. ADA COMPLIANT RAMPS / LANDING.
  - c. NON - ADA COMPLIANT RAMP BECAUSE OF EXISTING GRADE
- C04 INSTALL ROAD STRIPING / PAINT
  - a. WHITE CROSSWALK STRIPING (12" WIDE).
  - b. WHITE ASPHALT PARKING STRIPING (4" WIDE). MATCH CITY PATTERNS.
  - c. WHITE CROSSWALK / STOP BAR STRIPING (24" WIDE).
  - d. YELLOW ASPHALT PARKING STRIPING (4" WIDE). MATCH CITY PATTERNS.
- C05 INSTALL CITY OF KETCHUM APPROVED CAST IRON TRUNCATED DOME DETECTABLE WARNING INSERT
- C06 INSTALL CATCH BASIN. SEE DETAIL 6 / C0.2.
  - a. RIM = 5830.22
    INV. OUT = 5827.22
- C07 INSTALL 12" ADS N-12 STORM DRAIN PIPE WITH A MINIMUM SLOPE OF 2.0%. SEE DETAIL 9 / C0.2 FOR POTABLE AND NON-POTABLE WATER LINE SEPARATION AND DETAIL 8 / C0.2 FOR TRENCHING.
- C08 DRYWELL. SEE DETAIL 7 / C0.2.
  - a. CONNECT TO EXISTING DRYWELL
    RIM = 5828.98
    INV. IN = 5825.98
- C10 CONSTRUCT GRAVEL DRIVEWAY / PARKING AREA IMPROVEMENTS. REGRADE AREA TO PROVIDE FOR A SMOOTH TRANSITION. SEE DETAIL 4 / C0.2.
- C12 INSTALL PAVER PATIO / SIDEWALK. USE PAVERS FROM CORRESPONDING DEMOLITION PLAN SHEET AND/OR MATCH EXISTING STYLE AND PATTERN. SEE DETAIL 5 / C0.2.
- C13 RESET UTILITY BOX LID ELEVATION.
  - a. POWER HANDHOLE
    ORIGINAL RIM = 5832.68
    NEW RIM = 5832.95
- C17 STREET LIGHTS
  - a. INSTALL STREET LIGHT: SOLAR (OFF-GRID)
- A RETAIN AND PROTECT
  1. FENCE
  2. LANDSCAPE PLANTER
  3. UTILITY POLE
  4. TREE
- B MATCH EXISTING LINES AND GRADES
- C REGRADE AREA TO PROVIDE FOR A SMOOTH TRANSITION. REPAIR IRRIGATION AND LANDSCAPING AS NECESSARY.

A SITE IMPROVEMENT PLAN SHOWING

KETCHUM 2022 SIDEWALK INFILL: SITE Q3-3
6TH ST (FROM WASHINGTON AVE TO MAIN ST)

PREPARED FOR CITY OF KETCHUM

PROJECT INFORMATION
P:\sdskproj\1318-174 sidewalks\dwg\Construction\1318-174_Eng_2020-02(q3-3).dwg 02/13/22 12:38:09 PM

PROFESSIONAL ENGINEER REGISTERED 7986 STATE OF IDAHO CHRISTOPHER C. TOOMS
PRELIMINARY NOT FOR CONSTRUCTION

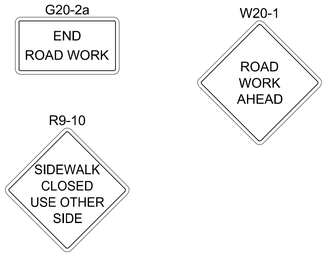
CT/JCL
DESIGNED BY
CT
DRAWN BY
JCL
CHECKED BY

GALENA ENGINEERING, INC.
Civil Engineers & Land Surveyors
317 N. River Street
Hailey, Idaho 83333
(208) 788-1705
email galena@galena-engineering.com

PURPOSE: BID SET (03/03/2022)

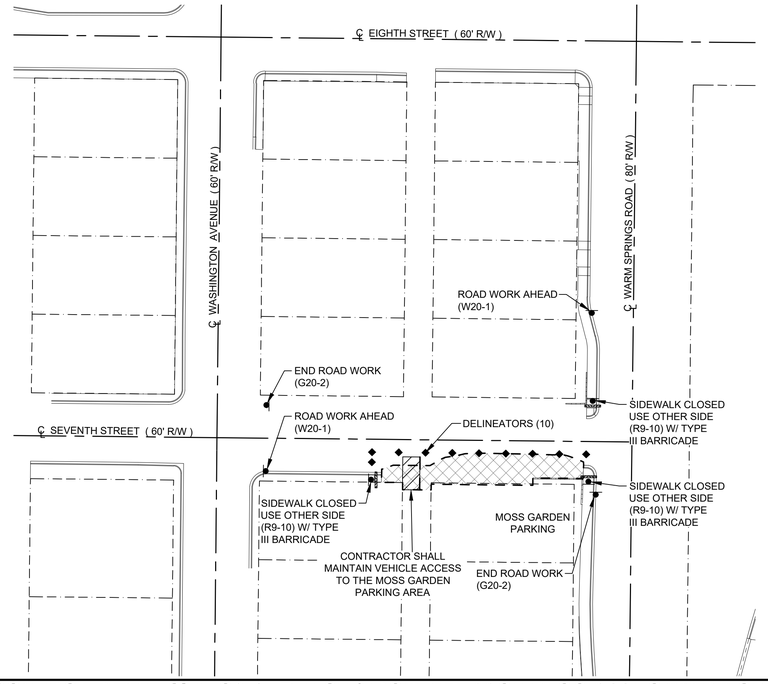
NO	DATE	BY	REVISIONS

Q3-3.1

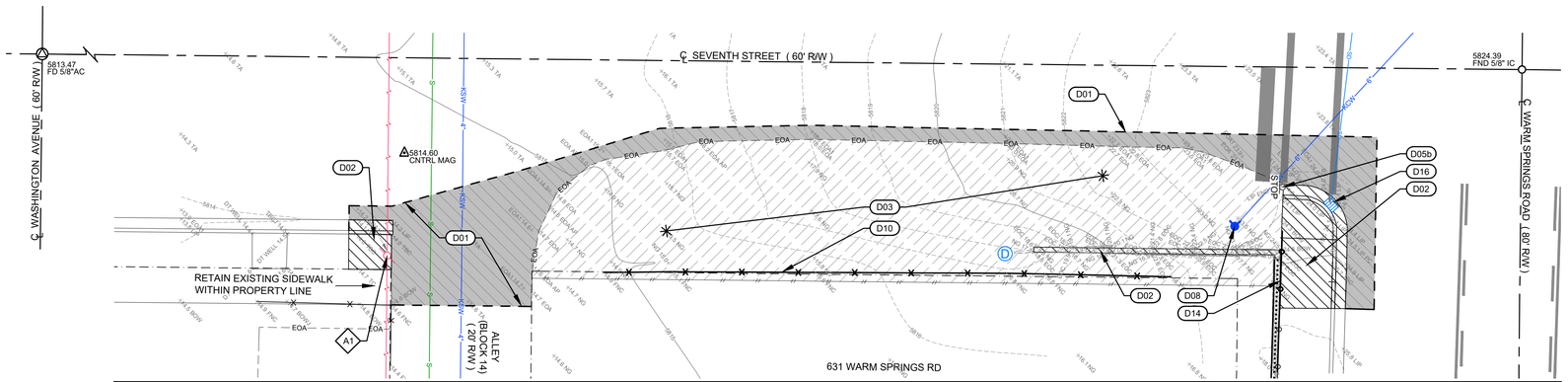


NOTES

1. ALL SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE CURRENT MUTCD. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE NUMBER OF BARRICADES, SIGNS, AND MANPOWER TO PREVENT ALL PUBLIC ACCESS TO THE CONSTRUCTION AREA.
2. THE CONTRACTOR SHALL PROVIDE, ERECT, AND MAINTAIN ALL TRAFFIC CONTROL DEVICES AS REQUIRED BY THESE PROJECT DOCUMENTS. THE OVERALL EFFECTIVENESS UNDER BOTH DAY AND NIGHT CONDITIONS AND THE PLACEMENT OF THESE INSTALLATIONS SHALL BE MAINTAINED, AND ADJUSTMENTS AND CLEANING DONE TO ENSURE OPTIMUM PERFORMANCE OF THE TRAFFIC CONTROL DEVICES.
3. THE CONTRACTOR SHALL SUBMIT ANY CHANGES TO THE CONTROL PLAN FOR APPROVAL BY OWNER AND THE CITY ENGINEER. NO CHANGES TO THE TRAFFIC CONTROL PLAN SHALL BE IMPLEMENTED UNTIL APPROVAL OR CHANGES ARE RECEIVED IN WRITING.
4. THE CONTRACTOR SHALL COVER EXISTING TRAFFIC CONTROL SIGNS IN CONSTRUCTION ZONE.
5. THE CONTRACTOR SHALL COORDINATE CLOSURE OF DRIVEWAYS WITH OWNERS, IF NECESSARY.



TRAFFIC CONTROL PLAN: SITE Q3-4 - 7TH ST (FROM ALLEY OF BLOCK 14 TO WARM SPRINGS RD)



DEMOLITION PLAN: SITE Q3-4 - 7TH ST (FROM ALLEY OF BLOCK 14 TO WARM SPRINGS RD)

GRAPHIC SCALE
0 50
1 inch = 50 ft.

LEGEND

- PROPERTY LINE
- CENTERLINE OF RIGHT-OF-WAY
- TEMPORARY TRAFFIC CONTROL SIGN
- EXPECTED LIMITS OF PROJECT
- DELINEATORS
- TYPE III BARRICADE

SIGN SUMMARY		
TYPE	DESCRIPTION	QUANTITY
G20-2	END ROAD WORK	2
R9-10	SIDEWALK CLOSED USE OTHER SIDE	3
W20-1	ROAD WORK AHEAD	2
	DELINEATORS	10
	TYPE III BARRICADE	3

DEMOLITION KEY NOTES

- D01 SAWCUT ASPHALT AS SHOWN TO PROVIDE CLEAN VERTICAL EDGE. REMOVE AND DISPOSE OF ASPHALT.
- D02 REMOVE AND DISPOSE OF CONCRETE CURB AND/OR SIDEWALK AND/OR RETAINING WALL. (UTILIZE EXISTING JOINTS WHERE POSSIBLE)
- D03 GRUB SITE
- D05 REMOVE SIGN:
  a. RETAIN AND RETURN TO OWNER.
  b. RETAIN SIGN. TO BE RELOCATED TO NEW SIDEWALK (SEE CORRESPONDING SIDEWALK DESIGN SHEET).
- D08 RELOCATE FIRE HYDRANT (SEE CORRESPONDING SIDEWALK DESIGN SHEET FOR NEW LOCATION).
- D10 REMOVE AND RETAIN FENCE.
- D14 CUT AND REMOVE A PORTION OF HAND RAIL (SEE CORRESPONDING SIDEWALK DESIGN SHEET FOR EXTENSION OF HANDRAIL).
- D16 REMOVE AND DISPOSE OF CATCH BASIN.
- A RETAIN AND PROTECT
  1. POWER POLE

GRAPHIC SCALE
0 10
1 inch = 10 ft.

TRAFFIC CONTROL AND DEMOLITION PLAN
KETCHUM 2022 SIDEWALK INFILL - SITE Q3-4
7TH ST (FROM ALLEY OF BLOCK 14 TO WARM SPRINGS RD)

PREPARED FOR CITY OF KETCHUM

PROJECT INFORMATION
P:\sdskproj\1318-174 sidewalks\dwg\Construction\1318-174_Eng_2020-02(q3-4).dwg 02/13/22 12:03:46 PM

PRELIMINARY NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER
REGISTERED
7986
CHRISTOPHER C. LOOMIS
STATE OF IDAHO

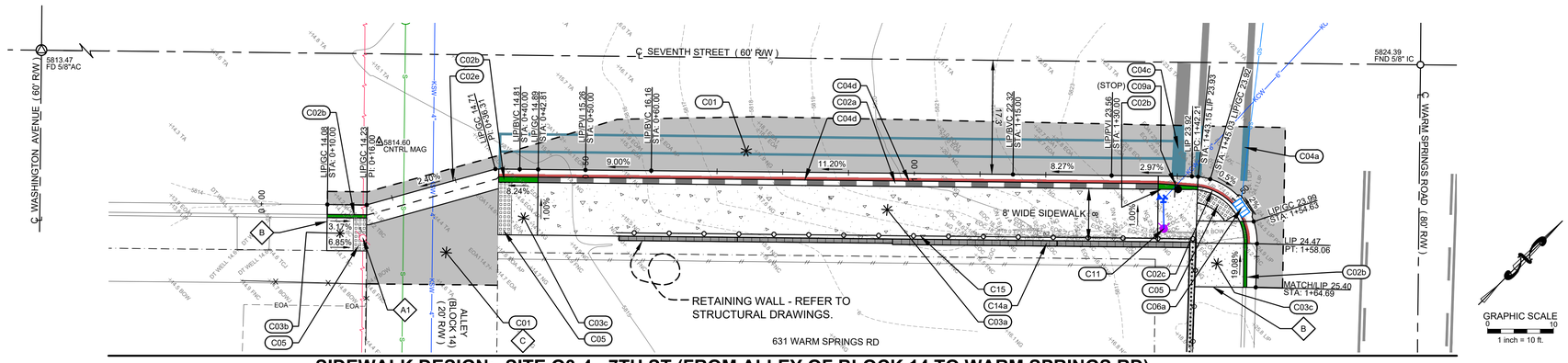
CT/JCL
DESIGNED BY
CT
DRAWN BY
JCL
CHECKED BY

GALENA ENGINEERING, INC.
Civil Engineers & Land Surveyors
317 N. River Street
Hailey, Idaho 83333
(208) 788-1705
email galena@galena-engineering.com

PURPOSE: BID SET (03/03/2022)

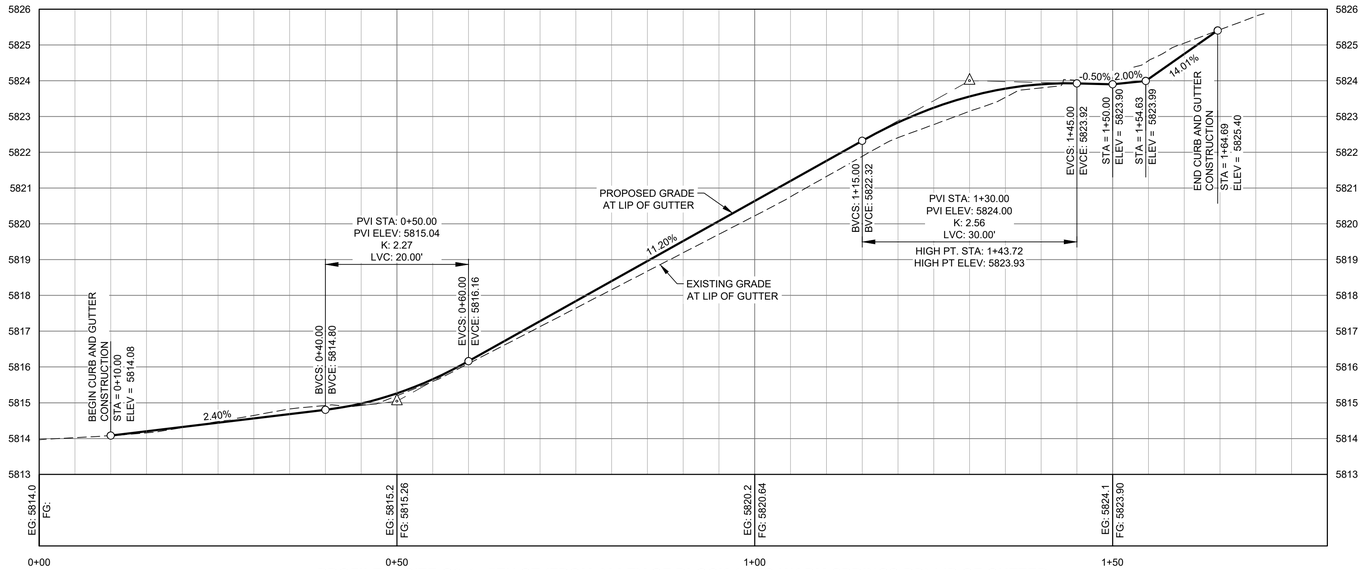
NO	DATE	BY	REVISIONS

Q3-4.0



GRAPHIC SCALE
0 10
1 inch = 10 ft.

SIDEWALK DESIGN: SITE Q3-4 - 7TH ST (FROM ALLEY OF BLOCK 14 TO WARM SPRINGS RD)



PROFILE 1: SITE Q3-4 - 7TH ST (FROM ALLEY OF BLOCK 14 TO WARM SPRINGS RD) LIP OF GUTTER

SCALE: 1"=10 H; 1"=2 V

CONSTRUCTION KEY NOTES

- C01 CONSTRUCT ASPHALT ROADWAY / ASPHALT REPAIR. SEE DETAIL 1 / C0.2.
- C02 CONSTRUCT CONCRETE CURB AND GUTTER
  - a. 6" ROLLED C&G PER DETAIL 2a / C0.2.
  - b. CURB TRANSITION PER DETAIL 2b / C0.2.
  - c. ZERO REVEAL CURB AND GUTTER PER DETAIL 2b / C0.2.
  - d. ±5' OF CURB TRANSITION (BETWEEN 6" VERTICAL C&G AND 6" ROLLED C&G).
  - e. 3' WIDE CONCRETE VALLEY GUTTER PER DETAIL 2c / C0.2.
  - f. CONCRETE VERTICAL CURB PER DETAIL 2d / C0.2.
- C03 CONSTRUCT CONCRETE SIDEWALK. WIDTH AS SHOWN HEREON. SEE DETAIL 3 / C0.2.
  - a. FLAT WORK
  - b. ADA COMPLIANT RAMPS / LANDING.
  - c. NON - ADA COMPLIANT RAMP BECAUSE OF EXISTING GRADE
- C04 INSTALL ROAD STRIPING / PAINT
  - a. WHITE CROSSWALK STRIPING (12" WIDE).
  - b. YELLOW ASPHALT PARKING STRIPING (4" WIDE). MATCH CITY PATTERNS.
  - c. WHITE CROSSWALK / STOP BAR STRIPING (24" WIDE).
  - d. RED "NO PARKING" STRIPING ON CURB. MATCH CITY PATTERNS.
- C05 INSTALL CITY OF KETCHUM APPROVED CAST IRON TRUNCATED DOME DETECTABLE WARNING INSERT. SEE DETAIL 6 / C0.3.
- C06 INSTALL CATCH BASIN. SEE DETAIL 6 / C0.2.
  - a. CONNECT TO EXISTING STORM DRAIN SYSTEM
    RIM = 5823.72
    INV. OUT = 5820.72
- C09 SIGNS:
  - a. RE-INSTALL PREVIOUSLY REMOVED SIGN (STOP, STREET, SPEED, ETC.). COORDINATE FINAL LOCATION WITH CITY OF KETCHUM. SEE DETAIL 4 / C0.3 FOR SIGN BASE DETAIL.
  - b. INSTALL NEW REGULATORY SIGN. COORDINATE TYPE AND FINAL LOCATION WITH CITY OF KETCHUM. SEE DETAIL 4 / C0.3 FOR SIGN BASE DETAIL.
- C10 CONSTRUCT GRAVEL DRIVEWAY / PARKING AREA IMPROVEMENTS. REGRADE AREA TO PROVIDE FOR A SMOOTH TRANSITION. SEE DETAIL 4 / C0.2.
- C11 RELOCATE EXISTING FIRE HYDRANT AND GATE VALVE. (SEE DEMOLITION PLAN FOR EXISTING LOCATION)
  INSTALL 6" 45° D.I. BEND
  W/ THRUST BLOCK
  ±4 L.F. OF 6" PVC WATER MAIN.
  CITY TO PROVIDE MOUNTAIN EXTENSION IF NOT PRESENT. CONTRACTOR TO COORDINATE WITH WATER AND FIRE DEPARTMENTS.
- C14 CONSTRUCT RETAINING WALL.
  - a. POUR IN-PLACE CONCRETE RETAINING WALL. REFER TO STRUCTURAL DRAWINGS.
- C15 INSTALL ADA COMPLIANT HAND / GUARD RAIL PAINTED PER CITY SPECIFICATIONS. SEE DETAIL 3 / C0.3.

◇A RETAIN AND PROTECT
1. POWER POLE

◇B MATCH EXISTING LINES AND GRADES

◇C REGRADE AREA TO PROVIDE FOR A SMOOTH TRANSITION. REPAIR IRRIGATION AND LANDSCAPING AS NECESSARY.

GENERAL NOTE:

1. NOT ALL KEY NOTES MAY BE USED.

SITE IMPROVEMENT PLAN
KETCHUM 2022 SIDEWALK INFILL - SITE Q3-4
7TH ST (FROM ALLEY OF BLOCK 14 TO WARM SPRINGS RD)

PREPARED FOR CITY OF KETCHUM

PROJECT INFORMATION
P:\sdskpro\1318-174 sidewalks\dwg\Construction\1318-174_Eng_2020-02(q3-4).dwg 02/13/22 12:03:46 PM

PROFESSIONAL ENGINEER
REGISTERED
7986
STATE OF IDAHO
JEFF C. LOOMIS
PRELIMINARY
CONSTRUCTION

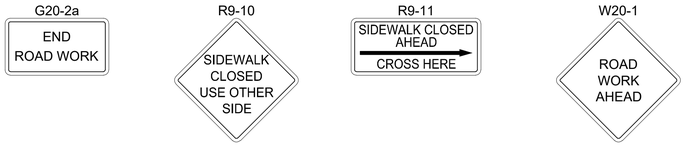
CT/JCL	DESIGNED BY
CT	DRAWN BY
JCL	CHECKED BY

GALENA ENGINEERING, INC.
Civil Engineers & Land Surveyors
317 N. River Street
Hailey, Idaho 83333
(208) 788-1705
email galena@galena-engineering.com

PURPOSE: BID SET (03/03/2022)

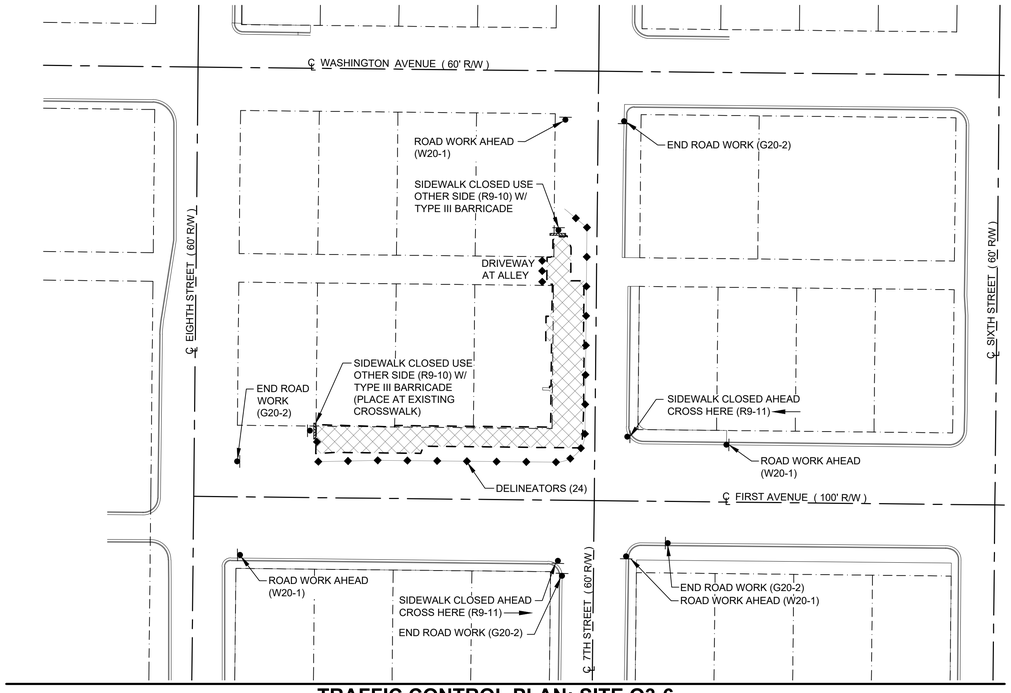
NO	DATE	BY	REVISIONS

Q3-4.1



NOTES

1. ALL SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE CURRENT MUTCD. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE NUMBER OF BARRICADES, SIGNS, AND MANPOWER TO PREVENT ALL PUBLIC ACCESS TO THE CONSTRUCTION AREA.
2. THE CONTRACTOR SHALL PROVIDE, ERECT, AND MAINTAIN ALL TRAFFIC CONTROL DEVICES AS REQUIRED BY THESE PROJECT DOCUMENTS. THE OVERALL EFFECTIVENESS UNDER BOTH DAY AND NIGHT CONDITIONS AND THE PLACEMENT OF THESE INSTALLATIONS SHALL BE MAINTAINED, AND ADJUSTMENTS AND CLEANING DONE TO ENSURE OPTIMUM PERFORMANCE OF THE TRAFFIC CONTROL DEVICES.
3. THE CONTRACTOR SHALL SUBMIT ANY CHANGES TO THE CONTROL PLAN FOR APPROVAL BY OWNER AND THE CITY ENGINEER. NO CHANGES TO THE TRAFFIC CONTROL PLAN SHALL BE IMPLEMENTED UNTIL APPROVAL OR CHANGES ARE RECEIVED IN WRITING.
4. THE CONTRACTOR SHALL COVER EXISTING TRAFFIC CONTROL SIGNS IN CONSTRUCTION ZONE.
5. THE CONTRACTOR SHALL COORDINATE CLOSURE OF DRIVEWAYS WITH OWNERS, IF NECESSARY.



TRAFFIC CONTROL PLAN: SITE Q3-6
EAST SIDE OF 1ST AVE. (FROM 8TH ST. TO 7TH ST.)

GRAPHIC SCALE
0 50
1 inch = 50 ft.

LEGEND

- PROPERTY LINE
- CENTERLINE OF RIGHT-OF-WAY
- TEMPORARY TRAFFIC CONTROL SIGN
- EXPECTED LIMITS OF PROJECT
- DELINEATORS
- TYPE III BARRICADE

SIGN SUMMARY		
TYPE	DESCRIPTION	QUANTITY
G20-2	END ROAD WORK	5
R9-10	SIDEWALK CLOSED USE OTHER SIDE	2
R9-11	SIDEWALK CLOSED AHEAD CROSS HERE	2
W20-1	ROAD WORK AHEAD	6
	DELINEATORS	31
	TYPE III BARRICADE	2

TRAFFIC CONTROL PLAN
KETCHUM 2022 SIDEWALK INFILL - SITE Q3-6
EAST SIDE OF 1ST AVE. (FROM 8TH ST. TO 7TH ST.)
PREPARED FOR CITY OF KETCHUM

PROJECT INFORMATION
P:\sdskproj\1318-174 sidewalks\dwg\Construction\1318-174_Eng_2020-02(q3-6).dwg 03/03/22 12:18:04 PM

PROFESSIONAL ENGINEER REGISTERED 7986 STATE OF IDAHO JEFF C. LOOMIS
PRELIMINARY NOT FOR CONSTRUCTION

CT/JCL
DESIGNED BY
CT
DRAWN BY
JCL
CHECKED BY

GALENA ENGINEERING, INC.
Civil Engineers & Land Surveyors
317 N. River Street
Hailey, Idaho 83333
(208) 788-1705
email galena@galena-engineering.com

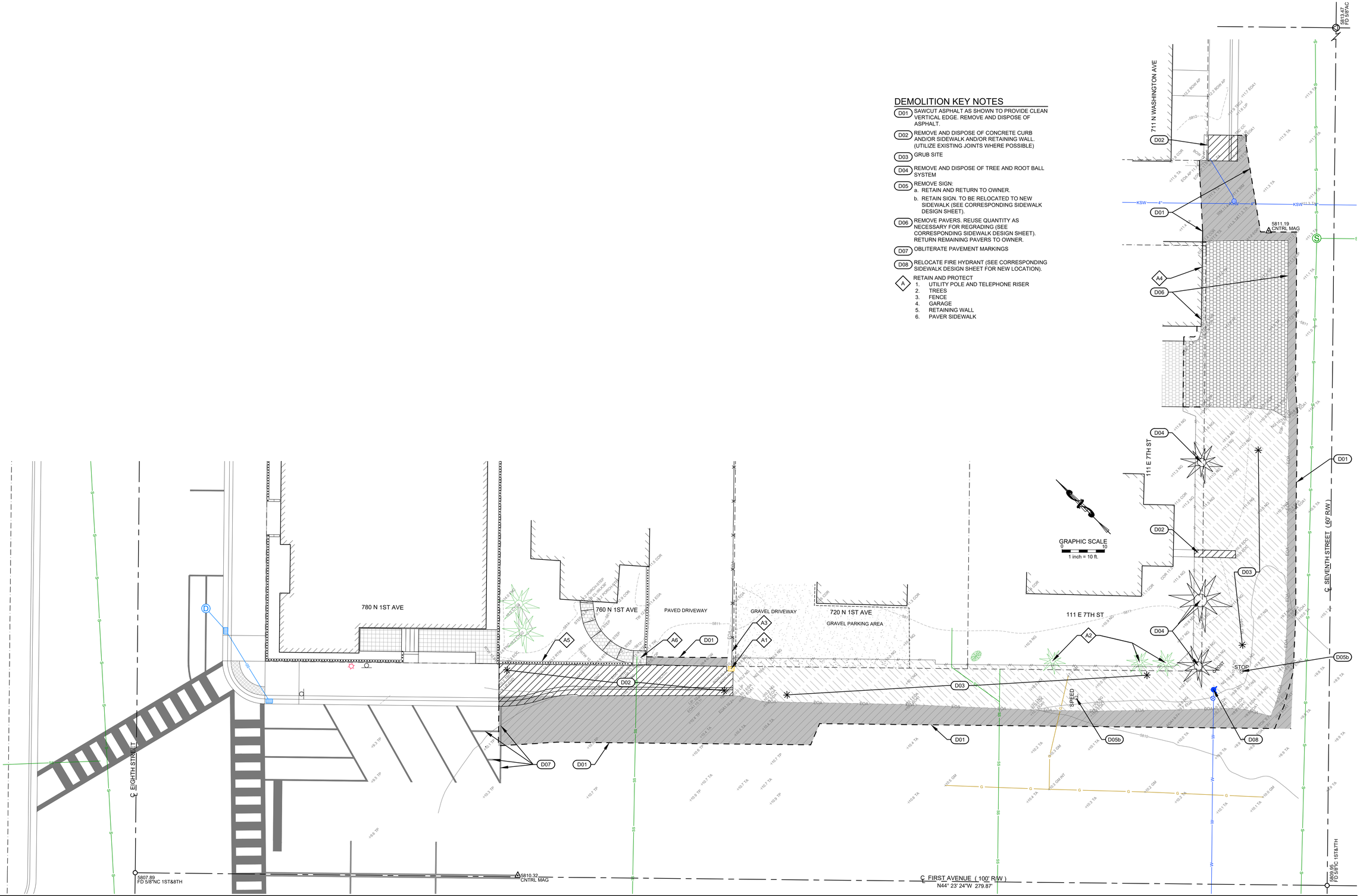
PURPOSE: BID SET (03/03/2022)

NO	DATE	BY	REVISIONS

Q3-6.0

DEMOLITION KEY NOTES

- (D01) SAWCUT ASPHALT AS SHOWN TO PROVIDE CLEAN VERTICAL EDGE. REMOVE AND DISPOSE OF ASPHALT.
- (D02) REMOVE AND DISPOSE OF CONCRETE CURB AND/OR SIDEWALK AND/OR RETAINING WALL. (UTILIZE EXISTING JOINTS WHERE POSSIBLE)
- (D03) GRUB SITE
- (D04) REMOVE AND DISPOSE OF TREE AND ROOT BALL SYSTEM
- (D05) REMOVE SIGN:
  a. RETAIN AND RETURN TO OWNER.
  b. RETAIN SIGN. TO BE RELOCATED TO NEW SIDEWALK (SEE CORRESPONDING SIDEWALK DESIGN SHEET).
- (D06) REMOVE PAVERS. REUSE QUANTITY AS NECESSARY FOR REGRADING (SEE CORRESPONDING SIDEWALK DESIGN SHEET). RETURN REMAINING PAVERS TO OWNER.
- (D07) OBLITERATE PAVEMENT MARKINGS
- (D08) RELOCATE FIRE HYDRANT (SEE CORRESPONDING SIDEWALK DESIGN SHEET FOR NEW LOCATION).
- (A) RETAIN AND PROTECT
  1. UTILITY POLE AND TELEPHONE RISER
  2. TREES
  3. FENCE
  4. GARAGE
  5. RETAINING WALL
  6. PAVER SIDEWALK



DEMOLITION PLAN: SITE Q3-6 - EAST SIDE OF 1ST AVE. (FROM 780 N 1ST AVE. TO 7TH ST.)

DEMOLITION PLAN
KETCHUM 2022 SIDEWALK INFILL - SITE Q3-6
EAST SIDE OF 1ST AVE. (FROM 8TH ST. TO 7TH ST.)

PREPARED FOR CITY OF KETCHUM

PROJECT INFORMATION
P:\sdskproj\1318-174 sidewalks\dwg\Construction\1318-174_Eng_2020-02(p3-6).dwg 03/03/22 12:18:04 PM

PRELIMINARY NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER
REGISTERED
7986
STATE OF IDAHO
KEVIN C. LOOMIS

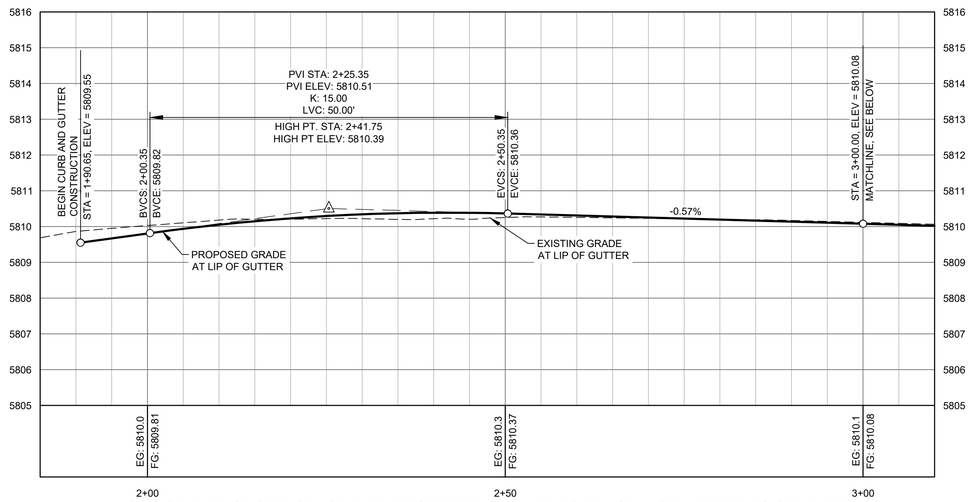
CT/JCL
DESIGNED BY
CT
DRAWN BY
JCL
CHECKED BY

GALENA ENGINEERING, INC.
Civil Engineers & Land Surveyors
317 N. River Street
Hailey, Idaho 83333
(208) 788-1705
email galena@galena-engineering.com

PURPOSE: BID SET (03/03/2022)

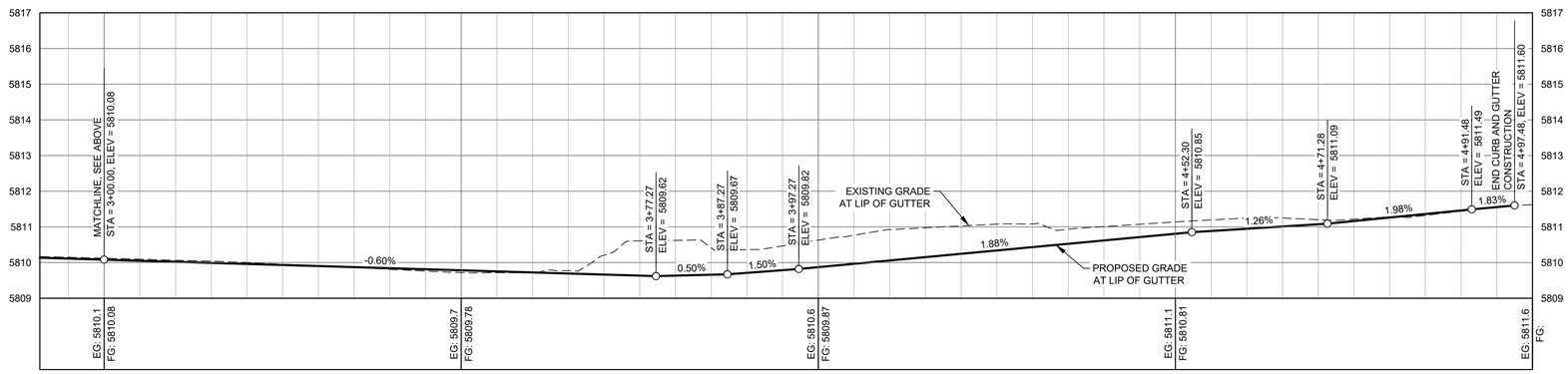
NO	DATE	BY	REVISIONS

Q3-6.1



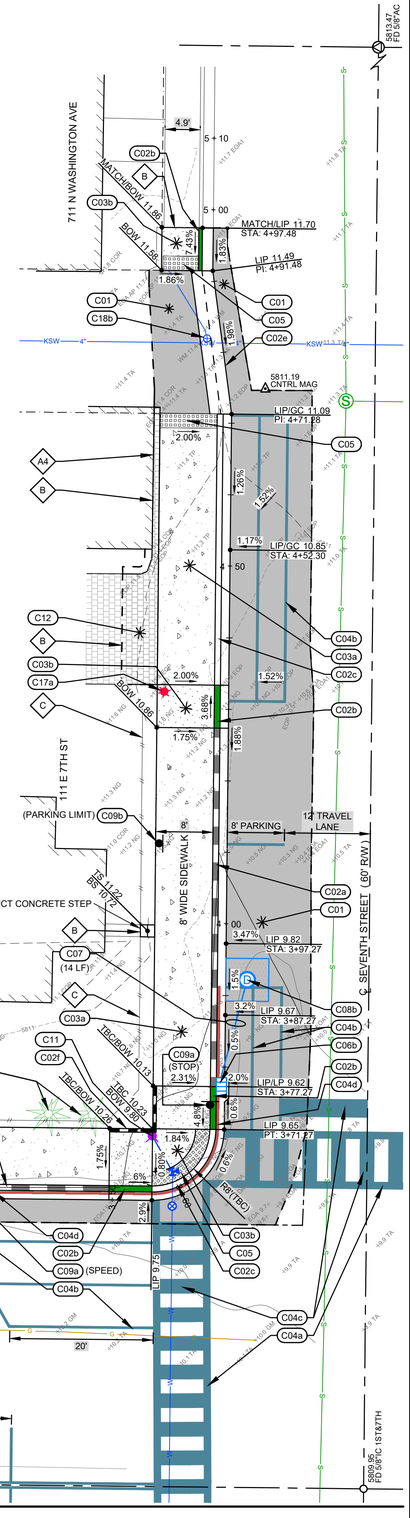
SITE Q3-6 - EAST SIDE OF 1ST AVE. (FROM 780 N 1ST AVE. TO 7TH ST.) / STA 1+90.65 TO STA 3+00)

SCALE: 1"=10 H; 1"=2 V



SITE Q3-6 - EAST SIDE OF 1ST AVE. (FROM 780 N 1ST AVE. TO 7TH ST.) / STA 3+00 TO STA 4+97.48)

SCALE: 1"=10 H; 1"=2 V



SIDEWALK DESIGN: SITE Q3-6 - EAST SIDE OF 1ST AVE. (FROM 780 N 1ST AVE. TO 7TH ST.)

CONSTRUCTION KEY NOTES

- C01 CONSTRUCT ASPHALT ROADWAY / ASPHALT REPAIR. SEE DETAIL 1 / C0.2.
- C02 CONSTRUCT CONCRETE CURB AND GUTTER
  - a. 6" ROLLED C&G PER DETAIL 2a / C0.2.
  - b. CURB TRANSITION PER DETAIL 2b / C0.2.
  - c. ZERO REVEAL CURB AND GUTTER PER DETAIL 2b / C0.2.
  - d. ±5' OF CURB TRANSITION (BETWEEN 6" VERTICAL C&G AND 6" ROLLED C&G).
  - e. 3' WIDE CONCRETE VALLEY GUTTER PER DETAIL 2c / C0.2.
  - f. CONCRETE VERTICAL CURB PER DETAIL 2d / C0.2.
- C03 CONSTRUCT CONCRETE SIDEWALK. WIDTH AS SHOWN HEREON. SEE DETAIL 3 / C0.2.
  - a. FLAT WORK
  - b. ADA COMPLIANT RAMPS / LANDING.
  - c. NON - ADA COMPLIANT RAMP BECAUSE OF EXISTING GRADE
- C04 INSTALL ROAD STRIPING / PAINT
  - a. WHITE CROSSWALK STRIPING (12" WIDE).
  - b. YELLOW ASPHALT PARKING STRIPING (4" WIDE). MATCH CITY PATTERNS.
  - c. WHITE CROSSWALK / STOP BAR STRIPING (24" WIDE).
  - d. RED "NO PARKING" STRIPING ON CURB. MATCH CITY PATTERNS.
- C05 INSTALL CITY OF KETCHUM APPROVED CAST IRON TRUNCATED DOME DETECTABLE WARNING INSERT. SEE DETAIL 6 / C0.3.
- C06 INSTALL CATCH BASIN. SEE DETAIL 6 / C0.2.
  - a. RIM = 5807.73
    INV. OUT = 5804.7
  - b. RIM = 5809.42
    INV. OUT = 5806.4
- C07 INSTALL 12" ADS N-12 STORM DRAIN PIPE WITH A MINIMUM SLOPE OF 2.0%. SEE DETAIL 2 / C0.3 FOR POTABLE AND NON-POTABLE WATER LINE SEPARATION AND DETAIL 1 / C0.3 FOR TRENCHING.
- C08 DRYWELL: SEE DETAIL 9 / C0.2.
  - a. CONNECT TO EXISTING DRYWELL
    RIM = 5807.7
    INV. IN = 5804.3
  - b. CONSTRUCT NEW DRYWELL
    RIM = 5809.88
    INV. IN = 5806.1
- C09 SIGNS:
  - a. RE-INSTALL PREVIOUSLY REMOVED SIGN (STOP, STREET, SPEED, ETC.). COORDINATE FINAL LOCATION WITH CITY OF KETCHUM. SEE DETAIL 4 / C0.3 FOR SIGN BASE DETAIL.
  - b. INSTALL NEW REGULATORY SIGN. COORDINATE TYPE AND FINAL LOCATION WITH CITY OF KETCHUM. SEE DETAIL 4 / C0.3 FOR SIGN BASE DETAIL.
- C10 CONSTRUCT GRAVEL DRIVEWAY / PARKING AREA IMPROVEMENTS. REGRADE AREA TO PROVIDE FOR A SMOOTH TRANSITION. SEE DETAIL 4 / C0.2.
- C11 RELOCATE EXISTING FIRE HYDRANT AND GATE VALVE. (SEE DEMOLITION PLAN FOR EXISTING LOCATION)
  INSTALL 6" 90° D.I. BEND
  W/ THRUST BLOCK
  ±7 L.F. OF 6" PVC WATER MAIN.
  CITY TO PROVIDE MOUNTAIN EXTENSION. CONTRACTOR TO COORDINATE WITH WATER AND FIRE DEPARTMENTS.
- C12 INSTALL PAVER PATIO / SIDEWALK. USE PAVERS FROM CORRESPONDING DEMOLITION PLAN SHEET AND/OR MATCH EXISTING STYLE AND PATTERN. SEE DETAIL 5 / C0.2.
- C17 STREET LIGHTS
  - a. INSTALL STREET LIGHT: SOLAR (OFF-GRID) SEE DETAIL 5 / C0.3 FOR DETAILS.
- C18b RELOCATE GATE VALVE OUT OF VALLEY GUTTER. COORDINATE WORK WITH CITY OF KETCHUM WATER DEPARTMENT.
- A RETAIN AND PROTECT
  1. UTILITY POLE AND TELEPHONE RISER
  2. TREES
  3. FENCE
  4. GARAGE
  5. RETAINING WALL
  6. PAVER SIDEWALK
- B MATCH EXISTING LINES AND GRADES
- C REGRADE AREA TO PROVIDE FOR A SMOOTH TRANSITION. REPAIR IRRIGATION AND LANDSCAPING AS NECESSARY.
- D REGRADE BORROW DITCH TO FLOW INTO CATCH BASIN.

GENERAL NOTE:

1. NOT ALL KEY NOTES MAY BE USED.

GRAPHIC SCALE
0 10
1 inch = 10 ft.

SITE IMPROVEMENT PLAN
KETCHUM 2022 SIDEWALK INFILL - SITE Q3-6
EAST SIDE OF 1ST AVE. (FROM 780 N 1ST AVE. TO 7TH ST.)

PREPARED FOR CITY OF KETCHUM

PROJECT INFORMATION
P:\sdskpro\1318-174 sidewalks\dwg\Construction\1318-174_Eng_2020-02(q3-6).dwg 03/03/22 12:18:04 PM

PRELIMINARY NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER
REGISTERED
7986
STATE OF IDAHO
JEFFREY C. LOOMIS

CT/JCL
DESIGNED BY
CT
DRAWN BY
JCL
CHECKED BY

GALENA ENGINEERING, INC.
Civil Engineers & Land Surveyors
317 N. River Street
Hailey, Idaho 83333
(208) 788-1705
email galena@galena-engineering.com

PURPOSE: BID SET (03/03/2022)

NO	DATE	BY	REVISIONS

Q3-6.2

G20-2a

END
ROAD WORK

R9-11

SIDEWALK CLOSED AHEAD
CROSS HERE

R9-10

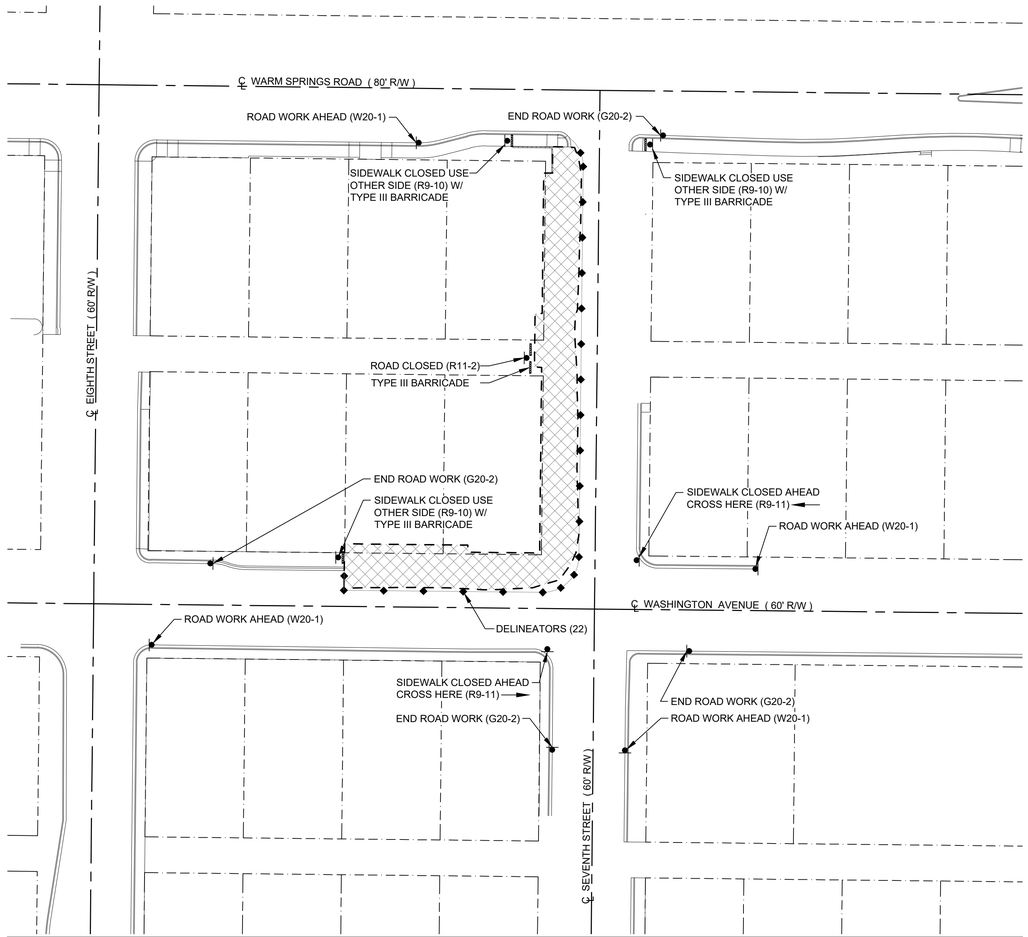
SIDEWALK CLOSED USE OTHER SIDE

R11-2

ROAD CLOSED

W20-1

ROAD WORK AHEAD



TRAFFIC CONTROL PLAN: SITE Q3-8 - WASHINGTON AVE (ALONG BLOCK 13)

GRAPHIC SCALE
0 40
1 inch = 40 ft.

LEGEND

- PROPERTY LINE
- CENTERLINE OF RIGHT-OF-WAY
- TEMPORARY TRAFFIC CONTROL SIGN
- EXPECTED LIMITS OF PROJECT
- DELINEATORS
- TYPE III BARRICADE

SIGN SUMMARY		
TYPE	DESCRIPTION	QUANTITY
G20-2	END ROAD WORK	4
R9-10	SIDEWALK CLOSED USE OTHER SIDE	3
R9-11	SIDEWALK CLOSED AHEAD CROSS HERE	2
R11-2	ROAD CLOSED	1
W20-1	ROAD WORK AHEAD	4
	DELINEATORS	22
	TYPE III BARRICADE	5

NOTES

1. ALL SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE CURRENT MUTCD. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE NUMBER OF BARRICADES, SIGNS, AND MANPOWER TO PREVENT ALL PUBLIC ACCESS TO THE CONSTRUCTION AREA.
2. THE CONTRACTOR SHALL PROVIDE, ERECT, AND MAINTAIN ALL TRAFFIC CONTROL DEVICES AS REQUIRED BY THESE PROJECT DOCUMENTS. THE OVERALL EFFECTIVENESS UNDER BOTH DAY AND NIGHT CONDITIONS AND THE PLACEMENT OF THESE INSTALLATIONS SHALL BE MAINTAINED, AND ADJUSTMENTS AND CLEANING DONE TO ENSURE OPTIMUM PERFORMANCE OF THE TRAFFIC CONTROL DEVICES.
3. THE CONTRACTOR SHALL SUBMIT ANY CHANGES TO THE CONTROL PLAN FOR APPROVAL BY OWNER AND THE CITY ENGINEER. NO CHANGES TO THE TRAFFIC CONTROL PLAN SHALL BE IMPLEMENTED UNTIL APPROVAL OR CHANGES ARE RECEIVED IN WRITING.
4. THE CONTRACTOR SHALL COVER EXISTING TRAFFIC CONTROL SIGNS IN CONSTRUCTION ZONE.
5. THE CONTRACTOR SHALL COORDINATE CLOSURE OF DRIVEWAYS WITH OWNERS, IF NECESSARY.

TRAFFIC CONTROL PLAN

KETCHUM 2022 SIDEWALK INFILL: SITE Q3-8 - WASH. AVE. (ALONG BK 13) & 7TH ST (FROM WASH. AVE TO WARM SPRINGS RD)

PREPARED FOR CITY OF KETCHUM

PROJECT INFORMATION
P:\sd\dwg\1318-174 sidewalks\dwg\Construction\1318-174_Eng_2020-02(q3-8).dwg 03/03/22 1:08:21 PM

PRELIMINARY NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER REGISTERED 7986 STATE OF IDAHO CHRISTOPHER C LOOMIS

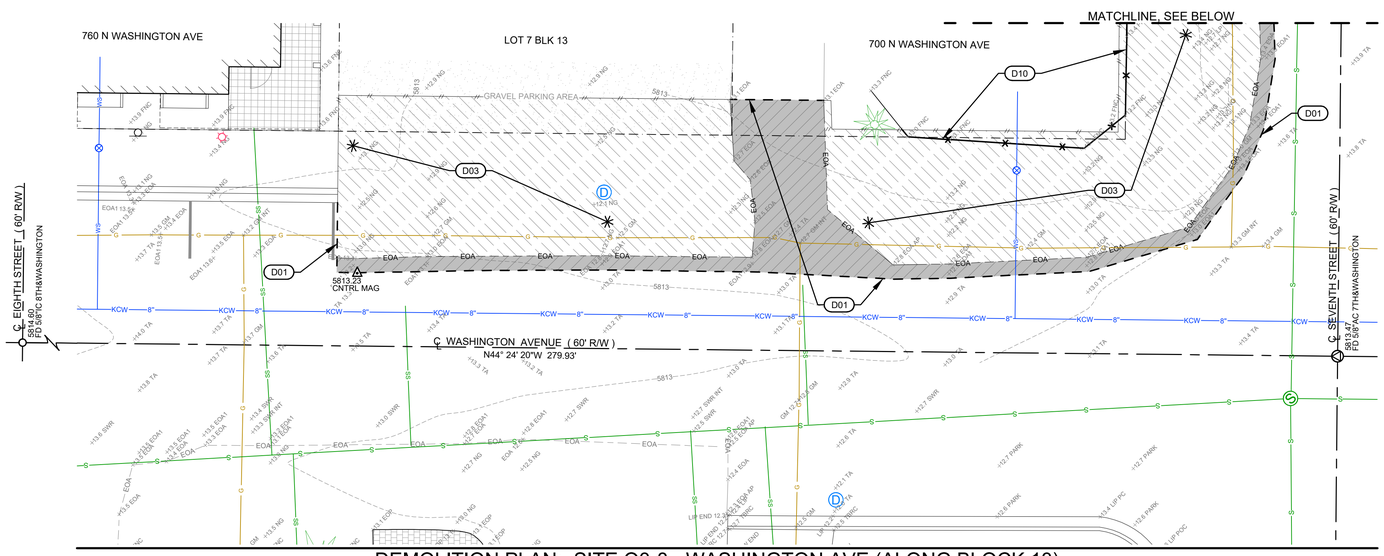
CT/JCL
DESIGNED BY
CT
DRAWN BY
JCL
CHECKED BY

GALENA ENGINEERING, INC.
Civil Engineers & Land Surveyors
317 N. River Street
Hailey, Idaho 83333
(208) 788-1705
email galena@galena-engineering.com

PURPOSE: BID SET (03/03/2022)

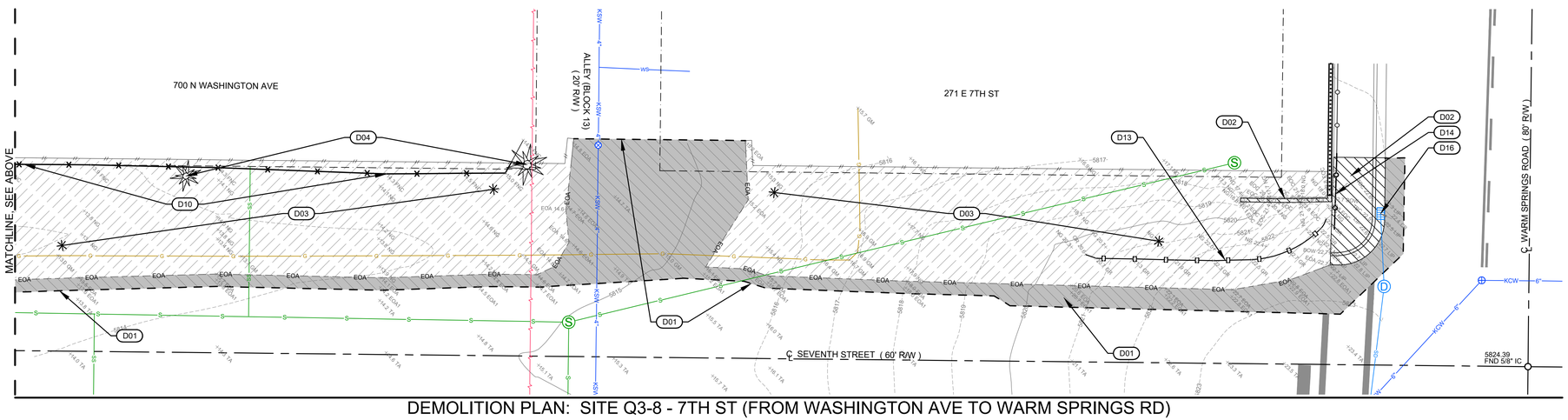
NO	DATE	BY	REVISIONS

Q3-8.0



DEMOLITION PLAN: SITE Q3-8 - WASHINGTON AVE (ALONG BLOCK 13)

GRAPHIC SCALE
0 10
1 inch = 10 ft.



DEMOLITION PLAN: SITE Q3-8 - 7TH ST (FROM WASHINGTON AVE TO WARM SPRINGS RD)

GRAPHIC SCALE
0 10
1 inch = 10 ft.

DEMOLITION SCHEDULE

D01	SAWCUT ASPHALT AS SHOWN TO PROVIDE CLEAN VERTICAL EDGE. REMOVE AND DISPOSE OF ASPHALT.
D02	REMOVE AND DISPOSE OF CONCRETE CURB AND/OR SIDEWALK AND/OR RETAINING WALL. (UTILIZE EXISTING JOINTS WHERE POSSIBLE)
D03	GRUB SITE
D04	REMOVE AND DISPOSE OF TREE AND ROOT BALL SYSTEM
D10	REMOVE AND RETAIN FENCE.
D13	REMOVE AND DISPOSE OF GUARD RAIL
D14	CUT AND REMOVE A PORTION OF HAND RAIL (SEE CORRESPONDING SIDEWALK DESIGN SHEET FOR EXTENSION OF HANDRAIL).
D16	REMOVE AND DISPOSE OF CATCH BASIN.

DEMOLITION PLAN

KETCHUM 2022 SIDEWALK INFILL: SITE Q3-8 - WASH. AVE. (ALONG BK 13) & 7TH ST (FROM WASH. AVE TO WARM SPRINGS RD)

PREPARED FOR CITY OF KETCHUM

PROJECT INFORMATION
P:\sd\dwg\1318-174 sidewalk\dwg\Construction\1318-174_Eng_2020-02(q3-8).dwg 03/03/22 1:08:21 PM

PRELIMINARY NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER
REGISTERED
7986
03/03/2022
STATE OF IDAHO
JEFF C LOOMIS

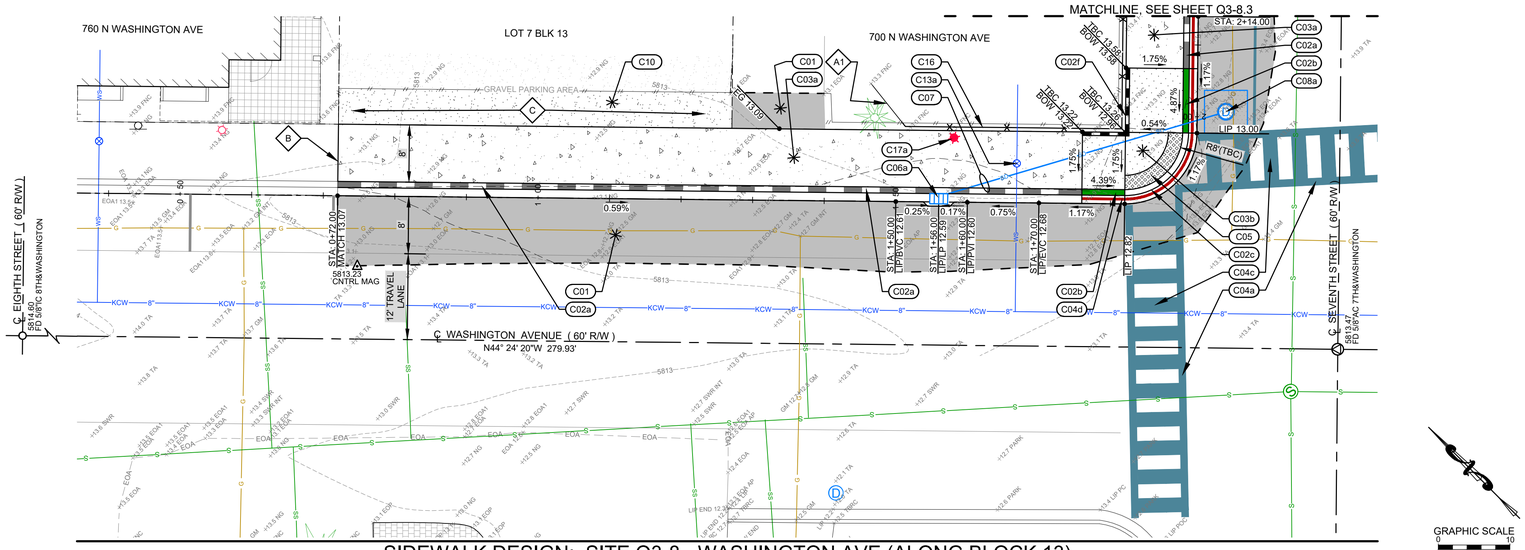
CT/JCL
DESIGNED BY
CT
DRAWN BY
JCL
CHECKED BY

GALENA ENGINEERING, INC.
Civil Engineers & Land Surveyors
317 N. River Street
Hailey, Idaho 83333
(208) 788-1705
email galena@galena-engineering.com

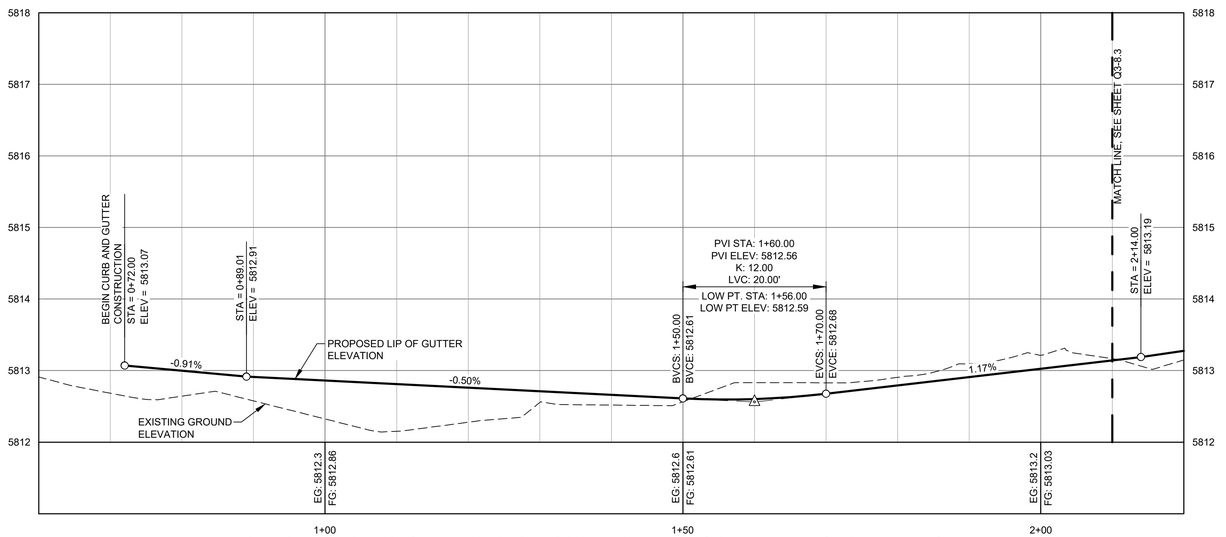
PURPOSE: BID SET (03/03/2022)

NO	DATE	BY	REVISIONS

Q3-8.1



SIDEWALK DESIGN: SITE Q3-8 - WASHINGTON AVE (ALONG BLOCK 13)



SITE Q3-8: WASHINGTON AVE (ALONG BLOCK 13 - STA 0+72 TO STA 2+10) LIP OF GUTTER PROFILE

SCALE: 1"=10 H; 1"=1 V

CONSTRUCTION SCHEDULE

- C01 CONSTRUCT ASPHALT ROADWAY / ASPHALT REPAIR. SEE DETAIL 1 / C0.2.
- C02 CONSTRUCT CONCRETE CURB AND GUTTER
  - a. 6" ROLLED C&G PER DETAIL 2a / C0.2.
  - b. CURB TRANSITION PER DETAIL 2b / C0.2.
  - c. ZERO REVEAL CURB AND GUTTER PER DETAIL 2b / C0.2.
  - d. ±5' OF CURB TRANSITION (BETWEEN 6" VERTICAL C&G AND 6" ROLLED C&G).
  - e. 3' WIDE CONCRETE VALLEY GUTTER PER DETAIL 2c / C0.2.
  - f. CONCRETE VERTICAL CURB PER DETAIL 2d / C0.2.
- C03 CONSTRUCT CONCRETE SIDEWALK. WIDTH AS SHOWN HEREON. SEE DETAIL 3 / C0.2.
  - a. FLAT WORK
  - b. ADA COMPLIANT RAMPS / LANDING.
  - c. NON - ADA COMPLIANT RAMP BECAUSE OF EXISTING GRADE
- C04 INSTALL ROAD STRIPING / PAINT
  - a. WHITE CROSSWALK STRIPING (12" WIDE).
  - b. YELLOW ASPHALT PARKING STRIPING (4" WIDE). MATCH CITY PATTERNS.
  - c. WHITE CROSSWALK / STOP BAR STRIPING (24" WIDE).
  - d. RED "NO PARKING" STRIPING ON CURB. MATCH CITY PATTERNS.
- C05 INSTALL CITY OF KETCHUM APPROVED CAST IRON TRUNCATED DOME DETECTABLE WARNING INSERT
- C06 INSTALL CATCH BASIN. SEE DETAIL 6 / C0.2.
  - a. RIM = 5812.39
    INV. OUT = 5809.39
- C07 INSTALL 12" ADS N-12 STORM DRAIN PIPE WITH A MINIMUM SLOPE OF 2.0%. SEE DETAIL 9 / C0.2 FOR POTABLE AND NON-POTABLE WATER LINE SEPARATION AND DETAIL 8 / C0.2 FOR TRENCHING.
- C08 DRYWELL. SEE DETAIL 7 / C0.2.
  - a. CONSTRUCT NEW DRYWELL
    RIM = 5813.23
    INV. IN = 5808.5
- C10 CONSTRUCT GRAVEL DRIVEWAY / PARKING AREA IMPROVEMENTS. REGRADE AREA TO PROVIDE FOR A SMOOTH TRANSITION. SEE DETAIL 4 / C0.2.
- C13 RESET UTILITY BOX LID ELEVATION.
  - a. WATER VALVE BOX
    ORIGINAL RIM = 5813.05
    NEW RIM = 5813.03
- C16 INSTALL FENCE WITH APPLICABLE GATES. USE PREVIOUSLY REMOVED FENCE / GATES OR MATCH STYLE AND HEIGHT.
- C17 STREET LIGHTS
  - a. INSTALL STREET LIGHT: SOLAR (OFF-GRID)
  - b. RELOCATE EXISTING STREET LIGHT
- A RETAIN AND PROTECT
  1. FENCE
- B MATCH EXISTING LINES AND GRADES
- C REGRADE AREA TO PROVIDE FOR A SMOOTH TRANSITION. REPAIR IRRIGATION AND LANDSCAPING AS NECESSARY.

A SITE IMPROVEMENT PLAN SHOWING

KETCHUM 2022 SIDEWALK INFILL: SITE Q3-8
WASHINGTON AVE (ALONG BLOCK 13)

PREPARED FOR CITY OF KETCHUM

PROJECT INFORMATION
P:\sdskproj\1318-174 sidewalksdog\Construction\1318-174_Eng_2020-02(q3-8).dwg 03/03/22 1:08:21 PM

PROFESSIONAL ENGINEER
REGISTERED
7986
03/03/22
STATE OF IDAHO
JEFF C. LOOMIS
PRELIMINARY NOT FOR CONSTRUCTION

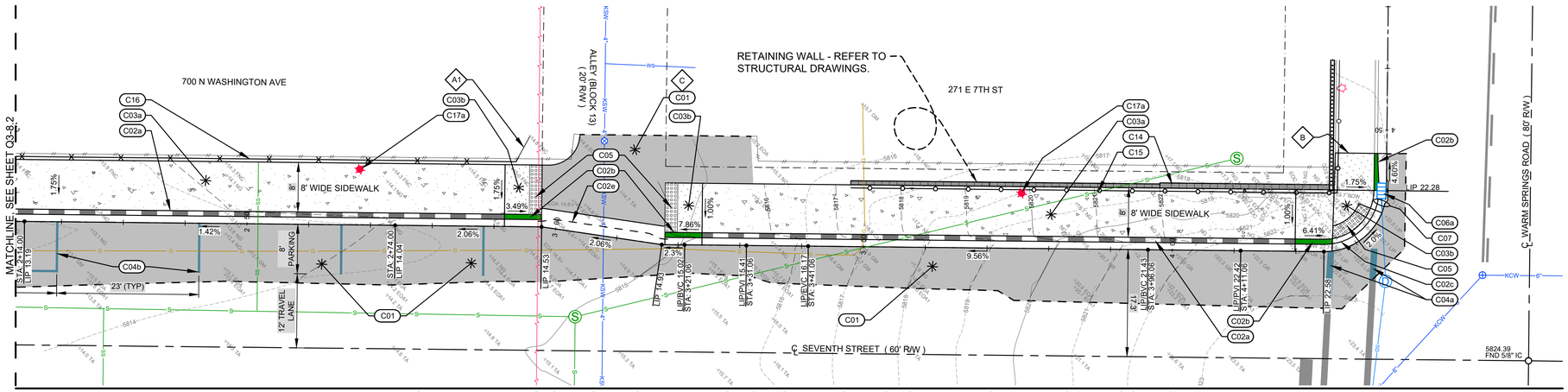
CT/JCL DESIGNED BY
CT DRAWN BY
JCL CHECKED BY

GALENA ENGINEERING, INC.
Civil Engineers & Land Surveyors
317 N. River Street
Hailey, Idaho 83333
(208) 788-1705
email galena@galena-engineering.com

PURPOSE: BID SET (03/03/2022)

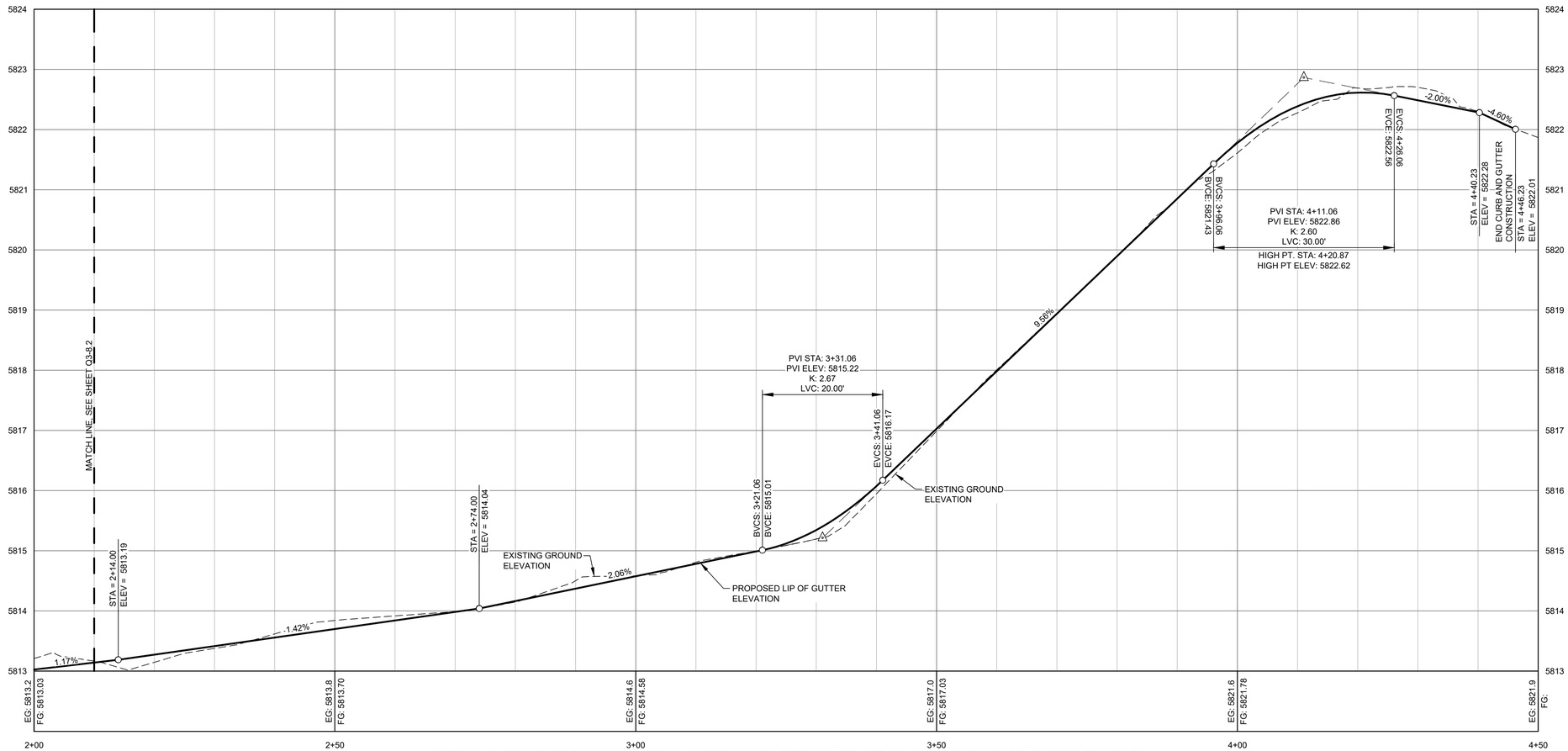
NO	DATE	BY	REVISIONS

Q3-8.2



SIDEWALK DESIGN: SITE Q3-8 - 7TH ST (FROM WASHINGTON AVE TO WARM SPRINGS RD)

GRAPHIC SCALE
0 10
1 inch = 10 ft.



SITE Q3-8: 7TH ST (FROM WASHINGTON AVE TO WARM SPRINGS RD - STA 2+10 TO END) LIP OF GUTTER PROFILE

SCALE: 1"=10 H; 1"=1 V

CONSTRUCTION SCHEDULE

- C01 CONSTRUCT ASPHALT ROADWAY / ASPHALT REPAIR. SEE DETAIL 1 / C0.2.
- C02 CONSTRUCT CONCRETE CURB AND GUTTER
  - a. 6" ROLLED C&G PER DETAIL 2a / C0.2.
  - b. CURB TRANSITION PER DETAIL 2b / C0.2.
  - c. ZERO REVEAL CURB AND GUTTER PER DETAIL 2b / C0.2.
  - d. ±5' OF CURB TRANSITION (BETWEEN 6" VERTICAL C&G AND 6" ROLLED C&G).
  - e. 3' WIDE CONCRETE VALLEY GUTTER PER DETAIL 2c / C0.2.
  - f. CONCRETE VERTICAL CURB PER DETAIL 2d / C0.2.
- C03 CONSTRUCT CONCRETE SIDEWALK. WIDTH AS SHOWN HEREON. SEE DETAIL 3 / C0.2.
  - a. FLAT WORK
  - b. ADA COMPLIANT RAMPS / LANDING.
  - c. NON - ADA COMPLIANT RAMP BECAUSE OF EXISTING GRADE
- C04 INSTALL ROAD STRIPING / PAINT
  - a. WHITE CROSSWALK STRIPING (12" WIDE).
  - b. WHITE ASPHALT PARKING STRIPING (4" WIDE). MATCH CITY PATTERNS.
  - c. WHITE CROSSWALK / STOP BAR STRIPING (24" WIDE).
- C05 INSTALL CITY OF KETCHUM APPROVED CAST IRON TRUNCATED DOME DETECTABLE WARNING INSERT
- C06 INSTALL CATCH BASIN. SEE DETAIL 6 / C0.2.
  - a. CONNECT TO EXISTING STORM DRAIN SYSTEM
    RIM = 5822.08
    INV. OUT = 5819.28
- C07 INSTALL 12" ADS N-12 STORM DRAIN PIPE WITH A MINIMUM SLOPE OF 2.0%. SEE DETAIL 9 / C0.2 FOR POTABLE AND NON-POTABLE WATER LINE SEPARATION AND DETAIL 8 / C0.2 FOR TRENCHING.
- C14 CONSTRUCT POUR IN-PLACE CONCRETE RETAINING WALL. REFER TO STRUCTURAL DRAWINGS.
- C15 INSTALL ADA COMPLIANT HAND / GUARD RAIL PAINTED PER CITY SPECIFICATIONS. SEE DETAIL 10 / C0.2.
- C16 INSTALL FENCE WITH APPLICABLE GATES. USE PREVIOUSLY REMOVED FENCE / GATES OR MATCH STYLE AND HEIGHT.
- C17 STREET LIGHTS
  - a. INSTALL STREET LIGHT: SOLAR (OFF-GRID)
- A RETAIN AND PROTECT
  1. FENCE
- B MATCH EXISTING LINES AND GRADES
- C REGRADE AREA TO PROVIDE FOR A SMOOTH TRANSITION. REPAIR IRRIGATION AND LANDSCAPING AS NECESSARY.

A SITE IMPROVEMENT PLAN SHOWING

KETCHUM 2022 SIDEWALK INFILL: SITE Q3-8

7TH ST (FROM WASHINGTON AVE TO WARM SPRINGS RD)

PREPARED FOR CITY OF KETCHUM

PROJECT INFORMATION
P:\sd\dwg\13\18-174 sidewalks\dwg\Construction\13\18-174_Eng_2020-02(q3-8).dwg 03/03/22 1:08:21 PM

PROFESSIONAL ENGINEER
REGISTERED
7986
STATE OF IDAHO
JEFFREY C. LOOMIS
PRELIMINARY NOT FOR CONSTRUCTION

CT/JCL
DESIGNED BY
CT
DRAWN BY
JCL
CHECKED BY

PURPOSE: BID SET (03/03/2022)

NO	DATE	BY	REVISIONS

GALENA ENGINEERING, INC.
Civil Engineers & Land Surveyors
317 N. River Street
Hailey, Idaho 83333
(208) 788-1705
email galena@galena-engineering.com

Q3-8.3