



Ames Construction
8333 E. Hartford Dr.
Scottsdale, AZ 85255

January 12, 2021

Serial #: 200303-AC-LTO-L005

City of Flagstaff
211 West Aspen
Flagstaff, AZ 86001

ATTENTION: Christine Cameron, Project Manager

REFERENCE: City of Flagstaff, Lone Tree Overpass Design-Build

SUBJECT: Phase 1 Design Services – R2

Ms. Cameron,

Please find a revised Phase 1 Design Services cost summary and design proposal. All other documents that were previously submitted remain unchanged and are not attached.

If you have any questions, please contact me at (602) 397-6598.

Thank you,

A handwritten signature in blue ink, appearing to read 'Scott Jones', written in a cursive style.

Scott Jones
Design-Build Coordinator

Ames Construction
 City of Flagstaff
 Lone Tree Overpass Design-Build
 Phase 1 Design Services - Revision #2



1/12/2021

Task #	Description	Cost
1	Phase 1 Design Coordination	\$93,804.23
2	Schedule Development to 15%	\$11,861.54
3	Rough Order of Magnitude Estimate @ 15% Design	\$33,312.98
4	Initial Site Survey for Design Development	\$10,622.85
5	Parcel Acquisition Coordination	\$764,720.00
Total Direct Cost Ames		\$914,321.60
Overhead @ 6%		\$54,859.30
Subtotal		\$969,180.89
Profit @ 8%		\$77,534.47
<i>Subtotal Phase 1 Design Services Ames</i>		<i>\$1,046,715.36</i>
WSP Scope & Fee for Phase 1 Design Services		\$1,237,454.75
Overhead @ 6%		\$74,247.29
<i>Subtotal Phase 1 Design Services WSP</i>		<i>\$1,311,702.04</i>
Phase 1 Design Services Ames/WSP		\$2,358,417.40
Owner Contingency @ 5%		\$117,920.87
TOTAL PHASE 1 DESIGN SERVICES		\$2,476,338.27

Assumptions:

- 1) Ames is assuming 4 months of management time for Phase 1 Design Coordination. Phase 2 Design Services will pick up additional design coordination.
- 2) ROW Parcel Acquisition Coordination is for 18months this is the anticipated duration of this activity. Please refer to Task #5 for additional clarification.
- 3) Refer to WSP's document dated January 7, 2021 for a breakdown of the design scope in this phase.

**Ames Personnel Rates
Phase 1 Design Services**

Personnel Rate Table			
Name	Position	Hourly Rate	Hours
Chris Kane	Project Manager	\$137.74	
Scott Jones	DB Coordinator	\$127.79	
Joel Hughes	Construction Manager	\$114.52	
Bruce Daniel	Railway Superintendent	\$94.62	
TBD	Project Engineer	\$74.71	
Bryan Mueller	Chief Estimator	\$127.79	
TBD	Estimator	\$104.57	
TBD	Jr. Estimator	\$74.71	
Eugene Schneider	Scheduler	\$99.52	
Todd Belzner	ROW Coordinator	\$135.00	
TBD	Administrative Assistant	\$43.13	
Jason McFaden	Survey Manager	\$107.88	
	Survey Cad Tech	\$95.00	
	Survey 2 Man Crew	\$122.00	
	Drone Pilot	\$105.00	
		\$0.00	
		\$0.00	
		\$0.00	

Task No	Task Description	Item Description	Unit	Qty	Unit Cost	Task Manhours			MH Rate	Total
						Weeks	Hrs/Wk	MH		
5	Parcel Acquisition Coordination	Labor								
	<p>This assumes 18 months (4.5 Wk/month*18m = 81Wk) for Todd Belzner to coordinate efforts. Oversee ROW process up to acquisition and relocation of parcels.</p> <p>1st 5months (22.5 Weeks) @ 40hrs/week 2nd 5months (22.5 Weeks) @ 24hrs/week 3rd 6months (27 Weeks) @ 16hrs/week Final 2months (9 Weeks) @ 40hrs/week</p> <p>Exclusions from this package: 1) Relocation Agent Costs are not able to be quantified at this time. 2) Survey for monuments and staking. 3) Purchase, Acquisition Costs and Relocations. 4) Property Management.</p>	ROW Coordinator			22.5	40	900	\$135.00	\$121,500.00	
		ROW Coordinator			22.5	24	540	\$135.00	\$72,900.00	
		ROW Coordinator			27	16	432	\$135.00	\$58,320.00	
		ROW Coordinator			9	40	360	\$135.00	\$48,600.00	
							0	\$0.00	\$0.00	
							0	\$0.00	\$0.00	
							0	\$0.00	\$0.00	
							Subtotal Labor			\$301,320.00
			Non Labor							
			Title Reports	LS	1	\$24,600.00				\$24,600.00
		Acquisition Agent	LS	1	\$176,000.00				\$176,000.00	
		Appraisals	LS	1	\$168,000.00				\$168,000.00	
		Appraisal Reviews	LS	1	\$40,300.00				\$40,300.00	
		Exhibits & Legals	LS	1	\$34,500.00				\$34,500.00	
		Survey Cont. for ROW	LS	1	\$20,000.00				\$20,000.00	
								Subtotal Non Labor	\$463,400.00	
Task Total									\$764,720.00	

ROW Acquisition Costs Phase 1 Design
Ames Construction

Flagstaff Parcel No	APN	Type	Design Builder Cost						City of Flagstaff Cost		Total Per Property	Notes
			Title Report/Update	Acquisition Agent	Appraisals & Updates	Appraisal Reviews	Relocation Agent	Exhibits & Legals	Property Purchase	Relocation		
LT-01	104-04-011D	Industrial	\$500.00	\$8,000.00	\$8,000.00	\$1,800.00					\$18,300.00	Existing Appraisal Expires in April
LT-02	104-01-017A, 018	Commercial	\$1,100.00	\$8,000.00	\$9,200.00	\$1,800.00					\$20,100.00	
LT-03	104-01-019	Residential	\$1,000.00	\$8,000.00	\$4,800.00	\$1,800.00					\$15,600.00	
LT-04	104-01-020D	Residential	\$1,000.00	\$8,000.00	\$5,900.00	\$1,800.00					\$16,700.00	
LT-05	104-01-016C	Commercial	\$1,000.00	\$8,000.00	\$8,500.00	\$1,800.00					\$19,300.00	
LT-06	104-01-097D	Com/Ind	\$1,000.00	\$8,000.00	\$11,000.00	\$1,800.00					\$21,800.00	
LT-07	104-01-022B	Industrial	\$1,000.00	\$8,000.00	\$4,300.00	\$1,800.00		\$3,000.00			\$18,100.00	
LT-08	104-01-093	Commercial	\$1,000.00	\$8,000.00	\$8,500.00	\$1,800.00					\$19,300.00	
LT-09	104-01-024	Commercial	\$1,000.00	\$8,000.00	\$4,300.00	\$1,800.00		\$3,000.00			\$18,100.00	
LT-10	104-01-023	Residential	\$0.00	\$0.00	\$0.00	\$0.00					\$0.00	
LT-11	104-04-012C	Industrial	\$1,000.00	\$8,000.00	\$7,500.00	\$1,800.00		\$3,000.00			\$21,300.00	May not be needed
LT-12	104-01-097B	Comm/Ind	\$1,000.00	\$8,000.00	\$7,500.00	\$1,800.00		\$3,000.00			\$21,300.00	May not be needed
LT-13	104-01-094E		\$1,000.00	\$8,000.00	\$7,500.00	\$1,800.00		\$3,000.00			\$21,300.00	May not be needed
LT-14	104-01-071B		\$1,000.00	\$8,000.00	\$7,500.00	\$1,800.00		\$3,000.00			\$21,300.00	May not be needed
LT-15	104-01-026B	Commercial	\$1,000.00	\$8,000.00	\$6,000.00	\$1,800.00					\$16,800.00	
LT-16	104-04-002	Commercial	\$1,000.00	\$8,000.00	\$5,500.00	\$1,800.00					\$16,300.00	
LT-17	104-15-002, 00?	Commercial	\$1,000.00	\$8,000.00	\$6,000.00	\$1,800.00					\$16,800.00	
LT-18	104-15-003	Commercial	\$1,000.00	\$8,000.00	\$6,000.00	\$1,800.00					\$16,800.00	
LT-19	104-04-012D		\$1,000.00	\$8,000.00	\$7,500.00	\$1,800.00		\$3,000.00			\$21,300.00	May not be needed
LT-20	104-04-009C		\$1,000.00	\$8,000.00	\$7,500.00	\$1,800.00		\$3,000.00			\$21,300.00	May not be needed
LT-21	104-04-008A	Commercial	\$1,000.00	\$8,000.00	\$7,500.00	\$1,800.00		\$3,000.00			\$21,300.00	May not be needed
LT-22	104-04-011C, 013B, 013C, 014, 104-01-094D, 097C, 098A	Comm/Ind	\$4,000.00	\$8,000.00	\$20,000.00	\$2,500.00		\$7,500.00			\$42,000.00	We are not sure what the cost will be on BNSF
LT-23	104-07-008	Ind	\$1,000.00	\$8,000.00	\$7,500.00	\$1,800.00					\$18,300.00	
Totals			\$24,600.00	\$176,000.00	\$168,000.00	\$40,300.00		\$34,500.00			\$443,400.00	



January 11, 2021

PUBLIC

Chris Kane, Project Manager
Ames Construction
8333 E Hartford Drive
Scottsdale, Arizona 85255

Subject: City of Flagstaff Scope and Fee for Phase 1 Design Services

Dear Mr. Kane:

We are pleased to submit our proposed Scope and Fee for the City of Flagstaff Lone Tree Overpass Project. The enclosed scope and fee are for Phase 1 Design Services. Please feel free to contact me at 520-838-3430 or at Jason.Carlaftes@wsp.com if there are any items you wish to discuss.

Kind regards,

A handwritten signature in black ink, appearing to read 'J. Carlaftes', written over a horizontal line.

Jason Carlaftes
Design Manager

Encl. Scope and Fee for Phase 1 Design Services
cc: Joy Melita, File



**WSP USA
Contract No. XXX
LONE TREE OVERPASS
Project No. XXX**

**Scope of Work
For
Phase 1 Design Services**

December 2020

Scope of Services

GENERAL DESCRIPTION OF WORK:

WSP USA (WSP) will provide Design Services for the Lone Tree Overpass project for Ames Construction (Ames). The project involves the construction of a new connection between Lone Tree Avenue and Butler Avenue to the south and a new connection at US 66 to the north. The new roadway will provide an elevated grade separation of the new United States Army Corps of Engineers (USACE) Rio de Flag channel and the Burlington North-Santa Fe (BNSF) Railroad. The project area will extend to the drainage area for the project, which includes the Southside neighborhood to the west Cherry Hill to the north, the petroleum facility to the east, and Sawmill Road to the south. The limits of the economic impact study and traffic impact analysis will have similar limits with final limits determined during project development. Project limits will also extend east and west within the BNSF right-of-way to the extent required to complete the realignment of the railroad and associated work.

The project will be developed in a multi-phase program with scope specific to each phase of design. This Scope of Work covers the development of the Project Scope for Phase 1 in order to establish the Project Footprint (approximately 30% level design), develop the Work Plan and Schedule in coordination with Ames Construction, develop a Traffic Impact Analysis, develop an Economic Impact Analysis, perform Phase 1 Environmental Site Assessments to support Right-of-Way acquisition, coordinate with major stakeholders and utilities, conduct Public Involvement, develop preliminary quantities for use by Ames Construction, and develop 15% Schematic Plans. Right-of-Way acquisition, survey, and cost estimation will be performed outside of this contract by Ames and others. It is anticipated that the Phase 1 duration will

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be approximately 6 months. Extensions in time of this phase based on delays from obtaining input, feedback, or acceptance from Stakeholders of concepts evaluated will result in additional project costs.

It is anticipated that there will be an additional two phases for this project. Phase 2 and Phase 3 will be added by contract modification. Phase 2 is anticipated to include the final design for the project after the initial scoping in Phase 1 is complete. As part of this process, we will work with Ames to develop a construction Guaranteed Maximum Price (GMP). Phase 3 is anticipated to include the construction phase of the project. WSP anticipates providing Design Services During Construction (DSDC) during this phase. Other Phases may be required for this work as determined by the City, including potential early construction release packages. Scope will be determined based on requests from the City and added by contract modification.

WSP will be supported on this project by three subconsultants:

1. TranSystems Corporation for rail design and permit / Construction Maintenance Agreement coordination with BNSF Railroad.
2. Peak Engineering for utility coordination, public involvement support, and local roadway design support.
3. Wheat Design Group for Landscaping, Exhibit/Graphic support, and stormwater pollution prevention plan (SWPPP) development.

Additional subconsultants, if needed, will be added to the project with approval of Ames and the City through contract modification. The scope of work for each identified subconsultant is attached at the end of this document.

TASK 1.0 - PROJECT MANAGEMENT AND COORDINATION

The work under this task will provide general project management and coordination activities during Phase 1 of the project. This task includes meetings, project documentation, and development of meeting agendas, minutes, and action item logs.

SUBTASKS:

TASK 1.1: Project management work will include project set-up, coordination with Ames Construction, monthly invoicing, and project tracking. Project Coordination includes meetings throughout this phase of the work to coordinate disciplines and provide updates to Ames, the City of Flagstaff, third party stakeholders, and utilities and major agencies, including ADOT, USACE, and BNSF.

TASK 1.2: Project coordination will be provided through an initial Project Kick-off meeting with the City and key stakeholders, followed by Technical Working Group (TWG) Meetings. These meetings will be used to discuss the project footprint, make design decisions for the project, and allow for City and stakeholder input during the development of the Project Scope and Project Footprint. Decisions that impact the project will be tracked on a decision tracking log with open decisions to be closed once direction is determined. It is anticipated that TWG meetings will be held every other week during Phase 1 for a total of up to 12 TWG meetings. It is assumed that all design key task leads will participate in all of these meetings (WSP Personnel - Design Manager/Structures, Roadway, Drainage, Structures; Non-WSP – Rail) and



that other disciplines will attend as needed for specific action items and discussions (WSP Personnel Geotechnical (4), Public Involvement (4), Environmental (2), Traffic (6), Economist (2); Non-WSP Personnel – Utilities (6) and Landscaping (6)). Also included in this task is coordination with Project Stakeholders such as ADOT, USACE, and BNSF. Up to 15 additional meetings are anticipated for this coordination each assumed at one-hour duration plus time for preparation and tracking. These stakeholder meetings are assumed in addition to the TWG meetings and will be attended by the appropriate Task Lead, the Design Manager, and one junior staff. The Task Lead time is accounted for under their respective tasks. A meeting agenda, meeting minutes, action item list, and decision tracking log will be developed for each meeting to document progress.

TASK 1.3: This task will also develop the project specific Project Quality Management Plan (PQMP) for design and administration of the Quality Control / Quality Assurance program as part of this project. Training of staff for the PQMP is included as part of this process to ensure the program is followed and implemented correctly.

ASSUMPTIONS: It is assumed that meetings will be virtual and do not require travel.

DELIVERABLES: Meeting Agenda (Electronic PDF), Meeting Minutes (Electronic PDF), Decision Tracking Log (Provided with Meeting Minutes), Action Items Log (Provided with Meeting Minutes), PQMP (Electronic PDF)

TASK 2.0 - ROADWAY DESIGN

The work under this task will develop the schematic roadway design to determine the preferred alternatives for Lone Tree and for the local area roadway network defined in the project area. Schematic design will be developed to sufficiently identify the project footprint and to develop preliminary quantities to be provided to Ames for development of the Initial GMP.

SUBTASKS:

TASK 2.1: WSP Roadway Design staff will verify the initial design concept reflected in the Lone Tree Overpass Study General Plan Exhibit from the Project Assessment and incorporate changes as needed from the Lone Tree Overpass Final Report Update. This concept will be identified as the base design alternative for both Lone Tree Road and Elden Street Loop concept using updated survey data as provided by Ames. This task includes primary road layout, profile, preliminary model and typical sections. Development of schematic driveway design, curb returns, intersection details are not included in this task.

TASK 2.2: Prepare Design Criteria Report identifying the basis of roadway design to be used for the project. Design and maintenance criteria will be obtained from various, applicable roadway design manuals from agencies including City of Flagstaff, ADOT, USACE, BNSF, and AASHTO. The City of Flagstaff Engineering Design Standard Details, Latest Edition, will also be referenced for the roadway design. A draft Design Criteria Report will be submitted to the City for review and finalized after the City has reviewed and commented.

TASK 2.3: Prepare up to two additional design refinements for Lone Tree Road and up to two alternative concepts for the Elden Street Loop concept. Design refinements for Lone Tree are anticipated to be associated with roadway typical section and vertical profile only. Horizontal alignment is generally considered appropriate based on previous studies.



The alternative concepts for the Elden Street Loop will involve consideration of alignments and typical sections based on the traffic studies performed under Task 3. Scope includes layout, profile and preliminary model as needed to evaluate design including R/W impacts, preliminary construction requirements and costs versus the alternatives identified in the Lone Tree Overpass Study. Concepts will be presented at TWG and decisions on approach will be requested and tracked to identify the preferred alternative.

TASK 2.4: A site visit will be completed by WSP Roadway Design Team staff (Sr. Engineer and Engineer) to assess field conditions of the project and to evaluate the alternative approaches identified in Task 2.3. This task includes time spent in the field as well as travel time to and from the site.

TASK 2.5: This task develops exhibits by WSP Roadway staff to be used for either public involvement meetings or stakeholder meetings. Exhibits are intended to be conceptual until a preferred alternative is identified. Work under this task will be performed in coordination with Task 9.0 and work performed by Wheat Design Group.

TASK 2.6: Plan and Profile sheets for the preferred alternative identified during the TWG process for Lone Tree Road and Elden Street will be prepared. Sheets will include Profile lines and grades and Plan view of the proposed roadway layout with R/W, drainage, and utility linework (utility linework will be provided by Peak Engineering). Details for the typical sections of new roadways will also be developed and provided for use in the Project Scoping Document. Impacts to driveways will be considered but schematic design is not included in this phase.

TASK 2.7: Preliminary roadway cross sections for the preferred alternative for Lone Tree Road and Elden Street will be prepared for use by Ames Construction to depict the roadway design elements. Raw earthwork quantities will be calculated to estimate borrow quantities. WSP will not provide an earthwork report as a part of this work.

TASK 2.8: Preliminary quantities for the preferred alternative will be developed for use by Ames Construction to develop a preliminary GMP. WSP will not provide an Engineer's Cost Estimate as part of this work.

ASSUMPTIONS:

1. City of Flagstaff Engineering Design Standard Details, Latest Edition as supplemented by AASHTO Roadway Design Guidelines, Latest Edition and other identified criteria will be used to design local roadway facilities.
2. ADOT Roadway Design Guidelines, Latest Version as supplemented by AASHTO Roadway Design Guidelines, Latest Edition and other identified criteria will be used to design roadway within ADOT ROW.

DELIVERABLES: Design Criteria Report (Electronic) (Draft and Final), 15% Plans for the preferred alternative as part of Scoping Document (Electronic PDF) (Draft and Final)

TASK 3.0 - TRAFFIC DESIGN

The Work under this task includes the development of a Traffic Impact Analysis (TIA) report that will document the vehicle, pedestrian, bicycle, and transit operations along the proposed Lone Tree Rd Connector and immediately adjacent major intersections. Coordination with MetroPlan, ADOT, WSP economics team, and other project



stakeholders is anticipated for this effort. The main goals of the TIA are to evaluate traffic operations and safety impacts within the project limits and optimize intersection designs based on stakeholder input.

SUBTASKS:

TASK 3.1: This task includes coordination efforts with MetroPlan, the regional metropolitan planning organization providing the travel demand model traffic data, and ADOT, who is familiar with the traffic operations of Route 66. WSP will incorporate comments from both agencies into a microscopic Synchro/Sim Traffic model. Parameters requiring input from these agencies include turning movement counts by peak hour, heavy vehicle percentages, and any available bicycle or pedestrian data. Up to six meetings are anticipated between ADOT and MetroPlan for this task.

TASK 3.2: WSP will develop a Synchro/SimTraffic model to analyze vehicle operations within the study area at the following intersections:

- Historic Route 66 corridor including the intersections of S Beaver St, S San Francisco St, the proposed S Lone Tree Rd, N Verde Street, and N Switzer Canyon Dr;
- Route 66 and N Humphreys St for opening year signal optimization timing only
- E Butler Ave corridor including the intersections of S San Francisco St, S Lone Tree Rd, and E Sawmill Rd
- E Butler Ave with S Beaver St and S Milton Rd for opening year signal optimization timing only
- S Lone Tree Rd corridor including the intersections of E Franklin Ave and E Sawmill Rd

The Synchro models will be developed for the AM and PM peak hours during the existing and projected 2040 conditions. It is assumed that MetroPlan will provide all needed volume information for vehicles, pedestrians, and bicycles for the future years. Existing data will be collected through previously completed reports and counts, and the City's StreetLight Data license. Vehicle, bicycle, and pedestrian movements within the project limits will be analyzed by WSP using the StreetLight Data platform to the extent allowed current license limitations maintained by the City and MetroPlan. It is anticipated that the City or MetroPlan will provide all needed licenses for StreetLight Data and that no counts will be conducted by WSP. If additional licenses are required, WSP will work with the City and MetroPlan to determine the appropriate license and will purchase these licenses as a Direct Expense cost. WSP will coordinate with ADOT and the City to obtain existing traffic signal timing.

Synchro measures-of-effectiveness (MOEs) will be HCM level-of-service, average user delay, and lengths for 95% queues. WSP will also perform a NCHRP multi-modal level-of-service (MMLOS) analysis for the Lone Tree Rd intersections with Route 66 and Butler Ave.

TASK 3.3: Five-year crash data will be provided by the City, MetroPlan, and/or ADOT. WSP will summarize the crash data within the project limits for crash type, severity, reported conditions, and location. For the Lone Tree Rd intersections with Route 66 and Butler Ave, WSP will collect and analyze crash modification factors (CMF's) from the Crash Modification Factors Clearinghouse to be used for the alternative's evaluation. The results of this effort will



provide an independent opinion of the safety performance for each intersection alternative being evaluated. A detailed safety analysis of the corridor is not included under the scope of this contract.

TASK 3.4: WSP will complete an alternatives analysis, up to four intersection alternatives, for the Lone Tree Rd intersections with Route 66 and Butler Ave. These analyses will compare findings of the microsimulation, MMLOS analysis, safety analysis, stakeholder feedback, and planning level impacts to the project. One schematic of each alternative will be provided to show a planning level concept. WSP will utilize the Pima Intersection Control Evaluation Spreadsheet (PICES) tool (or ADOT equivalent) for this evaluation. Final results will be tabulated in an Evaluation Matrix for each intersection and a recommended alternative will be identified. Results will be coordinated with other disciplines to evaluate alternative impacts to other disciplines and the project cost overall.

TASK 3.5: The City has requested an analysis of the intersections along Lone Tree Rd with Franklin Rd and Sawmill Rd. This effort will be to evaluate TWSC and signalization (vehicle and pedestrian facilities) for these intersections to determine the most efficient control type. This evaluation will be completed using the PICES software and the Synchro models developed in Task 3.2.

TASK 3.6: A draft TIA report will be created by WSP that summarizes the findings of the traffic analysis. This report will be prepared to cover both the City and ADOT owned intersections. The ADOT section, Route 66 corridor, will be prepared and presented for ADOT's review and will be consistent with the ADOT Permitting process. WSP will submit the draft TIA to ADOT and the City with a comment resolution form. Once comments are received, WSP will provide responses and will update the TIA for a final submittal. It is assumed that the Final TIA will be approved by ADOT if all original comments are addressed within industry standard of care.

TASK 3.7: WSP will prepare a 15% traffic plan set for the preferred alternative. These plans will include planning level striping, signing, lighting, and traffic signal designs. WSP will prepare preliminary quantities for the preferred alternative for the use by Ames Construction to develop a preliminary GMP. WSP will not provide an Engineer's Cost Estimate as part of this work.

WSP will not provide sign elevations, formats, maintenance of traffic (MOT) plans, traffic signal pole and conductor schedules, or any other details not typically provided in 15% level plans. Separate pedestrian lighting is not included in the scope of work for this phase.

DELIVERABLES: 15% Plans for the preferred alternative as part of Scoping Document (Electronic PDF) (Draft and Final), Traffic Impact Analysis (Electronic PDF, Project Model upon request) (Draft and Final), Intersection Alternatives Analysis with Evaluation Matrix (Electronic PDF) (Draft and Final), Crash Data Summary Memorandum (Electronic PDF) (Draft and Final)

TASK 4.0 DRAINAGE DESIGN

The Work under this task includes analysis of the existing offsite drainage to confirm the previous analyses, an analysis of these conditions as modified by the project, development of schematic design for drainage infrastructure to establish



the project footprint, and coordination with the USACE for connectivity to Rio de Flag and BNSF to establish proposed drainage concepts on railroad ROW.

SUBTASKS:

TASK 4.1: This task will involve Data Collection to confirm offsite drainage impacting the project and will include a site visit to visually identify existing drainage inventory and conditions. This task will also establish Design Criteria based on the appropriate governing agency (City of Flagstaff, USACE and/or BNSF). WSP will collect all pertinent data available through City of Flagstaff, ADOT, BNSF and USACE, including potential mapping sources using LiDAR, Aerial Mapping & Project Survey. WSP will conduct one field visit during the data collection phase. It is assumed that this field visit will be performed by two drainage engineers.

TASK 4.2: This task will involve Interagency Coordination with major stakeholders including USACE and BNSF who have facilities in the project area. We anticipate that all meetings with stakeholders will be virtual. Based on our experience with these stakeholders, we anticipate monthly meetings with BNSF and bimonthly meetings with USACE to establish drainage concepts and to develop preliminary schematic analysis acceptable by the stakeholders. These meetings are in addition to meetings described under Task 1. Meeting agendas and minutes will be prepared and distributed for each meeting.

TASK 4.3: This task will analyze the hydrology of the project area including offsite drainage entering the project area. WSP will reassess the prior work completed as part of the Project Assessment and will update delineated watersheds based on updated topographic data and changes to the schematic design. WSP will update the runoff calculations for the offsite drainage contributing to the project site. It is not anticipated that new drainage areas not addressed in the Project Assessment will be encountered. Onsite drainage hydrology will be evaluated for the purpose of confirming the need and sizing of schematic level detention basins. Pavement drainage hydrology is excluded from this phase of the project.

TASK 4.4: This task includes Drainage Schematic Design to aid in determining the project footprint as part of the Project Scoping Document. WSP will update the current PA drainage facilities based on the updated hydrologic analyses and additional facilities identified in the Lone Tree Overpass project update. Design effort will include preliminary sizing of Culverts, Detention Basins, and Ditches & Minor Channels. A rough estimate of pavement drainage needs will be developed based on information from the Project Assessment and engineering judgement. Pavement drainage hydrology is excluded from this phase of the project. It is anticipated that BNSF track profiles will require significant iteration with track design to determine the best approach for drainage and alignment within BNSF ROW.

TASK 4.5: This task includes development of the Drainage Schematic design into the project schematic plans. It is anticipated that drainage design will be incorporated with the roadway schematic plans. Schematic plans will identify drainage infrastructure but will not include details or plan and profiles for drainage infrastructure. Preliminary quantities for the preferred alternative will be developed for use by Ames Construction to develop a preliminary GMP. WSP will not provide an Engineer's Cost Estimate as part of this work.



ASSUMPTIONS:

1. Mapping required outside of the project topographic design level mapping will be provided by the City, County, State or USGS, whichever provides the most pertinent data.
2. It is assumed that Rio de Flag will be constructed prior to or during this project and that connections to the Rio de Flag channel will be approved by USACE with coordination.
3. A preliminary Drainage Report is not included in this Phase and will be provided during Phase 2.

DESIGN CRITERIA: The project incorporates four different entities with specific design criteria. Design will be performed in accordance with each entity's requirements. The recognized entities include the City of Flagstaff, ADOT, USACE, and BNSF.

DELIVERABLES: 15% Plans for the preferred alternative as part of Project Scoping Document (Electronic PDF) (Draft and Final)

TASK 5.0 - STRUCTURAL DESIGN:

The Work under this task includes the development of preliminary design concept for the Lone Tree Overpass bridges and walls in order to establish the project footprint. Preliminary coordination with BNSF is anticipated to establish acceptable bridge layouts and to define the structure depth and superstructure type based on realignment of BNSF tracks in their ROW.

SUBTASKS:

TASK 5.1: The bridge structure will cross the proposed realigned Paramount Spur line, the proposed USACE Rio de Flag canal, the BNSF railroad ROW, and the Flagstaff Urban Trail System (FUTS) south of Route 66. It is assumed that up to three span arrangement alternatives will be considered during preliminary design to allow for varying configurations across the USACE and BNSF facilities. The City will be consulted about the three preferred alternatives prior to analysis to confirm the concept is in line with previous projects and concepts, such as the Southside Plan that was recently adopted. Preliminary design will be to a level to evaluate viability of the proposed span configurations. If an alternative results in separate structures across the USACE and BNSF facilities, the identified alternative will be considered one alternative combining both structures. Once a preferred span arrangement is identified, preliminary plan, elevation, and typical sections will be prepared for the preferred alternative for inclusion in the Project Scoping document.

TASK 5.2: Walls will be required to support the elevated roadway at the approaches to the bridge structure and for infill areas between structures if multiple structures are preferred. During alternative development, WSP will develop preliminary wall plan and profiles to allow for quantity and cost comparisons. Once a preferred bridge structure alternative is identified, the preferred wall layout plan and profiles will be further developed for inclusion into the Project Scoping document.

TASK 5.3: Preliminary quantities for the preferred alternative will be developed for use by Ames Construction to develop a preliminary GMP. WSP will not provide an Engineer's Cost Estimate as part of this work.



DESIGN REQUIREMENTS: AASHTO LRFD Bridge Design Specifications, 8th Edition 2017, HL-93 Design Vehicle
AASHTO Manual for Bridge Evaluation, 3rd Edition, 2018, LRFR Rating

DELIVERABLES: 15% Plans for the preferred alternative as part of Project Scoping Document (Electronic PDF) (Draft and Final)

TASK 6.0 - UTILITY COORDINATION

The Work under this task includes coordination related to utilities between Peak Engineering, TranSystems, and other design disciplines as well as coordination with project stakeholders including the City of Flagstaff, ADOT, USACE, and BNSF.

SUBTASKS:

TASK 6.1: This task covers coordination between schematic plan development being prepared by Peak Engineering and the other disciplines and subconsultants. Impacts to changes in utilities on other disciplines will be a part of this work.

TASK 6.2: This task covers additional coordination and review packages for utility review with major stakeholders. Anticipated stakeholder reviews include the City of Flagstaff, ADOT, USACE, and BNSF.

DELIVERABLES: 15% Plans for the preferred alternative as part of Scoping Document (Electronic PDF) (Draft and Final)

TASK 7.0 - ENVIRONMENTAL

The Work under this task includes conducting the Phase 1 Environmental Site Assessments (ESA) as part of the ROW acquisition program. A total of 23 properties are currently identified as part of Phase 1 of the project. Under 40 CFR Part 312, the U.S. Environmental Protection Agency (EPA) has established its Standards and Practices for All Appropriate Inquiries (AAI) that define a minimum set of requirements for conducting site assessments for persons seeking to establish an innocent landowner defense or otherwise take advantage of certain liability protections available under Sections 101(35)(B)(ii) and (iii) of the U.S. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), provided that all applicable conditions are met. The EPA has indicated that the ASTM International Standard E 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM E 1527-13), may be used to comply with the requirements for conducting AAI. WSP will conduct a Phase I ESAs for the referenced properties in accordance with the ASTM E 1527-13 standard.

SUBTASKS:

TASK 7.1: This task involves performing and compiling the Phase 1 ESAs for the project, limited to the 29 properties identified as part of Phase 1 of the project. This task will be completed through several subtasks as follows:

1. Under ASTM E 1527-13 and the AAI rule, the user or prospective property owner is required to document and evaluate any specialized knowledge regarding the subject property and adjoining properties that may be material to identifying recognized environmental conditions in connection with the subject property. Specialized knowledge includes information regarding purchase price compared to the fair market value of the property, an



assessment of commonly known or reasonably ascertainable information, information about environmental liens, or other relevant environmental information regarding the property. Although not required to be disclosed to the environmental professional, any information not disclosed must be documented as a data gap in the Phase I ESA report. WSP will develop a questionnaire for the City to complete regarding any specialized knowledge regarding the subject properties for this project. WSP will provide the questionnaire to the City and request that it be completed for each property.

2. Data Compilation: It is assumed that the following data will be available and relevant and will be compiled by Ames and the City ahead of the site visit:
 - a. information on historical site conditions
 - b. site plans and location maps
 - c. information about previous ownership
 - d. descriptions of site operations and processes
 - e. environmental permits (such as air, wastewater, storm water, or hazardous waste)
 - f. information on underground and aboveground storage tanks
 - g. previous environmental reports
3. Site Visit Preparation: WSP's environmental professionals will review information obtained through publicly available resources (via a third party vendor : ERIS), using the minimum search distances required by ASTM E 1527-13 and the AAI rule, to identify potential environmental issues at the subject property and adjoining properties that have the potential to affect the subject property. In addition, WSP will review all the reasonably ascertainable historical information on the subject property as required by ASTM E 1527-13. Historical information to be reviewed may include aerial photographs, Sanborn fire insurance maps, city directories, or information from other sources. In addition, the research will include a search for documentation of any environmental liens filed against the property. WSP will review a chain of title, if provided by the client, to identify any environmental concerns associated with previous owners, leases, easements, and rights-of-way.
4. Site Visit: The ESA will be conducted by a WSP professional meeting the definition of an Environmental Professional as described in ASTM E 1527-13. The WSP professional will visit the facility to perform a review of operations and site conditions, meet with personnel knowledgeable about the site and its history, and gather information for the ESA. In addition, as required by ASTM E 1527-13, interviews with current owners and operators/occupants, and past owners and operators/occupants of the subject property, will be conducted to the extent that such people are available during the site visit. The data compiled above will be reviewed and copies of information will be requested, if needed. A WSP site assessment questionnaire will be completed with the assistance of site personnel. Site access will be coordinated by Ames and WSP with coordination time included under this task.
5. Regulatory Agency File Review and Records Search: As necessary, and in accordance with ASTM E 1527-13, WSP will submit Freedom of Information Act (or similar) requests to obtain relevant site records from federal, state, and local agencies. To the extent feasible, based on the timing for completion of this project and the approved



project budget, WSP will review such agency files as are made available and that are reasonably ascertainable. Local records and regulatory agency research will be conducted by WSP in conjunction with the site visit. Unless otherwise indicated in the proposal, WSP will not conduct a review of regulatory agency files that are not located in the same city as the sites. WSP will review files that are made available online or as hard copies sent to the Environmental Professional, provided that the files are available within the project schedule established in the proposal.

6. **Asbestos-Containing Materials:** During the site visit, WSP will make inquiries regarding the presence of asbestos-containing materials (ACM) at the subject property and will make a cursory visual inspection for readily observable ACM. WSP will note any suspect ACM that is observed. However, WSP will not conduct a formal asbestos survey or collect samples as part of the Phase I scope of work.
7. **Lead-Based Paint:** During the site visit, WSP will make inquiries regarding the presence of lead-based paint at the subject property and will make a cursory visual inspection of the condition of painted surfaces. WSP will note any areas of suspect lead-based paint that are present. However, WSP will not conduct a formal lead-based paint survey or collect samples as part of the Phase I scope of work.
8. **Report Preparation:** WSP will prepare a draft report that provides a description of the site and discusses the findings of the environmental assessment. WSP anticipates providing a draft report within 2 weeks following the site visit. If requested, the report will contain recommendations for conducting a Phase II investigation. Any comments on the draft report will be addressed within 5 business days of receipt, and an electronic copy of the final report will be issued.

The following items are non-scope considerations and will not be considered in WSP's Phase I ESA process: biological agents, cultural and historic resources, ecological resources, endangered species, health and safety, indoor air quality (except as related to a potential release of a hazardous substance or petroleum product), industrial hygiene, lead in drinking water, mold, radon, regulatory compliance, and wetlands. In addition, this Phase I ESA will not include collection of samples from any medium. An assessment of any of these non-scope considerations can be conducted upon request for an additional cost.

Phase I ESA report conducted in accordance with ASTM E 1527-13 will remain valid for a period of 12 months. In instances where more than 6 months (180 days) elapses from the date of the Phase I ESA report to a future transaction closing or lease execution date involving the subject property, certain aspects of the assessment must be updated to benefit from the innocent landowner protections under CERCLA.

The cost provided for this work does not include the following:

1. obtaining a chain of title for each property
2. reviewing regulatory agency files at offices that are not located in the same city as the sites
3. preparing future updates of the reports

TASK 7.2: A field visit will be used by the environmental staff to conduct site investigations and data acquisition in conformance for the work. It is anticipated that all properties will be ready for investigations when scheduled and up to three trips will be required for this work.



TASK 7.3: This task provides for management and coordination with the ROW acquisition team. Meetings will be used to track outreach and to plan site investigations, to coordinate report status, and to monitor changes in potential ROW acquisitions. This task will also cover coordination with ADOT for culture clearances associated with Right of Entry agreements for Geotech and Construction. It is assumed that this is limited to coordination only and that ADOT will not require a cultural survey.

DELIVERABLES: Phase 1 ESA Reports (Electronic PDF) (Draft and Final) (23 Total)

TASK 8.0 – GEOTECHNICAL

The Work under this task includes a review of existing geotechnical data in order to facilitate the development of preliminary geotechnical recommendations to be used for schematic development. This task will also include the development of the boring plan and obtaining of right-of-entry permits to facilitate the geotechnical work anticipated during Phase 2.

SUBTASKS:

TASK 8.1: This task includes Background Review of available geotechnical data. A review of available geologic, hydrogeologic data for the site area, including professional publications and existing geotechnical reports relevant to the project area will be researched and reviewed to develop a preliminary geotechnical profile for the project. The data review would include Google imagery, topographic maps, and project plans, profiles and cross sections. It would also include a review of record drawings available for data along the existing infrastructure, including pavement conditions and sections.

TASK 8.2: This task includes a Site Visit for Geologic Reconnaissance. Two site visits will be made to the project during Phase 1 for the following purposes:

1. A site reconnaissance will be performed to observe surface features and surficial geologic units exposed along the various project components. This will include a reconnaissance-level mapping effort to characterize the nature and distribution of bedrock exposures and unconsolidated soil units. Characterization of the bedrock units will include documenting rock lithology, degree of weathering, fabric, fracture pattern and hardness. Characterization of soil units will include soil classifications and notation of material properties that may have engineering significance for the planned project features. This information will be used to further develop a geotechnical profile for use in preliminary conceptual foundation design.
2. Upon development of a preliminary project design by the project team, a site visit will be made to review the layout of the project components. During this site visit, access to exploration points required to investigate the subsurface conditions for the specific project components will be established. This preliminary layout of the exploration plan will also include determining the right of entry requirements to complete the final exploration plan required in Phase 2.

TASK 8.3: This task will develop a preliminary geotechnical profile will be developed based on the data review and the geologic site reconnaissance during Phase 1. This profile will be used to evaluate the geotechnical conditions anticipated for the following project features:



1. Bridge Foundations
2. Retaining Walls
3. Embankment/Roadway Subgrades

A Technical Memorandum will be prepared summarizing this information and providing preliminary design recommendations for these features. The depth to rock is expected to be shallow across the site varying from a few feet to 20 plus feet with the deepest section of alluvium along the ancient Rio De Flag drainage channel. A preliminary pavement section for Lone Tree Road will be estimated using available data. In addition, new pavement for widening portions of Butler Avenue, Route 66 and local roads will be estimated based on review of available as-builts and/or City standards. Final pavement designs will be performed in later phases when more data is available.

TASK 8.4: This task will develop a geotechnical boring and access plan for the preferred alternative based on the planned project features ahead of geotechnical investigations anticipated for Phase 2. Borings for new bridge and wall structures, as well as embankment and pavement subgrades, will be shown along with proposed access routes. Boring depths and frequency's will be in general accordance with AASHTO, ADOT, and/or industry standards. The geotechnical exploration will be performed during Phase 2 of the project.

TASK 8.5: Using the Geotechnical boring and access plan described above, we will prepare the necessary paperwork and documentation to submit to various jurisdictions to gain permissions to perform the geotechnical exploration. We anticipate this will include obtaining a right of entry agreement with the BNSF Railroad and encroachment permits from the City and ADOT. Associated permit fees and cost for railroad liability insurance is not included herein. Personnel working on railroad property also typically requires training in advance of the work. The training requirement is to be determined during Phase 1 and is not included herein.

ASSUMPTIONS:

1. Geotechnical explorations will be performed during future phases of the project.
2. Fees associated with right of entry and permits will be obtained in future phases.
3. In-situ sampling of soils for environmental evaluations association with Phase 1 or follow up Phase 2 ESA's shall be separate from the geotechnical exploration plan and are typically completed in advance of the geotechnical drilling to clear the area for non-hazardous waste drilling.

DELIVERABLES: Preliminary Technical Memorandum (Electronic PDF) (Draft and Final), Preliminary Boring Plan (Electronic PDF) (Draft and Final), Right of Entry Permits (Electronic PDF)

TASK 9.0 - PUBLIC INVOLVEMENT

The Work under this task includes providing Public Involvement services and support for the Project during Phase 1. The WSP Public Involvement team will work closely with the City during Phase 1 to determine scope and effort of each task to meet the intent of the PI program. WSP will also work closely with the City's Public Information Officer to present a unified message to stakeholders and the public.



SUBTASKS:

TASK 9.1: WSP will develop a Public Involvement Plan (PIP) including goals and tactics related to public outreach throughout the life of the project. The PIP will identify and assess potentially affected stakeholders. The PIP is a living document which will be reviewed periodically for relevancy and efficacy. WSP assumes three City of Flagstaff reviews, including final approval. WSP will also develop a comprehensive stakeholder/project outreach list based on previous Lone Tree Overpass and adjacent project distribution lists from the City of Flagstaff. WSP assumes the City of Flagstaff will provide previous Lone Tree Bypass and adjacent project distribution lists.

WSP will also attend stakeholder and property owner meetings related to right-of-way acquisition and neighborhood and business group meetings, as needed. WSP assumes meetings through the first quarter of 2021 will be held virtually. WSP assumes attendance at up to 6 meetings.

TASK 9.2: WSP will prepare and print collateral materials with support from the technical project team, including:

- Project Messaging Document with Q & A. WSP will draft a comprehensive set of messages that address anticipated comments and questions stakeholders may have along with approved answers to the questions. This material will be used throughout all public facing project materials and platforms.
- Project Overview fact sheet (2 total, English and Spanish) (Printing: 200 each, English and Spanish).
- PowerPoint presentation. WSP will provide a template and general project information slides. WSP will assist with customization of the template for specific groups, as needed. (5 Total Customizations)
- Social media posts for the City of Flagstaff's Facebook/Twitter accounts (12 total).

WSP assumes three City of Flagstaff reviews, including final approval of materials. WSP assumes the fact sheets and comment forms will be translated to Spanish. WSP assumes up to 6 presentations. WSP also assumes email blasts will be sent by City of Flagstaff.

TASK 9.3: WSP will plan and coordinate an online meeting to provide a project overview. It is anticipated that this meeting will provide information on the preferred alternative only and is not intended to solicit feedback on evaluated alternatives. This meeting is anticipated to have a duration of up to two hours. The virtual meeting will include the capacity for attendees to submit questions and comments to project staff and real-time polling of attendees. Additional accommodations will include a call-in number for those unable to participate online. The platform includes the ability to simultaneously stream the meeting on social media creating another opportunity for stakeholders to take part. A recording of the virtual meeting will also be placed on the project's website for viewing later. WSP will:

- Host the meeting through WSP's Zoom account.
- Hold the meeting from a meeting room with a panel of team members using a camera suitable for virtual streaming the panel.
- Provide two staff members for logistical/administrative support during the meeting.
- Hold one planning conference call with project team members and one dry run of the meeting.



- Provide a recording of the meeting to the City of Flagstaff.
- Provide a summary of the virtual meeting including documentation of all public comments and questions.
- Develop a meeting notification mailer (size 5"x10", two-sided printing). WSP will draft, layout, print and mail a meeting postcard via Every Door Direct Mail (EDDM) for up to 9,000 businesses and residential stakeholders along mail carrier routes near the project location (see map) to provide notification of the public meeting.
- Develop graphic intensive email blasts for electronic notification of the meeting (2 total).
- Develop online and hard copy comment form/survey (English and Spanish) (Printing: 250 total color copies - 200 English/50 Spanish per comment form).
- Draft and lay-out display board graphics formatted for virtual presentation (up to 12 graphics) and printed on foam core boards.

WSP assumes up to 200 people will attend the virtual meeting and up to 100 public comments/questions will be submitted. WSP assumes the City of Flagstaff would stream the virtual meeting on their social media channels, if desired. WSP assumes the City of Flagstaff will provide a meeting room from which the virtual meeting can be held.

TASK 9.4: WSP will update the previously developed print collateral materials with support from the technical project team, including:

- Project Messaging Document with Q & A
- Project Overview fact sheet
- PowerPoint presentation.
- Social media posts for the City of Flagstaff's Facebook/Twitter accounts (12 total).

WSP assumes three City of Flagstaff reviews, including final approval of materials. WSP assumes the fact sheets and comment forms will be translated to Spanish. WSP assumes up to 6 presentations. WSP also assumes email blasts will be sent by City of Flagstaff.

TASK 9.5: WSP will create and host a project website, virtual meeting room and informational video for the project with support, as needed, from the technical team. WSP assumes:

- The website will include the following information: home page, Q&A, public involvement information, project documents, public meeting recording, a contact/comment form to join the project mailing list and the virtual meeting room.
- The virtual meeting room will include a project summary, project information station areas, the informational video, attendee sign-in and instructions on how to navigate the site.
- A two-minute informational video with English and Spanish voice over narration, background music and motion graphics to describe the project and its main benefits. Video development includes preparing a script,



translation of the script, professional voice narration in both languages, photography and graphics and final production.

WSP assumes three City of Flagstaff reviews, including final approval of materials.

TASK 9.6: WSP will plan, coordinate and attend a second online meeting focused on the Economic Impact Study. It is anticipated that this meeting will involve Mayor and Council and requested stakeholders only and is not intended to be presented to the general Public. This meeting is anticipated to have a duration of up to two hours. The virtual meeting will include the capacity for attendees to submit questions and comments to project staff and real-time polling of attendees. Additional accommodations will include a call-in number and a conference room with meeting materials for those unable to participate online. The platform includes the ability to simultaneously stream the meeting on social media creating another opportunity for stakeholders to take part. A recording of the virtual meeting will also be placed on the project's website for viewing later. WSP will:

- Host the meeting through WSP's Zoom account.
- Hold the meeting from a meeting room with a panel of team members using a camera suitable for virtual streaming the panel.
- Provide two staff members for logistical/administrative support during the meeting.
- Hold one planning conference call with project team members and one dry run of the meeting.
- Provide a recording of the meeting to the City of Flagstaff.
- Provide a summary of the virtual meeting including documentation of all public comments and questions.
- Develop a meeting notification mailer (size 5"x10", two-sided printing). WSP will draft, layout, print and mail a meeting postcard via Every Door Direct Mail (EDDM) for up to 500 businesses and residential stakeholders along mail carrier routes near the project location (see map) to provide notification of the public meeting.
- Develop graphic intensive email blasts for electronic notification of the meeting (2 total).
- Develop online and hard copy comment form/survey (English and Spanish) (Printing: 250 total color copies - 200 English/50 Spanish per comment form).
- Draft and lay-out display board graphics formatted for virtual presentation (up to 12 graphics) and printed on foam core boards.

WSP assumes up to 200 people will attend the virtual meeting and up to 100 public comments/questions will be submitted. WSP assumes the City of Flagstaff would stream the virtual meeting on their social media channels, if desired. WSP assumes the City of Flagstaff will provide a meeting room from which the virtual meeting can be held.

DELIVERABLES: Public Involvement Plan, Stakeholder Distribution List, Virtual Public Meeting and Summary, Email Address, Project Video, Project Website, Virtual Public Meeting Room, Fact Sheets, Online Surveys/Comment Forms, Mailer, Posters, Email Blasts, Social Media Posts, Display Board Graphics, PowerPoint Presentations



TASK 10.0 – ECONOMIST

The Work under this task includes development of an Economic Impact Study (EIS). The EIS will rely heavily on data from the TIA task which will provide volumes along different corridors, trip purpose, and trip origins/destinations (whether trips are traveling through the area or have a final origin or destination within the project area). It will also depend on information on businesses in the project area, ideally to be provided by the City of Flagstaff. If not provided, WSP will use publicly available information from Google Maps, Yelp, chambers of commerce, and other resources to generate the business inventory (focusing on consumer-facing businesses).

SUBTASKS:

TASK 10.1: This task will involve project research to provide the basis for the EIS. Consumer-facing businesses within the project limits (those most likely to experience fluctuations in sales due to the project) will be categorized by industry/business type, and WSP will estimate the portion of sales that could be characterized as either “destination” or “opportunity” based. The City of Flagstaff will provide 2019 Employer Database information developed by MetroPlan to support this categorization, including information gathered by development of the Southside Plan. Destination businesses are those that people go to because they provide a special product or attraction, for an appointment, or to receive a service. Opportunity, or traffic-serving, establishments are those to which consumers do not actively plan to travel in advance, and for which there are many comparable substitutes, such that a consumer would likely have purchased the same or a similar product at another business if the chosen establishment were not so visible and/or easy to access.

TASK 10.2: This task will analyze the economic impact on businesses identified in Task 10.1. The extent to which businesses are impacted by changes in traffic patterns depends heavily on whether they are primarily destination or opportunity enterprises. The portion of sales attributed to destination or opportunity will be estimated based on research by WSP, relying on existing literature and business surveys. For all major corridors in the project area, WSP will then calculate the total share of spending that is considered destination versus opportunity based. Opportunity-based spending is expected to fluctuate with traffic volumes, while destination based-spending is anticipated to hold relatively steady. In parallel, WSP will estimate the amount of typical household spending on opportunity-type businesses and calculate the average spending per trip. This value will be multiplied by the change in traffic volumes to estimate the total change in spending for each corridor. Finally, the change in spending will be translated into changes in direct, indirect, and induced employment, gross product, and labor income using input-output multipliers.

TASK 10.3: As an additional component of the economic impact study, WSP will estimate changes in greenhouse gas and other pollutant emissions based on changes in vehicle miles traveled (VMT), and standard emissions output per VMT.

TASK 10.4: These tasks involve the development of the Economic Impact Study Report. It is WSP’s understanding that this report will be submitted to the City council. We anticipate that there may be public engagement with governmental entities and the public after submittal of this report. WSP will support Public Involvement activities as part of this



engagement. We anticipate this report having a draft and final version with comments received during the draft review incorporated and addressed as appropriate.

DELIVERABLES: Economic Impact Study (Electronic PDF) (Draft and Final)

TASK 11.0 – SCOPING DOCUMENT AND WORKPLAN

The Work under this task includes compiling the Scoping Document to accompany schematic plans to provide the City a narrative of design decisions made during Phase 1. The narrative will be accompanied by the Key Decision Matrix tracked throughout Phase 1. This task also involves developing a Workplan and Schedule for the work remaining after Phase 1 to complete the project. This workplan and schedule will be developed with input from Ames, the City, and major Stakeholders.

SUBTASKS:

TASK 11.1: Task involves preparation of Project Scoping Document used to establish the project footprint and for describing the design decisions during this phase and provides for a comment resolution meeting for the Project Scoping Document. Responses will be developed by the project team, documented, and discussed at the comment resolution. Final responses to comments will be then included with an amended Project Scoping Document for submittal to the City.

TASK 11.2: This task includes development of a Work Plan and Schedule for the remaining phases of the project.

DELIVERABLES: Project Scoping Document (Electronic PDF) (Draft and Final), Workplan and Schedule (Electronic PDF)

SUBCONSULTANTS

As a part of WSP team, Peak Engineering will provide Utility Coordination and Public Involvement support during Phase 1. Peak will develop utility relocation schematic design and coordinate directly with utilities. They will also provide the on the ground support for Public Meetings and in person engagement when needed to supplement Public Involvement activities. TranSystems will provide rail design services and coordination support with BNSF. Wheat Design Group will provide Landscape Design and Aesthetic Design Services as the project progresses. Their cost proposals are attached for detailed scope of services and fee proposals.

This work will be performed on a time and material basis utilizing the established rates as shown in the attached fee proposal, not to exceed the fee shown in the attached proposal based on the scope outlined herein. If additional scope is required, a subsequent contract modification will be submitted at Ames' direction. WSP will invoice Ames for the actual hours of the work required for the Scope of Work and for efforts required to administer the task.

EXCLUSIONS:

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

1. Real Estate Services required for Right-of-Way Acquisition



2. Field Survey – To be provided by Ames and incorporated into schematic design.
3. Design of construction works including shoring, falsework, and formwork
4. Final Design Services
5. Coordination with the State Historic Preservation Office or Heritage Preservation program for historic or historic eligible properties.
6. Cultural or archeological services. Cultural clearance surveys for work within ADOT ROW are not included in Phase 1 services.
7. Permits and associated fees except as specifically included within this scope of work.
8. Outside agency costs required for site access or project plan reviews, such as BNSF review, flaggers, utility costs, etc.

OTHER INFORMATION REQUIRED (FROM OTHERS):

Items required for successful completion of the work include:

1. Updated field survey provided early in alternative development. Delays in survey may result in additional work to verify and revise alternatives based on new information.
2. Cultural clearances for areas within ADOT ROW. This clearance will need to be completed by the City prior to receiving final approval for design plans.
3. Requirements for demolition and removal of historic properties. The City is providing this coordination. Delays in coordination may delay ROW acquisitions within the project area.

CONTINGENCY

The following is a listing of potential City Contingency items that may be utilized at the discretion of the City Project Manager. The project team shall obtain written approval from the City Project Manager prior to expending contingency item funds. It is not intended to be all-inclusive but represents potential contingency items identified in the preparation of this scope.

1. **ADDITIONAL ALTERNATIVE REQUESTS BY CITY OR STAKEHOLDERS:** This scope defines what we consider reasonable alternative analysis based on our understanding of the project as based on the Project Assessment and recent update and discussions with the City and Project Stakeholders. If the City or Stakeholder, such as USACE or BNSF, requests additional alternatives for development consideration, we will work with the City to identify potential scope for performing the work and request a contingency for this work.
2. **UTILITY POTHOLE:** If utility potholes are required, WSP will coordinate with the City to develop utility pothole requests using Subsurface Utility Engineering (SUE) Request/Authorization Forms provided by the City. The request will include associated plan sheets. WSP will then coordinate with the City on obtaining the potholes and incorporating the information into the project plans.



3. **CITY SUPPORT OF SERVICES NOT COVERED:** Upon the City's request, WSP can provide support for services not covered or excluded from this Scope of Work, such as cultural investigations and historic property coordination.

ATTACHMENTS

1. Scope and Fee Proposal from TranSystems Corporation
2. Scope and Fee Proposal from Peak Engineering
3. Scope and Fee Proposal from Wheat Design Group



Contract No.: 0

Lone Tree Overpass

New Contract: X

Contract Mod:

DERIVATION OF COST PROPOSAL SUMMARY

ESTIMATED DIRECT LABOR

Classification	Manhours	% of Total Hours	Average Hourly Rate	Estimated Labor Costs
Project Principal	8	0.1%	\$290.00	\$2,320.00
Design Manager	430	7.5%	\$235.00	\$101,050.00
Sr Project Engineer	776	13.6%	\$225.00	\$174,600.00
Project Engineer	530	9.3%	\$155.00	\$82,150.00
Engineer	1,164	20.4%	\$125.00	\$145,500.00
Senior Designer	32	0.6%	\$150.00	\$4,800.00
Designer	598	10.5%	\$95.00	\$56,810.00
CADD Tech / Graphics	508	8.9%	\$110.00	\$55,880.00
Senior Geologist	108	1.9%	\$300.00	\$32,400.00
Env. Coordinator	92	1.6%	\$200.00	\$18,400.00
PI Specialist	320	5.6%	\$145.00	\$46,400.00
Sr Economist	204	3.6%	\$155.00	\$31,620.00
Sr Planner	336	5.9%	\$120.00	\$40,320.00
Planner / GIS	492	8.6%	\$95.00	\$46,740.00
Accountant	24	0.4%	\$120.00	\$2,880.00
Administration	86	1.5%	\$90.00	\$7,740.00
TOTAL Hours	5,708			

Sub-Total Labor Expense: \$849,610.00

ESTIMATED DIRECT EXPENSES

Outside Reproduction	\$2,618.75
Courier/Postage	\$250.00
Mileage	\$1,380.00
Travel	\$4,148.00
Miscellaneous Expenses	\$40,000.00

Sub-Total Direct Expenses: \$48,396.75

ESTIMATED OUTSIDE SERVICES AND CONSULTANTS

Subconsultant	Method of Compensation	DBE	Fee
TranSystems	Hourly	No	\$169,810.00
Peak Engineering	Hourly	No	\$54,710.00
Wheat Design Group	Hourly	Yes	\$14,928.00

Sub-Total Outside Services Expense: \$239,448.00

ESTIMATED TOTAL

TOTAL ESTIMATED COST: \$1,137,454.75

CONTRACT TIME: 72 months
(Phase 1 Design Services Only)

CONTINGENCY (10%) \$100,000.00

Signature

1/11/2021

Date



Lone Tree Overpass

Contract No. 0

TASK/DISCIPLINE	Project Principal	Design Manager	Sr Project Engineer	Project Engineer	Engineer	Senior Designer	Designer	CADD Tech / Graphics	Senior Geologist	Env. Coordinator	PI Specialist	Sr Economist	Sr Planner	Planner / GIS	Accountant	Administration	Total
1.0 PROJECT MGMT	6	190	180	0	0	0	46	0	12	8	12	8	0	0	24	24	510.0
2.0 ROADWAY	0	44	116	140	392	0	0	100	0	0	0	0	0	0	0	0	792.0
3.0 TRAFFIC	0	26	146	124	440	32	156	16	0	0	0	0	0	0	0	0	940.0
4.0 DRAINAGE	0	40	134	110	252	0	0	88	0	0	0	0	0	0	0	0	624.0
5.0 STRUCTURES	0	10	48	96	0	0	172	64	0	0	0	0	0	0	0	0	390.0
6.0 UTILITIES	0	20	0	60	0	0	60	0	0	0	0	0	0	0	0	0	140.0
7.0 ENVIRONMENTAL	0	10	0	0	0	0	0	0	0	80	0	0	242	432	0	16	780.0
8.0 GEOTECHNICAL	0	20	136	0	0	0	164	0	92	0	0	0	0	0	0	16	428.0
9.0 PUBLIC INVOLVEMENT	0	20	0	0	0	0	0	240	0	0	304	0	94	60	0	30	748.0
10.0 ECONOMICS	0	10	0	0	0	0	0	0	0	0	0	192	0	0	0	0	202.0
11.0 SCOPING AND SCHEDULING	2	40	16	0	80	0	0	0	4	4	4	4	0	0	0	0	154.0
PROJECT TOTAL HOURS	8	430	776	530	1164	32	598	508	108	92	320	204	336	492	24	86	5708



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1.0 PROJECT MGMT	Total Hours	Project Principal	Design Manager	Sr Project Engineer	Project Engineer	Engineer	Senior Designer	Designer	CADD Tech / Graphics	Senior Geologist	Env. Coordinator	PI Specialist	Sr Economist	Sr Planner	Planner / GIS	Accountant	Administration
1.1 Project Management and Coordination (6 Month Duration)	154	6	100													24	24
1.2 Project Coordination and Meetings	0																
1.2A Project Kick-Off Meeting (1 Total, 4 hours)	36		4	16						4	4	4	4				
1.2B Technical Working Group Meetings (12 Total, 2 hours)	132		24	84						8	4	8	4				
1.2C Meeting Preparation and Minutes (13 Total)	52		26					26									
1.2D Stakeholder Coordination Meetings (15 Total)	40		20					20									
1.3 Quality Program	0																
1.3A PQMP Development	56		16	40													
1.3B Project QA	40			40													
	0																
SUBTOTAL 1.0 PROJECT MGMT	510	6	190	180	0	0	0	46	0	12	8	12	8	0	0	24	24
Task Cost: \$ 104,480.00																	



Lone Tree Overpass
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2.0 ROADWAY																	
TASK DESCRIPTION	Total Hours	Project Principal	Design Manager	Sr Project Engineer	Project Engineer	Engineer	Senior Designer	Designer	CADD Tech / Graphics	Senior Geologist	Env. Coordinator	PI Specialist	Sr Economist	Sr Planner	Planner / GIS	Accountant	Administration
2.1 Develop Lone Tree Overpass base design from Project Assessment and update as Alternative 1 to set baseline for evaluations.	84		4			80											
2.2 Develop Design Criteria Report	20			4		16											
2.3 Alternatives Development	0																
2.3A Develop up to 2 additional design refinements for Lone Tree Overpass segment during schematic development.	144		8	16	60	60											
2.3B Develop up to 2 additional alternatives for local circulation routes (Elden Loop)	192		8	24	80	80											
2.4 Site Visit (Sr Engineer and Engineer)	32			16		16											
2.5 Exhibit Assistance for Public Involvement	96			16		40			40								
2.6 Roadway Schematic Development	116		12	24		40			40								
2.7 Schematic Roadway Cross Sections	44		4			20			20								
2.8 Development of Quantities	64		8	16		40											
	0																
SUBTOTAL 2.0 ROADWAY	792	0	44	116	140	392	0	0	100	0	0	0	0	0	0	0	0

Task Cost: \$ 118,140.00



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3.0 TRAFFIC																	
TASK DESCRIPTION	Total Hours	Project Principal	Design Manager	Sr Project Engineer	Project Engineer	Engineer	Senior Designer	Designer	CADD Tech / Graphics	Senior Geologist	Env. Coordinator	PI Specialist	Sr Economist	Sr Planner	Planner / GIS	Accountant	Administration
3.1 Stakeholder Coordination (MetroPlan and ADOT)	32		16	16													
3.2 Microsimulation / Traffic Modeling	109			5	6	98											
3.2A Microsimulation Model Updates	109			5	6	98											
3.2B Multimodal Model Analysis (Built Condition)	120			12	12	96											
3.3 Safety Analysis (Data Collection and Report Development)	80			4	4			72									
3.4 Alternatives Analysis	0																
3.4A Intersection Alternatives Analysis (PICES and Exhibits, Lone Tree and Route 66)	112			24	24	32		32									
3.4B Intersection Alternatives Analysis (PICES and Exhibits, Lone Tree and Butler)	112			24	24	32		32									
3.5 Intersection Operational Analysis (Franklin and Sawmill)	16			4		12											
3.6 Traffic Impact Analysis Report	96			12	16	48		20									
3.7 Traffic Schematic Development (Sign/Marking, Signals, Lighting)	154		10	40	32	24	32		16								
	0																
SUBTOTAL 3.0 TRAFFIC	940	0	26	146	124	440	32	156	16	0	0	0	0	0	0	0	0
Task Cost: \$ 134,560.00																	



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4.0 DRAINAGE																	
TASK DESCRIPTION	Total Hours	Project Principal	Design Manager	Sr Project Engineer	Project Engineer	Engineer	Senior Designer	Designer	CADD Tech / Graphics	Senior Geologist	Env. Coordinator	PI Specialist	Sr Economist	Sr Planner	Planner / GIS	Accountant	Administration
4.1 Data Collection and Field Review	80			40		40											
4.2 Intergency Coordination - USACE and BNSF	54		18	18		18											
4.3 Hydrology - Update existing and proposed conditions, preliminary evaluations of major cross drainage and on-site hydrology	140			20	40	80											
4.4 Drainage Schematic Design - Offsite and schematic level drainage design	194		10	40	40	64			40								
4.5 Schematic Design Plans - Incorporated into Roadway Plans. Schematic level drainage structures and basins.	156		12	16	30	50			48								
	0																
	0																
	0																
SUBTOTAL 4.0 DRAINAGE	624	0	40	134	110	252	0	0	88	0	0	0	0	0	0	0	0

Task Cost: \$ 97,780.00



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5.0 STRUCTURES																	
TASK DESCRIPTION	Total Hours	Project Principal	Design Manager	Sr Project Engineer	Project Engineer	Engineer	Senior Designer	Designer	CADD Tech / Graphics	Senior Geologist	Env. Coordinator	PI Specialist	Sr Economist	Sr Planner	Planner / GIS	Accountant	Administration
5.1 Bridge Design	10		10														
5.1A Bridge Concept Development (3 Alternatives)	132			12	40			80									
5.1B Preferred Alternative Bridge Plan Development (3 Sheets)	92			12	20			20	40								
5.2 Wall Design	10		10														
5.2A Wall Concept Development (3 Alternatives)	72			12	20			40									
5.2B Preferred Alternative Wall Plan Development (2 Sheets)	56			8	8			16	24								
5.3 Development of Quantities	28			4	8			16									
	0																
SUBTOTAL 5.0 STRUCTURES	400	0	10	48	96	0	0	172	64	0	0	0	0	0	0	0	0

Task Cost: \$ 51,410.00



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6.0 UTILITIES																	
TASK DESCRIPTION	Total Hours	Project Principal	Design Manager	Sr Project Engineer	Project Engineer	Engineer	Senior Designer	Designer	CADD Tech / Graphics	Senior Geologist	Env. Coordinator	PI Specialist	Sr Economist	Sr Planner	Planner / GIS	Accountant	Administration
6.1 Utility Coordination	90		10		40			40									
6.2 Stakeholder Coordination (USACE and BNSF)	50		10		20			20									
	0																
SUBTOTAL 6.0 UTILITIES	140	0	20	0	60	0	0	60	0	0	0	0	0	0	0	0	0
Task Cost: \$ 19,700.00																	



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7.0 ENVIRONMENTAL																	
TASK DESCRIPTION	Total Hours	Project Principal	Design Manager	Sr Project Engineer	Project Engineer	Engineer	Senior Designer	Designer	CADD Tech / Graphics	Senior Geologist	Env. Coordinator	PI Specialist	Sr Economist	Sr Planner	Planner / GIS	Accountant	Administration
7.1 Phase I ESA - 29 Identified Properties	666										40			210	400		16
7.2 Field visit	64													32	32		
7.3 Management/Coordination/ Meetings	50		10								40						
	0																
SUBTOTAL 7.0 ENVIRONMENTAL	780	0	10	0	0	0	0	0	0	0	80	0	0	242	432	0	16
Task Cost: \$ 89,870.00																	



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8.0 GEOTECHNICAL																	
TASK DESCRIPTION	Total Hours	Project Principal	Design Manager	Sr Project Engineer	Project Engineer	Engineer	Senior Designer	Designer	CADD Tech / Graphics	Senior Geologist	Env. Coordinator	PI Specialist	Sr Economist	Sr Planner	Planner / GIS	Accountant	Administration
8.1 Data Collection and Review	52			16				20		16							
8.2 Field Visit	48			24						24							
8.3 Geotech Analysis	56			16				32		8							
8.3A Geotech Analysis	56			16				32		8							
8.3B Technical Memorandum	82		10	32				16		24							
8.4 Boring Plan Development	66		10	16				32		8							
8.5 Right of Entry Permits	68			16				32		4							16
	0																
SUBTOTAL 8.0 GEOTECHNICAL	428	0	20	136	0	0	0	164	0	92	0	0	0	0	0	0	16

Task Cost: \$ 79,920.00



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9.0 PUBLIC INVOLVEMENT																	
TASK DESCRIPTION	Total Hours	Project Principal	Design Manager	Sr Project Engineer	Project Engineer	Engineer	Senior Designer	Designer	CADD Tech / Graphics	Senior Geologist	Env. Coordinator	PI Specialist	Sr Economist	Sr Planner	Planner / GIS	Accountant	Administration
9.1 Public Involvement Plan and Stakeholder Outreach	40											36		4			
9.2 Material - Initial Production / Setup	113								40			48		20			5
9.3 Virtual Public Meeting #1 - General Project Update	190		10						60			80		30			10
9.4 Materials - Update #1	70								20			30		15			5
9.5 Website and Informational Video	210								90			60			60		
9.6 Virtual Public Meeting #2 - EIS Update	125		10						30			50		25			10
	0																
SUBTOTAL 9.0 PUBLIC INVOLVEMENT	748	0	20	0	0	0	0	0	240	0	0	304	0	94	60	0	30
Task Cost: \$ 94,860.00																	



Lone Tree Overpass
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10.0 ECONOMICS																	
TASK DESCRIPTION	Total Hours	Project Principal	Design Manager	Sr Project Engineer	Project Engineer	Engineer	Senior Designer	Designer	CADD Tech / Graphics	Senior Geologist	Env. Coordinator	PI Specialist	Sr Economist	Sr Planner	Planner / GIS	Accountant	Administration
10.1 Project Research - Business Inventory and O/D Designation	40												40				
10.2 Economic Analysis - Spending profiles and input/output analysis	40												40				
10.3 GHG Analysis	12												12				
10.4 Economic Impact Study	10		10														
10.4A Report Development	40												40				
10.4B Public Involvement - Presentations, Public/Government Inquiries	60												60				
	0																
SUBTOTAL 10.0 ECONOMICS	202	0	10	0	0	0	0	0	0	0	0	0	192	0	0	0	0
Task Cost: \$ 32,110.00																	



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11.0 SCOPING AND SCHEDULE																	
TASK DESCRIPTION	Total Hours	Project Principal	Design Manager	Sr Project Engineer	Project Engineer	Engineer	Senior Designer	Designer	CADD Tech / Graphics	Senior Geologist	Env. Coordinator	PI Specialist	Sr Economist	Sr Planner	Planner / GIS	Accountant	Administration
1.6 Draft Scoping Document Submittal Preparation	48		8			40											
1.7 Draft Scoping Document Comment Compilation/Resolution	56		8	16		16				4	4	4	4				
1.8 Work Plan / Schedule Development (Remainder of Project)	50	2	24			24											
	0																
SUBTOTAL 11.0 SCOPING AND SCHEDULE	154	2	40	16	0	80	0	0	0	4	4	4	4	0	0	0	0
Task Cost: \$ 26,780.00																	



Lone Tree Overpass
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DIRECT EXPENSES						
ITEM	No.	Unit Cost	Cost			
Outside Reproduction						
11"x17" Copies (Color)	15	\$ 1.25	\$ 18.75			
11"x17" Copies (B&W)	0	\$ 0.50	\$ -			
8 ½" x 11" Copies (Color)	2800	\$ 0.75	\$ 2,100.00			
8 ½" x 11" Copies B&W)	0	\$ 0.25	\$ -			
5" x 10" card stock mailer (color, 50% bleed)	1000	\$ 0.50	\$ 500.00			
			SUB-TOTAL:	\$	2,618.75	
Courier/Postage/Overnight Mail						
Courier	0	\$ 7.95	\$ -			
Postage	500	\$ 0.50	\$ 250.00			
Overnight Mail	0	\$ 5.00	\$ -			
			SUB-TOTAL:	\$	250.00	
Mileage						
Monthly Coordination Mtgs	@	0	\$ 0.575	\$ -		
Field Review Meetings	8 mtgs @ 300 miles roundtrip	2400	\$ 0.575	\$ 1,380.00		
Comment Resolution Mtgs	@	0	\$ 0.575	\$ -		
	@	0	\$ 0.575	\$ -		
	@	0	\$ 0.575	\$ -		
			SUB-TOTAL:	\$	1,380.00	
Travel						
Airfare	1 staff @ 3 trips @ \$400 RT	3	\$ 400.00	\$ 1,200.00		
Airfare	@ @	0	\$ -	\$ -		
Meals	1 staff @ 23 days @ \$66/day	23	\$ 66.00	\$ 1,518.00		
Lodging	1 staff @ 10 days @ \$115/day	10	\$ 115.00	\$ 1,150.00		
Rental Car	1 staff @ 4 days @ \$70/day	4	\$ 70.00	\$ 280.00		
			SUB-TOTAL:	\$	4,148.00	
Miscellaneous Expenses						
Database ERIS Reports				\$	6,600.00	
Phone Support				\$	1,500.00	
Virtual Meeting Mailer				\$	1,500.00	
Translation Services				\$	1,000.00	
Meeting Boards				\$	1,500.00	
Streetlight Subscription (if not obtainable from the City or MetroPlan)				\$	20,000.00	
Undefined Expenses				\$	7,900.00	
			SUB-TOTAL:	\$	40,000.00	
TOTAL DIRECT EXPENSES						
			TOTAL:		\$	48,396.75



ATTACHMENT 1

SCOPE AND FEE FROM TRANSYSTEMS CORPORATION

Alternatives Screening

An alternatives screening will build upon the 2010 Lone Tree Overpass Study to be sure that the alternative selected is fully supported by the community, local leaders and BNSF. A review of these alternatives will provide a comprehensive list of pros and cons to fully evaluate the original preferred Alternative 3 “South Alignment with Shoofly”. The following alternatives have been discussed and are the three (3) alternatives that will be reviewed as part of the screening:

- Alternative 1 – North Alignment
- Alternative 2 – South Alignment
- Alternative 3 – South Alignment with Shoofly

Preliminary Design Services

Upon selection of a preferred alternative, the Preliminary Design services will be completed in accordance with the BNSF Engineering Instructions and The American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual for Railway Engineering. Clearances provided at the bridge will be in accordance with UPRR/BNSF Guidelines for Railroad Grade Separation Projects. The following tasks are included in the preliminary design:

- Establish all proposed horizontal geometrics based on current train speeds within the project limits. Design of the horizontal alignment for the proposed permanent relocated tracks, shoofly and Paramount Spur. Design will be offset and generally parallel to the existing tracks.
- Establish all proposed vertical geometrics based on current train speeds within the project limits. Design the vertical alignment to lower the proposed tracks in order to provide appropriate vertical clearances at the proposed bridge structure.
- If deemed necessary by the alternatives analysis, establish horizontal and vertical geometrics for a temporary shoofly.
- Develop preliminary rail cross sections at an interval of 50 feet. Cross sections for the tracks will be based on the standard BNSF typical section for main line construction.
- Develop the construction limits of the proposed project and estimate the approximate amount of right-of-way (or easement) to be acquired from the adjacent property owners.
- Develop an opinion of probable construction cost for the proposed rail improvements based upon the preliminary design.

Utilities & Property

This task identifies the potential existing utility conflicts and property needs including coordination with Ames, WSP and Peak Engineering on relocation and acquisition.

Project Meetings and Administration

This task involves scheduling, conducting, and summarizing BNSF meetings throughout the course of the Alternatives Analysis and Preliminary Design phases. Descriptions of these meetings are provided in the following sub-tasks. Project administrative duties include coordination efforts of the different engineering disciplines involved in design and conducting the necessary quality reviews prior to providing review submittals to the City, WSP and BNSF. The following work will be performed.

- Twelve (12) Technical Working Group (TWG) meetings are budgeted during this phase. These meetings will be held every other week for 6 months.
- Ten (10) meetings between the City, BNSF, TranSystems, WSP and Ames are scheduled to discuss preliminary design and phasing of track and operations. Eight (8) meetings are scheduled to be virtual and two (2) in-person for project walkthroughs.

Deliverables

This task involves submitting the below items on an agreed upon schedule with the City, Ames and WSP.

- Estimated Quantities for railroad work
- Preliminary plans of railroad work
- Recommendations and assumptions matrix

Time of Completion

Following a “Notice to Proceed” from the City, it is anticipated that the Preliminary Design Services will be completed within 6 months.

Exclusions

The below items are excluded from our scope.

- Coordination and payment for railroad flagging (if necessary)
- Railroad and project specific insurance policies
- Liquidated damages for delays in railroad approvals
- Permitting, geotechnical investigation, survey, bridge design, hydrology and hydraulics

ESTIMATED DIRECT LABOR

Classification	Manhours	% of Total Hours	Average Hourly Rate	Estimated Labor Costs
Principal	24	2.2%	\$ 350.00	\$ 8,400.00
Project Manager	175	16.2%	\$ 240.00	\$ 42,000.00
Engineer 3	198	18.3%	\$ 205.00	\$ 40,590.00
Engineer 2	296	27.3%	\$ 120.00	\$ 35,520.00
Technician 3	92	8.5%	\$ 115.00	\$ 10,580.00
Technician 2	298	27.5%	\$ 100.00	\$ 29,800.00
Total Hours	1083			
Sub-Total Labor Expense				\$ 166,890.00

ESTIMATED DIRECT EXPENSES

Airfare (2 Trips)	\$ 1,600.00
Car Rental	\$ 600.00
Lodging	\$ 480.00
Meals	\$ 240.00
Sub-Total Direct Expenses	\$ 2,920.00

ESTIMATED TOTAL

TRANSYSTEMS TOTAL ESTIMATED COST \$ 169,810.00

	Principal	Project Manager	Engineer 3	Engineer 2	Technician 3	Technician 2		
<i>Rates</i>	\$ 350.00	\$ 240.00	\$ 205.00	\$ 120.00	\$ 115.00	\$ 100.00		
Task								
Project Management							Hours	Fee
Twelve (12) TWG Meetings		24					24	\$ 5,760.00
Kickoff and Resolution Meeting		8					8	\$ 1,920.00
Ten (10) Team Meetings with BNSF	4	20	4				28	\$ 7,020.00
Schedule Development	8	40					48	\$ 12,400.00
SUBTOTAL PROJECT MANAGEMENT	12	92	4	0	0	0	108	\$ 27,100.00
Alternative Screening							Hours	Fee
Initial Review	2	4	24	8			38	\$ 7,540.00
Conceptual Horizontal Alignments		3	6	24	4	16	53	\$ 6,890.00
Conceptual Vertical Alignments	1	3	6	48	4	16	78	\$ 10,120.00
Typical Sections Exhibits (3)		1	1	1	4	8	15	\$ 1,825.00
Plan and Profile Exhibits (3)		1	1	1	4	8	15	\$ 1,825.00
Evaluation Matrix	1	8	16	4			29	\$ 6,030.00
SUBTOTAL ALTERNATIVE SCREENING	4	20	54	86	16	48	228	\$ 34,230.00
Preliminary Design Services							Hours	Fee
Review Survey			4		4		8	\$ 1,280.00
Establish Horizontal Geometrics		1	4	40			45	\$ 5,860.00
Establish Vertical Geometrics		1	4	50			55	\$ 7,060.00
Grading Model		1	24	100			125	\$ 17,160.00
Utility Coordination with Peak		4	8		4	10	26	\$ 4,060.00
Property Coordination with WSP		4	8		4	10	26	\$ 4,060.00
Hydrology & Hydraulics Coordination with WSP		4	8	10	8	10	40	\$ 5,720.00
30% Plans				10	40	220	270	\$ 27,800.00
Plan Review - QA/AC Process	4	40	40				84	\$ 19,200.00
Opinion of Probable Cost	4	8	40		16		68	\$ 13,360.00
SUBTOTAL PRELIMINARY DESIGN SERVICES	8	63	140	210	76	250	747	\$ 105,560.00
EXPENSES								
Airfare (2 Trips)								\$ 1,600.00
Car Rental								\$ 600.00
Lodging								\$ 480.00
Meals								\$ 240.00
SUBTOTAL PRELIMINARY DESIGN SERVICES								\$ 2,920.00
TOTAL PHASE 1 DESIGN FEE								\$ 169,810.00



ATTACHMENT 2

SCOPE AND FEE FROM PEAK ENGINEERING

SCOPE OF SERVICES – SCHEMATIC DESIGN

Date: January 7, 2021

Project: **Lone Tree Overpass**

Client Project No: TBD

Peak Project No: 20WSP01

Prepared For: WSP & AMES Construction (*Client: City of Flagstaff*)

Prepared By: J.Leid

PROJECT DESCRIPTION

The project is the extension of Lone Tree Road from Butler Avenue to Route 66. This requires a bridge over the BNSF railway tracks and the Rio de Flag channel, utility relocations, geometric changes to local intersecting streets and widening of Route 66 for added lanes.

The project is being delivered Design-Build with Ames Construction, WSP, Transystems and Peak Engineering. Peak Engineering's responsibilities include design of water and sewer relocations, coordination of franchise utility relocations, design of local streets and support of public involvement efforts.

The first phase of the project is development of schematic design (~15% design) and preliminary guaranteed maximum price (GMP). The following scope of work itemizes Peak Engineering's responsibilities for the schematic design.

SCOPE & DELIVERABLES

1. Administration & Coordination Meetings

Peak Engineering has budgeted to attend the following meetings:

- 6 two-hour long design-build team and/or client meetings (PM & PE)
- 2 four-hour design-build team and/or client meetings (PM & PE)
- Preparation, Support and Attendance at two public meetings (PM & Admin)
- Attendance at one Council meeting (PM Only)
- Attendance at one meeting with Mountain Line, the local transit authority (PM Only)
- Attendance at one meeting with MetroPlan (PM Only)

Administration costs are estimated to be 10% of the total proposed fee, distributed monthly for the duration of the scope. Administration costs include internal project management (schedule, staffing, quality assurance, budget management) and communications not related to meetings listed above.

2. Utility Coordination & Requirements Capture

Peak Engineering will be responsible for collecting available public and franchise utility data within the project area. We assume that Ames will prepare and provide the topographic and boundary survey and that WSP will develop into a CAD format project basemap. We will incorporate public and franchise

utility information into the survey basemap in CAD for distribution to the design-build team. Franchise utilities include APS (electric), UniSource Energy Services (UES, natural gas), CenturyLink (communications), AlticeOne/SuddenLink (communications) and AT&T (communications).

The scope of work for water main replacements within the project area are in Elden, Gabel, and Lumber Streets. New water main may be extended for the proposed Elden Street Extension and a new water main will be extended on the new Lone Tree extension to Butler. The scope of work for sewer main replacements within the project area includes servicing 424 E. Butler Avenue. New sewer main may be included for the proposed Elden Street Extension and/or aging infrastructure needing replacement.

Part of the schematic design phase is determining the need and configuration of an underpass for a local street to connect the east and west sides of Lone Tree Road in the project area. The final preferred alignment of local streets will impact the public and private utility alignments. We anticipate the need to evaluate serviceability to remnant parcels. We have budgeted for 10 hours of PM time, 20 hours of PE, and 10 hours of designer time to support the planning and evaluation effort for utilities specific to the Elden Street Extension/underpass or other alternative. This assumes that WSP will evaluate and determine the roadway alignment of the Elden Street extension/underpass; Peak's role in this effort is limited to evaluation of utility alignments.

Peak Engineering has budgeted for the following coordination meetings:

- 2 meetings with the City's Water Services Department to confirm water and sewer replacements and extensions. Peak Engineering will be responsible for agendas, exhibits and meeting notes.
- 3 meetings each with APS for electric and UES for natural gas (6 total meetings). Peak Engineering will be responsible for agendas, exhibits and meeting notes.
- 2 meetings each with Lumen (formerly Century Link) and Sudden Link for communications. Peak Engineering will be responsible for agendas, exhibits and meeting notes.
- 1 meeting with AT&T for communications along the south edge of Route 66. Peak Engineering will be responsible for the agenda, exhibit(s) and meeting notes.

3. Schematic Design (CAD Linework), Narrative & Quantities

Peak Engineering will prepare schematic water and sewer linework in CAD for the project. The schematic linework will show existing main and service locations and proposed main and service locations. Franchise utility information will be included in the CAD linework file, as available. Where possible and appropriate, water and UES natural gas will be aligned together and sewer and electrical/communications will be aligned together. The location of franchise utilities will be based on the results of utility coordination from the previous task

Peak Engineering will prepare a quantity summary for the utilities for Ames' use in preparing a preliminary GMP.

Peak Engineering will prepare a narrative supporting the utility alignments presented in the Schematic Design. The narrative will include a description of alternatives, as applicable, and a Utility Disposition Matrix. The Utility Disposition Matrix consists of utilities to be relocated, removed and/or abandoned and will include franchise utility information, as available, in addition to City Utilities.

We will package the CAD file for submittal to WSP.

Assumptions & Exclusions:

A topographic survey will be conducted by others and furnished to Peak in AutoCAD format with the project surface (DTM).

Utility locating and potholing is not included. Peak’s scope for showing utility information in the project basemap is based on available as-built and GIS data, adjusted for survey field appurtenances.

We assume that El Paso does not have natural gas in the area; therefore, we did not include coordination time with this utility company.

Peak will coordinate franchise utility design and show linework from franchise utility companies, if provided, in the schematic linework.

Peak’s scope for schematic design is limited to the public utilities within the project footprint.

Peak’s scope for this phase does not include schematic design for the local streets.

Peak’s scope for this phase does not include preparation of design plans.

Peak’s scope does not include coordination with ADOT.

WSP will perform the drainage analysis and design for the project, including local streets, and furnish information for local streets for Peak to include in the schematic design, if applicable.

Renderings or preparation of 3D graphics of design is not included.

FEE SUMMARY

Task	Description	Proposed Fee
1	Administration & Coordination Meetings	\$17,760
2	Utility Coordination & Requirements Capture	\$20,150
3	Schematic Design Linework, Narrative & Quantities	\$16,800
	Total Proposed Fee	\$54,710

Please refer to the cost detail summary, attached, for a breakdown of hours and hourly rates in support of the proposed fee. This work will be performed on a time and material basis utilizing the established rates as shown in the attached fee proposal, not to exceed the fee shown in the attached fee proposal based on the scope outlined herein. If additional scope is required, a subsequent contract modification will be submitted at WSP’s direction. Peak will invoice WSP for the actual hours of the work required for the Scope of Work and for efforts required to administer the task.

SCHEDULE

Peak anticipates work beginning early February 2021 with completion of the schematic design by end of the calendar year 2021.

Client Name: Ames Construction (prime), WSP (design lead)
 Project Name: City of Flagstaff Lone Tree Overpass
 Project Number: 20WSP01

Client Information
 Name: WSP
 Address:

Project Budget Summary

Task	Task Description	Principal Engineer		Project Manager		Project Engineer		Designer		Engineering Intern		Technical Drafter		Clerical		Total Hours	Labor Cost per Task
		Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars		
		Hourly Rate: \$190		\$170		\$155		\$125		\$85		\$90		\$75			
1	Task 1: Admin & Coordination Meetings	-	\$ -	63.00	\$ 10,710	30.00	\$ 4,650	-	\$ -	-	\$ -	-	\$ -	32.00	\$ 2,400	125.00	\$ 17,760
2	Task 2: Utility Coordination & Requirements Capture	-	\$ -	36.00	\$ 6,120	76.00	\$ 11,780	18.00	\$ 2,250	-	\$ -	-	\$ -	-	\$ -	130.00	\$ 20,150
3	Task 3: SD Linework, Narrative & Quantities	-	\$ -	16.00	\$ 2,720	36.00	\$ 5,580	68.00	\$ 8,500	-	\$ -	-	\$ -	-	\$ -	120.00	\$ 16,800
4	Task 4:	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -
5	Task 5:	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -
6	Task 6:	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -
7	Task 7:	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -
8	Task 8:	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -
9	Task 9:	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -
10	Task 10:	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -
LABOR TOTAL:			\$ -		\$ 19,550		\$ 22,010		\$ 10,750		\$ -		\$ -		\$ 2,400		\$ 54,710

Reimbursable Project Expenses

A	Printing & Reprographics	\$ -
B	Mileage	\$ -
C	Meals & Lodging	\$ -
D	Equipment	\$ -
E	Other (Parking)	\$ -
RPE TOTAL:		\$ -

Sub-Consultants

	Survey	\$ -
	Landscape Architect	\$ -
	Architect	\$ -
	Geotechnical	\$ -
	Other	\$ -
SUB-CONSULTANT TOTAL:		\$ -

PROJECT TOTAL:
\$ 54,710



ATTACHMENT 3

SCOPE AND FEE FROM WHEAT DESIGN GROUP

Jan. 7, 2021

Jason Carlaftes, P.E.
WSP

RE: City of Flagstaff, Lone Tree Overpass Project – Phase 1
Flagstaff Contract No. 03-19004

Jason,

We are pleased to submit this Scope and Fee proposal for providing landscape architecture services for the Lone Tree Overpass project. This proposal is for Phase 1 only.

Phase 1 tasks are listed below:

Project Management & Communication

- Preparation and attendance to project team technical meetings (6) 2-hour meetings
- Preparation and attendance to project team workshops (2) 4-hour meetings
- Preparation and attendance to stakeholder meetings (2) 2-hour meetings
- Site visit for 2 people

Public Involvement

Production of renderings for public involvement purposes; includes building the 3D model and providing multiple views of the bridge structure and adjacent area. Several views can be provided from one 3D model.

COST

Total consultant cost is **\$14,928.00**. Work will be provided on an hourly rate Not to Exceed basis, billed monthly based on percent of work completed. The work will be based on the hourly rates provided and based on the hours and tasks listed in the attached cost derivation documents. Work beyond this scope shall be considered additional services and will not proceed without approval from the client.

We are very much looking forward to working with WSP on this project.

Sincerely,



Laura Mielcarek
Principal, Wheat Design Group, Inc.

Wheat Design Group DERIVATION OF COST PROPOSAL SUMMARY

PROJECT: **City of Flagstaff, Lone Tree Overpass Project – Phase 1** DATE: 1/7/2021

Flagstaff Project No.: 03-19004 CONSULTANT: Wheat Design Group, Inc.
 CONTRACT TIME: 6 Months PREPARED BY: Laura Mielcarek, Principal
 CONTRACT TYPE: Hourly rate, Not to Exceed DBE: #1025

DIRECT LABOR COST

TASK DESCRIPTION	CLASSIFICATION	No. HOURS	UNIT RATES	TOTAL COST
		Hours		Cost
Landscape Architectural Services	Project Manager-Sr.	36	\$155.00	\$5,580.00
	Registered LA	24	\$136.50	\$3,276.00
	Designer	30	\$94.60	\$2,838.00
	CADD Technician	30	\$90.00	\$2,700.00
(A) Direct Labor		120 Hrs.		<u>\$14,394.00</u>

OTHER DIRECT EXPENSES: OUTSIDE REPRODUCTIONS

TRAVEL (Rental car, fuel, lodging, meals for site visit) Refer to Exhibit A				\$534.00
(D) Other Direct Expenses			=	<u>\$534.00</u>
(E) OUTSIDE SERVICES & SUBCONSULTANT COSTS Sub Names				Sub Fees
(F) TOTAL COST FOR ALL SUBCONSULTANT AND OUTSIDE SERVICES			=	<u>\$0.00</u>
(G) TOTAL COST			=	<u>\$14,928.00</u>


Laura Mielcarek, Principal

1/7/2021
Date

Wheat Design Group Workhour Estimate by Task
Lone Star Overpass project - Phase 1
Flagstaff Project No. 03-19004

Description		Project Manager-Sr.	Registered LA	Designer	CADD Technician	TOTAL
1	Project Management/Meetings					
	Project Management (6 months)	12	0	0	0	12
	Project team technical meetings (6) 2-hour meetings	6	6	0	0	12
	Project team workshops (2) 4-hour meetings	4	4	0	0	8
	Site Visit (2 people)	12	12	0	0	24
	Subtotal	34	22	0	0	56
Description		Project Manager-Sr.	Registered LA	Designer	CADD Technician	TOTAL
2	Public Involvement					
	Production of 3D model and renderings	2	2	30	30	64
	Subtotal	2	2	30	30	64
TOTAL WORKHOURS		36	24	30	30	120

EXHIBIT A: ESTIMATED DIRECT EXPENSES - LONE TREE OVERPASS PROJECT

1/7/2021

TRAVEL: SITE VISIT

		avg. mi.		
Mileage:	<u># of Trips</u>	<u>per trip</u>	<u>Cost/mi.</u>	<u>Cost</u>
			\$0.445	\$0.00
Car Rental:	<u># of Days</u>		<u>Cost/trip</u>	<u>Cost</u>
	2		\$65.00	\$130.00
Fuel:	<u>Gas station visits</u>		<u>Cost/visit</u>	<u>Cost</u>
	2		\$40.00	\$80.00
Lodging:	<u>Nights</u>		<u>Cost/night</u>	<u>Cost</u>
	2		\$96.00	\$192.00
Meals:	<u>Per Day</u>		<u>Cost/Day</u>	<u>Cost</u>
	2		\$66.00	\$132.00
				\$0.00
				\$0.00

TOTAL TRAVEL =	\$534.00
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PLOTTING

say 0 total

	<u>No. of Copies</u>	<u>Cost per Copy</u>	<u>Cost</u>
Vellum Plots (24x36)		\$3.50	\$0.00
Photo Mylars		\$9.00	\$0.00

TOTAL PLOTS =	\$0.00
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REPRODUCTIONS:

Reports (See EXHIBIT B) \$0.00

Copies other than reports

	<u>No. of Copies</u>	<u>Cost per Copy</u>	<u>Cost</u>
Color Copies			
8 1/2"x11"		\$0.50	\$0.00
11"x17"		\$1.50	\$0.00
Black & White Copies			
8 1/2"x11"		\$0.05	\$0.00
11"x17"		\$0.12	\$0.00
Blacklines (24x36)		\$1.50	\$0.00

TOTAL REPRODUCTIONS =	\$0.00
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EXHIBITS

	<u>No. of Copies</u>	<u>Cost per Copy</u>	<u>Cost</u>
Aerial Photo, 40 scale		\$8.00	\$0.00
(Mounting on 24" x 36" Foam Board for public meetings)		\$72.00	\$0.00
Presentation Blacklines		\$4.00	\$0.00
Color Photo Reductions		\$8.00	\$0.00

TOTAL EXHIBITS =	\$0.00
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SPECIALIZED VENDORS

	<u>Cost</u>
IAS Laboratories - Horticultural Soil Analysis	\$0.00
Vendor Name	\$0.00
Vendor Name	\$0.00

TOTAL SPECIALIZED VENDORS =	\$0.00
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