1.0 | Project Summary Information

1.1 Project Name (35 letters max) Spanish Fork - Provo Sub Railroad Consolidation Project

1.2 Project Type Preliminary Work

1.3 Limits (descriptions should be identifiable. i.e: intersections, place names, landmarks, 35 characters max) The proposed project extends from the intersection of US-6 and US-89 at the bottom of Spanish Fork Canyon to 400 South, 400 West in Springville.

1.4 Project Description (summary of project) The proposed project re-aligns the Provo Sub Rail Line from Spanish Fork Canyon to 400 South in Springville. By removing one of the existing rail lines adjacent to US-6 and re-aligning the existing line through Springville, the project would dramatically improve safety as well as reduce congestion on US-6. The project includes the removal of eight (8) RR crossings on the Provo Sub line and one bridge removal. Combined, these improvements improve safety and reduce congestions for both Spanish Fork and Springville. Spanish Fork is seeking funds for the engineering design, environmental and other fees associated with the design. The total estimated amount to realign the railroad is $22,878,000.00

1.5 Sponsor (jurisdiction, agency name) Spanish Fork City

1.6 Contact Information
   Project Manager Jered Johnson
   Office Phone 801-804-4575
   Cell Phone 801-921-9890
   Fax Click here to enter text.
   Email jjohnson@spanishfork.org

1.7 Cost Estimate
   Total Project Cost (include matches, pledged funds, etc.) $ 669,780
   MPO funding request (include any match) $ 669,780
   PE Cost $ 669,780
Row Cost $0.00
Construction Cost $0.00
Soft Match proposed for project $0.00

1.8 Project Rank (rank this project compared to your other submittals)
   2

1.9 Air Quality Benefit (summarize CM/AQ Report, NA for non-CM/AQ eligible projects)
   NA
2.0 | Project Scope
Always enter “NA” rather than leave an answer blank...

2.1 Describe purpose and need of project.
PLEASE SEE ATTACHED 2018-02-27 RailPros - Provo Sub Realignment Design Scope & Fee

The purpose of the project is to consolidate two railroad lines with similar routes. The consolidation will abandon 8.25 miles of railroad line and discontinue eight railway crossings and remove one railroad bridge. The consolidation of the lines will reduce the number of railroad crossings which will increase travel efficiency and reduce traffic congestion on US-6, 400 North, and other surrounding roads as well as improve the safety. Continued growth and development of Spanish Fork City and the surrounding area has put increased stress on roadways. To promote and increase roadway safety as well as ensure a sufficient transportation network for the residence of Spanish Fork, the proposed improvements are necessary. The requested funds would allow Spanish Fork to initiate the design of the Provo Sub Railroad consolidation.

2.2 Describe existing service/conditions
Currently the Provo Sub Line dissects into two lines at the junction of US-6 and US-89 at the bottom of Spanish Fork Canyon. The two lines combine again at 400 South 400 West in Springville Utah. The proposed project would consolidate the two routes into one railway line. In the current condition the numerous at-grade railroad crossings pose a considerable safety risks and increase traffic congestion on intersecting roadways.

2.3 Highway Project Information (for non-highway projects go to 2.4)

2.3.1 State Route # or Federal Aid Route #
US-6 and US-89

2.3.2 Beginning Mile Post
MP 8.7 on 400 South

2.3.3 End Mile Post
MP 177.9 near US-6

2.3.4 Length of project
Approximately two miles.

2.3.5 Existing and proposed number of Travel Lanes
This is a railroad project; it does not address travel lanes.

2.3.6 Current and proposed width of facility (detail ROW, lanes, shoulders, ped/planter).
This is a railroad project; it does not address width of facility.

2.3.7 Facility surface type.
This is a railroad project; it does not address surface type.

2.3.8 Describe how project is consistent with local or agency plans.
Spanish Fork City and Springville request to realign and consolidate the UPRR and GWRR tracks and right-of-way into one common corridor from 400 South in Springville to SR-6 in Spanish Fork City.

2.3.9 Describe how project incorporates ITS needs.
NA

2.3.10 If phased or segmented, describe how the phase has logical termini and what will future phases consist of.
NA

2.3.11 Is project being coordinated with or constructed with a larger project?
NA

2.3.12 Describe how project will alleviate congestion on this or other facilities.
NA

2.3.13 Describe any traffic improvements. (i.e lanes, signal coordination, ITS, turn lanes, bus pullouts, etc.)
The project will realign and consolidate the UPRR and GWRR tracks and right-of-way into one common corridor from 400 South in Springville to SR-6 in Spanish Fork City.

2.3.14 Describe any safety improvements for vehicular and pedestrian traffic. (i.e. raised median, channelization of turn movements, barriers, parkway strips, etc.)
The project will remove approximately ten at-grade railroad crossings that are accessed by three schools and multiple housing developments.

2.3.15 How are complete streets addressed with this project? (plan for pedestrians, bikes, transit, trails, ITS)
NA

2.3.16 Describe traffic control changes at intersections. (include info to warrant changes)
The removal of at-grade railroad crossings will improve the safety of the residential and school users.

2.3.17 What right-of-way is already secured?
NA

2.3.18 What additional right-of-way is needed?
NA

2.3.19 Describe utility work to be performed and indicate who will do the work.
2.3.20 What type of environmental work will most likely be needed?
Environmental Accessment

2.4 Non-Highway Projects (Transit / ITS / Active Transportation, Park and Ride, etc.)

2.4.1 Transit Route #
NA

2.4.2 Length of project
NA

2.4.3 What is the expected use of the facility or program?
NA

2.4.4 What services are provided in the operating of this project?
NA

2.4.5 Describe any equipment to be purchased (buses, ITS, etc.).
NA

2.4.6 Describe how project is consistent with local or agency plans.
NA

2.4.7 Describe how project incorporates ITS needs.
NA

2.4.8 If phased or segmented, describe how the phase has logical termini and what will future phases consist of.
NA

2.4.9 Is project being coordinated with or constructed with a larger project?
NA

2.4.10 Describe how project will alleviate congestion on this or other facilities.
NA

2.4.11 Describe any traffic improvements. (i.e. lanes, signal coordination, ITS, turn lanes, bus pullouts, etc.)
NA

2.4.12 Describe any safety improvements for transit and pedestrian traffic. (i.e. raised median, channelization of turn movements, barriers, parkway strips, bridges, etc.)
2.4.13 **How are complete streets addressed with this project?** (plan for pedestrians, bikes, transit, trails, ITS)
NA

2.4.14 **What right-of-way is already secured?**
NA

2.4.15 **What additional right-of-way is needed?**
NA

2.4.16 **Describe utility work to be performed and indicate who will do the work.**
NA

2.4.17 **What type of environmental work will most likely be needed?**
Environmental Assessment

### 2.5 Facility Design

<table>
<thead>
<tr>
<th></th>
<th>Current Conditions</th>
<th>Design Year 2022</th>
<th>Design Year w/o Improvements</th>
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<tr>
<td>Average Daily Traffic</td>
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<td>Level of Service</td>
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<td>Functional Class</td>
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<tr>
<td>Park and Ride Usage</td>
<td>NA</td>
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</tbody>
</table>
3.0 | Project Ranking

The following categories will be used by MPO staff to score each project. The points associated with each category show what total points MPO staff can give. MPO staff’s recommendations will be made available to the MPO TAC Committee for their use in making final project selection recommendations. MPO staff ranking is a tool to aid the MPO TAC Committee in their final selection. The committee is not required to pick projects solely on MPO staff ranks. **Please note, if questions pertinent to the project are not answered, zero points will be given.**

3.1 Congestion Relief (25 Points)

Explain if the project...

a) Provides an alternate transportation facility that corrects an identified congested problem? 
   The project does not provide an alternative transportation facility. However, it reduces the number of at-grade railroad crossings, thereby making travel safer for the developing residential, commercial, and school areas.

b) Reduces congestion by reducing the number of vehicles. 
   The project will consolidate the existing tracks into one corridor eliminating four existing at-grade railroad crossings and one substandard bridge. The project does not reduce the number of vehicles because it does not allow for alternative methods of travel.

c) Reduces the need for additional highway lanes for peak hour capacity. 
   The project will consolidate the existing tracks into one corridor eliminating four existing at-grade railroad crossings and one substandard bridge.

d) Increases the efficiency of transportation system through traffic management measures. 
   The project will consolidate the existing tracks into one corridor eliminating four existing at-grade railroad crossings and one substandard bridge. This reduction will improve the efficiency of the existing transportation flow on US-6.

e) Adds turning movements to relieve a congested intersection. 
   The project will consolidate the existing tracks into one corridor eliminating four existing at-grade railroad crossings and one substandard bridge. This project does not add turning movements to relieve a congested intersection.

3.2 Mode Choice (25 points)

Explain if the project...

a) Benefits multiple transportation systems (transit and highway, pedestrian and transit). The project will consolidate the existing tracks into one corridor eliminating four existing at-grade railroad crossings and one substandard bridge. This will benefit the flow of US-6.

b) Promotes alternative transportation solution to SOV use.
The project will consolidate the existing tracks into one corridor eliminating four existing at-grade railroad crossings and one substandard bridge. This project does not provide an alternative to SOV use.

c) Creates or improves linkages between transportation modes.
The project will consolidate the existing tracks into one corridor eliminating four existing at-grade railroad crossings and one substandard bridge.

d) Reduces physical, psychological, or economic barriers to carpool, bike, walk, or transit use.
The project will consolidate the existing tracks into one corridor eliminating four existing at-grade railroad crossings and one substandard bridge. This project does not add turning movements to relieve a congested intersection.

e) Provides incentives to carpool, bike, walk, or transit use.
The project will consolidate the existing tracks into one corridor eliminating four existing at-grade railroad crossings and one substandard bridge. This project does not provide incentive to carpool, bike, walk, or use transit.

3.3 Environmental Quality (15 points)
Explain if the project...

a) Provides cost effective emission reductions (air quality score).
The project will consolidate the existing tracks into one corridor eliminating four existing at-grade railroad crossings and one substandard bridge. This project will improve emission reductions by increasing traffic flow.

b) Minimizes environmental impacts or reduces existing impacts (e.g. air/water/noise pollution).
The project will consolidate the existing tracks into one corridor eliminating four existing at-grade railroad crossings and one substandard bridge. This project will minimize or reduce environmental impacts improving traffic flow.

c) Enhances the natural, cultural, or historic environment.
The project will consolidate the existing tracks into one corridor eliminating four existing at-grade railroad crossings and one substandard bridge. This project does not enhance the natural, cultural, or historic environment.

d) Mitigates invasive impacts to existing neighborhoods/commercial areas (minimal relocations).
The project will consolidate the existing tracks into one corridor eliminating four existing at-grade railroad crossings and one substandard bridge. This project will minimize relocations.

3.4 Safety (20 points)
Explain if the project...

a) Corrects/improves a verified or potential safety or accident problem.
The project will consolidate the existing tracks into one corridor eliminating four existing at-grade railroad crossings and one substandard bridge. This project will reduce the safety issue of
vehicles backing-up at the at-grade railroad crossings along this corridor. Traffic flowing from the growing surrounding residential and commercial areas will have improved flow to major road ways.

b) Improves information/communications for traffic operations and emergency responders. The project will consolidate the existing tracks into one corridor eliminating four existing at-grade railroad crossings and one substandard bridge. This project will improve access for emergency responders using this corridor.

c) Reduces severity of crashes. The project will consolidate the existing tracks into one corridor eliminating four existing at-grade railroad crossings and one substandard bridge. This project will potentially reduce the severity of crashes by improving the safety of the corridor.

d) Enhances safe movement of pedestrian, bicycle traffic. The project will consolidate the existing tracks into one corridor eliminating four existing at-grade railroad crossings and one substandard bridge. This project will address the safe movement of pedestrians and bicycle traffic by reducing the number of times they would have to cross at-grade railroad crossings.

e) Provides an intermodal safety improvement (e.g. separation of vehicles-trains, vehicles-pedestrian). The project will consolidate the existing tracks into one corridor eliminating four existing at-grade railroad crossings and one substandard bridge. This project will provide an intermodal safety improvement because it will reduce the number of at-grade railroad crossings which decreases the potential for vehicles and trains to collide.

3.5 Other Considerations (15 points)
Explain if the project...

a) Effectively distributes funding throughout the MPO area. This project effectively distributes funding through the MPO area by allowing MAG to spend Federal 130 safety funds to complete a study to determine the feasibility of consolidating the tracks into one corridor.

b) Phases project in a manner that the MPO can use limited funds efficiently. The Provo Sub Consolidation project, with the Tintic Industrial Lead Realignment project, will occur in phases to use funds efficiently.

c) Additional funding above required match is pledged toward project (including any soft match). No

d) Project sponsor ranking of project. 2
e) Project is numbered project within the current RTP. 
The project is not numbered within the current RTP.
4.0 | Air Quality Report

All projects that are eligible for CM/AQ and CM/AQ-PM2.5 funds must complete this report. These funds are eligible for projects and programs countywide. Contact Susan Hardy at Mountainland AOG if you need help completing 4.4 Quantitative Analysis below, 801/229-3842 or shardy@mountainland.org.

4.1 Eligibility
CM/AQ funds can only be used for projects and programs that a direct benefit to air quality can be demonstrated. Highway expansion, such as new single occupancy vehicle lanes, is not eligible. Turn lanes at congested intersections, transit programs, pedestrian and trail projects, signal modernization, ITS, and IM programs are typical eligible CM/AQ projects.

4.2 CM/AQ Program
The purpose of the CM/AQ program is to fund transportation projects or programs that will contribute to attainment or maintenance of the National Ambient Air Quality Standards (NAAQS) in Ozone (O₃), Carbon monoxide (CO), Particulate Matter – 10 microns (PM₁₀), and PM₂.₅ non-attainment and maintenance areas. The city of Provo is a maintenance area for CO and Utah County is a non-attainment area for PM₁₀ and PM₂.₅.

4.3 Completing this Report
All projects eligible for CM/AQ funds must complete this report. Completing this report can be quite technical, Susan Hardy, Air Quality Coordinator at Mountainland, can help with filling out this report. Contact her at 801/229-3842 or shardy@mountainland.org.

4.4 Quantitative Analyses
A quantitative assessment of how a proposed project or program is expected to reduce emissions is important to assist in selecting the most effective use of this fund. List below all travel benefits directly related to this project. Air quality benefit calculations must utilize Mobile 6. The air quality analysis should include assessing emission reductions of transit, traffic flow improvements, ITS projects and programs, ridesharing, bicycle and pedestrian improvements. Complete at least one of the sections below. If quantitative analyses cannot be done, do a qualitative assessment in 4.3.

a) Vehicle Miles Traveled
   Number of Vehicle Miles Traveled reduced (VMT): NA
   Average distance of trips reduced: NA
   Emission reduction per average weekday: NA

b) Idling Time
   Average idling time per vehicle reduced: NA
   Number of vehicles with reduced idling time: NA
   Emission reduction per average weekday: NA

C) Vehicle Speed
   Average change in vehicle speed (speed before and after): NA
   Number of vehicles affected: NA
   Emission reduction per average workday: NA
4.5 Qualitative Assessment
Although a quantitative analyses of air quality impacts is required whenever possible, some improvements may not lend themselves to rigorous quantitative analysis, because of the projects characteristics or because practical experience is lacking to adequately analyze the project. In these cases, a qualitative assessment based on a reason and logical examination of how the project or program will decrease emissions and contribute to attainment or maintenance of a NAAQS is appropriate.

The project is not eligible for CM/AQ funding.
5.0 | Project Cost Estimate
To development a project cost estimate, please supply a detailed cost breakdown of your unit costs, inflation, equipment, right-of-way, contingency, etc. To do so, use the Concept Costs Estimate Excel form provided by UDOT (available on Mountainland.org website). Non-construction projects such as equipment purchases, operations, administration programs, studies, etc. can use other methods to show their estimated costs. All sheets or methods used should be submitted as part of the Supplemental Information accompanying the Concept Report.

5.1 Cost Summary
Summarize the information from the Costs Estimate Excel form or other method. Enter NA for items that do not apply to the project.

a) Preliminary Engineering $426,739.00
b) Environmental Work $220,390.00
c) Construction No construction at this time
d) UDOT Review (project cost <$500k = $5k, >500K = $10k) NA
e) Construction Engineering No CE at this time
f) Subtotal (in today’s dollars) $647,129.00
g) Inflated Cost Factor (inflate to 2022) $669,780
h) Total 2022 Cost $669,780.00
i) Non-MPO Funds Available to Project $0.00
j) MPO Funding Request (includes 6.77% local match) $669,780

6.0 | Supplemental Information
Please submit any supporting documentation including maps, diagrams, charts, cost estimates, etc. that will allow MPO and UDOT staff and any Technical Advisory Committee to make an informed decision regarding the proposed project. Keep Supplemental Information submittals to 8 pages total.

6.1 Concept Report Submittal
In order to facilitate the distribution of the Concept Reports and any supplemental information, all Concept Reports shall be combined with any supplemental information and saved in PDF format as one document. Please note that this might create a large data file that might be too large to emailed. Plan accordingly to submit your report in electronic format (CD, DVD, Flash Drive) by the required due date. Concept Reports are due by March 29, 2018 at 6pm.

6.2 Contacts, Questions
For help with the Concept Report or questions, please contact:

Bob Allen
801/229-3813 rallen@mountainland.org

Shawn Eliot, AICP
801/229-3841
February 27, 2018
Chris Thompson
Spanish Fork City
Public Works Director/City Engineer
40 S Main St, Spanish Fork, UT 84660

Subject: Quote for Railroad Engineering Services for the Spanish Fork Railroad Corridor Consolidation

Dear Chris,

Thank you for contacting RailPros Field Services, Inc. (RPFS) to provide an estimate for track design and preparing the UPRR required 30% and final plans for their approval of the realignment of the Provo Subdivision from Springville, Utah to Spanish Fork, Utah. Services will include meetings as outlined herein. Delivery and design approval from UPRR of the 30% engineering plans will follow UPRR guidelines. Additional costs may occur if engineering or survey is needed outside of the UPRR requirements or if client requests modifications.

PROJECT APPROACH
We understand that the City of Spanish Fork desires to realign the Provo Subdivision starting at 400 South (SR 77) in Springville and ending at the bridge for Highway 6 over UPRR near the mouth of the Spanish Fork Canyon. The project will consolidate the east and west tracks into one corridor. The Utah Railway Mainline No. 2 is an older alignment which swings out west through Spanish Fork at a shallower grade than the UPRR Mainline No. 1 which follows a more direct route to the east toward the canyon. This project has three regions. The north region consists of a double track in the west corridor. The Main No. 1 will follow the existing Main No. 2 starting at 400 South until approaching 1600 South. The transition region consists of both mainline tracks following a new alignment to swing over to the east corridor. The third region consists of a double track in the east corridor through the central and southern portions of the project. As these two tracks approach the east corridor near 5400 South, Main No. 2 will follow the existing Main No. 1. The new alignment for these two tracks as they swing over from the west corridor to the east corridor must climb steeper that the existing Main No. 1 which is at approximately a 1% slope. The alignment is limited by both horizontal and vertical design constraints. 10% Design Concept plans have been developed for the proposed alignment.

We understand that the city desires to submit the required UPRR 30% design plans to UPRR for their review and approval based on the 10% design layout. It is assumed that this project will require at a minimum an environmental assessment to evaluate the impacts of the double track corridors as well as the proposed realignment of both tracks from the west corridor to the east corridor. Survey and geotechnical investigations will be needed to quantify the impacts of this project and to design the tracks, at-grade crossings, and structures such as culverts and the proposed bridge at State Street (SR-51).

Task 2.1 – Project Management
RPFS’s project manager will be the main point of contact from RPFS with the City of Spanish Fork, City of Springville, MRC, and UPRR. The project manager will direct the design, schedule, and budget. It is anticipated that the project manager will attend the following meetings:

- one (1) on-site meeting to gather field data, outline the surveyors, and review the proposed alignment
- one (1) on-site meeting with UPRR for the 30% site walk to review the 30% design track construction plans
- one (1) on-site meeting with UTA for the 30% site walk to review the 30% design track construction plans
- one (1) meeting with Utah Railway
- one (1) meeting with the City of Spanish Fork and the City of Springville
- one (1) meeting at UPRR HQ in Omaha, NE
- three (3) progress conference calls

The project manager will serve as the appointed QA/QC person. RPFS utilizes a standard QA/QC process that defines the QC roles internal to RPFS and our QC documentation for this project can be provided to the Client upon request.
Task 2.2 – Boundary and Topographic Survey
All rail and topographic survey will conform to UPRR’s standard survey requirements. The extent of the survey in length is approximately 6 miles along the Provo Subdivision along the approximately 100’ wide corridor. Survey will follow the Main No. 2 corridor starting at 400 South (SR 77) until Evergreen Drive at which point a 100’ wide corridor will be survey following the proposed alignment. At 5400 South, the survey will follow Main No. 1 until the bridge for Hwy 6 over UPRR. Survey will include track sections, at-grade crossings, grade separations, and other structures. Aerial imagery will be used to delineate the track and crossings which will be abandoned.

It is anticipated that eight (8) days of flagging will be needed to collect data within 25 feet of the track and for marking the rail. It is assumed that this fee will be $1,300 per day and has been included in this fee proposal.

Surveying tasks will include the following:

**Topographic Survey**
- **Project Control**: We have assumed no existing control exists so we will establish control points for use in the design survey or construction. Control points will be set in intervals alternating either side of the mainline track throughout the project area staggered to provide accurate control for data collection and future control for construction staking per UPRR standards. A survey control sheet will be provided to be included in the construction plans.
- **Topographic survey**: Topographic data will be collected with a 50’ grid outside of the track section to include additional items of interest (grade breaks, drainage infrastructure, at-grade crossings, utilities, structures, etc.). Where features are obscured, data will be collected by reflectorless methods.
- **Track survey**: Top of rail will be processed at 100 foot intervals (50 foot in curves) on 100 foot stationing. The data will consist of ground and top of rail elevations. We will also collect detailed information at derails and turnouts. Point of switch, point of frog, rail weight and transition information and other details as provided in UPRR’s survey requirements will be collected. Track stationing will be marked on the rail for the track that “controls” the design at the time of the survey. This will require that track to be cleared and flagging protection provided.
- **Track Stationing**: The engineering stationing will be marked on the outside of the east rail of the mainline track in 100’ intervals. Main No. 2 will be marked from 400 North to Evergreen Drive. Main No. 1 will be marked from Evergreen Drive to the Hwy 6 overpass.
- **Utility survey**: Any visible utilities will be collected and if structures are recovered, the direction, size of pipe, invert elevation, etc. will be noted. Low overhead wire line elevations will be collected in the vicinity of proposed track and parking improvements. The one-call utility locate service will be contacted to record any marked utilities.
- **Data Processing**: The survey data will be processed in delivered in dgn format per UPRR survey standards.

**Boundary / Right-of-Way**
- **Boundary Surveys**:
  - Identify the areas along the proposed alignment where additional right-of-way will need to be acquired.
  - Work with Spanish Fork City Staff to identify those areas along the proposed alignment where existing and/or proposed subdivisions interfere with the additional right-of-way.
  - Prepare boundary surveys of the specific areas within existing and/or proposed subdivision that will be required for the additional right-of-way.
  - Locate existing section control along the project alignment for boundary survey work.
  - Use county parcel data to identify ownership and future property acquisition in areas where the additional right-of-way will be outside of platted lands.
- **Land Owner Coordination**: Meet with city and landowners to review the boundary survey data.

**EXCLUSIONS**:
- Construction Staking
- Right-of-Way Acquisition
- Off-site Improvements
RailPros Field Services

- Planning Commissions and City Council Meetings
- Condominium Plats
- As-Built Drawings
- Legal Descriptions
- UDOT issues, improvements or drawings unless specifically referenced in the scope of work.
- Irrigation investigation, design or drawings, unless specifically referenced in the scope of work.

Task 2.3 – Geotechnical Investigation
PEC has extensive experience providing full geotechnical services for projects including one mile long roadway improvement project with multiple borings along the project, soil analysis and pavement design. PEC also provided geotechnical testing support services for more than four miles of roadway improvements through five phases of the 700 South Project (involved a UPRR railroad crossing) in Salt Lake City, including surcharging and settlement analysis as well as concrete pavement design. PEC provided geotechnical services in support of a UDOT pedestrian underpass at the intersection of US89 & Harrison which included design support for wing walls and a three sided box pedestrian structure. We also provided full geotechnical design services in support of the West Valley Pioneer Memorial Bridge, including lateral load analysis on the bridge piles.

PEC will conduct subsurface exploration for all cuts, fills, retaining walls, drainage, and structural designs as well as coordinate with the design engineers to identify the locations of the subsurface exploration. Geotechnical investigations will conform to UPRR specifications and the AREMA Geotechnical Manual of Instruction for guidance.

It is anticipated that eight (8) days of flagging will be needed for geotechnical investigation within 25 feet of the track in additional to the flagging required for survey. It is assumed that this fee will be $1,300 per day and has been included in this fee proposal.

Geotechnical tasks will include the following:

- **Conduct Preliminary Geotechnical Investigation:** PEC will identify potential issues that may affect the design and construction of the project. They will identify preliminary mitigations and develop a plan to select and design appropriate mitigations. PEC will develop a work plan for the geotechnical investigations.

- **Subsurface Exploration Plan:** PEC will conduct a field review and determine access and layout for borings and cores. A traffic control plan will be developed to promote safety of their staff and safe traffic flow. Clearance and permits will be obtained for the subsurface exploration and an Exploration Plan will be submitted to the UDOT Geotechnical Oversight Engineer for review and approval. Sampling will be submitted for testing and field subsurface exploration logs will be prepared. A sketch will be provided with borings and cores shown. Boring locations and test pit locations will be surveyed to clearly identify geology hazards (i.e. fault zones, liquefaction zones, etc.). Cone penetrometer soundings or standard penetration borings will be performed for the track, culverts, and bridge. Cores will be taken of existing pavement sections.
  - 13 Soundings / Borings for track will be advanced to a maximum depth of 50’
  - 10 Soundings / Borings for culverts to a maximum depth of 25’
  - 4 Soundings / Borings for the bridge to a maximum depth of 100’
  - 16 Cores at existing grade crossings to determine existing pavement sections
  - 4 Backhoe Tests will be performed to obtain bulk soil samples for lab testing

- **Geotechnical Draft and Final Reports:** PEC will perform the geotechnical design for settlement, slope stability, liquefaction/lateral spread investigation, foundation, subballast, and retaining wall design and develop the draft geotechnical report. Lateral Loading design values will be determined for the railroad double track bridge over State Street (SR-51). Upon review and approval, the report will be finalized for submittal to the Client and UPRR.
ASSUMPTIONS:
- Preliminary document search indicates the proposed line will cross the following:
  - The Wasatch Fault Zone, Provo Section
    - Once on the North end of the project
    - Once on the South end of the project
  - Estimated Liquefaction Potential zones
    - Crossing from Low liquefaction Potential into Moderate Potential (south to north at approximately 6400 South).
    - Crossing from Moderate Liquefaction Potential into High Liquefaction Potential (south to north at approximately 1600 South).
    - Crossing from High Liquefaction Potential into Moderate Liquefaction Potential (south to north at approximately Main Street).
- A liquefaction analysis will be required
- A seismic analysis will be required

Task 2.4 – Environmental Assessment / Agency Public Involvement
PEC has extensive experience providing environmental services for similar projects including the 24th Street Environmental Assessment, Skyline Drive Environmental Assessment, and Layton City, Hill Field Road and Antelope Drive Interchanges. PEC performed all technical analyses and completed an Environmental Assessment that considered improvements to the 24th Street Interchange. The study area included thousands of acres between 21st Street and 31st Street, and 1900 West to I-15, and resulted in a full interchange, intersection reconfigurations, and a new roadway. A primary concern of the study was the need to relocate existing Utah Central Railway (UCRY) tracks crossing under I-15. PEC coordinated with the UPRR, UCRY, dozens of interested stakeholders, and hundreds of residents to address concerns. With no significant impacts, the EA resulted in a Finding of No Significant Impact (FONSI).

PEC performed all technical analyses and completed an Environmental Assessment that considered a new roadway connecting the northeast side of Pleasant View City with US-89. This new roadway is would be constructed across undeveloped lands with fairly significant grades. PEC conducted analyses for archaeological and historical properties, threatened and endangered species, wetlands and waters of the United States, hazardous materials, and right-of-way impacts. PEC conducted all public involvement activities, which included two open houses, one public hearing, individual stakeholder and private property meetings, and official notices in the Federal Register.

It is anticipated that an Environmental Assessment (EA) will be required. The limits of the EA will incorporate any construction impacts of the proposed railroad alignments.

Environmental tasks will include the following:
- **Preliminary Survey:** PEC will perform a preliminary survey of the project using aerial photography and database searches to determine existing resources, gauge preliminary impacts, and assess needed agency consultation.
- **Analyze Environmental Resources:** PEC will perform a Resource Impact Analysis including archaeological, historical, wetlands, wildlife, hazardous materials, and all other field work and analyses required for completion of the EA. Environmental resource information will be provided including the results of any field work, database, and other online analyses. This information will be provided in reports to UDOT for approval and inclusion in the EA. Technical surveys, open house materials and reporting will be produced for this task.
- **Write Environmental Document And Obtain Approval:** PEC will prepare the EA for agency review and approval. Where applicable, PEC will coordinate with other resource and interested agencies prior to submitting the Draft EA to Spanish Fork City and UDOT. They will then prepare the Draft EA for the Client and UDOT Region 3 approval. Comments and revisions received will be incorporated into the final draft of the EA for final submittal. PEC will obtain approval of the EA, circulate it to the Client (and any other interested agencies), and post it in UDOT ProjectWise.
ASSUMPTIONS:
- PEC will perform assessment of one alternative and screening of one sub-alternative near the north end of the project which is the alignment used for the 10% design submittal to UPRR.
- Cultural, wildlife, waters of the United States, right-of-way, hazardous materials, and noise impacts will be required.
- No more than 12 individual meetings with project stakeholders and adjacent residents, and one open house are assumed.
- A public hearing will not be required, but an opportunity for public hearing will be made.
- One round of EA revisions is anticipated.

Task 2.5 – Rail Culverts
Our design team is experience with designing UPRR Culvert Structures for mainline tracks and yards. We have provided construction support and oversight as these culverts have been built including coordination with the manufacturer and the contractor for make connections and constructing the culverts. We have identified six drainage culverts that will need to be extended in kind for the proposed second mainline track. Invert data, material type, and size will be identified in the survey as well as the channels upstream and downstream of these culverts. The culverts are used to convey drainage from irrigation channels from one side of the mainline to the other side and appear to be used for irrigating fields. For the transition region of this project, the two mainline tracks will cross fields and undeveloped terrain. Drainage analysis will be performed for this region to determine the necessary drainage channels and culverts need for the UPRR track sections. It is anticipated that culverts will be used to convey drainage under the tracks rather than any bridges or other drainage structures. Culvert drawings will show the following information:
- Plan and profile of culvert
- Cross Sections
- Table showing data for construction
- Estimated quantities
- Drainage report for crossings
- Reference the UPRR standard culvert extension details
- Riprap or other soil stabilization for culvert end sections

ASSUMPTIONS:
- Structural design calculations for culverts will not be needed since we are assuming site-specific conditions fall within the design limitations.
- Headwall if required will be UPRR standard and will not require design
- Existing culverts do not require modifications or replacements

Task 2.6 – UPRR 30% Structures Design – State Street (SR-51) Double Track Bridge
Structures design for this project consists of a proposed double track bridge across State Street replacing the existing single track bridge for Main No. 2. This scope will include preliminary engineering and development of construction plans, specifications and construction cost estimate. The existing bridge has 14.5’ of clearance. It is anticipated that a UPRR standard through plate girder bridge will be required. This bridge may require a 17.5’ clearance per UPRR standards. We will coordinate with UPRR on whether they will allow a variance for this or possibly a sacrificial beam. The mainline tracks cannot be raised to meet this clearance due to nearby at-grade crossings and other design constraints. This may require that the roadway be lowered and has been included in this scope. See task 7 below.

Structures Design tasks will include the following:
- **Preliminary Engineering:** Preliminary engineering includes coordination with the Cities of Spanish Fork and Springville, UDOT, UPRR, and Utah Railway to select and configure the bridge structure and criteria that are required for the project’s completion. The railroad bridge will be designed in accordance with the AREMA Manual for Railway Engineering and UP’s Guidelines for Railroad Grade Separation Projects.
- **30% Design Plans:** Bridge plans will show the plan, elevation, and typical section for the double track bridge.
ASSUMPTIONS:

- Structural design will meet UPRR standards and designs will only be required for steel piling length. Piling will be end bearing or friction.
- The proposed bridge will have one uniform deck to provide flexibility in proposed / future track alignments.
- Bridge will not need to be designed to accommodate an access road.
- Bridge will need to be designed to accommodate a future track (three tracks total including the future track).

Task 2.7 – Roadway Improvements and At-grade Crossings
RPFS will develop plan and profile sheets for road improvements required for approaches to proposed at-grade crossings and for the proposed roadway lowering at the UPRR bridge over State Street. Pavement sections will be developed using local and state standard roadway sections and pavement cores obtained from geotechnical investigations. There are eight proposed public at-grade crossings and three proposed private at-grade crossings. Seven of the proposed public crossings will be a second track adjacent to an existing track. The two existing crossings at Evergreen Drive will be replaced with two new crossings at the new location of the two mainline tracks. RPFS will assist in the Quiet Zone Analysis as well as preparing FRA applications. RPFS will also coordinate agreements with UPRR and assist in negotiations.

Task 2.8 – UPRR 30% Track Design and Estimate
RPFS’s will develop 30% plans based on the 10% plans submitted to UPRR. Review comments from the Client and UPRR along with survey, geotechnical recommendations, and environmental recommendations will be incorporated into these plans. Plan, profiles, and cross sections will be developed for submittal to UPRR. We understand that we must include all design elements associated with the project so UPRR may accurately assess the cost and scope of the project. Progression of the plan beyond 30% Design through the remaining final design submittals and incorporation of design review comments are not included in this scope. We will provide CAD files to UPRR personnel or consultants to assist with their preparation of permitting documents, signal design, and utilities relocation design.
RPFS will develop conceptual 30% signal plans and develop a preliminary cost estimate for the signal work.
RPFS design plans, documents, and other services for track and civil design will consist of the following:

- **Standard UPRR general sheets:**
  - project location
  - sheet index and revisions
  - general notes and project contacts
  - legend
  - geometry

- **Track plan and profile sheets detailing:**
  - existing site conditions
  - existing and required R/W
  - installation of new track, access roads, at-grade crossings, removal of track and crossings, and shifting of track
  - key track dimensions and clearances, engineering stations, mile markers, and curve data
  - grading impacts and cut/fill limits
  - drainage features
  - any utilities identified through one-call locates and through UPRR utility crossing audits
  - utility protection or relocation notes
  - vertical profiles of proposed tracks and adjacent existing tracks, and surface elevations
  - erosion control measures

- **Roadway plan and profile sheets detailing:**
  - existing site conditions
  - existing and required R/W
  - roadway improvements, at-grade crossings, pavement removal, etc.
  - key roadway dimensions and clearances, engineering stations, mile markers, and curve data
  - grading impacts and cut/fill limits
  - drainage features
  - any utilities identified through one-call locates and through UPRR utility crossing audits
  - utility protection or relocation notes
  - vertical profiles of proposed roadways and existing roadways, and surface elevations
  - erosion control measures

- **Typical sections:**
  - existing and proposed track and ground elevations along with horizontal offsets to tracks,
  - existing and proposed ground, R/W, and fencing
  - proposed cut and fill volumes

- **Construction cost estimate** including quantities and estimated pricing.
FEE

See attached fee breakdown.

EXCLUSIONS

- Survey of the existing mainline tracks to be abandoned. It is assumed that this work will be delineated using aerial imagery.
- H&H design (other than design of drainage improvements required for positive track drainage)
- Traffic Study and Traffic Counts
- Attendance at PUC Hearing(s)
- Structural design other than the proposed double track bridge for State Street (SR-51)
- Environmental permitting, SWPPP, and NOI preparation (except grading and erosion control plans)
- Utilities relocation design and coordination (other than noting protection of existing utilities identified in the field and identifying utilities on the plans that need to be relocated)
- Railroad Signal design
- 60%, 90%, and Final Design of Bridge and Track Plans

DELIVERABLES

- 30% track design plan submission to UPRR for review (11”x17” full size, 100 scale or 200 scale). The drawing will be formatted such that it will be suitable for UPRR review and approval as per UPRR Public Project Track Standards.
- Topographic survey of the project limits
- Geotechnical Report including recommendations for subgrade preparation, subballast thickness, and recommendations for the proposed bridge foundation.
- Drainage report for hydraulics and hydrology for proposed culverts and drainage channels within the UPRR track section.
- Environmental Assessment Report including study of the environmental impacts of the proposed alignment.
- 30% design plan submission to UPRR structures for the proposed bridge at State Street (SR-51).
- Estimate of Probable Track Construction Costs based on the 30% design.
SCHEDULE
Below is a draft schedule for review and discussion. This information includes many assumptions and incorporates activities by parties beyond the control of RPFS. Schedule is as follows:

- Contract or e-mail NTP received, conceptual design begins and survey is scheduled
- 2 months from NTP – Survey is completed
- 4 months from NTP – Draft Geotechnical Report completed
- 4 months from NTP – 30% concept structures design submitted to UPRR
- 5 months from NTP – 30% design submittal ready for review by City
- 6 months from NTP – Draft Environmental Assessment completed
- 2 weeks from receipt of draft EA – Comments and impacts from EA are incorporated into plans
- 7 months from NTP – 30% track design submitted to UPRR

Invoices are submitted upon completion of the job or at month end. On-going jobs are billed on a monthly basis. Payments of invoices are due upon receipt, within 30 days. Invoices are subject to a 1% fee for every 30 days the payment is delinquent. We offer credit card payment processing for an additional 5% fee.

You may indicate your acceptance of the price listed above by signing and returning this quote via email or fax (866.762.7619). If you have any questions regarding this quote or would like further information, please feel free to contact me.

Thank you,

RAILPROS FIELD SERVICES, INC.

M. Shawn Marshall, PE
Mountain West Regional Manager
Freight Rail Design
801-668-2155

AGREED TO AND ACCEPTED BY:

[Signature]
Client Company Representative

[Signature]
Printed Name

[Signature]
Title
Date
PHASE 3 – FINAL DESIGN (NOT INLCUDED IN THE PHASE 2 - 30% DESIGN SCOPE)

KEY UNDERSTANDINGS
We understand that the City of Spanish Fork desires to progress the track and bridge plans to final design once the 30% plans are approved by UPRR. Final scope and fee is subject to change based on review comments received from the city and UPRR for the 30% design submittal.

60%, 90%, and Final Design Submittals will require the following tasks:

Task 3.1 – Project Management
RPFS’s project manager will be the main point of contact from RPFS with the City of Spanish Fork, City of Springville, MRC, and UPRR. The project manager will direct the design, schedule, and budget. It is anticipated that the project manager will attend the following meetings:

- one (1) on-site meeting with UPRR for the 90% site walk to review the 90% design track construction plans
- one (1) meeting with the City of Spanish Fork and the City of Springville
- one (1) meeting at UPRR HQ in Omaha, NE
- three (3) progress conference calls

The project manager will serve as the appointed QA/QC person. RPFS utilizes a standard QA/QC process that defines the QC roles internal to RPFS and our QC documentation for this project can be provided to the Client upon request.

Task 3.2 – UPRR 60%, 90%, and Final Structures Design & Specifications – State Street Double Track Bridge
This scope will include bridge plans, calculations, specifications, and cost estimate. The plans will show the complete configuration of the bridge and key details. Comments from previous submittals will be addressed at each phases and responses will be documented with the submittal.

Structures Design task will include the following:

- **60% Design Plans, Calculations, Specifications, and Estimate**: Bridge plans will show the plan, elevation, and typical section for the double track bridge. Preliminary specifications for the bridge construction will be developed. The estimate will be refined for this submittal.
- **90% Design Plans, Calculations, Specifications, and Estimate**: Bridge plans will be revised per comments from UPRR and local jurisdictions. The specifications and estimate will be refined for this submittal.
- **Final Design Plans, Calculations, Specifications, and Estimate**: Plans and Bid Documents will be finalized per comments from UPRR and local jurisdiction.

ASSUMPTIONS:

- Structural design will meet UPRR standards and designs will only be required for steel piling length. Piling will be end bearing or friction.
- The proposed bridge will have one uniform deck to provide flexibility in proposed / future track alignments.
- Bridge will not need to be designed to accommodate an access road
- Bridge will need to be designed to accommodate a future track (three tracks total including the future track).
- Roadway profile will be lowered to accommodate the minimum UPRR clearance requirements.

Task 3.3 – UPRR 60%, 90%, and Final Track Design, Estimate, & Specifications
RPFS will progress the track plans through the UPRR submittal process. Comments from previous submittals will be addressed at each phase and responses will be documented with the submittal. Drainage and grading plans as well as details will be refined as bid ready plans are developed.

Track Design task will include the following:
RailPros Field Services

- **60% Design Plans and Estimate**: Track plans will be revised to incorporate comments from UPRR. The estimate will be refined for this submittal.
- **90% Design Plans, Specifications, and Estimate**: Track plans will be revised to incorporate comments from UPRR. Preliminary specifications for track construction will be developed. The estimate will be refined for this submittal.
- **Final Design Plans, Specifications, and Estimate**: Plans and Bid Documents will be finalized per comments from UPRR and local jurisdiction.

**Task 3.4 – Boundary Survey**
Additional boundary work will be done for in this phase to development maps and records of survey to assist the City in acquiring right-of-way and parcels including the following tasks:

Surveying tasks will include the following:

**Boundary / Right-of-Way**
- **Boundary Surveys**:
  - Prepare a boundary survey of the properties along the new railroad alignment for right-of-way acquisition.
  - Prepared legal descriptions of the parcels needed for additional right-of-way.
  - Prepare property exhibits of additional right-of-way parcels as requested by Spanish Fork City.
  - Prepare a boundary survey of the specific areas that will be required for the additional right-of-way.
  - File a record of survey of the new right-of-way acquisition areas.
- **Land Owner Coordination**: Meet with city and landowners to review the boundary survey data as requested.

**EXCLUSIONS**:
- Construction Staking
- Right-of-Way Acquisition
- Off-site Improvements
- Planning Commissions and City Council Meetings
- Condominium Plats
- As-Built Drawings
- Legal Descriptions
- UDOT issues, improvements or drawings unless specifically referenced in the scope of work.
- Irrigation investigation, design or drawings, unless specifically referenced in the scope of work.

**FEE**

See attached fee breakdown.

**EXCLUSIONS**

- Survey of the existing mainline tracks to be abandoned. It is assumed that this work will be delineated using aerial imagery.
- H&H design (other than design of drainage improvements required for positive track drainage)
- Traffic Study and Traffic Counts
- Attendance at PUC Hearing(s)
- Structural design other than the proposed double track bridge for State Street (SR-51)
- Environmental permitting, SWPPP, and NOI preparation (except grading and erosion control plans)
- Utilities relocation design and coordination (other than noting protection of existing utilities identified in the field and identifying utilities on the plans that need to be relocated)
- Railroad Signal design
DELIVERABLES

- Final track design plan submission to UPRR for review (11”x17” full size, 100 scale or 200 scale). The drawing will be formatted such that it will be suitable for UPRR review and approval as per UPRR Public Project Track Standards.
- Final bridge design plan submission to UPRR structures for the proposed bridge at State Street (SR-51).
- Specifications for Track, Civil, and Bridge work.
- Estimate of Probable Track Construction Costs based on final design.

SCHEDULE

Below is a draft schedule for review and discussion. This information includes many assumptions and incorporates activities by parties beyond the control of RPFS. Schedule is as follows:

- 2 months from NTP – 60% design submittal incorporating comments from UPRR and the city
- 2 months from receipt of comments from 60% submittal – 90% Plans and Field Review
- 2 months from receipt of comments from 90% submittal – Final Plans, Estimate, and Specifications
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**UPRR Engineering Fee (Complete Project Review)**

- $ 20,000

**Total Engineering**

- $ 597,129

* Estimates for actual costs. City will be invoiced for actual costs not to exceed without written authority.
## Contractor - Site Work

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## Railroad - Track, Signal, & ROW

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<td>AC</td>
<td>$100,000.00</td>
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Subtotal 10,477,500.00

Contingency 30% 4,843,540.17
Engineering & Permitting 6% 1,259,320.44
Construction Management 3% 629,660.22

TOTAL COST 22,877,654.72

## Railroad - Optional Salvagable Track

<table>
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<tr>
<th>Item</th>
<th>Description</th>
<th>Qty</th>
<th>UOM</th>
<th>Max Rate</th>
<th>Total Amount</th>
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<tbody>
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<td>3.01</td>
<td>Track - Remove &amp; Disposal Mainline</td>
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<td>3.02</td>
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<td>TF</td>
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<td>$-23,830.00</td>
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Total credit $-573,055.60