

AMENDATORY AGREEMENT

This **AMENDATORY AGREEMENT** is made between the **CITY AND COUNTY OF DENVER**, a municipal corporation of the State of Colorado (the “City”) and **RS&H, INC.**, a Florida corporation whose address is 10748 Deerwood Park Boulevard South, Suite 300, Jacksonville, Florida 32256 (the “Design Consultant”), jointly (“the Parties”).

WITNESSETH:

A. The Parties entered into a Design Services Agreement dated July 23, 2019 (the “Agreement”) to furnish professional design services for the Project as set forth in the Agreement.

B. The Parties wish to amend the Agreement to extend the term.

NOW THEREFORE, in consideration of the premises and the Parties’ mutual covenants and obligations, the Parties agree as follows:

1. All references to “...Exhibit A...” in the Agreement shall be amended to read: “...Exhibit A and A-1...” as applicable. The scope of work marked as **Exhibit A-1** attached to this Amendatory Agreement is hereby incorporated by reference.

2. Section 4 of the Agreement entitled **TERM AND TERMINATION** Sub-paragraph 4.01 entitled “**Term**” is amended to read as follows:

“4. **TERM AND TERMINATION:**

4.01 Term: The Agreement will commence on May 20, 2019 and expire on December 31, 2023, unless sooner terminated as provided in this Agreement.”

3. As herein amended, the Agreement is affirmed and ratified in each and every particular.

4. This Amendatory Agreement will not be effective or binding on the City until it has been fully executed by all required signatories of the City and County of Denver, and if required by Charter, approved by the City Council.

[THE BALANCE OF THIS PAGE IS INTENTIONALLY LEFT BLANK.]

Contract Control Number: DOTI-202158050-01 [201948451-01]
Contractor Name: RS&H, Inc.

IN WITNESS WHEREOF, the parties have set their hands and affixed their seals at Denver, Colorado as of:

SEAL

CITY AND COUNTY OF DENVER:

ATTEST:

By:

APPROVED AS TO FORM:

REGISTERED AND COUNTERSIGNED:

Attorney for the City and County of Denver

By:

By:

By:

Contract Control Number:
Contractor Name:

DOTI-202158050-01 [201948451-01]
RS&H, Inc.

By:  _____
0F9A28713AD940D...

Name: Randal Lapsley
(please print)

Title: VP - TI Office Leader
(please print)

ATTEST: [if required]

By: _____

Name: _____
(please print)

Title: _____
(please print)

EXHIBIT A -1

PHASE 8 & 9

SCOPE OF WORK / FEE PROPOSAL



4582 S. Ulster Street
Suite 1100
Denver, CO 80237

○ 303-771-6200
rsandh.com

March 15, 2021

Mr. James Geist, P.E.
Senior Engineer-Department of Transportation and Infrastructure
City and County of Denver
201 W. Colfax Ave., Dept. 506
Denver, CO 80202

**RE: Washington Street Improvements – Design Services
Contract Control No. PWADM-201948451-00**

Dear Jim:

The current contract for the Washington Street Improvements – Design Services (Contract Control No. PWADM-201948451-00) is set to expire on June 30, 2021. As we have been discussing, RS&H, Inc. is requesting that the Contract be amended such that the contract expiration date be extended until December 31, 2023 as discussed below.

At the request of the City, a new phase of work, Phase 8, is being added for final design services for 51st Avenue from Logan to Emerson Street. 51st Avenue is a key connection from the National Western Complex to Washington Street. The schedule, scope and fee for this work is enclosed. Note that this request is for the Term of the contract to be extended to December 31, 2023, which is the anticipated date for construction to start on 51st Avenue per the attached schedule.

The City has also requested a new work phase, Phase 9, to complete a Washington Street Area prioritization study from I-70 to the City limits. This Prioritization Plan and Outreach Strategy will aid in analyzing connectivity in the area, and it will also make recommendations which will aid in addressing the significant budget deficit that has been identified on the Washington Street Project, modifying the scope of work on Washington Street to bring the project to be within the available project budget. The schedule, scope and fee for the Washington Area Prioritization Plan and Outreach Strategy is enclosed.



The current fee status for Phases 1 through 9 of work is listed below:

Phase	Description	Amount
Phase 1	Washington St from 47th Ave North	\$460,228.23
Phase 2	Washington St from 47th Ave to South Platte River	\$185,117.73
Phase 3	Washington St Bridge and Globeville Landing Pedestrian Bridge	\$199,751.50
Phase 4	Washington St from 47th Ave North final design	future work
Phase 5	Washington Street 47th south - final design	future work
Phase 6	Washington St Bridge and Globeville Landing Pedestrian Bridge - Final	future work
Phase 7	Professional Services During Construction	future work
Phase 8	51st Ave from Emerson St To Logan St	\$774,831.69
Phase 9	Washington Street Prioritization Plan	\$139,964.00
	Budget to be allocated to Phases 1 and 2 and other Phases as directed by the City once Phase 9 is complete	\$877,200.79
	Total	\$2,637,093.94

Once Phase 9, the Washington Area Prioritization Plan and Outreach Strategy, is complete, it is anticipated that the City will then determine the final scope for the Washington Street Improvements Project, and work on Phases 1 and 2 can continue as directed by the City using the available budget as shown in the Table above. Also, once the final scope is known, it is anticipated that this contract will be amended when needed to accommodate the final scope of improvements. At the discretion of the City, the contract may also be amended to include professional services during construction of the improvements that we design on 51st Ave., Washington Street, and the Washington Street Bridge and the Globeville Landing Pedestrian Bridge. Of course, we understand that future amendments could affect any of the Phases of work identified in the original contract, as well as other work as identified by the City.

A contract amendment for a time extension of the Term to December 31, 2023 is the only request of this amendment, and no additional funding is requested at this time, as current funding in the contract will continue to be used for the necessary tasks. The results from Phase 9, as well as other ongoing projects, developments and studies in the vicinity will inform and determine the future work on this Contract and on Phases 1 through 7, work on which is expected to resume in the future.

Please let me know if you need any additional information regarding this request.

Sincerely,

RS&H, INC.

Randal Lapsley, P.E.
Project Manager



Scope of Services

Phase 8

51st Avenue Improvements, Logan Street to Emerson Street

July 17, 2020

Project Description

The scope of this project consists of performing preliminary and final design, including right-of-way plans, for the construction of a roadway and multimodal improvements along 51st Avenue from Logan Street to Emerson Street in the City and County of Denver. Specific project components include the following:

- Realign 51st Avenue at Washington Street to eliminate the two existing offset three-leg intersections and construct a new four-leg intersection along the existing eastern leg's alignment. Realign 51st Avenue to tie-into the existing roadway west of Washington Street.
- Construct roadway and multimodal improvements along 51st Avenue from the realignment tie-in location west of Washington Street to Emerson Street. Connect to the proposed National Western Center improvements at Emerson Street. The proposed typical section will consist of two travel lanes and bicycle facilities, planting strips, sidewalk and curb on both sides of the roadway as provided by the City.
- Construct a new traffic signal at the proposed four-leg intersection of 51st Avenue and Washington Street.
- Remove the existing western leg of the 51st Avenue and Washington Street intersection, including obsolete pavement, sidewalk, curb, and the existing traffic signal infrastructure.
- Construct approximately 200 feet of sidewalk and curb on the north side of 51st Avenue from Logan Street to the nearest entrance to the east. This sidewalk section includes an at-grade crossing of the BNSF railroad.
- Construct approximately 900 feet of sidewalk and curb on the south side of 51st Avenue between Logan Street and the realignment tie-in just west of Washington Street. This sidewalk section includes an at-grade crossing of the BNSF railroad.
- A concept alignment for 51st Ave and typical roadway section were provided by the City. These concept plans were used to develop the scope and fee for this project. If during the preliminary design significant changes to the alignment or typical sections are determined to be needed the scope and fees may need to be revised.



Project Team

RS&H will manage the project and will lead roadway, multimodal, drainage and traffic engineering design tasks. Our team will consist of the following firms:

Firm Name	Role
RS&H	Project Manager and Engineering Lead
RailPros	Railroad Coordination
Clanton and Associates	Lighting Design
Geocal	Geotechnical Services
105 West, Inc.	Survey & Right of Way
Pinyon Environmental, Inc.	Environmental Services
Utility Mapping Services, Inc.	Subsurface Utility Engineering

Scope of Work

Our team will provide the below professional design and engineering services to assist the City of Denver (CCD) in completing the project.

1. Project management.
2. Field surveys and Right of Way.
3. Roadway, multimodal and traffic design.
4. Geotechnical investigations and Pavement design.
5. Environmental resources studies and considerations.
6. Right-of-Way considerations and identification of potential impacts. This will be a collaborative effort with the City in determining costs after RS&H determines impact limits.
7. Drainage/Water Quality design.
8. Utility research, identification, and coordination, including potholing.
9. Railroad Coordination and Public Utilities Commission support.
10. Lighting Design.
11. Risk register.
12. Cost estimating.
13. Denver Public Works Engineering, Regulatory, and Analytics (PWERA) Preparation, Process, and Submittal.

The project is divided into three tasks as follows:

Task 1: General Project Management

Task 2: Preliminary Design for the proposed improvements

- Phase 2a: Preliminary design along 51st Avenue, west of Washington Street
- Phase 2b: Preliminary design along 51st Avenue, east of Washington Street

Task 3: Final Design for the proposed improvements

- Phase 3a: Final design along 51st Avenue, west of Washington Street
- Phase 3b: Final design along 51st Avenue, east of Washington Street



Task 1: General Project Management

- **Project Management**

The Consultant will provide consultant project management services to include design team coordination, subconsultant coordination, monthly invoices, general project management and the below items.

- **Project Assistance:** The Consultant will aid the City in responding comments or inquiries.
- **Quality Plan:** Prepare and submit a Quality Assurance/Quality Control (QA/QC) plan and commit to adhering to the QA/QC process throughout the project.

- **Meetings:** The Consultant team for the below meetings will include key personnel from RS&H. Other team members will be included on an as-needed basis depending on topics being discussed.

Kick off Meeting – The Consultant will hold one kick off meeting upon NTP with the City staff and the project team to review the scope of work, schedule and budget for the project.

General Project Meetings – Consultant will attend and/or conduct up to 5 general project meetings as requested by the City. Prepare and distribute meeting minutes and action items for all project meetings.

Technical Meetings – Consultant will attend and/or conduct up to 5 technical meetings as requested by the City. Prepare and distribute meeting minutes and action items for all project meetings.

Bi-Weekly Progress Meetings - The Consultant will meet with the City's PM every two weeks to review project progress, critical issues and plan next steps. The frequency of these meetings can be adjusted as needed.



Task 2: Preliminary Design of 51st Avenue

This task includes work efforts for 51st Avenue both west and east of Washington Street (Phase 2a and Phase 2b respectively). Our team will address design of the proposed improvements in a comprehensive manner for the entire corridor. **Due to different funding sources, budgets and invoicing for Phase 2a and Phase 2b will be tracked separately.** Phase 2a and Phase 2b will have separate hours corresponding to each subtask below.

A. Field Surveys and Right of Way

105 West will complete this task at the direction of RS&H.

The Consultant has previously completed field survey along Washington Street and sections of 51st Avenue under a separate work effort. This task includes supplemental field survey to encompass the remaining project area not included in the initial effort's survey limits.

Specifically, these areas include:

- 51st Avenue, between Logan Street and the western realignment tie-in.
- Intermittent areas along 51st Avenue east of Washington Street outside of the ROW limits. Previous efforts surveyed up to the existing ROW lines.

Work efforts under this Task include:

- Meetings, Mobilization & Coordination:

105 West anticipates attending two (2) project team meetings with City and County of Denver (CCD) personnel and/or the RS&H team members. As part of this task 105 West will develop work plans, mobilize staff, and keep the Consultant Manager and CCD Project Manager updated relative to the survey team's progress or any concerns.
- Permits/Right-of-Entry:

105 West will apply for the right-of-way permit from the City and County of Denver in order to perform survey work within the City and County of Denver rights-of-way. Additionally, 105 West will prepare right-of-entry (ROE) forms for the fifteen (15) private parcels adjoining the project corridor. It is our understanding that CCD will address any private landowners that will not grant survey access to 105 West field personnel.
- Project Control:

105 West will establish horizontal and vertical (NAVD 88) control monuments based on the City and County of Denver's horizontal and vertical datum. 105 West anticipates setting four (4) semi-permanent control points to be used for surveying purposes. The preparation of a project control diagram is included in this task.
- Topographic Design Survey:

105 West will obtain, by field methods, existing, visible planimetric features and topography at a one-foot (1') contour interval. The topographic survey will include the existing edges of pavement, existing edge of traveled surface, centerline, curb/gutter, striping, sidewalks, traffic signals, culverts, fences, structures, and surface utility evidence. All electronic deliverables will be provided in AutoCAD.



- **Ownership/Right-of Way:**

In order to determine the existing right-of-way limits and private ownerships along 51st Avenue, 105 West will obtain City and County of Denver (CCD) record information including subdivision plats, land survey plats, right-of-way plans and vesting deed information for the fifteen (15) parcels located west of Washington Street. 105 West will utilize the “Existing Right-of-Way Plan and Ownership Map” provided by CCD signed and sealed on November 1, 2018. As part of this task, 105 West will verify the four (4) parcels shown on the map for accuracy and current ownership. The remaining eleven (11) parcels will be added to the base file to meet the additional limits now identified with this project.

- **Underground Utilities:**

The firm of Utility Mapping Services (see Task B below) will mark the underground utilities within the topographic limits. Once the utilities have been marked, and signed sketches have been provided, 105 West will survey the paint mark locations.

The following exclusions apply to this task:

- Monumentation of existing or proposed ROW/Easements
- CCD Survey Control Perpetuation of Range Points and creation of associated Survey Control Perpetuation Diagram
- Procurement of title commitments
- ALTA Surveys
- Manhole/Inlet invert measure downs

B. Subsurface Utility Engineering (SUE)

Utility Mapping Services (UMS) will complete this task at the direction of RS&H.

The Consultant has previously completed Quality Level B subsurface utility engineering (SUE) along Washington Street and sections of 51st Avenue under a separate work effort. Due to the expanded project limits, supplemental SUE work is required to complete the utility data collection effort.

The Consultant through the subconsultant Utility Mapping Services (UMS) will locate existing underground utilities in accordance with the American Society of Civil Engineers Construction Institute Standard 38-02 (ASCE/CI 38-02), as well as Colorado Senate Bill 18-167 (for the QL B utility designating project areas), and includes the following activities:

- Compilation of utility data (i.e. records and as-built information) acquired by UMS and others.
- Preparation of field books, log sheets, and crew scheduling and logistics for the initial utility designating field campaign.
- 2D QL B data acquisition (using electromagnetic (EM) induction, acoustic, and/or other geophysical technologies), characterization, and 2D depiction (CADD file) of existing utility infrastructure data to develop a reliably qualified base map and data set from which to develop and support future design, coordination, and construction decisions.



C. Preliminary Roadway and Multimodal Design

This task will be led by RS&H.

The City of Denver has developed and provided to the design team a conceptual-level alignment and typical section for 51st Avenue. The Consultant will utilize this information as a basis of design and will refine the design at the direction of CCD. Design refinements may include shifting the horizontal alignment or altering a typical section element in order to reduce right of way impacts or avoid impacting other features such as existing utilities. Major changes to the proposed roadway and multimodal typical section such as adding a travel lane or additional turn lanes is not anticipated. This task includes 30% design of roadway and multimodal improvements, including all affected driveways and intersections.

As of the date of this proposal, the ultimate alignment and typical section of Washington Street at the 51st Avenue intersection has not been determined. The design team will coordinate with CCD regarding this project's intersection design in order to layout improvements that will ultimately be utilized as part of the Washington Street Improvements project. RS&H and CCD will monitor any design or public involvement activities occurring during the 51st Avenue's design timeframe and will use the best available information to layout the proposed improvements.

The project team, in conjunction with CCD, will coordinate with the adjacent projects including the National Western Center (NWC) redevelopment and its proposed bridge connection which ties in with 51st Avenue at Emerson Street. Other projects to consider are the Washington Street Improvements project, Heron Pond/Heller/ Carpio-Sanguinette Park Phase 1, and Xcel Energy North Metro gas pipeline.

Roadway and multimodal design tasks include:

- Design horizontal and vertical alignments of roadway and multimodal facilities in accordance with CCD Transportation Standards and Details and all ADA compliance requirements.
- Gathering of sufficient information to accurately identify all pertinent horizontal and vertical elements for the purpose of preparing fully vetted and feasible roadway cross-sections which provide drainage, and which meet City standards.
- Provide alignments and develop profiles, cross sections, geometrics, grading, toes of slope and pavement sections based on the above referenced requirements and geotechnical recommendations.
- Identify and develop pertinent design features and report results including permanent and temporary impacts to Right-of-Way and utilities impacts to the City project manager.
- Evaluate the alignment for property and acquisition impacts, impacts from environmental studies and findings, and adjacent projects.
- Provide intersection design and signal improvements incorporating safety for pedestrians.
- Consider construction phasing and provide 30 percent construction phasing plans.

D. Preliminary Traffic Design

This task will be led by RS&H.

This task will include the analysis and design of a new traffic signal at the proposed Washington



Street/51st Avenue intersection and additional signing and striping along the new alignment of 51st Avenue.

Traffic design tasks include:

- Updated Signing and Striping plans for the realignment of 51st Avenue within the project limits. The City will provide any proposed signing and striping plans for the addition of the structure over the South Platte River between Washington Street and the structure. These plans will be considered the existing condition.
- Analyze existing and proposed ADT counts and turning movements at intersections. The City will provide traffic counts including 24-hour ADT counts along the corridor including axle weight classifications and turning movements at intersections.
- Traffic forecasts that include future connections of 51st Avenue across the South Platte River will be provided by the City. Traffic volumes provided by the City will be used for the proposed signal analysis to determine the need and length for turn lanes at intersections.
- Conceptual layouts of future signal pole location to accommodate future Washington Street cross section to provide minimum and maximum dimensions and consider the feasibility of mast arms and underground conduit now vs. an interim span wire installation.
- Forecast LOS analysis will be completed using Synchro traffic analysis software. Results from this analysis will be reviewed with City staff prior to final signal design to address the constraints of the location.
- Traffic Signal design at the proposed Washington Street/51st Avenue intersection location. This design will include all signal components for the new intersection as well as traffic signal resets or removals at the existing intersection.

Exclusion from the traffic work:

- A full traffic study will not be completed for the Washington Street/51st Street intersection.
- Collection of traffic data.

E. Geotechnical Investigations/Pavement Design

The Consultant through its subconsultant Geocal will provide the following:

- Consultant will complete 9 soil borings along the 51st Avenue. Borings will be drilled to depths of 5 to 10 feet below existing grade. Laboratory tests will be done to evaluate the engineering classification, strength and compressibility or swell characteristic and other engineering properties for the soils.
- Tests will include, swell-compression, R-value, Gradations, Liquid & Plastic Limit, pH, Resistivity, water soluble chloride, sulfide Potential and water-soluble sulfates.
- A draft report will be prepared under the direction of a registered professional engineer. This report will include all logs and laboratory test results, and other items such as site geology and area development that can have an effect on the ground water. The engineering report will be prepared to summarize at least the



following:

- Site description and geology
- Brief review of field and laboratory procedures
- Subsurface conditions encountered (soils, bedrock, and groundwater)
- Results of the field exploration and laboratory testing
- Figures of boring locations and logs of subsurface conditions
- Pavement design recommendations using MGPEC, AASHTO 1993, and M-E standards
- Consultant will be assisted by our team's environmental subconsultant during drilling if it is determined that monitoring during drilling is necessary. We have included the disposal fees of the contaminated materials in this proposal.

The draft report will be submitted for review by the client and City & County of Denver, and the final report will be submitted soon after comments on the draft have been received. All work will be done under the supervision of a Colorado Registered Professional Engineer.

F. Environmental Studies and Considerations

The Consultant will provide the following information through subconsultant Pinyon Environmental:

- Material Management Plan

An MMP will be prepared to facilitate the identification and management of soil, groundwater, and/or debris that is suspected of being a solid or hazardous waste or requires special handling and disposal. The purpose of this document is to detail the procedures for handling potentially contaminated media. The MMP will be designed to minimize worker exposure to potentially contaminated material, prevent releases to the environment, and ensure proper disposal. At a minimum, the MMP will include procedures covering the following topics:

- Personnel and their responsibilities
- Soil and debris management options based on regulated chemical concentrations
- Construction water handling procedures
- Waste characterization protocols
- Asbestos containing materials management
- Decontamination of equipment
- Reporting
- Limited Environmental Site Assessment (west of Washington Street only)

Based on information provided by CCD, an LES has already been completed for east of Washington Street; this scope will only be complete for west of Washington Street. A high-level review of publicly available information will be conducted to evaluate potential environmental project risks. For this project, Pinyon will obtain a regulatory database (GeoSearch), review historical data regarding land uses (e.g., Sanborn maps and reverse city directories), review reports that may already be in Pinyon's possession, and a desktop review of up to eight additional facility files. A summary report of existing conditions, including recommendations and conclusions, will be prepared. This report is not designed to be an ASTM compliant Phase I Environmental Site Assessment, but will be prepared to specifically identify potential project environmental risks.



- Limited Soil Sampling

Limited soil sampling activities will be completed concurrent with the geotechnical investigation. Pinyon understands that five borings will be advanced west of Washington Street and four borings will be advanced east of Washington Street; therefore, up to nine soil samples (one for each boring) will be collected. The borings will be drilled to depths of five to ten feet below existing grade.

- Pinyon will prepare a site-specific Health and Safety Plan (HASP), detailing the work activities and safety protocols to be used during this investigation.
- Pinyon will field screen soil samples for the presence of potential subsurface impacts. Soil samples collected during drilling will be field screened for non-specific volatile organic compounds (VOCs) using a photoionization detector (PID) and the headspace technique. In the headspace technique, a portion of the soil sample is placed in a “zip-lock” bag, which is sealed and placed in a warm area to promote volatilization. After a period of time, the PID is inserted into the headspace of the bag, and a reading is obtained. This reading will be recorded on the boring log.
- During geotechnical drilling (which will be completed and paid for by others, and occur over two days), Pinyon will collect up to nine representative soil samples to support a waste profile at the Denver- Arapahoe Disposal Site (DADS) per CCD and Waste Management requirements. A composite soil sample from the ground surface to the total anticipated depth of construction will be placed in laboratory-supplied containers, and submitted to an accredited laboratory for analysis of:
 - Volatile Organic Compounds by U.S. EPA Method 8260
 - Resource Conservation and Recovery Act (RCRA) 8 Metals using EPA Methods 6010/7471
 - Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) using EPA Method 8015
 - Polychlorinated Biphenyls by EPA Method 8082
 - Toxicity Characteristic Leaching Procedure (dependent on total VOC and RCRA Metals analysis)
- In the event GRO or DRO is detected at concentrations above the OPS threshold of 500 milligrams per kilogram (mg/kg), the soil sample with the highest hydrocarbon concentration will also be analyzed for polycyclic aromatic hydrocarbons (PAHs) using EPA Method 8270SIM. For cost estimating purposes Pinyon assumes up to two samples will need to be submitted for PAH analysis.
- This analytical data will be submitted to the CCD; it is assumed they will submit and obtain an approved waste profile from DADS. Pinyon has assumed that project activities will occur at shallow depths and groundwater will not be encountered; therefore, groundwater sampling is excluded from this scope of work.
- A Subsurface Investigation Report will be prepared based on the information collected. Conclusions regarding the potential for subsurface contamination at the site will be provided. If necessary, recommendations regarding future work will also be included.

- Assumptions

- Pinyon personnel will attend one project meeting.
- One MMP and one LES will be completed; these reports will include both east and west of Washington Street.
- The LES site visit will not include entrance into buildings.
- Any utility clearances, permits or traffic control measures will be completed and paid for by the geotechnical firm conducting the investigation.
- Investigation-Derived Wastes will be removed and disposed properly by a qualified vendor under the direction of the geotechnical driller. The geotechnical driller will pay for the disposal of these wastes.
- Geotechnical oversight will occur over a two-day period.
- No more than nine soil samples will be collected and submitted for laboratory analysis. If additional samples are required, additional costs will be incurred. The samples will be submitted for standard laboratory turn-around time, which is approximately seven business days. Lab analysis can be completed quicker; however, additional costs will be incurred.

G. Right-of-Way Impacts and Considerations

RS&H will lead this coordination effort with the City.

Right-of-Way procurement will be necessary to construct the improvements on 51st Avenue. The Consultant Team will assist the City with determining how alignment changes to the road may impact properties and project Right-of-Way needs.

H. Preliminary Drainage/Water Quality Design

RS&H will lead this task.

- Preliminary Drainage Design

The Consultant will coordinate all drainage design with the City and County of Denver Storm Drainage Master Plan and with Denver Wastewater to not preclude future improvements identified in the Master Plan, nor those considerations underway in the Globeville Stormwater Systems Study.

Washington Street is located in the downstream portion of the drainage basin and as such there is a significant offsite basin that historically drains from west to east, across Washington Street and ultimately to the South Platte River. 51st Avenue currently has two parallel trunklines that run west to east toward the South Platte River. The drainage design will evaluate whether these trunklines have sufficient capacity for the proposed design, or if they need to be replaced as part of the project. To the maximum extent practicable, existing drainage facilities will be utilized for this project. The City and County of Denver Master Plan shows the trunkline along 51st Avenue being significantly upsized so it is anticipated that this project will match the capacity of the trunkline being designed with the Heron Pond project immediately downstream of this project.



The onsite system will be designed to meet spread and depth requirements, but these flows are not anticipated to impact the size of the trunkline within 51st Avenue.

Deliverables Include:

- Drainage Plans: (50 scale) showing inlet locations, pipe sizes, existing contours, proposed contours, conceptual layout for water quality facilities, existing and proposed utilities, and existing and proposed right of way lines. Profiles will not be submitted with this submittal but will be developed as needed to identify right-of-way acquisitions.
- Preliminary Drainage Report

- Preliminary Water Quality Design

There is an existing water quality pond downstream of the project in Heron Park. It is assumed that the pond has sufficient volume to provide water quality treatment and detention for on-site runoff from this project and off-site runoff conveyed through the project. The required additional pond volume tributary to this pond will be calculated, but a hydraulic analysis of the pond or modifications to the pond are not included with this scope.

Deliverables Include:

- Water Quality Calculations included in the Preliminary Drainage Report

- Preliminary Stormwater Management Plans
 - Stormwater management plans (SWMP) will not be provided at the preliminary submittal.

I. Utility Conflict Identification and Coordination

RS&H will lead this task.

The Consultant will provide the following utility work:

- Identify potential utility conflicts between existing utilities and proposed improvements for coordination with design team and utility companies.
- Recommend locations for potholing. Potholing will be completed in the Final Design phase of the work.
- Incorporate utility mitigations/relocations schematics into the 30 percent design package.
- Prepare a summary table of all utilities within the project limits, noting utility adjustments, relocations and / or replacement.
- Coordinate with Xcel Energy to determine the location of the new North Metro Gas Pipeline installation.
- We have not included any water line relocation work. Until the preliminary design is completed and any conflicts or relocation desired by Denver Water are known, we are not able to determine the work required (if any).



J. Railroad Coordination and Public Utilities Commission and Support

The Consultant in conjunction with our subconsultant RailPros will coordinate with BNSF and PUC on the proposed grade crossing along 51st Avenue just east of Logan Street. Sidewalk is proposed on both sides of the roadway at this crossing. Signing and striping plans will be designed in accordance with MUTCD and BNSF design standards. Utilizing the Preliminary plans, the Consultant will prepare a grade crossing exhibit with recommendations for the 51st Avenue (DOT #245285S) crossing. This exhibit will also be used for the PUC application. The Consultant will coordinate with BNSF, Colorado Public Utilities Commission (PUC) and any other relevant agencies throughout this process.

Work efforts under this Task include:

- Develop signing and striping design at the 51st Avenue (DOT #245285S) crossing.
- Prepare a grade crossing exhibit recommending improvements (railroad equipment placement, signing, and roadway and pedestrian path configurations) at the 51st Avenue (DOT #245285S) crossing.
- Participate in Diagnostic Meeting with BNSF, PUC and CCD.
- Coordinate with BNSF and PUC and respond to comments.

Task Deliverables

- Diagnostic Meeting minutes.
- Prepare a grade crossing exhibit recommending improvements (railroad equipment placement and roadway and pedestrian path configurations) at the 51st Avenue (DOT #245285S) crossing.

K. Lighting Design

The Consultant in conjunction with our subconsultant Clanton and Associates will develop and coordinate the 30% lighting design with the City, the utility agency, and the project stakeholders. Lighting design will be integrated into the overall streetscape and character and done accordance with City and County of Denver Streetlighting Guidelines. Lighting work for this phase will include determining the type of lights and approximate locations. It is assumed that lighting will be owned and maintained by Xcel Energy.

The scope of work includes:

- A single lighting plan set for work along both the east and west sides of Washington St.
- New lighting for the right-of-way along 51st Avenue to the existing roadway tie-in.
- New lighting for the sidewalk west of the 51st Avenue tie-in.

The Consultant will provide the following lighting work for Preliminary Design:

- Kickoff meeting by videoconference call
- Establish basis of design
- Preliminary lighting design
- Xcel energy approved luminaire
- Preliminary lighting calculations



- Preliminary lighting details
- Preliminary electrical design (power source locations)
- Utility coordination
- Preliminary tabulation of approximate quantities
- Preliminary Opinion of Probable Cost

Specific exclusions from this scope are as follows:

- Lighting system redesign after the preliminary submittal due to changes in lighting ownership
- Structural engineering
- Equipment procurement
- Commissioning
- Communication wiring to traffic signals

L. Risk Register

RS&H will lead this task.

The Consultant review the existing GO BOND Risk Register and provide one update to the register for risks that may affect the budget and/or schedule of this project. These risks include, but are not limited to, Right-of-Way procurement, environmental conditions, utility conflicts, and coordination with adjacent projects.

M. Cost Estimating

RS&H will lead this task.

The Consultant shall develop detailed construction bid quantities and construction cost estimates based on the 30 percent design plans and quantities. The cost estimates will be presented by typical CDOT Pay Items and cost categories and utilize relevant/current unit cost information from similar/recent projects in the Denver metropolitan area.

N. Denver Transportation and Infrastructure Engineering, Regulatory, and Analytics (PWERA) Preparation, Process, and Submittal

RS&H will lead this task.

The project must follow the City's review process and meet all City standards (including, but not limited to the Department of Transportation & Infrastructure Standards, etc.). The consultant will complete the 30% design plans/documents associated with the PWERA review process. One or more reviews through PWERA prior to the completion of the preliminary design may be required. The following items may be included:

- Preparation and attendance for the 30% Design Review Meeting,
- Coordinate, complete and compile the plan inputs from all activities: materials, drainage utility design, and right-of-way.
- Compile the preliminary cost estimate for the work described in the preliminary design plans based on estimated quantities.
- The 30% design plans will include, but not be limited to:

- Title Sheet
 - Standard Plans List
 - Project Site Plan & Key Map
 - Typical Roadway Sections
 - General Notes
 - Summary of Approximate Quantities
 - Survey Control Sheet
 - Geometric Control
 - Typical Roadway & Multimodal Details
 - Miscellaneous Details
 - Removal & Reset Plans
 - Roadway Plan & Profiles
 - Side Street Profiles
 - Paving Plans
 - Utility Plans
 - Drainage Plans
 - Traffic Signal Subset
 - Signing and Striping Plans
 - Construction Zone Traffic Control Subset
 - Traffic Details
 - Lighting Plans
 - Landscape Plans
 - Roadway Cross Sections
 - Right-of-Way Ownership Plans
 - Preliminary Specifications
- The following items will be included with the preliminary design plans:
 - Geotechnical investigation & pavement design report.
 - Preliminary Drainage Report
 - Information regarding any required permits
 - The plans and specifications will be reproduced and distributed by the consultant as requested by the City. The consultant has included 10 paper copies in the reproduction expenses.
 - Resolve design questions raised in the 30 percent Design Review meeting in cooperation with the City. Document the decisions and transmit the documentation to the City for approval.
 - Submit a list of all deviations from standard design criteria along with the written justification for each one. Obtain concurrence from affected agencies or utility companies.
 - Consultant shall complete revisions to the 30% design documents to address comments made at the review meeting. Develop a memo summarizing the actions taken on each submitted comment.
 - Identify and submit a listing of all permits and clearances required for the completion of the project.
 - Submit copies of the revised plans to the City and other agencies as appropriate.



Task 3: Final Design of 51st Avenue

This task includes Final Design work efforts for 51st Avenue both west and east of Washington Street (Phase 3a and Phase 3b respectively). Task 3 work includes final design of the proposed improvements, final right-of-way mapping and surveying services, right-of-way acquisition process, and assistance in obtaining project permits and clearances for environmental (phase 1), design, right of way, and utilities that are necessary to advertise the project for bid. Our team will address design of the proposed improvements in a comprehensive manner for the entire corridor. **Due to different funding sources, budgets/invoicing for Phase 3a and Phase 3b will be tracked separately.** Phase 3a and Phase 3b will have separate hours corresponding to each subtask below.

A. Field Surveys and Right of Way

105 West will complete this task at the direction of RS&H.

- Final Right-of Way Plans:

Based on final geometry provided to us by RS&H, 105 West will create final Right-of-Way plans for up to thirty three (33) impacts (i.e. acquisitions, PEs, TEs) along 51st Avenue. The final right- of-way plans will be in accordance with CCD standards and requirements and satisfactory for a Right-of-Way Plan Review. For the purposes of our proposal, it is assumed that the title commitments for the impacted parcels will be provided to us by others. In addition, 105 West will prepare written legal descriptions in accordance with CCD requirements and satisfactory for recordation. Monumentation of existing or proposed right-of-way is not a part of this proposal at this time.

B. Subsurface Utility Engineering (SUE)

Utility Mapping Services (UMS) will complete this task at the direction of RS&H.

The Consultant through the subconsultant Utility Mapping Services (UMS) will perform QL A utility locates for existing underground utilities in accordance with the American Society of Civil Engineers Construction Institute Standard 38-02 (ASCE/CI 38-02). The utility investigation primarily consists of utility locating via discrete QL A vacuum excavated test holes. The Consultant will perform excavation operations and the engineering survey of each test hole location. The Consultant will identify test hole locations based on utility conflicts and areas where more detailed data, including three- dimensional coordinates, are required to complete designs and mitigate/accommodate conflicts. For the purpose of this work, “locate” means to establish by engineering, surveying, drafting, and vacuum excavation practices the accurate horizontal and vertical position of subsurface utilities with vertical tolerances of generally 0.1 feet based on referenced benchmarks. Written logs for all test holes are utilized, derived elevations are transcribed onto CAD reference files, and “locate” points area mapped to Quality Level A on the plans.

Based on our previous work designating utilities within the project area and on our project understanding, a total of 18 test holes are estimated.

C. Final Roadway and Multimodal Design

This task will be led by RS&H.

The Consultant will provide final engineering design to include the following:

- Horizontal and vertical geometry
- Roadway section elements including laneage, tapers, transitions, curb and gutter, sidewalk, islands, fences, etc.
- Pedestrian and bicycle facilities.
- Project grading and disturbance limits.
- Cross Sections
- Project and standard special provisions
- Final Construction Phasing Strategy and Construction Phasing Plans: The Consultant will develop plans for traffic management during construction and other considerations, to allow access to properties on Washington Street and side streets during construction. Consultant will provide design plans for temporary alignments and construction traffic control signing within the construction zone and on detour routes (if required).

D. Final Traffic Design

This task will be led by RS&H.

This task will include the analysis and design of a new traffic signal at the proposed Washington Street/51st Avenue intersection and additional signing and striping along the new alignment of 51st Avenue.

Traffic design tasks include:

- Updated Signing and Striping plans for the realignment of 51st Avenue within the project limits. The City will provide any proposed signing and striping plans for the addition of the structure over the South Platte River between Washington Street and the structure. These plans will be considered the existing condition.
- Traffic Signal design at the proposed Washington Street/51st Avenue intersection location. This design will include all signal components for the new intersection as well as traffic signal resets or removals at the existing intersection.

E. Geotechnical Investigations/Pavement Design

This task will be led by RS&H.

The Consultant will make any adjustments to pavement design based on the Final Geotechnical investigation & pavement design report. The typical sections will be updated accordingly.

F. Right-of-Way Impacts and Considerations

RS&H will lead this coordination effort with the City.

Based on the Preliminary design, the Consultant Team will assist the City with determining if it is possible to reduce Right-of-Way needs. At the direction of the City, the Consult will consider methods to minimize the Right-of-Way needs such as reducing the width of typical section



elements, slightly revising the horizontal or vertical alignment or changing cut/fill slopes.

G. Final Drainage/ Water Quality Design

RS&H will lead this task.

- **Final Drainage Design**

Final drainage plans will be a continuance of the preliminary drainage plans developed in the Preliminary Design. Comments from the preliminary drainage plans will be addressed and design will be further developed including: vertical layout of storm sewer, water quality details, and erosion control details. During this phase, the drainage design will be adjusted to minimize impacts to the existing utilities. Utility impacts that are unable to be avoided will be coordinated with the utility designers. Because the storm sewer trunklines running along 51st Avenue are large size, special drainage structures are anticipated. Design and detailing of two special drainage structures are included in this scope.

Deliverables Include:

- Final Drainage Plans (50 scale), Profiles, General Notes, and Details
- Final Drainage Report

- **Final Water Quality Design and Engineering**

The consultant will provide final required water quality volumes for the existing extended detention basin downstream of the project. It is anticipated that the water quality outlet structure of the extended detention basin will not need to be retrofit or replaced to accommodate the additional flows from this Project and no further analysis will be required.

Deliverables include:

- Water quality details
- Water quality calculations included in the Final Drainage Report

- **Final Stormwater Management Plans**

The Consultant will provide stormwater management plans adjusted to address comments and for modifications to roadway and drainage designs. These plans will serve as the basis of the contractor obtaining the construction stormwater discharge permit. The permit application is not included with this scope.

Deliverables Include:

- Stormwater Management Plans (Three Phases)



H. Final Utility Design and Coordination

The City will prepare Utility Clearance Letters to Utility Companies. The Consultant will prepare Utility Specifications; provide assistance to CCD to obtain Utility Clearances. Verify all utility company as-builts in the field to the full extent possible to finalize design and identify project utility relocations. Objective/requirement is to obtain the required Utility Clearance for the project.

I. Railroad Coordination and Public Utilities Commission and Support

The Consultant in conjunction with our subconsultant RailPros will coordinate with BNSF and PUC on the proposed grade crossing along 51st Avenue just east of Logan Street. Sidewalk is proposed on both sides of the roadway at this crossing.

Work efforts under this Task include:

- Revise the signing and striping design at the 51st Avenue (DOT #245285S) crossing per review comments.
- Revise the grade crossing exhibit per review comments.
- Prepare PUC grade crossing application.
- Coordinate with BNSF to obtain railroad estimates.
- Coordinate with BNSF to obtain a C&M agreement for the 51st Avenue (DOT #245285S) crossing.
- Participate in Diagnostic Meeting with BNSF, PUC and CCD.

Task Deliverables

- Revised grade crossing exhibit.
- PUC application.

J. Lighting Design

The Consultant in conjunction with our subconsultant Clanton and Associates will develop and coordinate the Final lighting design with the City, the utility agency, and the project stakeholders.

The Consultant will provide the following lighting work for Final Design:

- Incorporate comments from 60% Review
- Final lighting layout
- Final lighting details
- Final electrical design
 - Panel schedules
 - One line diagrams
 - Lighting Control Centers, including short circuit calculations and feeder sizing
 - Circuiting and conduit, including voltage drop calculations and conduit sizing
 - Electrical details
- Specifications
- Tabulation of Approximate Quantities
- Opinion of Probable Cost



K. Risk Register

RS&H will lead this task.

The consultant will review and update the Risk Register with the project manager and project team, and the consultant will assist with strategies to minimize/mitigate risks as they become apparent.

L. Cost Estimating

RS&H will lead this task.

The Consultant shall develop detailed construction bid quantities and construction cost estimates based on the Final plans and quantities. The cost estimates will be presented by typical CDOT Pay Items and cost categories and utilize relevant/current unit cost information from similar/recent projects in the Denver metropolitan area.

M. Denver Transportation and Infrastructure Engineering, Regulatory, and Analytics (PWERA) Preparation, Process, and Submittal

RS&H will lead this task.

The Consultant will prepare final construction documents, drawing and specification per City design standards and format including applicable federal and state requirements. The consultant will complete the Final design plans/documents associated with the PWERA review process. The following items may be included:

- Preparation and attendance for the Final Design Review Meeting,
- Coordinate, complete and compile the plan inputs from all activities: materials, drainage utility design, and right-of-way.
- Compile the Final cost estimate for the work described in the Final design plans based on estimated quantities.
- The Final design plans will include, but not be limited to:
 - Title Sheet
 - Standard Plans List
 - Project Site Plan & Key Map
 - Typical Roadway Sections
 - General Notes
 - Summary of Approximate Quantities
 - Survey Control Sheet
 - Geometric Control
 - Typical Roadway & Multimodal Details
 - Miscellaneous Details
 - Removal & Reset Plans
 - Roadway Plan & Profiles
 - Side Street Profiles
 - Paving Plans
 - Utility Plans
 - Drainage Plans



- SWMP plans
 - Traffic Signal Subset
 - Signing and Striping Plans
 - Construction Zone Traffic Control Subset
 - Lighting Plans
 - Landscape Plans
 - Roadway Cross Sections
 - Right-of-Way Plans
- The following items will be included with the Final design plans:
 - Project Sign-off and Cost Estimate for Ad for Bids
 - Final Geotechnical & Pavement Design Report
 - Final Drainage Report
 - Technical Specifications
 - Survey documents to support obtaining the required ROW Clearance
 - Updated Basemap and DTM
 - Final ROW and Ownership Plans
 - Updated Legal descriptions and Exhibits
 - Updated Title work (provided by CCD)

Limitations on Scope of Services

We have provided a specific number of hours to execute the various work tasks outlined in this proposal. The following tasks are not included in the scope of services:

- Redesign resulting from a change in CCD design policy or standards.
- Private or municipal utility design, including design work for water line relocations.
- Structural design.
- Public outreach, meetings and stakeholder engagement. It is our understanding that all necessary public involvement activities will be completed under a separate Planning project and will be inclusive of other adjacent CCD projects, including the Washington Street Improvements project, the National Western Center redevelopment, and Heron Pond.
- Hydraulic analysis or modifications to the existing water quality pond downstream of this project.
- Irrigation Design.
- Streetscape and Landscaping Design.
- Railroad Track Design.
- Railroad improvement cost estimates. It is assumed that BNSF will provide estimates for railroad grade crossing improvements.
- Right of way property owner meetings.
- Right of way Title Work.
- Traffic data collection, modelling, or analysis beyond what is stated within this proposal.
- Project Advertisement, Bidding, Addendum, bid tab evaluation and construction phase services are not included.



51st Avenue Improvements, Logan Street to Emerson Street

	Total RS&H Hours	RS&H Cost	Subs	Expenses	Total Cost
TASK1 - General Project Management	213	\$ 48,459.00	\$ -	\$ 500.00	\$ 48,959.00
TASK 2 - Preliminary Design of 51st Avenue					
PHASE 2a - 51st Avenue, west of Washington St.	665	\$ 114,727.00	\$ 83,091.84	\$ 7,720.00	\$ 205,538.84
PHASE 2b - 51st Avenue, east of Washington St.	662	\$ 112,384.00	\$ 55,163.97	\$ 4,887.00	\$ 172,434.97
Task 3 - Final Design of 51st Avenue					
PHASE 3a - 51st Avenue, west of Washington St.	760	\$ 129,280.00	\$ 37,541.38	\$ 14,636.50	\$ 181,457.88
PHASE 3b - 51st Avenue, east of Washington St.	752	\$ 127,131.00	\$ 25,198.50	\$ 14,111.50	\$ 166,441.00

Total (Task 1, 2 & 3) \$ 774,831.69

Breakout of Tasks 2 & 3	Total RS&H Hours	RS&H Cost	Subs	Expenses	Totals Cost
West of Washington Street (Task 2a + Task 3a)	1425	\$ 244,007.00	\$ 120,633.22	\$ 22,356.50	\$ 386,996.72
East of Washington Street (Task 2b + Task 3b)	1414	\$ 239,515.00	\$ 80,362.47	\$ 18,998.50	\$ 338,875.97

**City and County of Denver Department of Transportation & Infrastructure
51st Avenue Improvements, Logan Street to Emerson Street**

Work Activity	PM	Roadway					Drainage				Traffic			Admin		Total Design Hours	RS&H Cost	Subs & Expenses						Totals Cost	
	Project Manager	PE 5	PE 4	PE 2	EIT 2	Design 2	PE 5	PE 3	EIT 3	Design 3	PE 5	PE 3	EIT 2	Admin III	Admin II			Survey	Enviromenta I	Utilities	Geotech	Rail Roads	Clanton		Expenses
RATES	\$ 269.00	\$ 269.00	\$ 242.00	\$ 161.00	\$ 114.00	\$ 131.00	\$ 269.00	\$ 176.00	\$ 130.00	\$ 165.00	\$ 269.00	\$ 176.00	\$ 114.00	\$ 141.00	\$ 98.00	NA	NA	105 West	Pinyon	UMS	Geocal	RailPros	Clanton	(Lab testing, airline travel, etc)	
Task 1 - General Project Management	RL	KD	DD	SB			JS	MD			DW	DL	AW												
A. Project Management																									
Management & Coordination	16		16											6	8	46	\$ 9,806.00							\$500.00	\$ 10,306.00
Quality Plan	1		2													3	\$ 753.00								\$ 753.00
B. Meetings																									
Kick-off Meeting	4		4				4					4				16	\$ 3,824.00								\$ 3,824.00
General Project Coordination Meetings (5 mtgs)	5		16				8	8				10				47	\$ 10,537.00								\$ 10,537.00
Technical Meetings (5 mtgs)	5		16				8	8				10				47	\$ 10,537.00								\$ 10,537.00
Bi-Weekly Progress Meetings (20 mtgs)	20		20									10				50	\$ 11,980.00								
C. Schedule	2		2													4	\$ 1,022.00								\$ 1,022.00
TOTAL TASK 1 HOURS	53	0	76	0	0	0	20	16	0	0	0	34	0	6	8	213									
TOTAL Task 1	\$ 14,257	\$ -	\$ 18,392	\$ -	\$ -	\$ -	\$ 5,380	\$ 2,816	\$ -	\$ -	\$ -	\$ 5,984	\$ -	\$ 846	\$ 784		\$ 48,459.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$500.00	\$ 48,959.00



**City and County of Denver Department of Transportation & Infrastructure
51st Avenue Improvements, Logan Street to Emerson Street**

Work Activity	PM	Roadway					Drainage				Traffic			Admin		Total Design Hours	RS&H Cost	Subs & Expenses							Totals Cost
	Project Manager	PE 5	PE 4	PE 2	EIT 2	Design 2	PE 5	PE 3	EIT 3	Design 3	PE 5	PE 3	EIT 2	Admin III	Admin II			Survey	Enviromenta I	Utilities	Geotech	Rail Roads	Clanton	Expenses	
RATES	\$ 269.00	\$ 269.00	\$ 242.00	\$ 161.00	\$ 114.00	\$ 131.00	\$ 269.00	\$ 176.00	\$ 130.00	\$ 165.00	\$ 269.00	\$ 176.00	\$ 114.00	\$ 141.00	\$ 98.00	NA	NA	105 West	Pinyon	UMS	Geocal	RailPros	Clanton	(Lab testing, airline travel, etc)	
	RL	KD	DD	SB			JS	MD			DW	DL	AW												
Task 2 - Preliminary Design																									
PHASE 2a - 51st Ave, from Logan St to Washington St																									
A. Field Surveys and Right of Way	1		2	2												5	\$ 1,075.00	\$26,050.00							\$ 27,125.00
B. Subsurface Utility Engineering (SUE)			4													4	\$ 968.00								\$ 15,043.71
C. Preliminary Roadway & Multimodal Design																		\$12,285.71							\$ -
Horizontal & vertical alignment			24	32	24	40										120	\$ 18,936.00								\$ 18,936.00
Typical Section refinement			4	8	0	8										20	\$ 3,304.00								\$ 3,304.00
Apply feedback from stakeholders			4	4	0	4										12	\$ 2,136.00								\$ 2,136.00
Coordinate with adjacent projects	1		2													3	\$ 753.00								\$ 753.00
D. Preliminary Traffic Design																									\$ -
Signing and Striping Plans											2	12	16			30	\$ 4,474.00								\$ 4,474.00
Synchro Analysis											2	2	16			20	\$ 2,714.00								\$ 2,714.00
Traffic Signal Design											2	24	32			58	\$ 8,410.00								\$ 8,410.00
E. Geotechnical Investigations/Pavement Design	1		2			2										5	\$ 1,015.00			\$9,532.35					\$ 15,952.35
F. Environmental Studies																									\$ -
Materials Management Plan	1		2													3	\$ 753.00								\$ 3,055.50
Limited Environmental Screening	1		2													3	\$ 753.00		\$2,302.50						\$ 5,409.50
Limited Soil Sampling			1			1										2	\$ 373.00		\$4,656.50						\$ 7,411.50
G. Right-of-Way impacts and considerations	1		8													9	\$ 2,205.00								\$ 2,205.00
H. Drainage/Water Quality Design																									\$ -
Hydrology			2				1	8	8							19	\$ 3,201.00								\$ 3,201.00
Hydraulics Design							1	16	16							33	\$ 5,165.00								\$ 5,165.00
Water Quality Calculations								2								2	\$ 352.00								\$ 352.00
Drainage plans (4 plan, 1 gen notes, 1 det)							2	4	16	16						38	\$ 5,962.00								\$ 5,962.00
Preliminary Drainage Report							8	20		8						36	\$ 6,992.00								\$ 6,992.00
I. Utility Conflict Identification and Coordination	1		4	4	0											9	\$ 1,881.00								\$ 1,881.00
J. Railroad Coordination and PUC and Support																									\$ -
Review Design Plans	1		2													3	\$ 753.00								\$ 5,139.24
Prepare grade crossing exhibit	1		2	2	2											7	\$ 1,303.00								\$ 3,923.02
PUC diagnostic meeting	3		6													9	\$ 2,259.00								\$ 6,629.52
Coordinate with BNSF and PUC	1		4													5	\$ 1,237.00								\$ 2,474.80
Coordination meetings	2		4													6	\$ 1,506.00								\$ 6,440.70
K. Lighting Design	1		2	2	0											5	\$ 1,075.00								\$ 5,277.00
L. Risk Register	1		1													2	\$ 511.00								\$ 511.00
M. Cost Estimating	1	1	4	4	0	8										18	\$ 3,198.00								\$ 3,198.00
N. PWER preparation, process & submittal																									\$ -
Design Review Meeting	2		4	4												10	\$ 2,150.00								\$ 2,150.00
Preliminary Plans & Specifications	1	6	24	24		40										95	\$ 16,795.00								\$ 16,795.00
List of required permits			2													2	\$ 484.00								\$ 484.00
Respond to comments	1		8	8	8	8										33	\$ 5,453.00								\$ 5,453.00
List of deviations from standard design criteria			2	4												6	\$ 1,128.00								\$ 1,128.00
Revisions	1		8	8	8	8										33	\$ 5,453.00								\$ 5,453.00
TOTALS TASK 2a HOURS	23	7	134	106	42	119	12	50	40	24	6	38	64	0	0	665									
TOTAL Task 2a	\$ 6,187	\$ 1,883	\$ 32,428	\$ 17,066	\$ 4,788	\$ 15,589	\$ 3,228	\$ 8,800	\$ 5,200	\$ 3,960	\$ 1,614	\$ 6,688	\$ 7,296	\$ -	\$ -		\$ 114,727.00	\$26,050.00	\$13,997.50	\$12,285.71	\$9,532.35	\$17,024.28	\$4,202.00	\$7,720.00	\$ 205,538.84



**City and County of Denver Department of Transportation & Infrastructure
51st Avenue Improvements, Logan Street to Emerson Street**

Work Activity	PM	Roadway					Drainage				Traffic			Admin		Total Design Hours	RS&H Cost	Subs & Expenses							Totals Cost
	Project Manager	PE 5	PE 4	PE 2	EIT 2	Design 2	PE 5	PE 3	EIT 3	Design 3	PE 5	PE 3	EIT 2	Admin III	Admin II			Survey	Enviromenta I	Utilities	Geotech	Rail Roads	Clanton	Expenses	
RATES	\$ 269.00	\$ 269.00	\$ 242.00	\$ 161.00	\$ 114.00	\$ 131.00	\$ 269.00	\$ 176.00	\$ 130.00	\$ 165.00	\$ 269.00	\$ 176.00	\$ 114.00	\$ 141.00	\$ 98.00	NA	NA	105 West	Pinyon	UMS	Geocal	RailPros	Clanton	(Lab testing, airline travel, etc)	
	RL	KD	DD	SB			JS	MD			DW	DL	AW												
Task 2 - Preliminary Design																									
PHASE 2b - 51st Ave, from Washington St to Emerson St																									
A. Field Surveys and Right of Way	1		2	2												5	\$ 1,075.00	\$24,440.00							\$ 25,515.00
B. Subsurface Utility Engineering (SUE)	1		4													5	\$ 1,237.00							\$132.00	\$ 9,332.38
C. Preliminary Roadway & Multimodal Design																									\$ -
Horizontal & vertical alignment			24	32	16	40										112	\$ 18,024.00								\$ 18,024.00
Typical Section refinement			4	8	8	8										28	\$ 4,216.00								\$ 4,216.00
Apply feedback from stakeholders			8	8		8										24	\$ 4,272.00								\$ 4,272.00
Coordinate with adjacent projects	1		8													9	\$ 2,205.00								\$ 2,205.00
D. Preliminary Traffic Design																									\$ -
Signing and Striping Plans											2	12	16			30	\$ 4,474.00								\$ 4,474.00
Synchro Analysis											2	2	16			20	\$ 2,714.00								\$ 2,714.00
Traffic Signal Design											2	16	24			42	\$ 6,090.00								\$ 6,090.00
E. Geotechnical Investigations/Pavement Design	1		2			2										5	\$ 1,015.00			\$8,340.39				\$4,755.00	\$ 14,110.39
F. Environmental Studies																									\$ -
Materials Management Plan	1		2													3	\$ 753.00		\$2,302.50						\$ 3,055.50
Limited Soil Sampling			1			1										2	\$ 373.00		\$5,813.70						\$ 6,186.70
G. Right-of-Way impacts and considerations	2		8													10	\$ 2,474.00								\$ 2,474.00
H. Drainage/Water Quality Design																									\$ -
Hydrology			2													19	\$ 3,201.00								\$ 3,201.00
Hydraulics Design							1	8	8							33	\$ 5,165.00								\$ 5,165.00
Water Quality Calculations								2								2	\$ 352.00								\$ 352.00
Drainage plans (4 plan, 1 gen notes, 1 det)							1	4	16	16						37	\$ 5,693.00								\$ 5,693.00
Preliminary Drainage Report							8	20		8						36	\$ 6,992.00								\$ 6,992.00
I. Utility Conflict Identification and Coordination	1		4	4	4											13	\$ 2,337.00								\$ 2,337.00
K. Lighting Design	1		2	2	2											7	\$ 1,303.00								\$ 7,607.00
L. Risk Register			1													1	\$ 242.00					\$6,304.00			\$ 242.00
M. Cost Estimating	1	1	4	4	4	8										22	\$ 3,654.00								\$ 3,654.00
N. PWER preparation, process & submittal																									\$ -
Design Review Meeting	2		4	4												10	\$ 2,150.00								\$ 2,150.00
Preliminary Plans & Specifications	1	6	24	40		40										111	\$ 19,371.00								\$ 19,371.00
List of required permits			2													2	\$ 484.00								\$ 484.00
Respond to comments	1		8	8	8	8										33	\$ 5,453.00								\$ 5,453.00
List of deviations from standard design criteria			4	4												8	\$ 1,612.00								\$ 1,612.00
Revisions	1		8	8	8	8										33	\$ 5,453.00								\$ 5,453.00
TOTALS TASK 2b HOURS	15	7	126	124	50	123	11	50	40	24	6	30	56	0	0	662									
TOTAL Task 2b	\$ 4,035	\$ 1,883	\$ 30,492	\$ 19,964	\$ 5,700	\$ 16,113	\$ 2,959	\$ 8,800	\$ 5,200	\$ 3,960	\$ 1,614	\$ 5,280	\$ 6,384	\$ -	\$ -		\$ 112,384.00	\$24,440.00	\$8,116.20	\$7,963.38	\$8,340.39	\$0.00	\$6,304.00	\$4,887.00	\$ 172,434.97

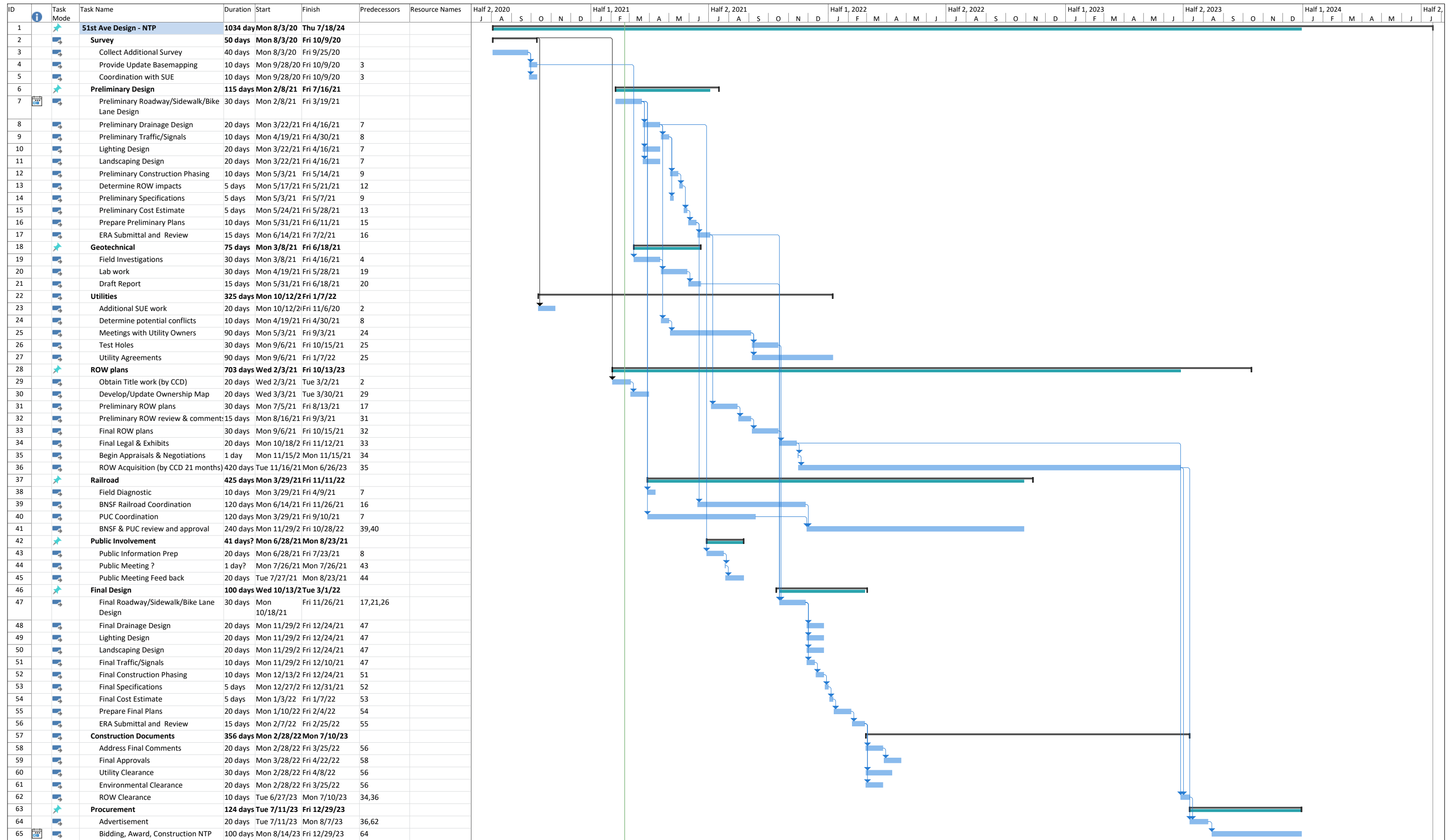


**City and County of Denver Department of Transportation & Infrastructure
51st Avenue Improvements, Logan Street to Emerson Street**

Work Activity	PM	Roadway					Drainage				Traffic			Admin		Total Design Hours	RS&H Cost	Subs & Expenses						Totals Cost	
	Project Manager	PE 5	PE 4	PE 2	EIT 2	Design 2	PE 5	PE 3	EIT 3	Design 3	PE 5	PE 3	EIT 2	Admin III	Admin II			Survey	Enviromenta I	Utilities	Geotech	Rail Roads	Clanton		Expenses
RATES	\$ 269.00	\$ 269.00	\$ 242.00	\$ 161.00	\$ 114.00	\$ 131.00	\$ 269.00	\$ 176.00	\$ 130.00	\$ 165.00	\$ 269.00	\$ 176.00	\$ 114.00	\$ 141.00	\$ 98.00	NA	NA	105 West	Pinyon	UMS	Geocal	RailPros	Clanton	(Lab testing, airline travel, etc)	
	RL	KD	DD	SB			IS	MD			DW	DL	AW												
Task 3 - Final Design																									
PHASE 3a - 51st Ave, from Logan St to Washington St																									
A. Field Surveys and Right of Way	1		1													2	\$ 511.00	\$14,690.00							\$ 15,201.00
B. Subsurface Utility Engineering (SUE)	1		4	8												13	\$ 2,525.00			\$4,011.50				\$14,111.50	\$ 20,648.00
C. Final Roadway & Multimodal Design																									\$ -
Horizontal & vertical alignment			12	16	4	32										64	\$ 10,128.00								\$ 10,128.00
Typical Section refinement			2	4	1	4										11	\$ 1,766.00								\$ 1,766.00
Apply feedback from stakeholders			4	4		4										12	\$ 2,136.00								\$ 2,136.00
Coordinate with adjacent projects			2													2	\$ 484.00								\$ 484.00
D. Final Traffic Design																									\$ -
Signing and Striping Plans											2	24	40			66	\$ 9,322.00								\$ 9,322.00
Traffic Signal Design											2	20	32			54	\$ 7,706.00								\$ 7,706.00
E. Geotechnical Investigations/Pavement Design			1													1	\$ 242.00								\$ 242.00
F. Right-of-Way impacts and considerations	1		4													5	\$ 1,237.00								\$ 1,237.00
G. Drainage/Water Quality Design																									\$ -
Hydrology							1	6	8							15	\$ 2,365.00								\$ 2,365.00
Hydraulics Design							1	8	8							17	\$ 2,717.00								\$ 2,717.00
Water Quality Calculations								4								4	\$ 704.00								\$ 704.00
General Notes, Tabulations, Standard Details (1 Shts)							1	4		8						13	\$ 2,293.00								\$ 2,293.00
Drainage Plan/Profile Sheets (2 Shts)							2	8	16	12						38	\$ 6,006.00								\$ 6,006.00
Additional Drainage Profile Sheets (2 Shts)							2	16	16	8						42	\$ 6,754.00								\$ 6,754.00
Special Structure Details (2 Shts)							2	24		16						42	\$ 7,402.00								\$ 7,402.00
Final Drainage Report							2	16		8						26	\$ 4,674.00								\$ 4,674.00
Stormwater management Plan (Narrative)							1	12		8						21	\$ 3,701.00								\$ 3,701.00
SWMP Site Maps (2 Shts x 3 Phases, 6 Total)							3	24	24	30						81	\$ 13,101.00								\$ 13,101.00
H. Final Utility Design and Coordination	2		12	8												22	\$ 4,730.00								\$ 4,730.00
I. Railroad Coordination and Public Utilities Commission and Support																									\$ -
Review design plans	1		2													3	\$ 753.00								\$ 5,139.24
Coordinate with BNSF and PUC	1		2													3	\$ 753.00								\$ 1,990.80
Revise grade crossing exhibit	1		2													3	\$ 753.00								\$ 3,373.02
Prepare PUC grade crossing application	1		2													3	\$ 753.00								\$ 2,754.12
Coordination meetings	1		2													3	\$ 753.00								\$ 5,687.70
J. Lighting Design	1		2	2												5	\$ 1,075.00								\$ 5,260.00
M. Risk Register			1													1	\$ 242.00								\$ 242.00
L. Cost Estimating	1	1	8	8		8										26	\$ 4,810.00								\$ 4,810.00
M. PWERA preparation, process & submittal																									\$ -
Design Review Meeting	1		4	4												9	\$ 1,881.00								\$ 1,881.00
Final Plans & Specifications	1	6	18	32		40										97	\$ 16,631.00								\$ 16,631.00
List of required permits			2													2	\$ 484.00								\$ 484.00
Respond to comments	1		8	8		8										25	\$ 4,541.00								\$ 4,541.00
List of deviations from standard design criteria			2	2												4	\$ 806.00								\$ 806.00
Revisions	1		8	8	0	8										25	\$ 4,541.00								\$ 4,541.00
TOTALS TASK 3a HOURS	16	7	105	104	5	104	15	122	72	90	4	44	72	0	0	760									
TOTAL Task 3a	\$ 4,304	\$ 1,883	\$ 25,410	\$ 16,744	\$ 570	\$ 13,624	\$ 4,035	\$ 21,472	\$ 9,360	\$ 14,850	\$ 1,076	\$ 7,744	\$ 8,208	\$ -	\$ -		\$ 129,280.00	\$14,690.00	\$0.00	\$4,011.50	\$0.00	\$14,654.88	\$4,185.00	\$14,636.50	\$ 181,457.88

**City and County of Denver Department of Transportation & Infrastructure
51st Avenue Improvements, Logan Street to Emerson Street**

Work Activity	PM	Roadway					Drainage				Traffic			Admin		Total Design Hours	RS&H Cost	Subs & Expenses							Totals Cost
	Project Manager	PE 5	PE 4	PE 2	EIT 2	Design 2	PE 5	PE 3	EIT 3	Design 3	PE 5	PE 3	EIT 2	Admin III	Admin II			Survey	Enviromenta I	Utilities	Geotech	Rail Roads	Clanton	Expenses	
RATES	\$ 269.00	\$ 269.00	\$ 242.00	\$ 161.00	\$ 114.00	\$ 131.00	\$ 269.00	\$ 176.00	\$ 130.00	\$ 165.00	\$ 269.00	\$ 176.00	\$ 114.00	\$ 141.00	\$ 98.00	NA	NA	105 West	Pinyon	UMS	Geocal	RailPros	Clanton	(Lab testing, airline travel, etc)	
Task 3 - Final Design	RL	KD	DD	SB			JS	MD			DW	DL	AW												
PHASE 3b - 51st Ave, from Washington St to Emerson St																									
A. Field Surveys and Right of Way	1		1													2	\$ 511.00	\$14,910.00							\$ 15,421.00
B. Subsurface Utility Engineering (SUE)	1		4	8												13	\$ 2,525.00			\$4,011.50				\$14,111.50	\$ 20,648.00
C. Final Roadway & Multimodal Design																									\$ -
Horizontal & vertical alignment			12	16	4	32										64	\$ 10,128.00								\$ 10,128.00
Typical Section refinement			2	4	1	4										11	\$ 1,766.00								\$ 1,766.00
Apply feedback from stakeholders			4	4		4										12	\$ 2,136.00								\$ 2,136.00
Coordinate with adjacent projects			4													4	\$ 968.00								\$ 968.00
D. Final Traffic Design																									\$ -
Signing and Striping Plans											2	30	40			72	\$ 10,378.00								\$ 10,378.00
Traffic Signal Design											2	16	32			50	\$ 7,002.00								\$ 7,002.00
E. Geotechnical Investigations/Pavement Design			1													1	\$ 242.00								\$ 242.00
F. Right-of-Way impacts and considerations	1		4													5	\$ 1,237.00								\$ 1,237.00
G. Final Drainage/Water Quality Design																									\$ -
Hydrology							1	6	8							15	\$ 2,365.00								\$ 2,365.00
Hydraulics Design							1	8	8							17	\$ 2,717.00								\$ 2,717.00
Water Quality Calculations								4								4	\$ 704.00								\$ 704.00
General Notes, Tabulations, Standard Details (1 Shts)							1	4		8						13	\$ 2,293.00								\$ 2,293.00
Drainage Plan/Profile Sheets (2 Shts)							2	8	16	12						38	\$ 6,006.00								\$ 6,006.00
Additional Drainage Profile Sheets (2 Shts)							2	16	16	8						42	\$ 6,754.00								\$ 6,754.00
Special Structure Details (2 Shts)							2	24		16						42	\$ 7,402.00								\$ 7,402.00
Final Drainage Report							2	16		8						26	\$ 4,674.00								\$ 4,674.00
Stormwater management Plan (Narrative)							1	12		8						21	\$ 3,701.00								\$ 3,701.00
SWMP Site Maps (2 Shts x 3 Phases, 6 Total)							3	24	24	30						81	\$ 13,101.00								\$ 13,101.00
H. Final Utility Design and Coordination	2		12	8												22	\$ 4,730.00								\$ 4,730.00
J. Lighting Design	1		2	2												5	\$ 1,075.00						\$6,277.00		\$ 7,352.00
K. Risk Register			1													1	\$ 242.00								\$ 242.00
L. Cost Estimating	1	1	8	8		8										26	\$ 4,810.00								\$ 4,810.00
M. PWEREA preparation, process & submittal																									\$ -
Design Review Meeting	2		4	4												10	\$ 2,150.00								\$ 2,150.00
Final Plans & Specifications	1	6	20	32		40										99	\$ 17,115.00								\$ 17,115.00
List of required permits	1		2													3	\$ 753.00								\$ 753.00
Respond to comments	1		8	8	0	8										25	\$ 4,541.00								\$ 4,541.00
List of deviations from standard design criteria			1	2												3	\$ 564.00								\$ 564.00
Revisions	1		8	8	0	8										25	\$ 4,541.00								\$ 4,541.00
TOTALS TASK 3b HOURS	13	7	98	104	5	104	15	122	72	90	4	46	72	0	0	752									
TOTAL Task 3b	\$ 3,497	\$ 1,883	\$ 23,716	\$ 16,744	\$ 570	\$ 13,624	\$ 4,035	\$ 21,472	\$ 9,360	\$ 14,850	\$ 1,076	\$ 8,096	\$ 8,208	\$ -	\$ -	\$ 127,131.00	\$14,910.00	\$0.00	\$4,011.50	\$0.00	\$0.00	\$6,277.00	\$14,111.50	\$ 166,441	
PROJECT HOURS	120	28	539	438	102	450	73	360	224	228	20	192	264	6	8	3052									
PROJECT TOTALS	\$ 32,280	\$ 7,532	\$ 130,438	\$ 70,518	\$ 11,628	\$ 58,950	\$ 19,637	\$ 63,360	\$ 29,120	\$ 37,620	\$ 5,380	\$ 33,792	\$ 30,096	\$ 846	\$ 784	\$ 531,981	\$80,090.00	\$22,113.70	\$28,272.09	\$17,872.74	\$31,679.16	\$20,968.00	\$41,855.00	\$ 774,831.69	



Project: 2020-06-19 Draft Schedu
Date: Mon 2/22/21

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

Scope of Work Phase 9

Washington Area Project Prioritization Plan and Outreach Strategy

November 11, 2020

There is a recognized gap in planning continuity across the entire “Washington Area” (41st and Fox station to NWCO Station, 54th, Arkin’s). Building upon the existing vision established in GES neighborhood planning and the NWC Master plan, the city desires to develop a cohesive planning vision-network study to understand how the various private and public investments interact and opportunities to enhance the mobility network along the riverfront and neighborhood connections to transit.

The effort will summarize recommendations and analyze existing DOTI efforts (one Build) with private development to understand interconnectedness and holistic solution for how the various efforts come together to form a walkable, safe, high quality network and contributes to Denver’s multimodal transportation network. **The intent of this effort is twofold:**

- 1) Provide immediate action items and prioritized projects for incorporation to current development**
- 2) Provide next steps/action items for higher level opportunities identified in previous planning efforts.**

Task 1. Project Management

Task 1a. Management and Coordination

Core Management Team: RS&H and OV Consulting will coordinate with the Core Team; City PM David Pulsipher, Community Design lead Karen Good and Office of Community and Business Engagement Lead, Anthony Aragon, on a monthly basis. The Core Team interaction will be key to both the Prioritization Study and the Communication and Outreach Strategy. The City will prepare agendas and provide meeting minutes. (10 virtual meetings)

Task 1b. Project Management Team: RS&H and OV Consulting will meet with the Project Management Team on a monthly basis to coordinate ongoing planning prioritization and outcomes. This group will include HOST, NWCO, Finance, CPD, Parks, GO Bond team and others as identified at the start of the project. The City will prepare agendas and provide meeting minutes. (10 virtual meetings)

Task 1c. Internal Team Coordination: RS&H and OV Consulting will coordinate on a monthly basis with team members related to both the Prioritization Study process and the development and implementation of the Outreach Strategy through internal meetings and calls with appropriate team members. Team members will be included in these bi-weekly meetings relevant to each study area. (10 virtual meetings)

Task 1d. Management of Project Schedule & Workflow: OV and RS&H will manage project schedule and workflow for both the Prioritization Study and Outreach and Engagement efforts, including study process, development of materials and findings, and ongoing coordination related to the Prioritization Study effort and organization of Outreach Strategy, stakeholder/public engagement approach and

materials and organization of implementation. The workflow and schedule will be coordinated directly with the Core Team on a regular basis and shared regularly with the PMT.

Task 1e. Agency and Department Coordination

RS&H and OV will coordinate with City departments, City project teams or area agencies or organizations as needed to inform the transportation discovery, analysis, alternatives and scenario development, as well as the outreach strategy. (up to 10 virtual meetings)

Task 1 Deliverables:

- Overall project workflow management and schedule for Prioritization Study process and Outreach Strategy development and implementation
- Monthly Core Management Team meetings for both Prioritization Study and Outreach Strategy (10)
- Monthly Internal Team coordination meetings/calls (10)
- City Department or related city project coordination meetings (CDP, DEDO, etc) in support of project coordination, information, or outreach strategy development. (up to 10)

Task 2. Connectivity Study

Task 2 Subtask: Discovery and Analysis

Confirm study area boundary or influence area to be included in all work, examine past planning efforts, recent projects and ongoing development (NPI, NWCO Master Plan, Denver Moves suite of plans, Vision Zero Action Plan) and readily available data within influence area at key locations:

Task 2a. Relevant Plans/Studies Mobility- OV

Define and finalize study area and/or influence area. Survey Denver Moves, NDCC Transportation Plan, NWCO and other relevant area mobility planning efforts for previously identified projects and community intent for mobility. Develop relevant summary documentation, graphics, or materials to convey findings, and confirm with coordinating departments, projects or organizations.

Task 2b. Relevant Plans/Studies/Development- OV

Review and identify key land use considerations in the Globeville and Elyria Swansea Neighborhood Plans and other relevant land use plans in the area, confirm previously identified community intent around land use and development, research current and proposed land use development throughout area.

Task 2c. Crash Analysis -OV

Obtain historical crash data including vehicle, pedestrian, bicyclist, fatal, and serious injury crashes within study area. Develop relevant summary graphics or materials to convey findings.

Task 2d. Hazmat Analysis -OV

Review environmental conditions within the study area and impact to potential future transportation network improvements. Develop relevant summary graphics or materials to convey findings. This will include review of existing field investigation information but no new field work.

Task 2e. Network Assessment -OV

Examine all current and future planned projects in the area and examine existing conditions of study area, including transit, sidewalk, vision zero, and bicycle facilities within study area to understand connections and barriers. Evaluate against land use analysis. Develop relevant summary graphics, materials and presentations of analysis and findings and confirm with coordinating departments.

Subtask Deliverables:

- Study Area and Influence Area map/GIS layers and data confirmation
- Summary, mapping, and graphics related to Relevant Mobility Plans/Studies, Land Use and Development, Crash Analysis, Hazmat Analysis
- Summary documentation and presentation of overall Network Assessment

Task 2 Subtask: Alternatives, Criteria Evaluation and Scenario Development

Task 2f. Evaluation and Scenario Development: RS&H and OV will evaluate the infrastructure network as defined in Task 2 and identify infrastructure gaps and examine the opportunity to fill infrastructure gaps through coordination between large developments and ongoing projects. The team will develop up to two (2) study area scenario(s) for future connectivity supported by existing and future planned development.

Task 2g. Alternatives Analysis and CIP Program Prioritization: OV and RS&H and will develop key evaluation criteria and analyze alternative projects that improve multimodal connectivity within the influence area and support the future network/scenario(s) through the CIP program:

1. Develop an in-depth look at near-term and long-term program of projects, bike and pedestrian connectivity, access to transit, etc.
2. Develop criteria, evaluate, and prioritize CIP program projects in coordination with city staff based on determined network needs and alternatives.
3. Assess funding and 6-year plan of projects with city staff in relation to program projects prioritization results.

Subtask Deliverables:

- Future scenario development of infrastructure network: mapping, graphics, and documentation
- Analysis of alternative projects near-term and long-term and prioritization of projects to meet network demand/infrastructure gaps.
- Coordinated funding assessment of prioritized projects and CIP program

Task 2 Subtask: Network Recommendations

Task 2h: RS&H and OV will provide recommendations to improve multimodal connectivity within study area relating to the following areas and subjects. Up to four (4) alternative concept drawings to support recommendations.

- a. Washington Street (45th Avenue to 52nd Avenue)
- b. Multimodal trail connections

- c. Local network connections and relationship to land use
- d. Multimodal network connectivity across South Platte into National Western Complex (NWC) and adjacent neighborhood/uses
- e. Emerson Street, as it relates to the construction of the 48th Avenue/Bettie Cram Bridge
- f. Recommendations about reconnecting the street grid between Washington Street and the River for 51st Avenue to 47th Avenue

Task 3. Public Engagement Strategy

Task 3 Subtask: Support OCBE

OV and RS&H will develop an area wide engagement strategy in coordination with OCBE and ensure that the new project focus is communicated externally in a consistent and transparent way to stakeholders and community.

Task 3a. Communication and Outreach Strategy Development – OV will work with OCBE and DOTI to draft new Communication and Outreach Strategy for the area, coupled with key messaging, community benefits and relevant project information to highlight and explain the coordinated project approach underway in the area. This strategy will be a robust plan that identifies the relevant projects within the 6-year plan, the related information to take to the community, and the timing of that information. This strategy will represent a cohesive and comprehensive approach to communication throughout the influence area.

This work will include development of the desired strategy, key messages, roles and responsibilities, identification of communication methods and tools, mapping and related educational materials and documentation of plan and schedule. OCBE will partner in developing and implementing the approach in coordination with this project team.

Task 3b. Communications Coordination Group

OV and RS&H will attend monthly Communications Coordination Group meeting as part of orchestrating the strategic engagement effort with OCBE and others. (up to 10 virtual meetings)

Task 3c. Stakeholder Group

OV will work with the OCBE and the Core Management Team to confirm the stakeholder group for the broader study area. The Stakeholder Group will be representative of the broader study area and integral to the Washington St. process. They will serve a key role in implementing the Outreach Strategy throughout the community. OV will support OCBE in the management of stakeholder meetings throughout the process. Up to ten (10) meetings within the contract period for this scope of services.

Task 3d. Business/Property Owner/Developer Coordination

OCBE will work with businesses, property owners and developers within the Washington corridor area to integrate proposed development and pending corridor design. OCBE will convey relevant information to the project team.

Task 3e. Community Engagement

OV will support OCBE in the community/public engagement effort as detailed in the overall Communication and Outreach Strategy. Specific support will include the following:

- **Website and Social Media:** OCBE will ensure coordination and interface with city website manager. OV will assist with the development of materials or the implementation of social media tools, such as community surveys using Survey Monkey, Facebook interface and community comments.
- **Newsletters:** OV will support OCBE in the development of two Adobe Spark newsletters for project progress/coordination in the area and along Washington Street. All materials and updates to the community will be ADA accessible and in English/Spanish. Hard copy will be made available through local organization and council offices.
- **Virtual or in-person Meetings:** OV will support OCBE in the implementation of virtual or in-person engagement with the public., OCBE will manage the organization and notification process. OV will provide assistance with virtual platforms and tools including Microsoft Teams, Zoom, Poll Anywhere, etc.
- **51st Ave Engagement:** OCBE will lead up to two (2) virtual engagement meetings of one (1) hour in duration with the public and key stakeholders to communicate ongoing study process and related design efforts on 51st Ave. OV will provide support with the technical platform as needed. RS&H will provide design materials. OCBE will advertise, plan and run these meetings.

Task 4. Washington Street Value Engineering

RS&H and OV will perform a Value Engineering evaluation on the Washington Street preferred design as defined in the Washington Street Study to identify ways to address the funding gap. RS&H will develop up to two (2) concept alternatives and develop a conceptual cost estimate and conceptual drawings for each alternative.

The alternatives will evaluate the preferred typical sections between 47th Avenue and 51st Avenue to identify how to reduce construction and right of way costs without compromising the project's goals. Evaluate the width and locations of the multimodal sidewalk, amenity zones and parking components of the typical section. This effort will recommend areas where reducing or omitting these components will reduce construction costs and right of way impacts. Focus on areas that may have significant right of way impacts, such as where the proposed improvements may impact adjacent existing structures or have implications to commercial accesses.

Additionally, this work will identify concurrent capital projects, such as the 48th Avenue Outfall project, that may be able to incorporate some of the Washington Street project elements. Elements such as right of way acquisition or utility relocations potentially could be incorporated at parcels that are anticipated to be impacted by both projects. Also, identify if any planned redevelopment efforts on private parcels have potential to incorporate some elements of the Washington Street project, such utility relocations.

Schedule

This scope of work and fee is based on a 10-month schedule. It will be critical to complete items on schedule to stay within the budget.



City and County of Denver Department of Transportation & Infrastructure Washington Area Project Prioritization Plan and Outreach Strategy										
Work Activity	PM	Planning (Roadway)		Planning (Traffic)		Admin			Subs	
	Project Manager	PE 4	PE 2	PE 5	PE 3	Admin III	Total Hours	RS&H Cost	OV	Totals Cost
RATES	\$ 269.00	\$ 242.00	\$ 161.00	\$ 269.00	\$ 176.00	\$ 141.00				
Task 1: Project Management (RS&H, OV)										
1a. Core Management Team (10 mtgs)	5	10					15	\$ 3,765.00	\$3,100.00	\$ 6,865.00
1b. Project Management Team (PMT) (10 mtgs)	5	10					15	\$ 3,765.00	\$3,650.00	\$ 7,415.00
1c. Internal Team Coordination (10 mtgs)	5	10					15	\$ 3,765.00	\$5,200.00	\$ 8,965.00
1d. Project Schedule & Workflow		1					1	\$ 242.00	\$3,540.00	\$ 3,782.00
1e. Agency/Department Coordination (10 mtgs)	1	10					11	\$ 2,689.00	\$4,150.00	\$ 6,839.00
1f. Project Management (Invoicing, Coordination)	2	5				6	13	\$ 2,594.00		\$ 2,594.00
Task 2: Connectivity Study (OV)										
Task 2 Subtask: Discovery and Analysis (OV)										
2a. Relevant Plan/Studies/ Mobility coordination		1					1	\$ 242.00	\$5,475.00	\$ 5,717.00
2b. Relevant Plans/Studies/Development/ Land Use coordination		1					1	\$ 242.00	\$5,475.00	\$ 5,717.00
2c. Crash Analysis		1					1	\$ 242.00	\$1,680.00	\$ 1,922.00
2d. Hazmat Analysis		1					1	\$ 242.00	\$1,680.00	\$ 1,922.00
2e. Network Assessment/grahics/documentation		1					1	\$ 242.00	\$6,690.00	\$ 6,932.00
Task 2 Subtask: Alternatives/Criteria Evaluation/Scenario Development (RS&H, OV)										\$ -
2f. Evaluation and Scenario Development	1	1					2	\$ 511.00	\$6,225.00	\$ 6,736.00
2g. Alternatives Analysis and CIP Program Prioritization	1	1					2	\$ 511.00	\$6,225.00	\$ 6,736.00
Task 2 Subtask: Network Recommendations (RS&H, OV)										
2h. Network Recommendations for up to four alternatives	4	6	12		2		24	\$ 4,812.00	\$10,920.00	\$ 15,732.00
Task 3: Public Engagement Strategy (RS&H, OV)										
Task 3 Subtask: Support OCBE (RS&H, OV)										
3a. Communication and Outreach Strategy Development (includes materials)	1	1					2	\$ 511.00	\$10,900.00	\$ 11,411.00
3b. Communications Coordination Group (10 mtgs)	2	8					10	\$ 2,474.00	\$1,550.00	\$ 4,024.00
3c. Stakeholder Group Support (mngt, presentation content, 10 meetings)	2	8					10	\$ 2,474.00	\$7,920.00	\$ 10,394.00
3d. Business/Property Owner/Developer Coordination							0	\$ -	\$0.00	\$ -
3e. Community Engagement Support (materials,online platforms, coordination) 10 mo	2	6					8	\$ 1,990.00	\$3,675.00	\$ 5,665.00
Task 4: Washington Street Value Engineering (RS&H, OV)										
4a. Value Engineering	4	60	20	4	4		92	\$ 20,596.00		\$ 20,596.00
TOTALS HOURS	35	142	32	4	6	6	225			
TOTAL	\$ 9,415	\$ 34,364	\$ 5,152	\$ 1,076	\$ 1,056	\$ 846		\$ 51,909.00	\$88,055.00	\$ 139,964.00

Washington Area Project Prioritization Plan and Outreach Strategy								
OV Consulting								
WORK ACTIVITY	Beth Vogelsang Principal Planner	Kevin Rangel Engineer	Steph Leonard Planner	Shari Moore Office Manager (Senior Planner)	Total Design Hours	Total Cost	Expenses	Total Costs
MANHOURLY RATES	\$ 155.00	\$ 105.00	\$ 105.00	\$ 115.00	NA	NA		
Washington Area Project Prioritization Plan and Outreach Strategy								
Task 1: Project Management (RS&H, OV)								
1a. Core Management Team (10 mtgs)	20			0	20	\$ 3,100.00		\$ 3,100
1b. Project Management Team (PMT) (10 mtgs)	10		20		30	\$ 3,650.00		\$ 3,650
1c. Internal Team Coordination (10 mtgs)	20		20		40	\$ 5,200.00		\$ 5,200
1d. Project Schedule & Workflow	8	0	0	20	28	\$ 3,540.00		\$ 3,540
1e. Agency/Department Coordination (10 mtgs)	20	0	10		30	\$ 4,150.00		\$ 4,150
Task 1 sub total:	78	0	50	20	148	\$ 19,640.00		\$ 19,640
Task 2: Connectivity Study (OV)								
Subtask: Discovery and Analysis (OV)					0	\$ -		\$ -
2a. Relevant Plan/Studies/ Mobility coordination	15	0	30		45	\$ 5,475.00		\$ 5,475
2b. Relevant Plans/Studies/Development/ Land Use coordination	15	0	30		45	\$ 5,475.00		\$ 5,475
2c. Crash Analysis		16	0		16	\$ 1,680.00		\$ 1,680
2d. Hazmat Analysis		16	0		16	\$ 1,680.00		\$ 1,680
2e. Network Assessment/graphics/documentation	12	16	30		58	\$ 6,690.00		\$ 6,690
subtask sub total	42	48	90	0	180	\$ 21,000.00		\$ 21,000
Subtask: Alternatives/Criteria Evaluation/Scenario Development (RS&H, OV)					0	\$ -		\$ -
2f. Evaluation and Scenario Development	30		15		45	\$ 6,225.00		\$ 6,225
2g. Alternatives Analysis and CIP Program Prioritization	30	0	15		45	\$ 6,225.00		\$ 6,225
subtask sub total	60	0	30	0	90	\$ 12,450.00		\$ 12,450
Subtask: Network Recommendations (RS&H, OV)								
2h. Network recommendations for up to four alternatives	42	0	42	0	60	\$ 10,920.00		\$ 10,920
subtask sub total	42	0	42	0	60	\$ 10,920.00		\$ 10,920
Task 3: Support OCBE (RS&H, OV)								
Subtask: Public Engagement Strategy								
3a. Communication and Outreach Strategy Development (and materials)	50		30		80	\$ 10,900.00		\$ 10,900
3b. Communications Coordination Group (10 mtgs)	10	0	0		10	\$ 1,550.00		\$ 1,550
3c. Stakeholder Group Support (mngt, presentation content, 10 meetings)	24		40		64	\$ 7,920.00		\$ 7,920
3d. Business/Property Owner/Developer Coordination					0	\$ -		\$ -
3e. Community Engagement Support (materials,online platforms, coordination) 10 mo	0		35		35	\$ 3,675.00		\$ 3,675
Task 3 sub total	84	0	105	0	189	\$ 24,045.00		\$ 24,045
Task 4: Washington Street Value Engineering (RS&H, OV)								
Task 4 sub total	0	0	0	0	0	\$ -		\$ -
SUBTOTALS HOURS	306	48	317	20	667		\$0	\$ -
TOTAL	\$ 47,430.00	\$ 5,040.00	\$ 33,285.00	\$ 2,300.00		\$ 88,055.00		\$ 88,055.00