TASK ORDER NO. 01

TASK ORDER NAME: FRONT RUNNER FORWARD ENVIRONMENTAL STUDIES PACKAGE NO. 01

PROJECT CODE: MSP252 – FR Double Track

This is Task Order No. 01 to the FrontRunner Forward On-Call Environmental Study Contract entered into by and between Utah Transit Authority (UTA) and HDR Engineering, Inc. (Contractor) as of January 12, 2022.

This Task Order is part of the Front Runner Forward On Call Environmental Study Contract and is governed by the terms thereof.

The purpose of this Task Order is to specifically define the scope, schedule, fee, and other terms applicable to the work identified herein.

UTA and Contractor hereby agree as follows:

1.0 SCOPE OF SERVICES

The scope of work for the Task Order No. 01 is hereby attached and incorporated into this Task Order.

2.0 SCHEDULE

The Completion Date for this Task is 12/31/2022

3.0 FEE

The price for this task order is a not to exceed $1,386,504.93. Invoices will be billed on monthly basis for work completed to date.

4.0 APPLICABILITY OF FEDERAL CLAUSES

This Task Order does ☐ does not ☒ [Check Applicable] include federal assistance funds which requires the application of the Federal Clauses appended as Exhibit D to the FrontRunner Forward Environmental Study Pool Consultant Contract.

IN WITNESS WHEREOF, this Task Order has been executed by UTA and the Contractor or its appointed representative

UTAH TRANSIT AUTHORITY:

By: _____
Mary DeLoretto, Interim Executive Director Date
> $100,000

By: _____
David Hancock, Interim Chief Service Dvlpmt. Ofc. Date
< 100,000

By: _____
Todd Provost, Dir. of Capital Development Date
< $50,000

By: _____
Janelle Robertson, Project Manager Date
< $10,000

DocuSigned by:
Michael Bell
Legal Review 1/20/2022

Procurement Review

HDR ENGINEERING, INC.:

By: Brent W. Jensen
Brent W. Jensen, Senior Vice President

Date: January 18, 2022

Task Order Scope of Work

FRF Environmental Studies Package #1

Utah Transit Authority

December 16, 2021

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Executive Summary

Overview. HDR Engineering, Inc. was requested to submit a scope and fee for preparation of environmental studies and preliminary designs for FrontRunner Forward (FRF) Environmental Studies Package #1. Package #1 consists of the following FrontRunner Forward double track improvements projects:

Double Track Segments	Length	HDR Scope of Work	
		Environmental Study	Preliminary Design
Warm Springs (Task 2)	0.9	Categorical Exclusion	Preliminary design (approximately 30%)
South of Salt Lake (Task 3)	2.1	Categorical Exclusion	Preliminary design (approximately 30%)
South of Murray (Task 4)	1.5	Categorical Exclusion	Preliminary design (approximately 30%)
Draper (Task 5)	3.1	Categorical Exclusion	Preliminary design (approximately 30%)
Beck Yard	1.6	Categorical Exclusion	-None-

Project Understanding. The HDR team will work with UTA and the Frontrunner Forward Program Management Services Consultant (PMSC) to accomplish preliminary design work and environmental services for the project in accordance with National Environmental Policy Act (NEPA) and U.S. Department of Transportation (USDOT) and Federal Transit Authority (FTA) requirements. HDR will provide the necessary professional engineers, planners, scientists, architects, MicroStation operators, and other staff and professional and technical skills, materials, supplies, and other services, to complete this scope of work.

Major elements of work under this contract will include the following items:

- Project management
- Reviews and analyses for NEPA
- Preparation of five Categorical Exclusion (CE) documents using FTA Region 8's 2020 CE Worksheet and instructions as the template and guidelines
- Documentation of records and decision making
- Preliminary engineering to support environmental analysis
- Public outreach support (outreach conducted by UTA and PMSC)
- Union Pacific coordination support (coordination conducted by UTA and PMSC)

The result of this effort will be engineering design to a level (approximately 30%) that will allow the HDR team to complete each CE worksheet, assist the UTA PMSC with public involvement and outreach in support of the CE, assist UTA with obtaining the appropriate level of agency approval in

accordance with NEPA, and advance the conceptual preliminary engineering to use in developing a target price for construction. UTA has indicated that tasks might be refined as the contract progresses. If there is a net increase in the cost of the work because of these refinements, a contract amendment will be executed between UTA and HDR. Necessary out-of-scope work will be identified by the HDR team and communicated to the UTA Project Manager, written authorization will be obtained from UTA prior to performing the work.

Overall Assumptions:

- **Preliminary Design/Engineering.** A conceptual configuration layout will be provided to HDR by the UTA PMSC. HDR will advance the configuration layout to an approximately 30% level of design.
- **Survey and Mapping.** The UTA PMSC will provide all survey and mapping to HDR.
- **Union Pacific Railroad Coordination.** UTA and the PMSC will lead coordination with Union Pacific. All coordination and communication with Union Pacific will be through the UTA Project Manager and PMSC. HDR will provide exhibits and graphics as quantified in the individual segment task scopes below.
- **Public Outreach.** The UTA PMSC will lead public outreach. HDR will support the PMSC as required such as preparing exhibits, data, graphics, and information for public meetings as quantified in the individual segment task scopes below.

Project Unknowns. The tasks listed in this scope of work are necessary for the completion of this contract. Future agency or public comments could require additional work. Each task below includes assumptions related to the work required to complete the CE worksheets. For HDR to meet the schedules for each CE set forth by UTA in their Technical Memoranda, prompt reviews by UTA, the PMSC, and FTA are necessary.

Schedule. Schedules for each CE and associated engineering will be developed within the first month after NTP but are not anticipated to take longer than is shown in each CE's respective technical memorandum schedule provided by UTA. Engineering will be advanced to the first submittal to UTA/UPRR as quickly as possible and anticipated submittal dates will be provided once all data is received from UTA.

Fee Type. The fee uses rates provided in the contract plus direct expenses.

Scope of Work

Task 1: Project Management, Administration, and Coordination

A. Description of Activity

This activity provides overall direction for the tasks included in the FRF Environmental Studies Package #1. The HDR team project manager will be responsible for team coordination, implementation of quality-control measures, project reporting to UTA, project documentation, and overall performance of the project. The HDR team project manager will develop a communication strategy to streamline meetings and minimize time commitment, while facilitating input where necessary. The tasks for this activity include the following:

- Prepare monthly progress reports summarizing work completed for the month and anticipated work for the following period (18 progress reports assumed)
- Oversee allocation and delegation of authorized work in accordance with the established work plan and track overall completion of work progress
- Prepare a quality control (QC) plan and quality assurance (QA) compliance procedures
- Administer project costs, invoicing, and schedule control
- Coordinate with UTA and the PMSC project manager and PMSC team through bi-monthly team meetings (36 meetings assumed)

B. Assumptions

- The UTA-approved QC plan will establish procedures and requirements to be followed by the project team in the preparation of quality documents. The QC plan will describe the responsibilities and procedures that will apply to deliverables prior to submittal.
- The HDR team will use UTA project CAD standards as well as standard formats for technical reports and memoranda and will utilize current UTA document-control procedures.
- Design will meet the appropriate UTA design standards. Standards to be used INCLUDE UTA Commuter Rail Design Criteria, AREMA *Manual for Railway Engineering*, FRA (including 49 CRF 200 series), AASHTO, MUTCD, and UDOT and individual municipalities as necessary.
- The administrative record will file and organize pertinent project events, communications, and documentation. The administrative record will capture NEPA decisions and will be kept in electronic format with a searchable database.

C. Work Products

- Bi-Monthly meetings or workshops
- Monthly progress reports
- Monthly invoices

- Meeting notes
- QA/QC plan
- Schedule updates
- USB drive copy of administrative record with searchable database

Task 2: Environmental Study for UTA Double Track Segment – Warm Springs

A. Proposed personnel:

Project Manager: Heidi Spoor

Environmental Lead: Heidi Spoor

Design Lead: Travis Colledge

Support Staff: shown in Cost Estimate

B. Scope of Services.

2.1 Preliminary Design/Engineering

HDR will prepare preliminary (30%) design. A conceptual configuration layout will be provided to HDR by the PMSC. HDR will advance the conceptual configuration to a design level to conduct the environmental resource impact review required for the environmental document, and to estimate quantities and costs. Preliminary engineering will include:

- Rail and special trackwork as described in the Warm Springs segment tech memo and shown in the accompanying exhibit
- Layout of ballast walls or small retaining walls if required for new track profiles and grading
- Geotechnical field sampling, analysis, and report preparation
- Track drainage design for new and relocated tracks
- Utilities impact evaluation and conceptual disposition based on the conceptual track design
- Civil and site development design
- At-grade crossings
- Right-of-way analysis and design as described in the Warm Springs segment tech memo and shown in the accompanying exhibit
- Conceptual signal quantities to support the track design

2.2 Environmental Services.

HDR will conduct environmental activities and prepare the CE Worksheet for the double tracking project segment, including the following:

- HDR will conduct environmental resource impact review and documentation required to obtain a FTA approved NEPA document including field work,

mapping, and reporting. This is anticipated to include completing the FTA CE worksheet. This is anticipated to consist of two review cycles by UTA and FTA.

- HDR will perform surveys and studies to support Section 106 and Section 4(f) requirements. Section 106 agency consultation will be conducted by FTA. HDR will assist UTA with Section106 documentation.
- HDR will prepare map set showing surveyed environmental resources in the project area. HDR will submit GIS layers to UTA at the conclusion of the projects.
- HDR will prepare a table summarizing required mitigations and anticipated environmental permits for each project.

2.3 Public Outreach Support. HDR will support PMSC with documents, information, data, orgraphics. Support limited to hours provided in the attached cost estimate.

2.4 Union Pacific Railroad Coordination Support. HDR will prepare plans and exhibits in accordance with Union Pacific standards and criteria.

2.5 Quantities and Cost Estimate. HDR will prepare a quantity and cost estimate. Quantitytake-offs and estimates shall be coordinated with UTA and should be based on FTA's Standard Cost Codes (SCC).

C. Assumptions

- **Preliminary Design/Engineering**
  - Design drawings and existing base design files will be developed in MicroStation using UTA standard formats.
  - UTA will provide all CAD files used to create the exhibits for each conceptual tech memo
  - The HDR team will prepare preliminary design plans in support of the CE. The scope assumes the preliminary engineering will not deviate from the concept shown in the Warm Springs Segment tech memo and accompanying exhibit. The following design is included:
    - Track -
      - Plan and profile sheets at 1”=40’ scale
      - Typical Sections
      - Special trackwork called out on plan sheets
      - Level of effort assumes UTA MoW will approve the design exceptions noted in the Warm Springs tech memo and PSMC will coordinate approvals with UTA
    - Grading plans to support the track design (cut and fill lines and minor ballast wall or retaining structure layout, if required)
    - Conceptual drainage design shown on the track plan and profile sheets
    - Site/Civil conceptual plans

- UTA and UPRR facilities
- ROW impacts as noted in the Warm Springs tech memo and accompanying exhibit
- Detailed yard facilities design is not included

- Grade crossing design will be conceptual in support of track plan and profile
  - Diagnostic/surveillance review with UDOT will be conducted during the beginning of design phase
- Conceptual utility impact analysis and disposition shown on Site/Civil plans
  - One (1) Overhead power pole in rail yard
  - UDOT fiber line along east side of property (1,000 LF)
  - Review the initial utility information from UTA/PMSC for 30% effort will be to update mapping from Front Runner South based or utility company mapping (assumed to be ASCE 38-02 Level D designations)
  - 1 contact with each utility company to verify impact and mitigation effort
  - Conflict matrix will be provided
  - 1 virtual meeting per utility company
    - Assumed 10 companies for 2 hours w/minutes; HDR team will update the existing utility file from UTA/PSMC based activities from this task
- No structures except for minor retaining structure included in grading plans
- Geotechnical
  - **See attached Geostrata scope for Geotechnical tasks**
- Signal
  - **See attached PRE scope for Signal tasks**

- Union Pacific Railroad coordination led by PMSC. The following HDR efforts are included in the scope:
  - HDR team will provide exhibits and plans in accordance with UPRR criteria
  - One submittal of preliminary design plans as scoped above
  - One follow-up submittal including revisions based on UPRR comments
  - One set of constructability exhibits based on the sequence presented in the Warm Springs segment tech memo
  - Five (5) miscellaneous exhibits (11x17) as requested by UPRR through PMSC
  - Level of effort proposed assumes UPRR will approve the concept presented in the Warm Springs tech memo and accompanying exhibit

- **Environmental Services**
  - **Categorical Exclusion.** Technical Analysis and preparation of FTA Region 8's Categorical Exclusion (CE) Work Sheet will be prepared. FTA Region 8 CE Worksheet Instructions and Environmental Resources Information guidance will be followed for individual resource studies. HDR staff will work with UTA, the PMSC, and local resource agency staff, if necessary, on identification of issues and analysis related to the various topics listed below under Work Products.

    Field work will be conducted for necessary resources including:

    - **Noise.** The HDR team will conduct a general noise and vibration assessment and will prepare a technical report. The analysis and report will be prepared using methods and guidelines specified in FTA's Transit Noise and Vibration Impact Assessment (2018).
      - We assume that a general assessment will suffice per UTA's Evaluation Matrix which notes that no major impacts are anticipated to adjacent neighborhoods and because this is an industrial area.
      - If FTA does not agree with this approach, HDR will address any out-of-scope work necessary to conduct a more-detailed noise and vibration assessment with UTA and the PMSC prior to performing the work.
    - **Air Quality.** The HDR team will describe impacts to air quality both qualitatively and quantitatively. The air quality analysis will include a conformity analysis, analysis of Greenhouse Gas (GHG) emissions, and will evaluate and quantify impacts to criteria pollutants. If FTA does not agree with this approach or it is determined that a hot spot analysis for carbon monoxide is required, additional work will be conducted under a contract modification.
    - **Historic Properties and Section 106 Consultation**. **See Certus Environmental Solutions' scope for Section 106 consultation and historic properties assessment tasks.**
      - The HDR team will prepare Section 106 consultation materials and historic resources technical reports describing the methods, results, and National Register recommendations for the architectural and archaeological surveys.
      - The HDR team will draft a letter for FTA submittal to the State Historic Preservation Office (SHPO) showing a proposed area of potential effects (APE) and requesting concurrence with the APE, and drafting letters for FTA's use inviting consulting parties to participate in the Section 106 review process. Subconsultant Certus Environmental Solutions will identify potential consulting parties and federally recognized tribes for consultation and will draft consultation letters for review and submission by FTA. Certus will also assist in consultation with the SHPO regarding the APE, eligibility of resources for the National Register of Historic Places, and findings of effect.

- No separate 4(f) evaluation will be required.

- **Hazardous Materials.** No Phase I or Phase II Environmental Site Assessment (ESA) will be completed as part of the CE. HDR will perform a desktop search of applicable environmental databases, assess the likelihood of encountering contaminated soils or groundwater, specify the potential nature of contamination at sites identified in environmental databases, and define appropriate mitigation measures that could be implemented prior to construction.
- **Ecosystem Resources.** The HDR team will describe the existing wetlands, wildlife, vegetation, wildlife habitat, and threatened and endangered species in the study area. The resources will be combined to provide a description of the ecosystem.
    - A field survey of the study area will be conducted to document wildlife and vegetation in the corridor. The field survey will include a review for threatened and endangered species based on lists from the U.S. Fish and Wildlife Service (USFWS) and from the Utah Natural Heritage Program database.
    - A map will be prepared in GIS that shows habitat and vegetation types and locations of wetland and threatened and endangered species.
    - Consultation with USFWS, Corps, and Utah Division of Wildlife Resources will be conducted to develop methodologies, obtain data, and develop mitigation measures if necessary.
- **Wetlands and Waters of the United States.** Any existing wetland data will be obtained from the U.S. Army Corps of Engineers (Corps) and National Wetlands Inventory (NWI) maps. A wetland survey will be conducted and, if wetlands are found, a formal delineation of wetlands will be conducted, and applicable reports will be prepared under a contract modification.
    - If necessary, coordination with the Corps will be conducted regarding wetland impacts and likely Clean Water Act Section 404 permits required. No individual permit applications or pre-construction notifications for nationwide permits are included. If required, a conceptual wetland mitigation approach will be developed, but it will be preliminary and will not include any final design.

- **Mitigation and Environmental Permits.** The HDR team will clearly identify, in a mitigation table, the next steps that would need to be taken during final design, mitigation commitments, and anticipated required permits. The approach will be to obtain agreement from the agencies regarding what permits are required and which are not, under what conditions they are required, and what mitigation might be required in the permit.
- **Administrative Record.** The final project files will be delivered in electronic format with a database identifying material in the file. The electronic database can be searched to find records.

- **Public Outreach Support.** HDR will support the PMSC via person hours and collateral including documents, information, data, or graphics.

D. Work Products

- Preliminary Engineering to support the CE
  - Preliminary design plans as described in assumptions above
  - Utility conflict matrix
- UPRR Coordination materials as described in the assumptions above
- Public outreach support
  - Meeting invitation and 3 staff attendance for one (1) public meeting
  - Display materials for the meeting including maps, including up to six display boards and one set of aerials (optional)
- Draft and final CE Worksheet along with appropriate technical analyses and supporting figures and appendices
- Section 106 consultation materials and a Historic Resources Technical Report describing the methods, results, and National Register recommendations for the architectural and archaeological surveys will be prepared
- Map set showing surveyed environmental resources in the project area
- Mitigation and permits table(s)
- Electronic copy of administrative draft CE for internal review by UTA, PMSC, and FTA
- Comment/response matrix that responds to UTA, PMSC, and FTA comments on administrative draft CE
- Electronic copy of final CE for submission to FTA for approval and signature
- Composite utility identification and avoidance/protection/relocation information to be included in a utility report
- Preliminary quantity estimates and costs from engineering tasks
- Electronic format (DVD) administrative record(s), including GIS layers used for mapping

Task 3: Environmental Study for UTA Double Track Segment – South of Salt Lake

A. Proposed personnel:

Project Manager: Heidi Spoor

Environmental Lead: Audrey Unger

Design Lead: Travis Colledge

Support Staff: shown in Cost Estimate

B. Scope of Services.

3.1 Preliminary Design/Engineering

HDR will prepare preliminary (30%) design. A conceptual configuration layout will be provided to HDR by the PMSC. HDR will advance the conceptual configuration to a design level to conduct the environmental resource impact review required for the environmental document, and to estimate quantities and costs. Preliminary engineering will include:

- Rail and special trackwork as described in the South of Salt Lake segment tech memo and shown in the accompanying exhibit
- Structural design including proposed Mill Creek bridges and layout of ballast walls or small retaining walls if required for new track profiles and grading
- Geotechnical field sampling, analysis, and report preparation
- Track drainage design for new and relocated tracks
- Utilities impact evaluation and conceptual disposition based on the conceptual track design
- Civil and site development design
- At-grade crossings
- Right-of-way analysis and design as described in the South of Salt Lake segment tech memo and shown in the accompanying exhibit
- Conceptual signal quantities to support the track design

3.2 Environmental Services.

HDR will conduct environmental activities and prepare the CE worksheet for the double tracking project segment, including the following:

- HDR will conduct environmental resource impact review and documentation required to obtain a FTA approved NEPA document including field work, mapping, and reporting. This is anticipated to includecompleting the FTA CE worksheet. This is anticipated to consist oftwo review cycles by UTA and FTA.
- HDR will perform surveys and studies to support Section 106 and Section 4(f) requirements. Section 106agency consultation will be conducted by FTA. HDR will assist UTA with Section106 documentation.
- HDR will prepare map set showing surveyed environmental resources in the project area. HDR will submit GIS layers to UTA at the conclusion of the projects.
- HDR will prepare a table summarizing required mitigations and anticipated environmental permits for each project.

3.3 Public Outreach Support. HDR will support PMSC with documents, information, data, orgraphics. Support limited to hours provided in the cost estimate.

3.4 Union Pacific Railroad Coordination Support. HDR will prepare plans and exhibits in accordance with Union Pacific standards and criteria. PMSC will submit plans to and coordinatewith Union Pacific Railroad.

3.5 Quantities and Cost Estimate. HDR will prepare a quantity and cost estimate. Quantitytake-offs and estimates shall be coordinated with UTA and should be based on FTA's Standard Cost Codes (SCC).

C. Assumptions

- **Preliminary Design/Engineering**
  - Design drawings and existing base design files will be developed in MicroStation using UTA standard formats
  - UTA will provide all CAD files used to create the exhibits for each conceptual tech memo
  - The HDR team will prepare preliminary design plans in support of the CE. The scope assumes the preliminary engineering will not deviate from the concept shown in the South of Salt Lake Tech Memo and accompanying exhibit. The following design is included:
    - Track
      - Plan and profile plans at 1”=40’ scale
      - Typical sections
      - Special trackwork called out on plan sheets
    - Grading plans to support the track design (cut and fill lines and minor ballast wall or retaining structure layout, if required)
    - Conceptual drainage design shown on the track plan and profile sheets
    - Grade crossing design will be conceptual in support of track plan and profile
      - Diagnostic/surveillance review with UDOT will be conducted during the beginning of design phase
    - Conceptual utility impact analysis and disposition shown on rail plan sheets
      - Mt. Olympus 42” sewer line crossing casing at Sta 22410+50, potential need to extend casing
    - Structures – Preliminary engineering for new bridges over Mill Creek as shown in South of Salt Lake tech memo exhibit
      - Two single track bridges (one for proposed UTA Track #2 and one for relocated UPRR ML 2
      - Situation & Layout and typical section for each bridge
    - Geotechnical
      - **See attached Geostrata scope for Geotechnical tasks.**
    - Signal

- **See attached PRE scope for Signal tasks.**

- Union Pacific Railroad coordination led by PMSC. The following HDR efforts are included in the scope:
  - HDR team will provide exhibits and plans in accordance with UPRR criteria
  - One submittal of preliminary design plans as scoped above
  - One follow-up submittal including revisions based on UPRR comments
  - One set of constructability exhibits based on the sequence presented in the South of Salt Lake segment tech memo
  - Five (5) miscellaneous exhibits (11x17) as requested by UPRR through PSMC
  - Level of effort proposed assumes UPRR will approve the concept presented in the South of Salt Lake segment tech memo and accompanying exhibit

- **Environmental Services**
  - **Categorical Exclusion.** Technical Analysis and preparation of FTA Region 8's CE Work Sheet will be prepared. FTA Region 8 CE Worksheet Instructions and Environmental Resources Information guidance will be followed for individual resource studies. HDR staff will work with UTA, the PMSC, and local agency staff, if necessary, on identification of issues and analysis related to the various topics listed below under Work Products.

    Field work will be conducted for resources including:

    - **Noise.** The HDR team will conduct a general noise and vibration assessment and will prepare a technical report. The analysis and report will be prepared using methods and guidelines specified in FTA's Transit Noise and Vibration Impact Assessment (2018).
      - We assume that a general assessment will suffice per UTA's Evaluation Matrix which notes that no major impacts are anticipated to adjacent neighborhoods and because this is an industrial area.
      - If FTA does not agree with this approach, HDR will address any out-of-scope work necessary to conduct a more-detailed noise and vibration assessment with UTA and the PMSC prior to performing the work.
    - **Air Quality.** The HDR team will describe impacts to air quality both qualitatively and quantitatively. The air quality analysis will include a conformity analysis, analysis of Greenhouse Gas (GHG) emissions, and will evaluate and quantify impacts to criteria pollutants. If FTA does not agree with this approach or it is determined that a hot spot analysis for carbon monoxide is required, additional work will be conducted under a contract modification.
    - **Historic Properties and Section 106 Consultation**. **See Certus Environmental Solutions' scope for Section 106 consultation and historic properties assessment tasks.**

- The HDR team will prepare Section 106 consultation materials and historic resources technical reports describing the methods, results, and National Register recommendations for the architectural and archaeological surveys.
- The HDR team will draft a letter for FTA submittal to the State Historic Preservation Office (SHPO) showing a proposed area of potential effects (APE) and requesting concurrence with the APE, and drafting letters for FTA's use inviting consulting parties to participate in the Section 106 review process. Subconsultant Certus Environmental Solutions will identify potential consulting parties and federally recognized tribes for consultation and will draft consultation letters for review and submission by FTA. Certus will also assist in consultation with the SHPO regarding the APE, eligibility of resources for the National Register of Historic Places, and findings of effect.
- No separate 4(f) evaluation will be required.

- **Hazardous Materials**. No Phase I or Phase II Environmental Site Assessment (ESA) will be completed as part of the CE. HDR will perform a desktop search of applicable environmental databases, assess the likelihood of encountering contaminated soils or groundwater, specify the potential nature of contamination at sites identified in environmental databases, and define appropriate mitigation measures that could be implemented prior to construction.
- **Ecosystem Resources.** The HDR team will describe the existing wetlands, wildlife, vegetation, wildlife habitat, and threatened and endangered species in the study area. The resources will be combined to provide a description of the ecosystem.
    - A field survey of the study area will be conducted to document wildlife and vegetation in the corridor. The field survey will include a review for threatened and endangered species based on lists from the U.S. Fish and Wildlife Service (USFWS) and from the Utah Natural Heritage Program database.
    - A map will be prepared in GIS that shows habitat and vegetation types and locations of wetland and threatened and endangered species.
    - Consultation with USFWS, Corps, and Utah Division of Wildlife Resources will be conducted to develop methodologies, obtain data, and develop mitigation measures if necessary.
- **Wetlands and Waters of the United States.** Existing wetland data will be obtained from the U.S. Army Corps of Engineers (Corps) and National Wetlands Inventory (NWI) maps. A wetland survey will be conducted and, if wetlands are found, a formal delineation of wetlands will be conducted, and applicable reports will be prepared under a contract modification.

- If necessary, coordination with the Corps will be conducted regarding wetland impacts and likely Clean Water Act Section 404 permits required. No individual permit applications or pre-construction notifications for nationwide permits are included. If required, a conceptual wetland mitigation approach will be developed, but it will be preliminary and will not include any final design.

  - **Mitigation and Environmental Permits.** The HDR team will clearly identify, in a mitigation table, the next steps that would need to be taken during final design, mitigation commitments, and anticipated required permits. The approach will be to obtain agreement from the agencies regarding what permits are required and which are not, under what conditions they are required, and what mitigation might be required in the permit.

  - **Administrative Record**. The final project files will be delivered in electronic format with a database identifying material in the file. The electronic database can be searched to find records.

- **Public Outreach Support.** HDR will support the PMSC via person hours and collateral including documents, information, data, or graphics.

D. Work Products

- Preliminary Engineering to support the CE
  - Preliminary design plans as described in the assumptions above
  - Utility conflict matrix
- UPRR coordination materials as described in the assumptions above
- Public outreach support
  - Meeting invitation and 3 staff in attendance for one (1) public meeting
  - Display materials for the meeting including maps, including up to six display boards and one set of aerials
- Draft and final CE Worksheet along with appropriate technical analyses and supporting figures and appendices
- Section 106 consultation materials and a Historic Resources Technical Report describing the methods, results, and National Register recommendations for the architectural and archaeological surveys will be prepared
- Map set showing surveyed environmental resources in the project area
- Mitigation and permits table(s)
- Electronic copy of administrative draft CE for internal review by UTA, PMSC, and FTA
- Comment/response matrix that responds to UTA, PMSC, and FTA comments on administrative draft CE
- Electronic copy of final CE for submission to FTA for approval and signature

- Composite utility identification and avoidance/protection/relocation information to be included in a utility report
- Preliminary quantity estimates and costs from engineering tasks
- Electronic format (DVD) administrative record(s), including GIS layers used for mapping

Task 4: Environmental Study for UTA Double Track Segment – Murray

A. Proposed personnel:

Project Manager: Heidi Spoor

Environmental Lead: Audrey Unger

Design Lead: David McCune

Support Staff: shown in Cost Estimate

B. Scope of Services.

4.1 Preliminary Design/Engineering

HDR will prepare preliminary (30%) design. A conceptual configuration layout will be provided to HDR by the PMSC. HDR will advance the conceptual configuration to a design level to conduct the environmental resource impact review required for the environmental document, and to estimate quantities and costs. Preliminary engineering will include:

- Rail and special trackwork as described in the Murray segment tech memo and shown in the accompanying exhibit
- Structural design including proposed UTA Track #1 bridge and layout of ballast walls or small retaining walls if required for new track profiles and grading
- Geotechnical field sampling, analysis, and report preparation
- Track drainage design for new and relocated tracks
- Utilities impact evaluation and conceptual disposition based on the conceptual track design
- Civil and site development design
- At-grade crossings
- Right-of-way analysis and design as described in the Warm Springs segment tech memo and shown in the accompanying exhibit
- Conceptual signal quantities to support the track design

4.2 Environmental Services.

HDR will conduct environmental activities and prepare the CE worksheet for the double tracking project segment, including the following:

- HDR will conduct environmental resource impact review and documentation required to obtain a FTA approved NEPA document including field work,

mapping, and reporting. This is anticipated to include completing the FTA CE worksheet. This is anticipated to consist of two review cycles by UTA and FTA.

- HDR will perform surveys and studies to support Section 106 and Section 4(f) requirements. Section 106 agency consultation will be conducted by FTA. HDR will assist UTA with Section106 documentation.
- HDR will prepare map set showing surveyed environmental resources in the project area. HDR will submit GIS layers to UTA at the conclusion of the projects.
- HDR will prepare a table summarizing required mitigations and anticipated environmental permits for each project.

4.3 Public Outreach Support. HDR will support PMSC with documents, information, data, orgraphics. Support limited to hours provided in the attached cost estimate.

4.4 Union Pacific Railroad Coordination Support. HDR will prepare plans and exhibits in accordance with Union Pacific standards and criteria. PMSC will submit plans to and coordinatewith Union Pacific Railroad.

4.5 Quantities and Cost Estimate. HDR will prepare a quantity and cost estimate. Quantitytake-offs and estimates shall be coordinated with UTA and should be based on FTA's Standard Cost Codes (SCC).

C. Assumptions

- **Preliminary Design/Engineering**
  - Design drawings and existing base design files will be developed in MicroStation using UTA standard formats
  - UTA will provide all CAD files used to create the exhibits for each conceptual tech memo
  - The HDR team will prepare preliminary design plans in support of the CE. The scope assumes the preliminary engineering will not deviate from the concept shown in the Murray Segment tech memo and accompanying exhibit. The following design is included:
    - Track
      - Plan and profile plans at 1”=40’ scale
      - Typical sections
      - Special trackwork called out on plan sheets
    - Grading plans to support the track design (cut and fill lines and minor ballast wall or retaining structure layout, if required)
    - Conceptual drainage design shown on the track plan and profile sheets
    - Grade crossing design will be conceptual in support of track plan and profile
      - Diagnostic/surveillance review with UDOT will be conducted during the beginning of design phase
    - Conceptual utility impact analysis and disposition shown on rail plan sheets

- UTA communications duct bank for entire length of segment (8,200 LF)
- Murray City 60" storm drain along east side of existing tracks (2,075 LF)
- Murray City 52" storm drain along east side of existing tracks (600 LF)
- Two communications towers
- Murray city 8" water line crossing casing
- Dominion Energy gas line crossing casing
- Murray City 15" sewer line (250 LF)
- Murray City 24" storm drain crossing
- Murray Power transmission line crossing (1 pole)

▪ Structures – Preliminary engineering for new UTA Track #1 bridge over 5300 South

- Situation & Layout
- Typical Section

▪ Geotechnical

- **See attached Geostrata scope for Geotechnical tasks.**

▪ Signal

- **See attached PRE scope for Signal tasks.**

o Union Pacific Railroad coordination led by PMSC. The following HDR efforts are included in the scope:

▪ HDR team will provide exhibits and plans in accordance with UPRR criteria

▪ One submittal of preliminary design plans as scoped above

▪ One follow-up submittal including revisions based on UPRR comments

▪ One set of constructability exhibits based on the sequence presented in the Murray segment tech memo

▪ Five (5) miscellaneous exhibits (11x17) as requested by UPRR through PSMC

▪ Level of effort proposed assumes UPRR will approve the concept presented in the Murray segment tech memo and accompanying exhibit

- **Environmental Services**

o **Categorical Exclusion.** Technical Analysis and preparation of FTA Region 8's CE Work Sheet will be prepared. FTA Region 8 CE Worksheet Instructions and Environmental Resources Information guidance will be followed for individual

resource studies. HDR staff will work with UTA, the PMSC, and local agency staff, if necessary, on identification of issues and analysis related to the various topics listed below under Work Products.

Field work will be conducted for necessary resources including:

- **Noise.** The HDR team will conduct a general noise and vibration assessment and will prepare a technical report. The analysis and report will be prepared using methods and guidelines specified in FTA's Transit Noise and Vibration Impact Assessment (2018).
    - We assume that a general assessment will suffice per UTA's Evaluation Matrix which notes that no major impacts are anticipated to adjacent neighborhoods and because this is an industrial area.
    - If FTA does not agree with this approach, HDR will address any out-of-scope work necessary to conduct a more-detailed noise and vibration assessment with UTA and the PMSC prior to performing the work.
- **Air Quality.** The HDR team will describe impacts to air quality both qualitatively and quantitatively. The air quality analysis will include a conformity analysis, analysis of Greenhouse Gas (GHG) emissions, and will evaluate and quantify impacts to criteria pollutants. If FTA does not agree with this approach or it is determined that a hot spot analysis for carbon monoxide is required, additional work will be conducted under a contract modification.
- **Historic Properties and Section 106 Consultation. See Certus Environmental Solutions' scope for Section 106 consultation and historic properties assessment tasks.**
    - The HDR team will prepare Section 106 consultation materials and historic resources technical reports describing the methods, results, and National Register recommendations for the architectural and archaeological surveys.
    - The HDR team will draft a letter for FTA submittal to the State Historic Preservation Office (SHPO) showing a proposed area of potential effects (APE) and requesting concurrence with the APE, and drafting letters for FTA's use inviting consulting parties to participate in the Section 106 review process. Subconsultant Certus Environmental Solutions will identify potential consulting parties and federally recognized tribes for consultation and will draft consultation letters for review and submission by FTA. Certus will also assist in consultation with the SHPO regarding the APE, eligibility of resources for the National Register of Historic Places, and findings of effect.
    - No separate 4(f) evaluation will be required.
- **Hazardous Materials.** No Phase I or Phase II Environmental Site Assessment (ESA) will be completed as part of the CE. HDR will perform a desktop search of applicable environmental databases, assess the likelihood

of encountering contaminated soils or groundwater, specify the potential nature of contamination at sites identified in environmental databases, and define appropriate mitigation measures that could be implemented prior to construction.

- **Ecosystem Resources.** The HDR team will describe the existing wetlands, wildlife, vegetation, wildlife habitat, and threatened and endangered species in the study area. The resources will be combined to provide a description of the ecosystem.
    - A field survey of the study area will be conducted to document wildlife and vegetation in the corridor. The field survey will include a review for threatened and endangered species based on lists from the U.S. Fish and Wildlife Service (USFWS) and from the Utah Natural Heritage Program database.
    - A map will be prepared in GIS that shows habitat and vegetation types and locations of wetland and threatened and endangered species.
    - Consultation with USFWS, Corps, and Utah Division of Wildlife Resources will be conducted to develop methodologies, obtain data, and develop mitigation measures if necessary.
- **Wetlands and Waters of the United States.** Existing wetland data will be obtained from the U.S. Army Corps of Engineers (Corps) and National Wetlands Inventory (NWI) maps. A wetland survey will be conducted and, if wetlands are found, a formal delineation of wetlands will be conducted, and applicable reports will be prepared under a contract modification.
    - If necessary, coordination with the Corps will be conducted regarding wetland impacts and likely Clean Water Act Section 404 permits required. No individual permit applications or pre-construction notifications for nationwide permits are included. If required, a conceptual wetland mitigation approach will be developed, but it will be preliminary and will not include any final design.

- **Mitigation and Environmental Permits.** The HDR team will clearly identify, in a mitigation table, the next steps that would need to be taken during final design, mitigation commitments, and anticipated required permits. The approach will be to obtain agreement from the agencies regarding what permits are required and which are not, under what conditions they are required, and what mitigation might be required in the permit.
- **Administrative Record**. The final project files will be delivered in electronic format with a database identifying material in the file. The electronic database can be searched to find records.

- **Public Outreach Support.** HDR will support the PMSC via person hours and collateral including documents, information, data, or graphics.

D. Work Products

- Preliminary Engineering to support the CE
  - Preliminary design plans as described in the assumptions above
  - Utility conflict matrix
- UPRR coordination materials as described in the assumptions above
- Public outreach support
  - Meeting invitation and 3 staff in attendance for one (1) public meeting
  - Display materials for the meeting including maps, including up to six display boards and one set of aerials
- Draft and final CE Worksheet along with appropriate technical analyses and supporting figures and appendices
- Section 106 consultation materials and a Historic Resources Technical Report describing the methods, results, and National Register recommendations for the architectural and archaeological surveys will be prepared
- Map set showing surveyed environmental resources in the project area
- Mitigation and permits table(s)
- Electronic copy of administrative draft CE for internal review by UTA, PMSC, and FTA
- Comment/response matrix that responds to UTA, PMSC, and FTA comments on administrative draft CE
- Electronic copy of final CE for submission to FTA for approval and signature
- Composite utility identification and avoidance/protection/relocation information to be included in a utility report
- Preliminary quantity estimates and costs from engineering tasks
- Electronic format (DVD) administrative record(s), including GIS layers used for mapping

Task 5: Environmental Study for UTA Double Track Segment – Draper

A. Proposed personnel:

Project Manager: Heidi Spoor

Environmental Lead: Heidi Spoor

Design Lead: David McCune

Support Staff: shown in Cost Estimate

B. Scope of Services.

4.1 Preliminary Design/Engineering

HDR will prepare preliminary (30%) design. A conceptual configuration layout will be provided to HDR by the PMSC. HDR will advance the conceptual configuration to a design level to conduct the environmental resource impact review required for the environmental document, and to estimate quantities and costs. Preliminary engineering will include:

- Rail and special trackwork as described in the Draper segment tech memo and shown in the accompanying exhibit
- Structural design including new UTA Track #2 bridge over Bangerter Highway, New UTA Track #2 Bridge over 14400 South, and retaining walls
- Geotechnical field sampling, analysis, and report preparation
- Track drainage design for new and relocated tracks
- Utilities impact evaluation and conceptual disposition based on the conceptual track design
- Civil and site development design
- Right-of-way analysis and design as described in the Draper segment tech memo and shown in the accompanying exhibit
- Conceptual signal quantities to support the track design

4.2 Environmental Services.

HDR will conduct environmental activities and prepare required environmental documents for the double tracking project segment, including the following:

- HDR will conduct environmental resource impact review and documentation required to obtain a FTA approved NEPA document including field work, mapping, and reporting. This is anticipated to includecompleting the FTA CE worksheet. This is anticipated to consist of two review cycles by UTA and FTA.
- HDR will perform surveys and studies to support Section 106 and Section 4(f) requirements. Section 106 agency consultation will be conducted by FTA. HDR will assist UTA with Section106 documentation.
- HDR will prepare map set showing surveyed environmental resources in the project area. HDR will submit GIS layers to UTA at the conclusion of the projects.
- HDR will prepare a table summarizing required mitigations and anticipated environmental permits for each project.

4.3 Public Outreach Support. HDR will support PMSC with documents, information, data, orgraphics. Support limited to hours provided in the cost estimate.

4.4 Union Pacific Railroad Coordination Support. HDR will prepare plans and exhibits in accordance with Union Pacific standards and criteria. PMSC will submit plans to and coordinatewith Union Pacific Railroad.

4.5 Quantities and Cost Estimate. HDR will prepare a quantity and cost estimate. Quantitytake-offs and estimates shall be coordinated with UTA and should be based on FTA's Standard Cost Codes (SCC).

C. Assumptions

- **Preliminary Design/Engineering**
  - Design drawings and existing base design files will be developed in MicroStation using UTA standard formats
  - UTA will provide all CAD files used to create the exhibits for each conceptual tech memo
  - The HDR team will prepare preliminary design plans in support of the CE. The scope assumes the preliminary engineering will not deviate from the concept shown in the Draper Segment tech memo and accompanying exhibit. The following design is included:
    - Track
      - Plan and profile plans at 1”=40’ scale
      - Typical sections
      - Special trackwork called out on plan sheets
      - Level of effort assumes UTA MoW will approve the design exception noted in the Draper tech memo and PSMC will coordinate approval with UTA
    - Grading plans to support the track design (cut and fill lines and minor ballast wall or retaining structure layout, if required)
    - Conceptual drainage design shown on the track plan and profile sheets
    - Conceptual utility impact analysis and disposition shown on rail plan sheets
      - Murray City 60” storm drain along east side of existing tracks (2,075 LF)
      - UTA communications duct bank for the length of segment (13,600 LF)
      - Rocky Mountain Power 1 Phase overhead power line (3,900 LF)
      - Rocky Mountain Power 3 Phase overhead power line (1,000 LF)
      - Dominion energy 20” HP gas line crossing
      - Bluffdale City 18” water line crossing
    - Structures – Preliminary engineering for new UTA Track #2 Bridges over Bangerter Highway and 14400 South
      - Situation & Layouts for each bridge
      - Typical Sections for each bridge

- Retaining wall layouts and sections
- Box culvert extension situation and layout and section
- New crossing at 14600 South will be paid for and constructed under a separate project. Level of effort assumes no design or coordination for 14600 South bridge and that the 14400 South crossing will remain in place at the time of the Draper double track construction

▪ Geotechnical

- **See attached Geostrata scope for Geotechnical tasks.**

▪ Signal

- **See attached PRE scope for Signal tasks.**

o Union Pacific Railroad coordination led by PMSC. The following HDR efforts are included in the scope:

▪ HDR team will provide exhibits and plans in accordance with UPRR criteria

▪ One submittal of preliminary design plans as scoped above

▪ One follow-up submittal including revisions based on UPRR comments

▪ One set of constructability exhibits based on the sequence presented in the Murray segment tech memo

▪ Five (5) miscellaneous exhibits (11x17) as requested by UPRR through PSMC

▪ Level of effort proposed assumes UPRR will approve the concept presented in the Draper segment tech memo and accompanying exhibit

- **Environmental Services**

o **Categorical Exclusion.** Technical Analysis and preparation of FTA Region 8's CE Work Sheet will be prepared. FTA Region 8 CE Worksheet Instructions and Environmental Resources Information guidance will be followed for individual resource studies. HDR staff will work with UTA, the PMSC, and local agency staff, if necessary, on identification of issues and analysis related to the various topics listed below under Work Products.

Field work will be conducted for necessary resources including:

▪ **Noise.** The HDR team will conduct a general noise and vibration assessment and will prepare a technical report. The analysis and report will be prepared using methods and guidelines specified in FTA's Transit Noise and Vibration Impact Assessment (2018).

- We assume that a general assessment will suffice per UTA's Evaluation Matrix which notes that no major impacts are anticipated to adjacent neighborhoods and because this is an industrial area.

- If FTA does not agree with this approach, HDR will address any out-of-scope work necessary to conduct a more-detailed noise and vibration assessment with UTA and the PMSC prior to performing the work.

- **Air Quality.** The HDR team will describe impacts to air quality both qualitatively and quantitatively. The air quality analysis will include a conformity analysis, analysis of Greenhouse Gas (GHG) emissions, and will evaluate and quantify impacts to criteria pollutants. If FTA does not agree with this approach or it is determined that a hot spot analysis for carbon monoxide is required, additional work will be conducted under a contract modification.

- **Historic Properties and Section 106 Consultation. See Certus Environmental Solutions' scope for Section 106 consultation and historic properties assessment tasks.**

  - The HDR team will prepare Section 106 consultation materials and historic resources technical reports describing the methods, results, and National Register recommendations for the architectural and archaeological surveys.

  - The HDR team will draft a letter for FTA submittal to the State Historic Preservation Office (SHPO) showing a proposed area of potential effects (APE) and requesting concurrence with the APE, and drafting letters for FTA's use inviting consulting parties to participate in the Section 106 review process. Subconsultant Certus Environmental Solutions will identify potential consulting parties and federally recognized tribes for consultation and will draft consultation letters for review and submission by FTA. Certus will also assist in consultation with the SHPO regarding the APE, eligibility of resources for the National Register of Historic Places, and findings of effect.

  - No separate 4(f) evaluation will be required.

- **Hazardous Materials**. No Phase I or Phase II Environmental Site Assessment (ESA) will be completed as part of the CE. HDR will perform a desktop search of applicable environmental databases, assess the likelihood of encountering contaminated soils or groundwater, specify the potential nature of contamination at sites identified in environmental databases, and define appropriate mitigation measures that could be implemented prior to construction.

- **Ecosystem Resources.** The HDR team will describe the existing wetlands, wildlife, vegetation, wildlife habitat, and threatened and endangered species in the study area. The resources will be combined to provide a description of the ecosystem.

  - A field survey of the study area will be conducted to document wildlife and vegetation in the corridor. The field survey will include a review for threatened and endangered species based on lists from the U.S.

Fish and Wildlife Service (USFWS) and from the Utah Natural Heritage Program database.

- A map will be prepared in GIS that shows habitat and vegetation types and locations of wetland and threatened and endangered species.
- Consultation with USFWS, Corps, and Utah Division of Wildlife Resources will be conducted to develop methodologies, obtain data, and develop mitigation measures if necessary.

▪ **Wetlands and Waters of the United States.** Existing wetland data will be obtained from the U.S. Army Corps of Engineers (Corps) and National Wetlands Inventory (NWI) maps. A wetland survey will be conducted and, if wetlands are found, a formal delineation of wetlands will be conducted, and applicable reports will be prepared under a contract modification.

- If necessary, coordination with the Corps will be conducted regarding wetland impacts and likely Clean Water Act Section 404 permits required. No individual permit applications or pre-construction notifications for nationwide permits are included. If required, a conceptual wetland mitigation approach will be developed, but it will be preliminary and will not include any final design.

o **Mitigation and Environmental Permits.** The HDR team will clearly identify, in a mitigation table, the next steps that would need to be taken during final design, mitigation commitments, and anticipated required permits. The approach will be to obtain agreement from the agencies regarding exactly what permits are required and which are not, under what conditions they are required, and what mitigation might be required in the permit.

o **Administrative Record**. The final project files will be delivered in electronic format with a database identifying material in the file. The electronic database can be searched to find records.

- **Public Outreach Support.** HDR will support the PMSC via person hours and collateral including documents, information, data, or graphics.

D. Work Products

- Preliminary Engineering to support the CE
  - Preliminary design plans as described in assumptions above
  - Utility conflict matrix
- UPRR Coordination materials as described in the assumptions above
- Public outreach support
  - Meeting invitation and 3 staff in attendance for one (1) public meeting
  - Display materials for the meeting including maps, including up to six display boards and one set of aerials

- Draft and final CE Worksheet along with appropriate technical analyses and supporting figures and appendices
- Section 106 consultation materials and a Historic Resources Technical Report describing the methods, results, and National Register recommendations for the architectural and archaeological surveys will be prepared
- Map set showing surveyed environmental resources in the project area
- Mitigation and permits table(s)
- Electronic copy of administrative draft CE for internal review by UTA, PMSC, and FTA
- Comment/response matrix that responds to UTA, PMSC, and FTA comments on administrative draft CE
- Electronic copy of final CE for submission to FTA for approval and signature
- Composite utility identification and avoidance/protection/relocation information to be included in a utility report
- Preliminary quantity estimates and costs from engineering tasks
- Electronic format (DVD) administrative record(s), including GIS layers used for mapping

Task 6: Environmental Study for UTA Double Track Segment – Beck Yard

A. Proposed personnel:

Project Manager: Heidi Spoor

Environmental Lead: Audrey Unger

Support Staff: shown in Cost Estimate

B. Scope of Services.

2.1 Environmental Services.

HDR will conduct environmental activities and prepare the CE Worksheet for the double tracking project segment, including the following:

- HDR will conduct environmental resource impact review and documentation required to obtain a FTA approved NEPA document including but not limited to field work, mapping, and reporting. This is anticipated to include completing the FTA CE worksheet. This is anticipated to consist of two review cycles by UTA and FTA.

- HDR will perform surveys and studies to support Section 106 and Section 4(f)requirements. Section 106 agency consultation will be conducted by FTA. HDR will assist UTA with Section106 documentation.

- HDR will prepare map set showing surveyed environmental resources in the project area. HDR will submit GIS layers to UTA at the conclusion of the projects.
- HDR will prepare a table summarizing required mitigations and anticipated environmental permits for each project.

2.3 Public Outreach Support. HDR will support PMSC with documents, information, data, orgraphics. Support limited to hours provided in the attached cost estimate.

C. Assumptions

- **Environmental Services**
  - **Categorical Exclusion.** Technical Analysis and preparation of FTA Region 8's CE Work Sheet will be prepared. FTA Region 8 Categorical Exclusion Worksheet Instructions and Environmental Resources Information guidance will be followed for individual resource studies. HDR staff will work with UTA, the PMSC, and local resource agency staff, if necessary, on identification of issues and analysis related to the various topics listed below under Work Products. UTA and the PMSC will provide HDR with all relevant engineering drawings and other engineering-related information to help facilitate completion of the CE.

    Field work will be conducted for necessary resources including:

    - **Noise.** The HDR team will conduct a general noise and vibration assessment and will prepare a technical report. The analysis and report will be prepared using methods and guidelines specified in FTA's Transit Noise and Vibration Impact Assessment (2018).
      - We assume that a general assessment will suffice per UTA's Evaluation Matrix which notes that no major impacts are anticipated to adjacent neighborhoods and because this is an industrial area.
      - If FTA does not agree with this approach, HDR will address any out-of-scope work necessary to conduct a more-detailed noise and vibration assessment with UTA and the PMSC prior to performing the work.
    - **Air Quality.** The HDR team will describe impacts to air quality both qualitatively and quantitatively. The air quality analysis will include a conformity analysis, analysis of Greenhouse Gas (GHG) emissions, and will evaluate and quantify impacts to criteria pollutants. If FTA does not agree with this approach or it is determined that a hot spot analysis for carbon monoxide is required, additional work will be conducted under a contract modification.
    - **Historic Properties and Section 106 Consultation. See Certus Environmental Solutions' scope for Section 106 consultation and historic properties assessment tasks.**
      - The HDR team will prepare Section 106 consultation materials and historic resources technical reports describing the methods, results, and National Register recommendations for the architectural and archaeological surveys.

- The HDR team will draft a letter for FTA submittal to the State Historic Preservation Office (SHPO) showing a proposed area of potential effects (APE) and requesting concurrence with the APE, and drafting letters for FTA's use inviting consulting parties to participate in the Section 106 review process. Subconsultant Certus Environmental Solutions will identify potential consulting parties and federally recognized tribes for consultation and will draft consultation letters for review and submission by FTA. Certus will also assist in consultation with the SHPO regarding the APE, eligibility of resources for the National Register of Historic Places, and findings of effect.
- No separate 4(f) evaluation will be required.

- **Hazardous Materials.** No Phase I or Phase II Environmental Site Assessment (ESA) will be completed as part of the CE. HDR will perform a desktop search of applicable environmental databases, assess the likelihood of encountering contaminated soils or groundwater, specify the potential nature of contamination at sites identified in environmental databases, and define appropriate mitigation measures that could be implemented prior to construction.
- **Ecosystem Resources.** The HDR team will describe the existing wetlands, wildlife, vegetation, wildlife habitat, and threatened and endangered species in the study area. The resources will be combined to provide a description of the ecosystem.
  - A field survey of the study area will be conducted to document wildlife and vegetation in the corridor. The field survey will include a review for threatened and endangered species based on lists from the U.S. Fish and Wildlife Service (USFWS) and from the Utah Natural Heritage Program database.
  - A map will be prepared in GIS that shows habitat and vegetation types and locations of wetland and threatened and endangered species.
  - Consultation with USFWS, Corps, and Utah Division of Wildlife Resources will be conducted to develop methodologies, obtain data, and develop mitigation measures if necessary.
- **Wetlands and Waters of the United States.** Existing wetland data will be obtained from the U.S. Army Corps of Engineers (Corps) and National Wetlands Inventory (NWI) maps. A wetland survey will be conducted and, if wetlands are found, a formal delineation of wetlands will be conducted, and applicable reports will be prepared under a contract modification.
  - If necessary, coordination with the Corps will be conducted regarding wetland impacts and likely Clean Water Act Section 404 permits required. No individual permit applications or pre-construction notifications for nationwide permits are included. If required, a conceptual wetland mitigation approach will be developed, but it will be preliminary and will not include any final design.

- **Mitigation and Environmental Permits.** The HDR team will clearly identify, in a mitigation table, the next steps that would need to be taken during final design, mitigation commitments, and anticipated required permits. The approach will be to obtain agreement from the agencies regarding what permits are required and which are not, under what conditions they are required, and what mitigation might be required in the permit.
- **Administrative Record**. The final project files will be delivered in electronic format with a database identifying material in the file. The electronic database can be searched to find records.

- **Public Outreach Support.** HDR will support the PMSC via person hours and collateral including documents, information, data, or graphics.

D. Work Products

- Public outreach support
  - Meeting invitation and 3 staff in attendance for one (1) public meeting
  - Display materials for the meeting including maps, including up to six display boards and one set of aerials
- Draft and final CE Worksheet along with appropriate technical analyses and supporting figures and appendices
- Section 106 consultation materials and a Historic Resources Technical Report describing the methods, results, and National Register recommendations for the architectural and archaeological surveys will be prepared
- Map set showing surveyed environmental resources in the project area
- Mitigation and permits table(s)
- Electronic copy of administrative draft CE for internal review by UTA, PMSC, and FTA
- Comment/response matrix that responds to UTA, PMSC, and FTA comments on administrative draft CE
- Electronic copy of final CE for submission to FTA for approval and signature
- Electronic format (DVD) administrative record(s), including GIS layers used for mapping

CLIENT: Utah Transit Authority

Project Number: TBD

Project Name: Front Runner Forward, Initial Investment Projects PKG1

12/21/2021

LABOR

Name		Position	Rate	Task 1 Project Management Hours	Task 1 Project Management Total	Task 2 WarmSprings Hours	Task 2 WarmSprings Total	Task 3 South of Salt Lake Hours	Task 3 South of Salt Lake Total	Task 4 Murray Hours	Task 4 Murray Total	Task 5 Draper Hours	Task 5 Draper Total	Task 6 Beck Yard Sid ing Hours	Task 6 Beck Yard Sid ing Total	Total Hours	All Tasks Total
Spoor	Heidi	Contract/Project Manager	$ 83.83	220	18,442.60	125	10,478.75	30	2,514.90	22	1,844.26	135	11,317.05	125	10,478.75	657	55,076.31
Unger	Audrey	Task Order Manager	$ 81.35	82	6,670.70	10	813.50	115	9,355.25	115	9,355.25	10	813.50	10	813.50	342	27,821.70
Perkins	Mike	Wetlands/Wildlife/Agency Coordination	$ 59.50	0	-	64	3,808.00	0	-	64	3,808.00	0	-	0	-	128	7,616.00
Croft	Amy	Wetlands/Wildlife/Air Quality	$ 52.59	0	-	0	-	64	3,365.76	0	-	64	3,365.76	64	3,365.76	192	10,097.28
Liebsch	Ed	Air Quality	$ 100.26	0	-	8	802.08	16	1,604.16	24	2,406.24	16	1,604.16	6	601.56	70	7,018.20
Delu	Nina	Tribal Cultural	$ 70.88	0	-	0	-	0	-	0	-	32	2,268.16	0	-	32	2,268.16
Parsons	Michael	Noise/Vibration	$ 67.80	0	-	0	-	24	1,627.20	20	1,356.00	0	-	0	-	44	2,983.20
Buck	Adam	Noise/Vibration	$ 42.64	0	-	16	682.24	0	-	0	-	24	1,023.36	12	511.68	52	2,217.28
Clayton	Andrea	Enviromental QC/QA	$ 82.60	0	-	2	165.20	2	165.20	2	165.20	2	165.20	2	165.20	10	826.00
Warner	Terry	Hazardous Materials	$ 98.01	0	-	16	1,568.16	16	1,568.16	32	3,136.32	16	1,568.16	16	1,568.16	96	9,408.96
Flansberg	Jacob	Floodplains/Water Quality	$ 39.63	0	-	17	673.71	17	673.71	17	673.71	16	634.08	16	634.08	83	3,289.29
Tzioumis	Travis	GIS/Mapping	$ 36.45	0	-	56	2,041.20	0	-	56	2,041.20	0	-	0	-	112	4,082.40
Sellars	Adrian	GIS/Mapping	$ 40.12	0	-	0	-	56	2,246.72	0	-	56	2,246.72	56	2,246.72	168	6,740.16
Ulrich	Carrie	Technical Editor	$ 51.18	0	-	24	1,228.32	24	1,228.32	24	1,228.32	24	1,228.32	24	1,228.32	120	6,141.60
Dennis	Jackie	Public Outreach Support	$ 65.71	0	-	8	525.68	8	525.68	8	525.68	8	525.68	8	525.68	40	2,628.40
Hunt	Crissy	Public Outreach Support	$ 42.31	0	-	8	338.48	8	338.48	8	338.48	8	338.48	8	338.48	40	1,692.40
Gray	Brian	Public Outreach Support	$ 28.78	0	-	16	460.48	16	460.48	16	460.48	16	460.48	16	460.48	80	2,302.40
Kilpatrick	Kevin	Land Use/Socioeconomics	$ 75.10	0	-	8	600.80	12	901.20	12	901.20	12	901.20	8	600.80	52	3,905.20
Colledge	Travis	Engineering Lead/Site Civil	$ 82.00	90	7,380.00	164	13,448.00	140	11,480.00	0	-	0	-	0	-	394	32,308.00
McCune	David	Engineering Lead	$ 101.34	90	9,120.60	0	-	0	-	120	12,160.80	120	12,160.80	0	-	330	33,442.20
Baggott	Daniel	Rail & Special Track	$ 59.50	0	-	0	-	0	-	210	12,495.00	180	10,710.00	0	-	390	23,205.00
Klaumann	Tony	Rail & Special Track	$ 61.62	0	-	228	14,049.36	0	-	24	1,478.88	24	1,478.88	0	-	276	17,007.12
Johnston	Kelly	Site Civil/Roadway	$ 42.01	0	-	200	8,402.00	0	-	0	-	0	-	0	-	200	8,402.00
Entzel	Chris	Site Civil/Roadway	$ 74.77	0	-	0	-	0	-	40	2,990.80	0	-	0	-	40	2,990.80
Blumenkamp	John	At- Grade Crossing	$ 88.67	0	-	0	-	0	-	24	2,128.08	0	-	0	-	24	2,128.08
Pope	Bill	Drainage	$ 70.99	0	-	4	283.96	0	-	24	1,703.76	24	1,703.76	0	-	52	3,691.48
Beutler	Nathan	Drainage	$ 58.60	0	-	80	4,688.00	0	-	0	-	0	-	0	-	80	4,688.00
Wilson	Nash	Structures	$ 62.35	0	-	0	-	40	2,494.00	20	1,247.00	40	2,494.00	0	-	100	6,235.00
Christensen	Colby	Structures	$ 76.88	0	-	0	-	80	6,150.40	4	307.52	16	1,230.08	0	-	100	7,688.00
Buttenob	John	Engineering QC/QA	$ 116.71	0	-	4	466.84	4	466.84	0	-	0	-	0	-	8	933.68
Semenick	Rich	Design QC/QA	$ 129.21	0	-	2	258.42	0	-	16	2,067.36	16	2,067.36	0	-	34	4,393.14
Young	Steve	Cost Estimating	$ 75.96	0	-	48	3,646.08	48	3,646.08	48	3,646.08	48	3,646.08	0	-	192	14,584.32
Halsted	Patrick	UPPR Coordination	$ 106.61	0	-	0	-	0	-	12	1,279.32	12	1,279.32	0	-	24	2,558.64
Reasch	Larry	Project Principal	$ 126.32	8	1,010.56	0	-	0	-	0	-	0	-	0	-	8	1,010.56
Elton	Cindy	Project Coordinator	$ 41.38	24	993.12	0	-	0	-	0	-	0	-	0	-	24	993.12
Hill	Shauna	Project Accountant	$ 41.25	72	2,970.00	0	-	0	-	0	-	0	-	0	-	72	2,970.00
		Labor		586	$ 46,587.58	1108	$ 69,429.26	720	$ 50,812.54	962	$ 69,744.94	919	$ 65,230.59	371	$ 23,539.17	4666	$ 325,344.08
		Overhead	147.06%		68,511.70		102,102.67		74,724.92		102,566.91		95,928.11		34,616.70		478,451.00
		Direct Labor			$ 115,099.28		$ 171,531.93		$ 125,537.46		$ 172,311.85		$ 161,158.70		$ 58,155.87		$ 803,795.08
		Fee	10%		11,509.93		17,153.19		12,553.75		17,231.18		16,115.87		5,815.59		80,379.51
		Total Labor			$ 126,609.20		$ 188,685.12		$ 138,091.21		$ 189,543.03		$ 177,274.57		$ 63,971.46		$ 884,174.59
																check	$ 884,174.59
DIRECT EXPENSES			ODC SubTotal		$ 499.00		$ 604.00		$ 604.00		$ 679.00		$ 679.00		$ 604.00		$3,669.00
SUBCONTRACTORS		**Certus**			$ 1,926.42		$ 1,834.72		$ 2,260.41		$ 2,548.17		$ 3,154.72		$ 1,846.32		$ 13,570.76
		CRS					$ 40,279.60		$ 37,662.69		$ 37,662.69		$ 40,279.60				$ 155,884.58
		GeoStrata					$ 15,650.00		$ 37,350.00		$ 26,300.00		$ 61,750.00				$ 141,050.00
		MottMacDonald			$ 15,137.00				$ 96,731.00								$ 111,868.00
		PRE					$ 19,072.00		$ 19,072.00		$ 19,072.00		$ 19,072.00				$ 76,288.00
			Subcontracts Subtotal		$ 17,063.42		$ 76,836.32		$ 193,076.10		$ 85,582.86		$ 124,256.32		$ 1,846.32		$ 498,661.34
TOTAL				**PM**	$ 144,171.62	**WarmSrings**	$ 266,125.44	**South SLC**	$ 331,771.31	**Murray**	$ 275,804.89	**DRAPER**	$ 302,209.89	**Beck Yard**	$ 66,421.78		$1,386,504.93

Front Runner Forward, Initial Investment Projects PKG1
Estimate of Person Hours
HDR ENGINEERING, INC.

TASK NO	ACT ID	TASK DESCRIPTION	Speer Heidi Contract/ Project Manager	Unger Audrey Task Order Manager	Perkins Mike Wetlands/ Wildlife	Croft Amy Wetlands/ Wildlife/ AQ	Liebsch Ed Air Quality	Delu Nina Tribal Cultural	Parsons Michael Noise/ Vibration	Buck Adam Noise/ Vibration	Warner Terry Hazardous Materials	Flansberg Jacob Floodplains/ WQ	Tzioumis Travis GIS/ Mapping	Sellars Adrian GIS/ Mapping	Ulrich Carrie Technical Editor	Dennis Jackie Public Outreach Support	Hunt Crissy Public Outreach Support	Gray Brian Public Outreach Support	Kilpatrick Kevin Land Use/ Socio	Colledge Travis Engineer Lead/ Site Civil	McCune David Engineer Lead	Baggott Daniel Rail & Special Track	Klaumann Tony Rail & Special Track	Johnston Kelly Site Civil/ Roadway	Entzel Chris Site Civil/ Roadway	Blumenkamp John Al- Grade Crossing	Pope Bill Drainage	Beutler Nathan Drainage	Wilson Nash Structures	Christense Colby Structures	Buttenob John Engineer QC/QA	Semenick Rich Design QC/QA	Young Steve Cost Estimating	Halsted Patrick UPPR Coord	Reasch Larry Project Principal	Elton Cindy Project Coordinator	Hill Shauna Project Accountant	HOURS
1.0		**PROJECT MANAGEMENT**																																			
		BI-MONTHLY STATUS MEETINGS (18 MONTHS, 2 HOUR PER PLUS PREP/NOTES)	144	72																72	72														8			368
		MONTHLY INVOICING AND STATUS REPORT	36	10																10	10														24	72	162
		QA/QC PLAN, PROJECT GUIDE, AND PROJECT MANAGEMENT PLAN	40																	8	8																56
		Task1 Direct Labor Total Hours	**220**	**82**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**90**	**90**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**24**	**72**	**586**
2.0		**WARM SPRINGS**																																			
2.1		**PRELIMINARY DESIGN**																																			
		Track/Special Track/Signals																		50				160													240
		Structures																																			0
		Utilities/ Drainage/Civil/At-Grade Xings																		80		0			120			4	84								288
		ROW																																			0
		Prepare Map Set																		4				40	40				16			4	2				106
																																					0
		task 2.1 subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	134	0	0	200	160	0	0	4	80	0	0	4	2	0	0	0	0	614
2.2		**ENVIRONMENTAL SERVICES**																																			
		Field Work (Bio/Aquatics/Cultural)			16								4																								20
		Survey Reports	2		24							1	4		4																						35
		Prepare NEPA Documentation, CatEx with Mitigation Table, Fig., and Graphics	80	8	24		8			16	16	16	32		20				8																		230
		Submit Draft to UTA	4																																		4
		Revise and Submit Draft to FTA	24	2									4																								30
		Finalize and Coordinate Signatures	4																																		4
		Assemble GIS Files	1										12																								13
																									1												0
		task 2.2 subtotal	115	10	64	0	8	0	0	16	16	17	56	0	24	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	336
2.3		**PUBLIC OUTREACH SUPPORT**																																			
		Prepare documents, information, graphics	10													8	8	16						4	8												54
													0			0																						0
		task 2.3 subtotal	10	0	0	0	0	0	0	0	0	0	0	0	0	8	8	16	0	0	0	0	4	8	0	0	0	0	0	0	0	0	0	0	0	0	54
2.4		**UP COORDINATION SUPPORT**																																			
		Prepare Plans and Exhibits																						8	16												24
													0			0																						0
		task 2.4 subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	16	0	0	0	0	0	0	0	0	0	0	0	0	24
2.5		**QUANTITIES AND COST ESTIMATE**																																			
		Generate Quantities and Prepare Estimate											0											16	16												72
		Transmittal Memo																																			8	8
													0			0																						0
		task 2.5 subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	16	0	0	0	0	0	0	0	0	40	48	0	8	0	80
		Task 2 Direct Labor Total Hours	**125**	**10**	**64**	**0**	**8**	**0**	**0**	**16**	**16**	**17**	**56**	**0**	**24**	**8**	**8**	**16**	**8**	**134**	**0**	**0**	**228**	**200**	**0**	**0**	**4**	**80**	**0**	**0**	**4**	**2**	**48**	**8**	**0**	**8**	**0**	**1108**

Front Runner Forward, Initial Investment Projects PKG1
Estimate of Person Hours
HDR ENGINEERING, INC.

TASK NO	ACT ID	TASK DESCRIPTION	Spoor Heidi Contract/ Project Manager	Unger Audrey Task Order Manager	Perkins Mike Wetlands/ Wildlife	Croft Amy Wetlands/ Wildlife/ AQ	Liebsch Ed Air Quality	Delu Nina Tribal Cultural	Parsons Michael Noise/ Vibration	Buck Adam Noise/ Vibration	Warner Terry Hazardous Materials	Flansberg Jacob Floodplains/ WQ	Tziounis Travis GIS/ Mapping	Sellars Adrian GIS/ Mapping	Ulrich Carrie Technical Editor	Dennis Jackie Public Outreach Support	Hunt Crissy Public Outreach Support	Gray Brian Public Outreach Support	Kilpatrick Kevin Land Use/ Socio	Colledge Travis Engineer Lead/ Site Civil	McCune David Engineer Lead	Baggott Daniel Rail & Special Track	Klaumann Tony Rail & Special Track	Johnston Kelly Site Civil/ Roadway	Entzel Chris Site Civil/ Roadway	Blumenkar John Al- Grade Crossing	Pope Bill Drainage	Beutler Nathan Drainage	Wilson Nash Structures	Christense Colby Structures	Buttenob John Engineer QC/QA	Semenick Rich Design QC/QA	Young Steve Cost Estimating	Halsted Patrick UPPR Coord	Reasch Larry Project Principal	Elton Cindy Project Coordinator	Hill Shauna Project Accountant	HOURS
3.0		SOUTH OF SALT LAKE																																			
3.1		PRELIMINARY DESIGN																																			
		Track/Special Track/Signals																		64		0															64
		Structures																												40	80							120
		Utilities/ Drainage/Civil/At-Grade Xings																		64																		64
		ROW																																				0
		Prepare Map Set																		4													4					8
																																						0
		task 3.1 subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	132	0	0	0	0	0	0	0	0	0	40	80	4	0	0	0	0	0	256
3.2		ENVIRONMENTAL SERVICES																																				
		Field Work (Bio/Aquatics/Cultural)				16								4																								20
		Survey Reports		2		24						1		4	4																							35
		Prepare NEPA Documentation, Cell s with Mitigation Table, Fig , and Graphics	8	80		24	16		24		16	16		32	20				12																		250
		Submit Draft to UTA		4																																		4
		Revise and Submit Draft to FTA	2	24										4																								30
		Finalize and Coordinate Signatures		4																																		4
		Assemble GIS Files		1										12																								13
																																						0
		task 3.2 subtotal	10	115	0	64	16	0	24	0	16	17	0	56	24	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	356
3.3		PUBLIC OUTREACH SUPPORT																																				
		Prepare documents, information, graphics	10													8	8	16																				42
													0			0																							0
		task 3.3 subtotal	10	0	0	0	0	0	0	0	0	0	0	0	0	8	8	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42
3.4		UP COORDINATION SUPPORT																																				
		Prepare Plans and Exhibits	10																																			10
													0				0																						0
		task 3.4 subtotal	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
3.5		QUANTITIES AND COST ESTIMATE																																				
		Generate Quantities and Prepare Estimate											0							4														40					44
		Transmittal Memo																		4														8					12
													0				0																						0
		task 3.5 subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	48	0	0	0	56
	Task 3	Direct Labor Total Hours	30	115	0	64	16	0	24	0	16	17	0	56	24	8	8	16	12	140	0	0	0	0	0	0	0	0	0	40	80	4	0	48	0	0	0	720

Front Runner Forward, Initial Investment Projects PKG1
Estimate of Person Hours
HDR ENGINEERING, INC.

TASK NO	ACT ID	TASK DESCRIPTION	Spoor Heidi Contract/ Project Manager	Unger Audrey Task Order Manager	Perkins Mike Wetlands/ Wildlife	Croft Amy Wetlands/ Wildlife/ AQ	Liebsch Ed Air Quality	Delu Nina Tribal Cultural	Parsons Michael Noise/ Vibration	Buck Adam Noise/ Vibration	Warner Terry Hazardous Materials	Flansberg Jacob Floodplains/ WQ	Tziounis Travis GIS/ Mapping	Sellars Adrian GIS/ Mapping	Ulrich Carrie Technical Editor	Dennis Jackie Public Outreach Support	Hunt Crissy Public Outreach Support	Gray Brian Public Outreach Support	Kilpatrick Kevin Land Use/ Socio	Colledge Travis Engineer Lead/ Site Civil	McCune David Engineer Lead	Baggott Daniel Rail & Special Track	Klaumann Tony Rail & Special Track	Johnston Kelly Site Civil/ Roadway	Entzel Chris Site Civil/ Roadway	Blumenkamp John Al- Grade Crossing	Pope Bill Drainage	Beutler Nathan Drainage	Wilson Nash Structures	Christensen Colby Structures	Buttenob John Engineer QC/QA	Semenick Rich Design QC/QA	Young Steve Cost Estimating	Halsted Patrick UPPR Coord	Reasch Larry Project Principal	Elton Cindy Project Coordinator	Hill Shauna Project Accountant	HOURS
4.0		MURRAY																																			
4.1		PRELIMINARY DESIGN																																			
		Track/Special Track/Signals																		120	120	24						20	4								288
		Structures																																			0
		Utilities/ Drainage/Civil/At-Grade Xings																							40	24	24										88
		ROW																																			0
		Prepare Map Set																			60												8				68
																																					0
		task 4.1 subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120	180	24	0	40	24	24	0	20	4	0	8	0	0	0	0	0	444
4.2		ENVIRONMENTAL SERVICES																																			
		Field Work (Bio/Aquatics/Cultural)			16								4																								20
		Survey Reports	2	2	24							1	4		4																						37
		Prepare NEPA Documentation, Cells with Mitigation Table, Fig., and Graphics		80	24		24		20		32	15	32		20				12																		262
		Submit Draft to UTA		4																																	4
		Revise and Submit Draft to FTA		24									4																								28
		Finalize and Coordinate Signatures		4																																	4
		Assemble GIS Files		1									12																								13
																																					0
		task 4.2 subtotal	2	115	64	0	24	0	20	0	32	17	56	0	24	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	368
4.3		PUBLIC OUTREACH SUPPORT																																			
		Prepare documents, information, graphics	10													8	8	16																			42
													0			0																					0
		task 4.3 subtotal	10	0	0	0	0	0	0	0	0	0	0	0	0	8	8	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42
4.4		UP COORDINATION SUPPORT																																			
		Prepare Plans and Exhibits	10																		30												8				48
													0			0																					0
		task 4.4 subtotal	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	48
4.5		QUANTITIES AND COST ESTIMATE																																			
		Generate Quantities and Prepare Estimate																																	40	12				52
		Transmittal Memo																																	8				8
													0			0																						0
		task 4.5 subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	12	0	0	60
		Task 4 Direct Labor Total Hours	**22**	**115**	**64**	**0**	**24**	**0**	**20**	**0**	**32**	**17**	**56**	**0**	**24**	**8**	**8**	**16**	**12**	**0**	**120**	**210**	**24**	**0**	**40**	**24**	**24**	**0**	**20**	**4**	**0**	**16**	**48**	**12**	**0**	**0**	**0**	**962**

Front Runner Forward, Initial Investment Projects PKG1
Estimate of Person Hours
HDR ENGINEERING, INC.

TASK NO	ACT ID	TASK DESCRIPTION	Spoor Heidi Contract/ Project Manager	Unger Audrey Task Order Manager	Perkins Mike Wetlands/ Wildlife	Croft Amy Wetlands/ Wildlife/ AQ	Liebsch Ed Air Quality	Delu Nina Tribal Cultural	Parsons Michael Noise/ Vibration	Buck Adam Noise/ Vibration	Warner Terry Hazardous Materials	Flansberg Jacob Floodplains/ WQ	Tziounis Travis GIS/ Mapping	Sellars Adrian GIS/ Mapping	Ulrich Carrie Technical Editor	Dennis Jackie Public Outreach Support	Hunt Crissy Public Outreach Support	Gray Brian Public Outreach Support	Kilpatrick Kevin Land Use/ Socio	Colledge Travis Engineer Lead/ Site Civil	McCune David Engineer Lead	Baggott Daniel Rail & Special Track	Klaumann Tony Rail & Special Track	Johnston Kelly Site Civil/ Roadway	Entzel Chris Site Civil/ Roadway	Blumenkamp John Al- Grade Crossing	Pope Bill Drainage	Beutler Nathan Drainage	Wilson Nash Structures	Christensen Colby Structures	Buttenob John Engineer QC/QA	Semenick Rich Design QC/QA	Young Steve Cost Estimating	Halsted Patrick UPPR Coord	Reasch Larry Project Principal	Elton Cindy Project Coordinator	Hill Shauna Project Accountant	HOURS
5.0		**DRAPER**																																			
5.1		**PRELIMINARY DESIGN**																																			
		Track/Special Track/Signals																		120	100	24															244
		Structures																												40	16							56
		Utilities/ Drainage/Civil/At-Grade Xings																									24											24
		ROW																																				0
		Prepare Map Set																			50												8					58
																																						0
		task 5.1 subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120	150	24	0	0	0	24	0	40	16	0	8	0	0	0	0	0	382
5.2		**ENVIRONMENTAL SERVICES**																																			
		Field Work (Bio/Aquatics/Cultural)				16								4																							20
		Survey Reports	2			24								4	4																						34
		Prepare NEPA Documentation, Cell s with Mitigation Table, Fig , and Graphics	80	8		24	16	32		24	16	16		32	20				12																		282
		Submit Draft to UTA	4																																		4
		Revise and Submit Draft to FTA	24	2										4																							30
		Finalize and Coordinate Signatures	4																																		4
		Assemble GIS Files	1											12																							13
																																					0
		task 5.2 subtotal	115	10	0	64	16	32	0	24	16	16	0	56	24	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	387
5.3		**PUBLIC OUTREACH SUPPORT**																																			
		Prepare documents, information, graphics	10													8	8	16																			42
																																					0
		task 5.3 subtotal	10	0	0	0	0	0	0	0	0	0	0	0	0	8	8	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42
5.4		**UP COORDINATION SUPPORT**																																			
		Prepare Plans and Exhibits	10																		30												8		12			60
																																						0
		task 5.4 subtotal	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	0	0	0	0	0	0	8	0	12	0	0	0	60
5.5		**QUANTITIES AND COST ESTIMATE**																																			
		Generate Quantities and Prepare Estimate																																40				40
		Transmittal Memo																																8				8
																																					0
		task 5.5 subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	0	0	0	48
	Task 5	**Direct Labor Total Hours**	135	10	0	64	16	32	0	24	16	16	0	56	24	8	8	16	12	0	120	180	24	0	0	0	24	0	40	16	0	16	48	12	0	0	0	919

Front Runner Forward, Initial Investment Projects PKG1

Estimate of Person Hours

HDR ENGINEERING, INC.

TASK NO	ACT ID	TASK DESCRIPTION	Spoor Heidi	Unger Audrey	Perkins Mike	Croft Amy	Liebsch Ed	Delu Nina	Parsons Michael	Buck Adam	Warner Terry	Flansberg Jacob	Tzioumis Travis	Sellars Adrian	Ulrich Carrie	Dennis Jackie	Hunt Crissy	Gray Brian	Kilpatrick Kevin	Colledge Travis	McCune David	Baggott Daniel	Klaumann Tony	Johnston Kelly	Entzel Chris	Blumenkar John	Pope Bill	Beutler Nathan	Wilson Nash	Christense Colby	Buttenob John	Semenick Rich	Young Steve	Halsted Patrick	Reasch Larry	Elton Cindy	Hill Shauna	HOURS
			Contract/ Project Manager	Task Order Manager	Wetlands/ Wildlife	Wetlands/ Wildlife/ AQ	Air Quality	Tribal Cultural	Noise/ Vibration	Noise/ Vibration	Hazardous Materials	Floodplains/ WQ	GIS/ Mapping	GIS/ Mapping	Technical Editor	Public Outreach Support	Public Outreach Support	Public Outreach Support	Land Use/ Socio	Engineer Lead/ Site Civil	Engineer Lead	Rail & Special Track	Rail & Special Track	Site Civil/ Roadway	Site Civil/ Roadway	At- Grade Crossing	Drainage	Drainage	Structures	Structures	Engineer QC/QA	Design QC/QA	Cost Estimating	UPPR Coord	Project Principal	Project Coordinator	Project Accountant	
6.0		**BECK YARD SIDING**																																			
		PRELIMINARY DESIGN																																			
		Not Included																																			0
		task 6.0 subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6.1		**ENVIRONMENTAL SERVICES**																																			
		Field Work (Bio/Aquatics/Cultural)				16								4																							20
		Survey Reports	2			24								4	4																						34
		Prepare NEPA Documentation, CatEx with Mitigation Table, Fig., and Graphics	80	8		24	6			12	16	16		32	20				8																	224
		Submit Draft to UTA	4																																		4
		Revise and Submit Draft to FTA	24	2										4																							30
		Finalize and Coordinate Signatures	4																																		4
		Assemble GIS Files	1											12																							13
																																					0
		task 6.1 subtotal	115	10	0	64	6	0	0	12	16	16	0	56	24	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	329
6.2		**PUBLIC OUTREACH SUPPORT**																																			
		Prepare documents, Information, graphics	10													8	8	16																			42
																																					0
		task 6.2 subtotal	10	0	0	0	0	0	0	0	0	0	0	0	0	8	8	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42
		UP COORDINATION SUPPORT																																			
		Not Included																																			0
																																					0
		subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		QUANTITIES AND COST ESTIMATE																																			
		Not Included																																			0
																																					0
		subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Task 5 Direct Labor Total Hours	125	10	0	64	6	0	0	12	16	16	0	56	24	8	8	16	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	371
		All Tasks (1-5) Direct Labor Total Hours	657	342	128	192	70	32	44	52	96	83	112	168	120	40	40	80	52	394	330	390	276	200	40	24	52	80	100	100	8	34	192	24	8	24	72	4666
		All Tasks Per Cent Per Person	14.08%	7.33%	2.74%	4.11%	1.50%	0.69%	0.94%	1.11%	2.06%	1.78%	2.40%	3.60%	2.57%	0.86%	0.86%	1.71%	1.11%	8.44%	7.07%	8.36%	5.92%	4.29%	0.86%	0.51%	1.11%	1.71%	2.14%	2.14%	0.17%	0.73%	4.11%	0.51%	0.17%	0.51%	1.54%	100.00%

Front Runner Forward, Initial Investment Projects PKG1

Direct Expenses- HDR			Task 1 Project Management		Task 2 WarmSprings		Task 3 South of Salt Lake		Task 4 Murray		Task 5 Draper		Task 6 Beck Yard Siding	
	Unit Cost	Unit	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total
MISCELLANEOUS 509100														
Supplies	$ 500.00	LS		$ -		$ -		$ -		$ -		$ -		$ -
Shipping	9.00	each		-		$ -		$ -		$ -		$ -		$ -
Postage	0.42	each		-		$ -		$ -		$ -		$ -		$ -
Equipment, Misc.				-		$ -		$ -		$ -		$ -		$ -
Noise Meter	75.00	day		-	1	$ 75.00	1	$ 75.00	2	$ 150.00	2	$ 150.00	1	$ 75.00
Field Supplies	250.00	LS		-		$ -		$ -		$ -		$ -		$ -
GPS Rental	75.00	day		-		$ -		$ -		$ -		$ -		$ -
Maps	10.00	each	4	40.00	4	$ 40.00	4	$ 40.00	4	$ 40.00	4	$ 40.00	4	$ 40.00
Photos and Photography supplies	0.50	each		-		$ -		$ -		$ -		$ -		$ -
Public Involvement				-		$ -		$ -		$ -		$ -		$ -
Postage - Fliers	0.42	each	100	42.00	100	$ 42.00	100	$ 42.00	100	$ 42.00	100	$ 42.00	100	$ 42.00
Boards	5.00	each		-	6	$ 30.00	6	$ 30.00	6	$ 30.00	6	$ 30.00	6	$ 30.00
Misc.(refreshments)	-	LS		-		$ -		$ -		$ -		$ -		$ -
Advertisements in Newspaper- Display	-	each		-		$ -		$ -		$ -		$ -		$ -
Meeting Rooms	50.00	each		-		$ -		$ -		$ -		$ -		$ -
Stenographer (Court Reporter)	-	each		-		$ -		$ -		$ -		$ -		$ -
Subtotal				**$ 82.00**		**$ 187.00**		**$ 187.00**		**$ 262.00**		**$ 262.00**		**$ 187.00**
TRAVEL 509200														
Miles	0.560	Mile	150	84.00	150	84.00	150	**84.00**	150	84.00	150	84.00	150	$ 84.00
Airfare	400.00	Trip		-		-		-		-		-		$ -
Hotel	75.00	day		-		-		-		-		-		$ -
Meals	30.00	day		-		-		-		-		-		$ -
Subtotal				**$ 84.00**		**$ 84.00**		**$ 84.00**		**$ 84.00**		**$ 84.00**		**$ 84.00**
REPRODUCTION 509500														
8.5x11 B\W Copies	0.10	each	200	20.00	200	20.00	200	20.00	200	20.00	200	20.00	200	$ 20.00
8.5x11 Color Copies	0.15	each	100	15.00	100	15.00	100	15.00	100	15.00	100	15.00	100	$ 15.00
11x17 B\W Copies	0.20	each		-		-		-		-		-		$ -
11X17 Color Copies	0.40	each	25	10.00	25	10.00	25	10.00	25	10.00	25	10.00	25	$ 10.00
Newsletters Reproduction (quantity)	-	each		-		-		-		-		-		$ -
Fliers Reproduction	-	each		-		-		-		-		-		$ -
Handout Reproduction	0.50	each	350	175.00	350	175.00	350	175.00	350	175.00	350	175.00	350	$ 175.00
Meeting Reports Reproduction	-	each		-		-		-		-		-		$ -
Plots						-		-		-		-		$ -
11x17 B\W Plots	1.00	each		-		-		-		-		-		$ -
11X17 Color Plots	1.20	each		-		-		-		-		-		$ -
22X34 B\W Plots	4.00	each		-		-		-		-		-		$ -
22X34 Color Plots	4.80	each	10	48.00	10	48.00	10	48.00	10	48.00	10	48.00	10	$ 48.00
30X42 GIS Plots	6.50	each	10	65.00	10	65.00	10	65.00	10	65.00	10	65.00	10	$ 65.00
36X60 Color Plots (Glossy)	69.50	each		-		-		-		-		-		-
Subtotal				**$ 333.00**		**$ 333.00**		**$ 333.00**		**$ 333.00**		**$ 333.00**		**$ 333.00**
Total HDR Direct Expenses				**$ 499.00**		**$ 604.00**		**$ 604.00**		**$ 679.00**		**$ 679.00**		**$ 604.00**

21-03497VW FrontRunner Forward Enviromental Service Pool Labor Cost Form

HDR Inc.

No.	Firm	Prime	Sub	Last Name	First Name	Discipline/Classification	Basic Hourly Rate	Overhead rate Percentage	Fee	Fully Burdened Bill Rate
1	HDR	X		Spoor	Heidi	Contract/Project Manager	$ 83.83	147.06%	10%	$ 227.82
2	HDR	X		Unger	Audrey	Task Order Manager	$ 81.35	147.06%	10%	$ 221.08
3	HDR	X		Taunton	Matthew	Task Order Manager	$ 84.07	147.06%	10%	$ 228.47
4	HDR	X		Perkins	Mike	Wetlands/Wildlife/Agency Coordination	$ 59.50	147.06%	10%	$ 161.70
5	HDR	X		Croft	Amy	Wetlands/Wildlife/Air Quality	$ 52.59	147.06%	10%	$ 142.92
*	HDR	X		Liebsch	Ed	Air Quality	$ 100.26	147.06%	10%	$ 272.47
6	HDR	X		Brodbeck	Mark	Historic Properties/Section 4(f)	$ 60.43	147.06%	10%	$ 164.23
7	HDR	X		Delu	Nina	Tribal Cultural	$ 70.88	147.06%	10%	$ 192.63
8	HDR	X		LaFata	Cathy	Transportation Equity/Enviromental Justice	$ 107.32	147.06%	10%	$ 291.66
9	HDR	X		Parsons	Michael	Noise/Vibration	$ 67.80	147.06%	10%	$ 184.26
10	HDR	X		Casey	Tim	Noise/Vibration	$ 80.96	147.06%	10%	$ 220.02
11	HDR	X		Buck	Adam	Noise/Vibration	$ 42.64	147.06%	10%	$ 115.88
12	HDR	X		Peterson	Scott	Traffic	$ 87.76	147.06%	10%	$ 238.50
13	HDR	X		Gorton	Michael	Ridership	$ 78.80	147.06%	10%	$ 214.15
14	HDR	X		Block	Jordan	Ped/Bike	$ 72.19	147.06%	10%	$ 196.19
15	HDR	X		Clayton	Andrea	Enviromental QC/QA	$ 82.60	147.06%	10%	$ 224.48
16	HDR	X		Warner	Terry	Hazardous Materials	$ 98.01	147.06%	10%	$ 266.36
17	HDR	X		Flansberg	Jacob	Floodplains/Water Quality	$ 39.63	147.06%	10%	$ 107.70
18	HDR	X		Pisani	Frank	GIS/Mapping	$ 67.06	147.06%	10%	$ 182.25
19	HDR	X		Tzioumis	Travis	GIS/Mapping	$ 36.45	147.06%	10%	$ 99.06
20	HDR	X		Sellars	Adrian	GIS/Mapping	$ 40.12	147.06%	10%	$ 109.03
21	HDR	X		Ulrich	Carrie	Technical Editor	$ 51.18	147.06%	10%	$ 139.09
22	HDR	X		Dennis	Jackie	Public Outreach Support	$ 65.71	147.06%	10%	$ 178.58
23	HDR	X		Hunt	Crissy	Public Outreach Support	$ 42.31	147.06%	10%	$ 114.98
24	HDR	X		Gray	Brian	Public Outreach Support	$ 28.78	147.06%	10%	$ 78.21
25	HDR	X		Kilpatrick	Kevin	Land Use/Socioeconomics/Agency Coordination	$ 75.10	147.06%	10%	$ 204.10
26	HDR	X		Colledge	Travis	Engineering Lead/Site Civil	$ 82.00	147.06%	10%	$ 222.85
27	HDR	X		McCune	David	Engineering Lead	$ 101.34	147.06%	10%	$ 275.41
28	HDR	X		Thomas	Gina	Engineering Lead	$ 70.40	147.06%	10%	$ 191.32
29	HDR	X		Kuehne	Kenneth	Rail & Special Track	$ 57.32	147.06%	10%	$ 155.78
**	HDR	X		Baggott	Daniel	Rail & Special Track	$ 59.50	147.06%	10%	$ 161.70
30	HDR	X		Klaumann	Tony	Rail & Special Track	$ 61.62	147.06%	10%	$ 167.46
31	HDR	X		Johnston	Kelly	Site Civil/Roadway	$ 42.01	147.06%	10%	$ 114.17
32	HDR	X		Entzel	Chris	Site Civil/Roadway	$ 74.77	147.06%	10%	$ 203.20
33	HDR	X		Blumenkamp	John	At- Grade Crossing	$ 88.67	147.06%	10%	$ 240.97
34	HDR	X		Pope	Bill	Drainage	$ 70.99	147.06%	10%	$ 192.93
35	HDR	X		Beutler	Nathan	Drainage	$ 58.60	147.06%	10%	$ 159.25
36	HDR	X		Wilson	Nash	Structures	$ 62.35	147.06%	10%	$ 169.45
37	HDR	X		Christensen	Colby	Structures	$ 76.88	147.06%	10%	$ 208.93
38	HDR	X		Buttenob	John	Engineering QC/QA	$ 116.71	147.06%	10%	$ 317.18
40	HDR	X		Semenick	Rich	Design QC/QA	$ 129.21	147.06%	10%	$ 351.15
41	HDR	X		Kirkman	Brent	Ped/Bike	$ 63.52	147.06%	10%	$ 172.63
42	HDR	X		Hogan	Donn	Architectural	$ 83.81	147.06%	10%	$ 227.77
43	HDR	X		Cox	Kory	Architectural	$ 49.73	147.06%	10%	$ 135.15
44	HDR	X		Alvord	Asia	Project Controls	$ 93.23	147.06%	10%	$ 253.37
45	HDR	X		Kosiba	Andrew	Project Controls	$ 60.49	147.06%	10%	$ 164.39
46	HDR	X		Digregorio	Mike	Cost Estimating	$ 96.39	147.06%	10%	$ 261.96
47	HDR	X		Young	Steve	Cost Estimating	$ 75.96	147.06%	10%	$ 206.43
48	HDR	X		Halsted	Patrick	UPPR Coordination	$ 106.61	147.06%	10%	$ 289.73
49	HDR	X		Reasch	Larry	Project Principal	$ 126.32	147.06%	10%	$ 343.29
50	HDR	X		Borsh	Lina	Project Coordinator	$ 31.29	147.06%	10%	$ 85.04
51	HDR	X		Elton	Cindy	Project Coordinator	$ 41.38	147.06%	10%	$ 112.46
52	HDR	X		Hill	Shauna	Project Accountant	$ 41.25	147.06%	10%	$ 112.10
53	HDR	X		Doutis	Mistee	Project Accountant	$ 40.12	147.06%	10%	$ 109.03

* note inadvertantly left off initial rate sheet. Ed is an air quality expert, particularly in diesel emissions

** note inadvertantly left off initial rate sheet. Daniel is a rail and special track design expert currently helping with the Future of LRT project