

WSP USA  
Contract No. 2022-108  
City of Flagstaff Downtown Mile Project  
Planning and Design Services  
Project No. 30902258

Scope of Work  
For  
Planning and Design Services  
Contract Modification #2

October 2023

#### GENERAL DESCRIPTION OF WORK:

WSP USA (WSP) is continuing to provide Design Services for the Downtown Mile project. As part of the development of the 30% design submittal, several items were identified that were not covered in the original scope. This contract modification is being submitted to capture these additional scope items and cover the following:

- Additional foundation borings for two new walls identified along Lower Coconino Road and along detention basins between Lower Coconino Road and Coconino Road.
- The second identified boring was originally identified as option for the Florence-Walnut crossing but is being incorporated to confirm condition based on poor soil conditions identified in the original project design.

The design schedule has also been revised for the project based on this contract modification and current status of design and review by project partners. With delays in obtaining Section 106 Clearance and initial acceptance of Design Criteria from ADOT and BNSF, an extension of 8 months to a revised contract end date of August 31, 2024, is being requested. It is anticipated that some permits may take longer than this schedule based on stakeholder requirements. If required, a schedule extension for permitting may be requested under a future contract modification. The work will be performed using a Lump Sum fee based on the scope outlined herein. If additional scope is required, a subsequent contract modification will be submitted to the City for approval prior to any additional work being completed. WSP will invoice the City monthly based on percent complete as design progresses.

WSP's additional work under this contract modification will be supported by the following subconsultants:

1. Peak Engineering: Additional services to update the design of the connections and pathway between Florence-Walnut through the new BNSF crossing. The design was not included in the original scope. Design will provide updates to the original work completed by TranSystems and Turner Engineering and design connections to the streets and a basic trail connection between the streets. BPAC has indicated that future improvements may be made under a separate project, design of these elements is not included with this scope. Additional services are included for additional impacts at Beaver Road after a raise in BNSF vertical profile was identified in the 30% design impacting additional infrastructure.
2. GSI: Additional geotechnical drilling in support of field explorations for geotechnical investigations.

3. Quail: Additional traffic control for geotechnical exploration within ADOT right-of-way.
4. WSP Environmental (Formerly Wood): Lab testing of soil and rock data retrieved during geotechnical explorations. Work is based on a schedule of fees to be determined based on field explorations. Actual expenses will be invoiced under this work.
5. Northland Exploration Surveys: Additional survey will be required in the area of the retaining wall at the western limits of the rail modifications between BNSF and Lower Coconino Road. Additionally, additional rail survey is required to the west of the project to address comments received by BNSF.

Subconsultants scope of work and fee are attached as appendices at the end of this document.

It is anticipated that this project will become a Construction Manager at Risk (CMAR) project between Concept Design and 90% Design. It is assumed under this scope that redesign and value engineering efforts will not require significant changes to design established at the Concept Design phase. Significant changes in design may require a subsequent contract modification to complete the work.

#### PAYMENT TERMS:

The City has requested that this scope of work be submitted through two different contract modifications. A complete scope of work is being provided for clarity. The fee for the submitted scope will be agreed to on the following basis:

- Contract Modification #1 – Contract Modification #1 will cover the additional scope and fee required for WSP's subcontractors (except Northland Exploration Surveys) under this scope of work.
- Contract Modification #2 – Contract Modification #2 will cover the additional scope and fee required for additional work to be performed by WSP and Northland Exploration Surveys.

## TASK 1.0 – PROJECT MANAGEMENT AND COORDINATION

The work under this task will include general project management and coordination activities during the project. This task includes project management, meetings, project documentation, and development of meeting agendas and minutes.

### SUBTASKS:

TASK 1.1: Project Management work will include project set up, monthly invoicing, and project tracking. Additional work under this task includes additional time for the schedule extension.

TASK 1.2: Project Meetings will include meetings throughout this scope of work to coordinate with the City of Flagstaff and obtain feedback. A meeting agenda and minutes will be prepared for each meeting and include documentation of decisions.

*TASK 1.2B:* Monthly progress meetings will be scheduled with City staff and invited stakeholders to discuss project elements and design decisions (Virtual: PM, DPM, Roadway, Drainage, Structures, Traffic, Public Involvement, Rail, Environmental). These meetings will include all key task leaders and will be held virtually to allow attendance by stakeholders and remote task leads. It is assumed there will be three additional meetings with the schedule extension.

*TASK 1.2C:* Bi-monthly stakeholder meetings are anticipated to discuss project elements and coordinate project requirements with other local projects and permit requirements. Unanticipated monthly coordination meetings with the Downtown Connection Center were not originally scoped and are added to the original scope as an additional stakeholder.

TASK 1.3: Project Coordination is provided to coordinate work performed by subconsultants for survey and utilities. This coordination includes survey review and verification, attendance at utility meetings, and conflict identification and mitigation.

TASK 1.4: The Quality Program is WSP's program to verify that quality control procedures on the project are implemented and executed per the project Quality Plan. Time under this task includes Quality Assurance reviews and coordination of submittals prior to submission to the City. Quality Control is handled at a task level by the Task Leads under the work described elsewhere. Four submissions are identified for this task: Concept, 60%, 90%, and PS&E.

### ASSUMPTIONS:

1. It is assumed that meetings, except for the Kick-off meeting, will be virtual and do not require travel.

### DELIVERABLES:

Meeting Agendas (Electronic PDF), Meeting Minutes (Electronic PDF)

## TASK 2.0 – ROADWAY

No additional work included with this contract modification.

## TASK 3.0 – DRAINAGE

No additional work included with this contract modification.

#### TASK 4.0 – TRAFFIC DESIGN

No additional work included with this contract modification.

#### TASK 5.0 – STRUCTURES

The BNSF and the City have identified the preferred structure type for each of the four BNSF crossings. The structure type for the RDF FUTS Crossing has been selected as a three-span railway bridge where the original contract identified this as a concrete box structure. Additional design and sheet development will be required for this preferred structure type. The retaining wall type for the wall in front of the Downtown Connection Center was also modified after multiple rounds of coordination from a Cast-in-place retaining wall to a Post-and-Panel wall. Additional design and plan development is required to complete this work.

##### SUBTASKS:

TASK 5.3: 60% Submittal further develops the selected alternatives for each crossing. Additionally, the superstructure design for each bridge will be finalized and preliminary substructure design to develop general geometry will be started. Preliminary wall design will be completed. Preliminary design of special details will be started. The submittal is anticipated to include:

- a. Plans at a scale of 1" = 20' to include:
- b. RDF FUTS Crossing
  - a. Bridge Details (Three span bridge) (20 additional Sheets)
- c. Retaining Walls
  - a. Plans and Elevations (2 Additional Sheets)
  - b. Wall Details (2 Additional sheets)

##### DELIVERABLES:

60% Submittal, Specifications, and Engineer's Estimate (Electronic PDF)

TASK 5.4: 90% Submittal finalizes design for each crossing, retaining wall, and special detail. The submittal is anticipated to include:

- a. Plans at a scale of 1" = 20' to include:
- b. RDF FUTS Crossing
  - a. Bridge Details (Box Structure) (20 Additional Sheets)
- c. Existing BNSF RDF Crossing
  - a. Crossing Details (Drainage Structure) (8 Sheets)
- d. Retaining Walls

- a. Plans and Elevations (2 Additional Sheets)
- b. Wall Details (2 Additional sheets)

DELIVERABLES:

90% Submittal, Specifications, and Engineer's Estimate (Electronic PDF)

TASK 5.5: PS&E Submittal will address all final comments and prepare the bid ready package. The submittal is anticipated to include:

- a. Plans at a scale of 1" = 20' to include:
  - b. RDF FUTS Crossing
    - a. Bridge Details (Box Structure) (20 Additional Sheets)
  - c. Existing BNSF RDF Crossing
    - a. Crossing Details (Drainage Structure) (8 Sheets)
  - d. Retaining Walls
    - a. Plans and Elevations (2 Additional Sheets)
    - b. Wall Details (2 Additional sheets)

DELIVERABLES:

PS&E Submittal, Specifications, and Engineer's Estimate (Electronic PDF)

ASSUMPTIONS:

- 1. None.

## TASK 6.0 - GEOTECHNICAL

The scope of work for this task includes additional geotechnical exploration and recommendations are needed for a Cast in Place (CIP) retaining wall approximately 75 feet long near an existing building near the northwest quadrant of Milton Rd and BNSF tracks, and a soil nail retaining wall approximately 500 feet long, located between West Lower Coconino Avenue and north side of the BNSF tracks.

An additional CIP wall is needed along the planned basin on the north side of BNSF tracks. We understand the wall will be on the order of 500 feet long, up to 15 feet in height and will tie into the Flo-Nut structure.

In addition, geotechnical exploration and recommendations are needed for the RDF FUTS underpass structure, which will be a 3-span structure supported on drilled shafts. Further, we have been asked to provide updated geotechnical recommendations for the planned Flo-Nut structure using existing geotechnical information provided by the City.

SUBTASKS:

TASK 6.2: A site reconnaissance will be performed to observe surface features and surficial geologic units exposed. During this site visit, access to exploration points required to investigate the subsurface conditions for the additional project elements will be established. An updated geotechnical boring and access plan will be developed based on the planned project features with proposed access routes.

Using the Geotechnical boring and access plan described above, we will submit an addendum to our previously submitted BNSF Right of Entry application. The additional borings along Lower Coconino will be included in our encroachment permit from the City. We also understand the boring and access plan will be used to obtain environmental clearance of the boring locations.

This task includes a field investigation using geotechnical borings and laboratory testing to develop an understanding of the subsurface conditions and development of a subsurface profile for design. WSP will subcontract with Geomechanics Southwest Inc. to complete the borings using truck-mounted and track-mounted drill rigs.

Ten additional borings are needed to supplement previously identified borings. A summary of the planned borings is shown in the following table.

Feature	No. of borings	Approximate Depth of Borings (ft)	Planned Drill Method	Drill Equipment	Anticipated Traffic Control
Retaining Walls	6	25	Auger/Core	Track	Yes
USACE/FUTS Crossing	4	50	Auger/Core	Track	N/A

The FUTS borings will be located in unpaved areas and will be backfilled with grout. Three (3) of the wall borings will be located in the local street and one (1) boring will be located in the access road along the BNSF tracks. Wall borings will be backfilled with auger cuttings and capped with cold patch asphalt if there is asphalt pavement.

Arizona Blue Stake (AZ811) will be contacted to locate public utility lines near each boring location. This activity will be completed prior to subsurface drilling activities.

Traffic control will be needed for the borings along Lower Coconino Road and will consist of temporary lane closures with a shadow truck.

Appropriate laboratory tests will be performed to evaluate soil properties and characteristics for engineering analysis and design.

TASK 6.3: Geotechnical analysis will be performed based on the findings of the exploration and recommendations for the FUTS underpass structure and CIP walls will be included in our previously scoped Geotechnical Report. Updated recommendations for socketed piles for the Flo-Nut structure will be provided using existing geotechnical information previously provided by the City. For the planned soil nail wall, geotechnical data will be presented for soil nail design by others.

TASK 6.5: Geotechnical analysis will be incorporated into the Geotechnical Report(s) (draft and final). Work will incorporate the analysis of the additional borings, including test results, logs of test borings, photographs of recovered rock core, and recommendations for the various project features. Foundation data sheets will be prepared by WSP for inclusion in the bridge plan sets.

#### ASSUMPTIONS:

- A separate drill rig mobilization is not needed. New borings will be performed under mobilization of previously planned borings.
- Borings can be performed during weekday daytime hours.
- Borings will be added to BNSF ROE agreement at no additional cost. Compensation for flaggers is not included.
- Geotech recommendations are not needed for the RDF Drainage underpass.

#### DELIVERABLES:

None. Covered in previous tasks.

#### TASK 7.0 – ENVIRONMENTAL

No additional work included with this contract modification.

#### TASK 8.0 – PUBLIC INVOLVEMENT

No additional work included with this contract modification.

#### TASK 9.0 – RAIL

No additional work included with this contract modification.

#### TASK 10.0 – PLANNING AND CONSTRUCTION

No additional work included with this contract modification.

#### EXCLUSIONS

Services excluded from this Scope of Work include, but are not limited to:

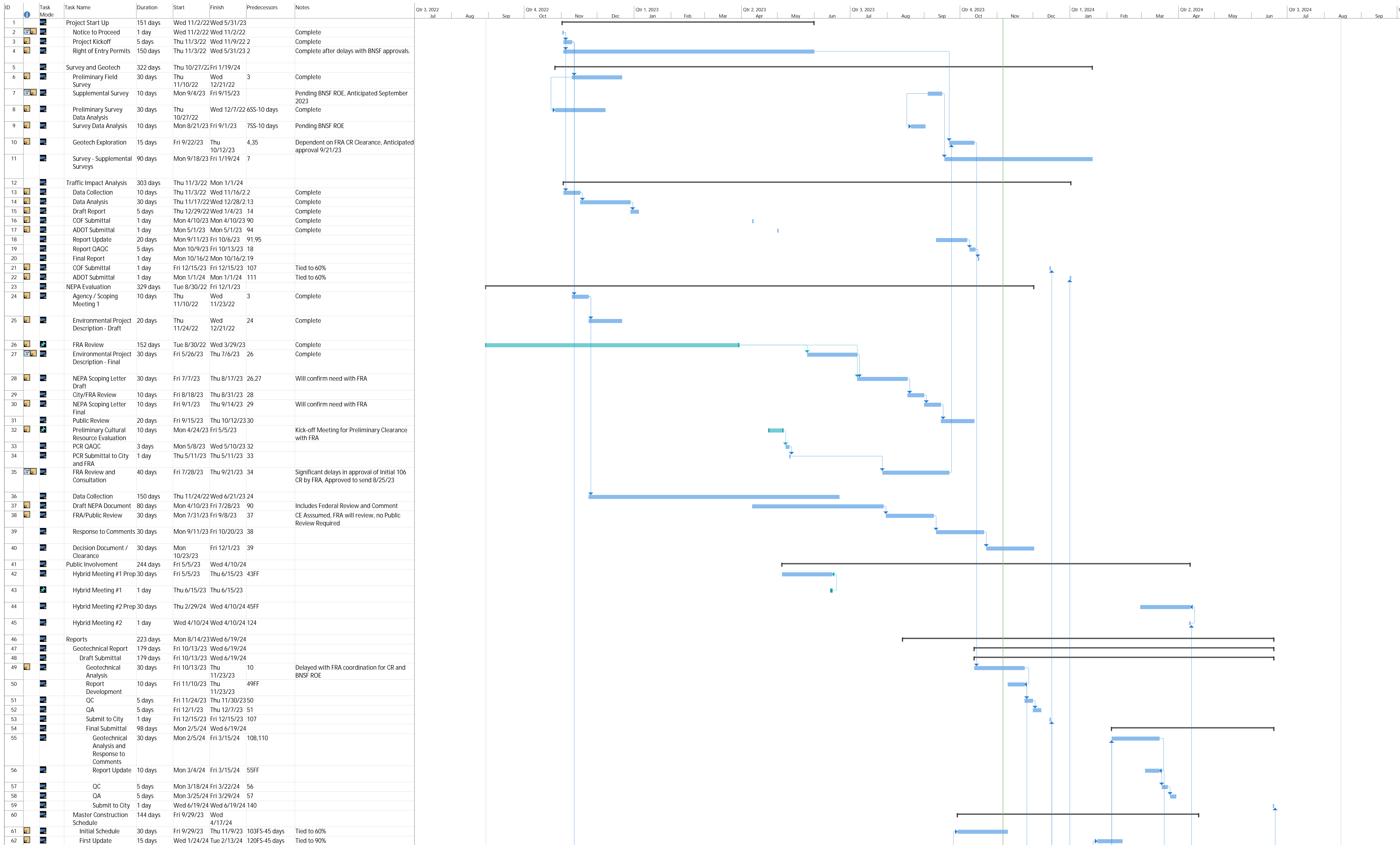
1. Subsurface Utility Exploration (SUE) is not included in this scope of work.
2. Right-of-Way acquisition and support services other than Right-of-Way plans is excluded from this scope of work.
3. Amtrak platform design is currently limited to the site civil preliminary location and coordination for site selection. Other work may be added through a contract modification after site selection.
4. BNSF will perform the Signal design at San Francisco and Beaver Street outside this contract.
5. Significant redesign due to the addition of a CMAR contractor and Value Engineering is not included with this contract. If there is significant redesign requested and approved by the City, that work will be completed under a contract modification.

## DIRECT EXPENSES

Direct Expenses are based upon the agreed upon rates as established by the Contract. See the attached cost proposal for additional information.

## DESIGN SCHEDULE

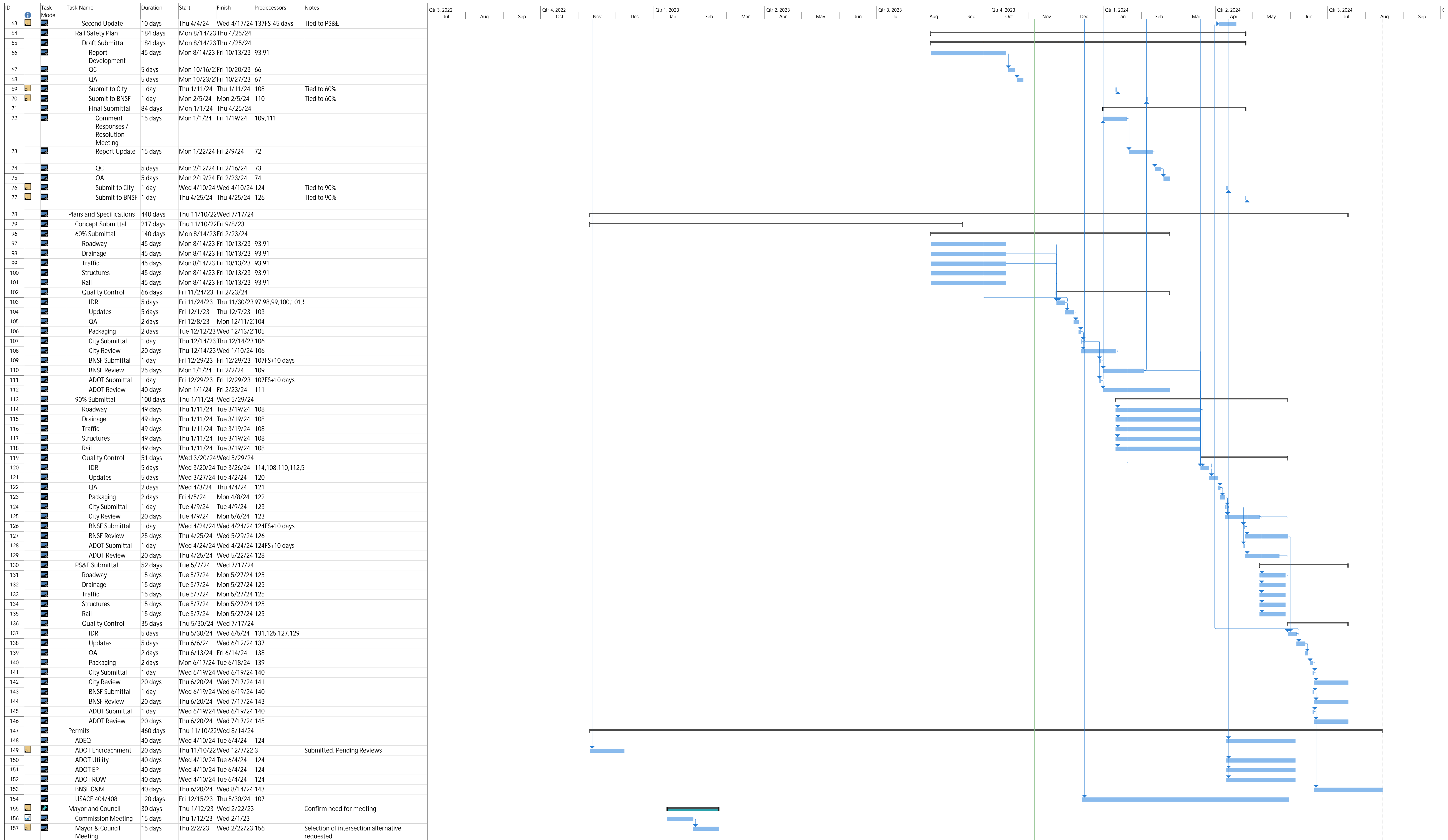
An updated design schedule has been included with this contract modification. Please see the following sheets for the proposed DDS.



Project: Proposed Schedule Date: Mon 11/6/23

Task Split

■ Milestone   
 ◆ Project Summary   
 ■ Inactive Milestone   
 ◆ Inactive Task   
 ■ Manual Task   
 ■ Manual Summary Rollup   
 ■ Start-only   
 ■ External Tasks   
 ■ Deadline   
 ■ Manual Progress   
 ■ Manual Summary   
 ■ Finish-only   
 ■ External Milestone   
 ■ Progress



Project: Proposed Schedule  
Date: Mon 11/6/23

Task Split	Milestone	Project Summary	Inactive Milestone	Manual Task	Manual Summary Rollup	Start-only	External Tasks	Deadline	Manual Progress
Summary	Summary	Inactive Task	Inactive Summary	Duration-only	Manual Summary	Finish-only	External Milestone	Progress	



Contract No.: 2022-108

COF Downtown Mile Project

New Contract: X

Contract Mod:

DERIVATION OF COST PROPOSAL SUMMARY

ESTIMATED DIRECT LABOR

Classification	Manhours	% of Total Hours	Billable Hourly Rate	Estimated Labor Costs
Project Principal	3	0.2%	\$285.00	\$855.00
Project Manager	113	8.0%	\$250.00	\$28,250.00
Resident Engineer	0	0.0%	\$230.00	\$0.00
Project Engineer-Sr	115	8.1%	\$255.00	\$29,325.00
Project Engineer	486	34.2%	\$180.00	\$87,480.00
Engineer	398	28.0%	\$125.00	\$49,750.00
Designer - Sr.	0	0.0%	\$145.00	\$0.00
Designer	0	0.0%	\$95.00	\$0.00
Geologist-Sr.	24	1.7%	\$280.00	\$6,720.00
CADD Technician	258	18.2%	\$105.00	\$27,090.00
Environmental	6	0.4%	\$180.00	\$1,080.00
Administrative	0	0.0%	\$95.00	\$0.00
Project Administrator	10	0.7%	\$145.00	\$1,450.00
Transportation Planner	0	0.0%	\$105.00	\$0.00
Transportation Planner - Sr.	0	0.0%	\$205.00	\$0.00
GIS Analysis/Technician	0	0.0%	\$175.00	\$0.00
Graphic Designer - Sr.	0	0.0%	\$130.00	\$0.00
Graphic Designer	0	0.0%	\$90.00	\$0.00
PI Specialist	6	0.4%	\$145.00	\$870.00
<b>TOTAL Hours</b>	<b>1,419</b>			

Sub-Total Labor Expense: \$232,870.00

ESTIMATED DIRECT EXPENSES

Outside Reproduction	\$0.00
Courier/Postage	\$0.00
Mileage	\$414.40
Travel	\$1,757.00
Miscellaneous Expenses	\$0.00

Sub-Total Direct Expenses: \$2,171.40

ESTIMATED OUTSIDE SERVICES AND CONSULTANTS

Subconsultant	Method of Compensation	DBE	Fee
GSI	Unit Rate	No	\$0.00
Quail	Unit Rate	No	\$0.00
Wood	Unit Rate	No	\$0.00
Peak	Unit Rate	No	\$0.00
WDG	Unit Rate	Yes	\$0.00
TranSystems	Unit Rate	No	\$0.00
Northland	Unit Rate	No	\$8,400.00

Sub-Total Outside Services Expense: \$8,400.00

ESTIMATED TOTAL

TOTAL ESTIMATED COST: \$243,441.40

CONTRACT TIME: 365 CALENDAR DAYS

CONTINGENCY (0%) \$0.00

Signature

11/6/2023

Date



COF Downtown Mile Project

Contract No. 2022-108

TASK/DISCIPLINE	Project Principal	Project Manager	Resident Engineer	Project Engineer-Sr	Project Engineer	Engineer	Designer - Sr.	Designer	Geologist-Sr.	CADD Technician	Environmental	Administrative	Project Administrator	Transportation Planner	Transportation Planner - Sr.	GIS Analysis/Technician	Graphic Designer - Sr.	Graphic Designer	PI Specialist	Total
1.0 Project Management	3	23	0	47	6	0	0	0	0	0	6	0	6	0	0	0	0	0	6	97.0
2.0 Roadway	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
3.0 Drainage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
4.0 Traffic and MOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
5.0 Structures	0	90	0	0	220	398	0	0	0	258	0	0	0	0	0	0	0	0	0	966.0
6.0 Geotechnical	0	0	0	68	260	0	0	0	24	0	0	0	4	0	0	0	0	0	0	356.0
7.0 Environmental	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
8.0 Public Involvement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
9.0 Rail	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
10.0 Planning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
<b>PROJECT TOTAL HOURS</b>	<b>3</b>	<b>113</b>	<b>0</b>	<b>115</b>	<b>486</b>	<b>398</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>258</b>	<b>6</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>1419</b>



COF Downtown Mile Project  
Contract No. 2022-108

1.0 Project Management																				
TASK DESCRIPTION	Total Hours	Project Principal	Project Manager	Resident Engineer	Project Engineer - Sr	Project Engineer	Engineer	Designer - Sr	Designer	Geologist - Sr	CADD Technician	Environmental	Administrative	Project Administrator	Transportation Planner	Transportation Planner - Sr	GIS Analysis/Technician	Graphic Designer - Sr.	Graphic Designer	PI Specialist
1.1 Project Management (9 Month Duration)	21	3	6			6								6						
1.2 Project Meetings	0																			
1.2B Monthly Progress Meetings (3 Total, 2 hours, Virtual)	60		9		39							6								6
1.2C Stakeholder Meetings (8 Total x 1 Stakeholders, 1 hour, virtual)	16		8		8															
	0																			
	0																			
	0																			
	0																			
	0																			
	0																			
	0																			
SUBTOTAL 1.0 Project Management	97	3	23	0	47	6	0	0	0	0	0	6	0	6	0	0	0	0	0	6
																			Task Cost: \$ 22,490.00	



COF Downtown Mile Project  
Contract No. 2022-108

5.0 Structures																				
TASK DESCRIPTION	Total Hours	Project Principal	Project Manager	Resident Engineer	Project Engineer - Sr	Project Engineer	Engineer	Designer - Sr.	Designer	Geologist - Sr.	CADD Technician	Environmental	Administrative	Project Administrator	Transportation Planner	Transportation Planner - Sr.	GIS Analysis/Technician	Graphic Designer - Sr.	Graphic Designer	PI Specialist
5.2 60% Submittal	0																			
5.2B RDF FUTS Crossing	460		40			100	200				120									
5.2D Retaining Walls	26		2			4	10				10									
5.3 90% Submittal	0																			
5.3B RDF FUTS Crossing	400		40			100	160				100									
5.3D Retaining Walls	26		2			4	10				10									
5.4PS&E Submittal	0																			
5.4B RDF FUTS Crossing	28		4			8	8				8									
5.4D Retaining Walls	26		2			4	10				10									
	0																			
<b>SUBTOTAL 5.0 Structures</b>	<b>966</b>	<b>0</b>	<b>90</b>	<b>0</b>	<b>0</b>	<b>220</b>	<b>398</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>258</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
																			<b>Task Cost: \$ 138,940.00</b>	



COF Downtown Mile Project  
Contract No. 2022-108

6.0 Geotechnical																					
TASK DESCRIPTION	Total Hours	Project Principal	Project Manager	Resident Engineer	Project Engineer - Sr	Project Engineer	Engineer	Designer - Sr	Designer	Geologist - Sr	CAAD Technician	Environmental	Administrative	Project Administrator	Transportation Planner	Transportation Planner - Sr	GIS Analysis/Technician	Graphic Designer - Sr.	Graphic Designer	PI Specialist	
6.2 Blue Stake, Field Work, Logs, Lab	164				12	140				8				4							
6.3 Geotechnical and Foundation Profiles/Analyses	92				24	60				8											
6.5 Geotechnical and Foundation Reports	100				32	60				8											
	0																				
	0																				
	0																				
	0																				
SUBTOTAL 6.0 Geotechnical	356	0	0	0	68	260	0	0	0	24	0	0	0	4	0	0	0	0	0	0	0
Task Cost: \$ 71,440.00																					

# NORTHLAND EXPLORATION SURVEYS

## SCOPE AND FEE



October 10, 2023

WSP USA, Inc.  
Jason Carlaftas  
1230 West Washington Street  
Suite 405  
Tempe, AZ 85281

RE: Extra survey services for the City of Flagstaff Downtown Mile,  
City of Flagstaff, Arizona.

Dear Mr. Carlaftas,

We appreciate the opportunity to offer survey services for the above mentioned project. We understand that we will conduct those survey services per your email dated October 9, 2023:

1. Conduct a topographic survey of the areas outlined in the above mentioned email. This will include all visible improvements, including, but not limited to, existing train tracks and adding the additional topography received from BNSF extending to the West.
2. Conduct any additional surveying, research and computations as needed for additional information.

The survey and map will be surveyed in the Arizona Central Coordinate system, scaled to ground at a central control point and NGVD88 elevations.

We propose to conduct the above mentioned services for the following costs:

Topographic survey:

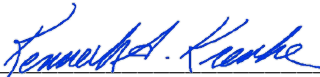
24 hours @ \$170:	\$ 4,080.00
<u>32 hours @ \$120:</u>	<u>\$ 3,840.00</u>
<b>Subtotal:</b>	<b>\$ 9,680.00</b>

Coordination:

<u>4 hours @ \$120:</u>	<u>\$ 480.00</u>
<b>Subtotal:</b>	<b>\$ 480.00</b>

**Total Initial Estimate/Cost: \$ 8,400.00**

If the above mentioned proposal is agreeable to you, please sign and either FAX or mail this proposal back to us. Again, we appreciate the opportunity to offer survey services to you.

  
\_\_\_\_\_  
Kenneth A. Krenke  
Chief Surveyor

Accepted this \_\_\_\_\_ day of \_\_\_\_\_, 2023.

\_\_\_\_\_  
Jason Carlaftas  
For WSP USA, Inc.

WPSUSACOFDowntownMileExtra