City of Ketchum

September 20, 2021

Mayor Bradshaw and City Councilors
City of Ketchum
Ketchum, Idaho

Mayor Bradshaw and City Councilors:

Recommendation to approve Agreement 20714 with HDR Inc. for the Main Street (SH-75) Signal Timing Plan

Recommendation and Summary
Staff is recommending approval of Agreement 20714 with HDR for traffic engineering services to develop a signal timing plan for the Main Street (SH-75) corridor.

"I move to authorize the Mayor to sign Agreement 20714 with HDR Inc."

The reasons for the recommendation are as follows:
- Signal operation at Sun Valley Road and Main Street has changed with the addition of the pedestrian scramble.
- The signal timing plan will determine the optimum cycle length for each light within the Main Street corridor.
- HDR is available to do the work and can complete in 4 weeks

Introduction and History
Timing plans are developed by analyzing traffic volume and traffic direction on a given street or corridor during a given time of the day. A typical traffic signal uses timing plans based on the time of day, AM peak period, PM peak period and off-peak period. A five-step process is used when creating a timing plan these steps include: data collection, optimization/modeling, implementation, evaluation, and refinement.

With the addition of the pedestrian scramble at Sun Valley Road and the HAWK on 4th Street the existing Main Street corridor timing plan is out-of-date. The signals within the corridor are no longer sequenced with current traffic patterns. The signal timing plan will utilize recently collected traffic data to develop a timing plan based on existing traffic patterns of the corridor and optimize the signal sequencing and cycle length for AM and PM peak times.

ITD initially requested the City contract with Jacobs Engineering to complete the timing plan. In subsequent discussions with ITD it was determined to be more cost effective to have HDR provide the plan verses Jacobs.

Traffic counts were collected by L2 Data as part of the Main Street and Warm Springs Alternative Analysis and will be used in the model to create the timing plans. HDR is available to do the analysis and can provide a timing plan in approximately 4 weeks.

Sustainability Impact
Improved signal timing reduces wait time and idling at intersections.

Financial Impact
The cost of the timing plan is $18,436.00. CIP fund balances will be used to cover the cost of the plan.

Attachments:
Agreement 20714 – Task Order 3 – Main Street Signal Timing Plan

TASK ORDER

This Task Order pertains to an Agreement by and between City of Ketchum, ("OWNER"), and HDR Engineering, Inc. ("ENGINEER"), dated September , 2021, ("the Agreement"). Engineer shall perform services on the project described below as provided herein and in the Agreement. This Task Order shall not be binding until it has been properly signed by both parties. Upon execution, this Task Order shall supplement the Agreement as it pertains to the project described below.

TASK ORDER NUMBER: 03
PROJECT NAME: Main Street (SH-75) Signal Timing

PART 1.0 PROJECT DESCRIPTION: See Attachment A

PART 2.0 SCOPE OF SERVICES TO BE PERFORMED BY ENGINEER ON THE PROJECT: See Attachment A

PART 3.0 OWNER'S RESPONSIBILITIES: See Attachment A

PART 4.0 PERIODS OF SERVICE: See Attachment A

PART 5.0 ENGINEER'S FEE: See Attachment B

PART 6.0 OTHER: N/A

This Task Order is executed this _____ day of _____, 2021.

City of Ketchum "OWNER"	HDR ENGINEERING, INC. "ENGINEER"
BY: _____	BY: _____
NAME: _____	NAME: Kate Eldridge
TITLE: _____	TITLE: Vice President
ADDRESS: _____ _____	ADDRESS: 412 E. Parkcenter Blvd., Suite 100 Boise, ID 83706

Attachment A

SCOPE OF SERVICES

Project Description

The purpose of the project is to develop and updated signal timing plan for the Main Street (SH-75) corridor in the City of Ketchum (City) for the signalized intersections at 1st Street, Sun Valley Street, and 5th Street and the pedestrian hybrid beacon (HAWK Signal) at 4th Street.

This Scope of Services (SOS) includes the data collection, signal timing plan development, signal timing plan implementation, before and after implementation travel time runs, and final report. HDR Engineering, Inc. (HDR) will complete the tasks included in this SOS.

The scope narrative is organized by the following tasks:

- Task 100 Project Management
- Task 200 Project Goals and Objectives
- Task 300 Data Collection
- Task 400 Existing Conditions and Timing Plan Development

Key Understandings

1. The City is the agreement administrator, and the project is funded by the City. State and Federal funds will not be used.
2. This scope of services assumes a three (3) month project duration for estimating purposes, with timing plan delivery no later than December 31, 2022, based on an NTP of October 1, 2021.
3. All deliverables will be electronic PDF files. Where hard copies are required it will be noted in the tasks below.
4. In developing signal timing plans, HDR will use the available data collected, however changes to traffic volumes and patterns from those observed can greatly impact signal performance. HDR, therefore, will not warranty signal performance.
5. Any tasks to review, analyze, or update the developed signal timing plans after they are implemented will be additional services.

100 PROJECT MANAGEMENT

110 Project Initiation and Project Management Plan

HDR will set up the project files and accounting system, as well as prepare a Project Management Plan for use by the project team, including the City. The plan will include key project information such as communication protocols, contact information for key team members, project schedule, project delivery process, quality control procedures and will be updated as needed during the project development process.

Deliverables

- Project Management Plan (information only, no review)

120 Kick-off Meeting

A kick-off meeting will be held to outline the project objectives, roles and responsibilities, critical success factors, and to review the schedule. This meeting will include City staff, ITD staff, and two (2) HDR staff (PM + key task lead). HDR will prepare the agenda, schedule, and facilitate

the kick-off meeting with City staff to discuss the project objectives, approach, schedule, available information, etc.

Assumptions

- The kickoff meeting will be held in person in the City of Ketchum.
- Meeting attendance includes two (2) HDR staff (PM + key task lead).
- The kickoff meeting is anticipated to last two (2) hours, including preparing meeting minutes, and five (5) hours of travel time.
- The kickoff meeting may be combined with the Main Street (SH-75) Alternatives Analysis project kick-off meeting to save project costs.

Deliverables

- Kickoff meeting agenda and minutes

130 Project Team Meetings

Project team meetings will be conducted throughout the duration of the project. Team meetings will be held via conference call to review project status and address questions with the City. Timing and scheduling of these meetings will be determined at the project kick-off meeting. The team meetings will be held via conference call throughout the project.

All meetings will include an agenda and discussion of action items. Meeting minutes will be prepared and distributed.

Assumptions

- Two (2) team coordination meetings will be scheduled as needed.
- Meeting attendance includes two (2) HDR staff (PM + key task lead).
- Project Team meetings are anticipated to last one and a half (1 ½) hours, including preparing meeting minutes.

Deliverables

- Project Team meetings agendas and minutes

140 Status Calls

Status calls between the HDR PM and the City PM will be scheduled as needed throughout the duration of the project to coordinate project status and needs. The HDR PM will coordinate the necessary updates and action items for the calls.

Assumptions

- Four (4) status calls at ½ hour each.

Deliverables

- Action Item List - via email, if necessary

150 Project Administration, Progress Reports and Invoicing

HDR will staff and manage a project team to provide project deliverables and manage the budget and schedule. Monthly progress reports and invoices will meet the City's requirements. HDR will submit invoices to the City.

Deliverables

- Monthly Invoice and Progress Report - including labor and expense backup (assume three [3] invoices)

200 PROJECT GOALS AND OBJECTIVES

210 Develop the Project Goals and Objectives

In coordination with the kickoff meeting, HDR will discuss the project goals and objectives that the City and ITD will have for this project. This will include a discussion of existing signal infrastructure and operations as well as a high-level review of existing corridor functionality including observed problem movements or areas.

HDR will summarize goals and objectives in the meeting minutes for City and ITD review following the meeting. Once comments are received and the appropriate input incorporated, the goals and objectives will be documented in the Final Letter Report.

Assumptions

- Two (2) HDR staff, City staff, and ITD staff will meet in the kickoff meeting in task 120.
- Travel expenses for this will be under the kickoff meeting under Task 120.

Deliverables

- Meeting minutes under Task 120

300 DATA COLLECTION

HDR will use the following data collected by HDR, L2 or the City for another project:

- Most recent five calendar years of crash data (e.g., type, severity, injuries) including location information
- Locations in the project area identified as exceeding statewide or local performance measure for crash frequency or severity
- Signalized intersections and signal timings
- Signalized controller and detection type information
- Posted speeds
- Number of lanes/cross-sections for project roadways
- Pavement conditions (assuming data are readily available and completed)
- Existing bike lanes, sidewalks, publicly maintained off-street pedestrian/bike facilities
- Pedestrian and bicycle counts on project and surrounding corridors
- Transit routes
- Proposed and adopted plans for future land use and development
- Significant land use changes and/or developments since the last Comprehensive Plan
- Peak hour and ADT counts at key intersections and segments
- Base map data (AutoCAD, GIS or Aerial format) for use in calculating signal and pedestrian clearance times will be obtained from the City.

HDR will document the existing conditions, including roadway and intersection configurations, pedestrian facilities, bicycle facilities, surrounding land use.

HDR will review completed data and recommend updates and request additional information from the City.

Deliverables

- Existing Data Summary Memo

400 EXISTING CONDITIONS AND TIMING PLAN DEVELOPMENT

410 Existing Synchro Model Development

HDR will develop an Existing Synchro Model for the corridor for AM and PM time of day plans. HDR will analyze the operations at the signals and HAWK signal under the existing signal timing parameters. Level of service (LOS) will be reported based on Highway Capacity Manual (HCM) metrics using Synchro, SimTraffic, and Highway Capacity Software (HCS) traffic operations analysis tools.

Assumptions

- This analysis will be for existing conditions using existing signal timing parameters provided by ITD.
- The existing models will include the pedestrian scramble phase at the Sun Valley Road Intersection.

Deliverables

- Existing Conditions Summary included in the Draft and Final Letter Reports

420 Signal Timing Plan Development

HDR will develop two updated signal timing plans for the corridor for the AM and PM Peak hours. HDR will develop Signal Timing Parameter worksheets to aid in imputing traffic signal timing parameters into the central software. The parameter worksheets will calculate updated vehicle and pedestrian clearance intervals using data collected under 300.

Assumptions

- Calculated signal timing parameters will follow recommendations in NCHRP 812: *Signal Timing Manual – Second Edition*, and ITE's *Guidelines for Determining Traffic Signal Change and Clearance Intervals*.
- ITD and the City will provide one (1) round of comments on the draft timing plans.
- No seasonal, shoulder or weekend plans will be developed.

Deliverables

- One (1) draft time-space diagram for the corridor will be developed for each of the two (2) signal timing plans in .pdf format
- One (1) draft signal timing parameter workbook for each of the two (2) signal timing plans in .pdf format
- One (1) final signal timing parameter workbook for each of the two (2) signal timing plans in .pdf format

430 Letter Report

The results of the data collection, analysis, and signal timing plans will be described in a short letter report that documents the results of the signal timing study.

HDR will distribute the Draft Letter Report electronically to City staff to share with and agency partners, including the ITD District 4 Traffic Engineer, and other stakeholders.

HDR will finalize the Letter Report by incorporating comments received. HDR will provide a Final Letter Report to City staff, and agency partners, in electronic format.

Assumptions

- Draft Letter Report will be up to three (3) pages with the proposed signal timings attached.
- One (1) review of the Draft Letter Report will be conducted by City staff and other agency partners
- City will compile all City Council, staff, ITD, stakeholder, and public comments and provide one set of comments to HDR
- No team meeting will be held to review comments.

Deliverables

- Draft Letter Report
- Comment and response matrix from review of Draft Letter Report
- Final Letter Report

HDR Engineering, Inc.
City of Ketchum Main Street (SH-75) Signal Timing

			HDR					
		TOTAL	Principal in Charge	Quality Control	Project Manager	Senior Traffic Engineer	Traffic Engineer	Accounting
100	**Project Management**	**40**	**1**	**0**	**17**	**0**	**12**	**10**
110	Project Initiation and Project Management Plan	4.5	0.5		2			2
120	Kick-off Meeting	14			7		7	
130	Project Team Meetings	6			3		3	
140	Status Calls	4			2		2	
150	Project Administration, Progress Reports and Invoicing	11.5	0.5		3			8
200	**Project Goals and Objectives**	**3**	**0**	**0**	**1**	**1**	**1**	**0**
210	Develop the Project Goals and Objectives	3			1	1	1	
300	**Data Collection**	**8**			**4**		**4**	
400	**Existing Conditions and Timing Plan Development**	**55**	**0**	**3**	**0**	**20**	**32**	**0**
410	Existing Synchro Model Development	21		1		8	12	
420	Signal Timing Plan Development	21		1		8	12	
430	Letter Report	13		1		4	8	
	Total:	**106**	**1.0**	**3.0**	**22.0**	**21.0**	**49.0**	**10.0**
	Total Check:	**106.0**	**1.0**	**3.0**	**22.0**	**21.0**	**49.0**	**10.0**
	Percent of Project Total:	**100.0%**	**0.9%**	**2.8%**	**20.8%**	**19.8%**	**46.2%**	**9.4%**

Attachment B

CONSULTANT NAME: **HDR Engineering, Inc.**
PROJECT NAME: **City of Ketchum Main Street (SH-75) Signal Timing**
PROJECT NO.: **N/A**
KEY NO. **N/A**

DESIGN

A. SUMMARY ESTIMATED MAN-DAY COSTS

		Man-Hours		Rate		Labor Cost
1	Principal in Charge	= 1.00	@	$305.00	=	$305.00
2	Quality Control	= 3.00	@	$224.00	=	$672.00
3	Project Manager	= 22.00	@	$224.00	=	$4,928.00
4	Senior Traffic Engineer	= 21.00	@	$233.00	=	$4,893.00
5	Traffic Engineer	= 49.00	@	$131.00	=	$6,419.00
7	Accounting	= 10.00	@	$85.00	=	$850.00
		TOTAL = 106.00		**TOTAL =**		**$18,067.00**

B. OUT-OF-POCKET EXPENSES

HDR TOTAL ESTIMATED EXPENSE* = **$369.00**
* See attached Direct Expenses for HDR

C. ESCALATION

Anticipated Agreement Date:	October 1, 2021
Project Duration:	4 months
Escalation Period:	1 month

Total Labor Cost		Esc Ratio		Annual Esc		
$18,067.00	X	0%	x	3.5%	=	**$0.00**

HDR Subtotal = **$18,436.00**

D. SUBCONSULTANTS

Subconsultant Subtotal = **$0.00**

TOTAL = **$18,436.00**

SULTANT NAME: HDR Engineering, Inc.
PROJECT NAME: City of Ketchum Main Street (SH-75) Signal Timing
PROJECT NO.: N/A
KEY NO. N/A

F. OUT-OF-POCKET EXPENSES SUMMARY

	Expense	Unit	Estimated Amount		Unit Cost		Estimated Expense
1	Printing (8.5x11)	Sheets	100	@	$ 0.05	=	$ 5.00
2	Printing (8.5x11 Color)	Sheets	25	@	$ 0.16	=	$ 4.00
3	Printing (11x17)	Sheets	50	@	$ 0.10	=	$ 5.00
4	Printing (11x17 Color)	Sheets	25	@	$ 0.32	=	$ 8.00
5	Postage & Shipping	LS		@	$ 100.00	=	$ -
6	Postcards/Shipping Postcards	Each	-	@		=	$ -
7	Display Boards (16)	sq ft	-	@	$ 7.00	=	$ -
8	Roll Plot - Color	sq ft	-	@	$ 0.90	=	$ -
9	Display Ad	Each	-	@	$ 210.00	=	$ -
10	Meeting Refreshments	LS	-	@	$ 50.00	=	$ -
11	Mileage	Miles	-	@	$ 0.560	=	$ -
12	Meals	Day	2	@	$ 66.00	=	$ 132.00
13	Lodging	Each	-	@	$ 147.00	=	$ -
14	Lodging Tax	Each	-	@	$ 22.05	=	$ -
15	Airfare - Spokane to Boise	Each	-	@	$ 250.00	=	$ -
16	Rental Car	Each	1	@	$ 75.00	=	$ 75.00
17	Fuel	Gals	40	@	$ 3.50	=	$ 140.00
		HDR Engineering, Inc. Total Estimated Expenses					**$369.00**

Task 120&300 Number of People Trips 2 Trips 1 Miles/trip 300 Days/Trip 1

Expense	Unit	Estimated Amount		Unit Cost		Estimated Expense
Meals	Day	2	@	$ 66.00	=	$ 132.00
Lodging	Each		@	$ 147.00	=	$ -
Lodging Tax	Each		@	$ 22.05	=	$ -
Airfare - Spokane to Boise	Each		@	$ 250.00	=	$ -
Rental Car	Each	1	@	$ 75.00	=	$ 75.00
Fuel	Gals	40	@	$ 3.50	=	$ 140.00