

Scope of Work

Town of Blue River Sherwood Forest Maintenance Project - Design Services

Date: June 7th, 2023

Project Introduction

1. PROJECT BACKGROUND

The intersection of Sherwood Lane and Starlit Lane in the Town of Blue River (Town) currently experiences drainage issues during spring runoff and intermittently through the winter season. These issues are reported from town staff and local residents as: cross culverts freezing and not draining; standing and frozen water in roadside ditches; and flat roadway grade which all result in recurring damage to the existing roadway.

In 2016, Muller Engineering (Consultant) completed construction plans for a project in Sherwood Forest focused on improving drainage through the neighborhood. The project was ultimately not constructed due to the inability to acquire adequate easements to complete the project improvements.

At a site visit on May 9th, 2023, Muller Engineering met with Town Staff and local residents to work through possible solutions to the drainage problems. During this meeting it was determined that a Maintenance Project is desired to be completed immediately. Components of the 2016 Sherwood Forest construction project will be isolated and put to bid this summer with some modifications desired by the Town.

Muller Engineering recommends a system of culverts and ditches through Sherwood Forest to the specified outfall to the Blue River. During the site visit on May 9th, 2023, the Town chose to forgo complete ditches along Blue Grouse Trail in favor of a “field fit” flow path to the outfall. We understand the Town’s position and reasoning for this. Please note that Muller Engineering does not assume responsibility for adverse impacts associated with not constructing the roadside ditch adjacent to Blue Grouse Trail. Final construction plans will only be modified per comments received during the May 9th site visit. No additional or updated survey will be gathered.

The following scope of work will outline design and coordination tasks to be performed by Muller Engineering to finalize construction plans for the Sherwood Forest Maintenance Project (Maintenance Project).

2. PROJECT GOALS

The primary goals for the project are as follows:

- Improve drainage at the intersection of Sherwood Lane and Starlit Lane.

3. PROJECT LIMITS

This project is located in the Town of Blue River along Sherwood Lane from the intersection with Starlit Lane to the intersection with Blue Grouse Trail. Improvements will continue northeast along Blue Grouse Trail to an outfall to the Blue River at approximately 275 Blue Grouse Trail. Some improvements will occur along Starlit Lane from the intersection with Sherwood Lane to approximately 44 Starlit Lane.

4. PROJECT COSTS

The total design cost of this project is estimated at \$43,038.

5. WORK DURATION

The total time for the work in this full scope is approximately 3 months, assuming to start in May 2023 to August of 2023.

6. CONSULTANT RESPONSIBILITY AND DUTIES

Throughout the entirety of this project, the Consultant will be responsible for the preparation of Final Construction Plans, Bid Tab, and Specifications.

7. WORK PRODUCT

The work in the scope of services for this project will be contracted through the current on-call services contract between Muller Engineering and the Town of Blue River.

Project Management and Coordination

1. BLUE RIVER CONTACT

The Contract Administrator for this project is: Michelle Eddy, Town Manager and Project Manager (PM) as referenced below.

2. PROJECT COORDINATION

Coordination will be required with the following stakeholders:

- Town of Blue River
- Residents of Sherwood Forest. All resident communication will come from the Town; however, Muller is happy to provide feedback when requested.

Project Management and Coordination Meetings

1. PROJECT MANAGEMENT

This project will require close coordination and collaboration with the Town. Project Management activities will include:

1. Overall Project Budget

A project budget will be developed and submitted. This will be regarded as the baseline against which status and progress are measured and reported. The Consultant will work with the Town Project Manager to ensure that invoices contain required documentation and

backup and will coordinate with the Town business office as needed or requested by the Town Project Manager.

2. Monthly Scope and Budget Updates:

The Consultant shall monitor scope and budget and report progress monthly. The Consultant will develop and implement change management procedures to manage work progress. These updates as well as change management strategies will be documented in monthly progress reports accompanying the consultant invoices.

3. Monthly Reporting and Billing

The Consultant shall submit monthly progress reports that summarize:

- Work accomplished for the month
- Task percent complete
- Task percent expended
- Work planned for the upcoming month
- Change management updates

4. General Project Management Responsibilities of Consultant

The Consultant shall develop, manage, and implement project coordination strategies including:

- Prepare for and participate in project meetings -including materials and documentation
- Maintain action items, decision log, scope log, issues tracking, etc.
- Document management for file share platforms.

Deliverables:

- Overall Project Budget and Schedule
- Monthly Invoice
- Monthly Progress Report
- Action Item and Decision Logs to be maintained on OneNote.

2. PROJECT MEETINGS

All meetings except for site visits within this task order are anticipated to be held virtually.

1. Site Visit

The Consultant completed one site visit May 8th, 2023 and shall participate in a second field visit to the project site prior to project bidding. Two team members are assumed – project manager and hydraulics project engineer.

2. Project Coordination and Meeting with Residents

The Consultant will assist the Town with materials and answer questions from the Town Staff regarding the maintenance project. All coordination and meetings are assumed to be virtual. The Consultant will only communicate with town residents through Town Staff and will not answer emails or phone calls directly from town residents.

- a. Project meetings with Town residents to be scheduled by the Town (2 assumed)
- b. As-needed check in meetings with staff (2 assumed)
- c. Town Board meetings (2 assumed)

Deliverables:

- Meeting notes in OneNote - The Consultant shall take minutes at all meetings and provide the Town Project Manager access to the project notebook where all project meetings will be documented.
- Action Items and Decision Items List in One Note - When a definable task is discussed during a meeting, the minutes will identify the “Action Items”, the agency responsible for accomplishing them, and the proposed completion date. Similarly, when a definable decision is made by the Board or town, it will be identified as such in the minutes in OneNote.

Final Design

1. FINAL DESIGN

2. Modify Sherwood Forest Construction Plans for Maintenance Project

- a. Modify the final construction plans that were created in 2016 for Sherwood Forest into a Maintenance Project. The maintenance project will consist of the installation of driveway culverts across four driveways; an enlarged culvert across Sherwood Lane at Starlit Lane; a new culvert across Sherwood Lane at Blue Grouse; grading of roadside ditches from 14 Sherwood Lane, northeast to 275 Blue Grouse Trail; and a rundown at 275 Blue Grouse Trail to outfall the roadside ditch to the Blue River. Note that the original design included roadway re-grading so some additional grading work is needed.
- b. Stormwater management BMP’s will be included in the final Construction Plans, but no Stormwater Management Plan will be developed. The Stormwater Management Plan is assumed to be developed by the contractor.

Deliverables:

- Final Construction Plans

2. Utility Coordination

- Project size eliminates the requirement for Subsurface Utility Engineering plans per ASCE 38-02. Some conflicts with an existing gas line are anticipated.
- No utility relocations are included with this project.
- The Consultant will identify any known utility conflicts in the final construction plans. The Consultant will not facilitate utility potholing. Any modification to

the construction plans due to site conditions is not included in this scope of work.

- Coordination with the utility company is the responsibility of either the Town or the Contractor.

Deliverables:

- None

3. Bid Tab/Engineer's Opinion of Probable Cost

- a. Create a Bid Tab of project quantities to be used for project bidding. The Consultant will use available CDOT cost data to estimate probable unit costs for the bid tab to aid the Town in determining an appropriate project construction budget.

Deliverables:

- Bid Tab
- Engineer's Opinion of Probable Cost

3. Specifications

- a. The project manual and specifications will be based on those developed for the 2016 Sherwood Forest Construction Project. Updates will include modifications to the project name, dates, scope, and bid tab only. No additional specifications will be written for the maintenance project. None of the content of the technical specifications will be updated.

Deliverables:

- Project Manual and Specifications

4. Quality Assurance/Quality Control (QA/QC)

- a. The Consultant will conduct internal QA/QC reviews of all deliverables throughout the project in accordance with Muller's Quality Management Program (or equal).

Deliverables:

- None

4. Drainage Memo

- a. The consultant will write a drainage memo that will document the following:
 - Existing Conditions
 - Photo documentation of existing conditions
 - Drainage basins and basin map
 - Rational Method to determine runoff estimates

- Proposed Improvements
 - Hydraulic analysis of proposed cross culverts only
 - Hydraulic analysis of proposed ditch section
- b. Drainage basin delineation will be based on most current LiDAR data available for public download in conjunction with survey data gathered in 2016. It is assumed that no additional survey data will be collected and that the 2016 survey represents the current site conditions. It is assumed that project improvements are mimicking existing site conditions, so one set of drainage basins will be delineated to represent both existing and proposed conditions. Runoff estimates calculated by the rational method are for information only and will be used to check the maximum capacity of cross culverts and ditches. Ditch section will be determined by what is feasible to install rather than to meet a specific design storm. Therefore, hydraulic calculations for cross culverts and ditches will report maximum capacity only. Driveway culverts will not be sized.

Deliverables:

- Drainage Memo with applicable appendices

5. Miscellaneous Tasks for Project Advertisement

- a. The Consultant will assist the town on an as needed basis during project bidding and award as requested by the town; assumed 4 hours.

Subconsultant Coordination

A. ENVIRONMENTAL SERVICES

See the attached scope and fee from ERO Resources for Environmental Services

ASSUMPTIONS AND EXCLUSIONS

- Components from the 2016 Sherwood Forest Construction Project were identified by the Town to be included in the current Maintenance Project.
- Muller Engineering recommends a system of culverts and ditches through Sherwood Forest to the specified outfall to the Blue River. During the site visit on May 9th, 2023, the Town chose to forgo complete ditches along Blue Grouse Trail in favor of a “field fit” flow path to the outfall. Muller Engineering does not assume responsibility for any adverse impacts associated with not constructing the roadside ditch adjacent to Blue Grouse Trail.
- Final construction plans will only be modified per comments received during the May 9th site visit. No additional or updated survey will be gathered.
- Temporary easements will be required to construct the Maintenance Project. Legals from the 2016 project will be used and not modified. All easement coordination will be provided by the Town. This scope does not include any additional Right of Way Services.
- The Town will secure easements prior to final design and completion of the construction plans by the Consultant.
- The Town will facilitate all public engagement. Muller will not coordinate directly with any

residents and will direct all communications through the Town.

- Assumes no utility relocations or subsurface engineering will be provided.
- Assumes no construction phasing or traffic control plans.
- Assumes no stormwater management plan.
- Ditch and culvert capacity will not be analyzed to convey a specified design storm.
- Ditch size and capacity will be limited in some locations to avoid existing infrastructure such as septic systems, leach fields, utilities and utility services.
- No additional specifications will be written. Project manual will be a copy of the 2016 project manual and updated for project names, dates, times, and scope of work only.
- The Town will facilitate the bidding and project award process. The Consultant will be available to assist the town with miscellaneous questions as needed (assumed 4 hours).
- No construction services or contract administration is included in this scope of work.

MULLER ENGINEERING COMPANY
PROJECT FEE ESTIMATE

CLIENT:

Town of Blue River

PROJECT:

Sherwood Forest Maintenance

PROPOSAL NO.:

PREPARED BY: WMG

CHECKED BY: ALR

PROJECT NO.: 11-008.19

DATE: 6/7/2023

PROPOSED TOTAL FEE: \$ 43,038

TASK NO.	ITEM DESCRIPTION	LABOR (HOURS)				EXPENSES			TOTALS			
		ALR	JHW	WMG	BTG	OUTSIDE SERVICES	TRAVEL	MISCELLANEOUS	TIME (HOURS)	LABOR COST	EXPENSES	SUBTOTAL
		Project Manager 7L	Project Manager 6L	Project Engineer 5H	Technician/CADD Operator 2							
	Staff Member Initials >>>											
	2023 Billing Rate>>>	\$208	\$188	\$178	\$101							
100	Project Management											
	Project Management (assume 3 months)		9	3					12	\$ 2,226		\$ 2,226
	Site Visit (assume 2)		8	12			\$ 200		20	\$ 3,640	\$ 200	\$ 3,840
	Project coordination and meetings with residents	6	12	20					38	\$ 7,064		\$ 7,064
	SUBTOTAL								70	\$ 12,930	\$ 200	\$ 13,130
200	Final Design											
	Modify Sherwood Construction Plans for Maintenance Project	1		28	12				41	\$ 6,404		\$ 6,404
	Utility Coordination	2		6					8	\$ 1,484		\$ 1,484
	Bid Tab/Engineers Opinion of Probable Cost	2		6					8	\$ 1,484		\$ 1,484
	Specifications (update previous spec package only)	1		12					13	\$ 2,344		\$ 2,344
	QA/QC	3	1	2	4				10	\$ 1,572		\$ 1,572
	Drainage Memo	4		54	12				70	\$ 11,656		\$ 11,656
	Misc Tasks for Project Advertisement			4					4	\$ 712		\$ 712
	SUBTOTAL								154	\$ 25,656	\$ -	\$ 25,656
300	Subconsultant Services											
	Wetland determination - ERO	1	1	2		\$ 3,500			4	\$ 752	\$ 3,500	\$ 4,252
	SUBTOTAL								4	\$ 752	\$ 3,500	\$ 4,252
	TOTAL HOURS	20	31	149	28				228			
	TOTAL LABOR	\$ 4,160	\$ 5,828	\$ 26,522	\$ 2,828					\$ 39,338		
	TOTAL EXPENSES					\$ 3,500	\$ 200	\$ -			\$ 3,700	
	TOTAL FEE											\$ 43,038

May 24, 2023

Mr. Jeffery Wulliman
Muller Engineering Company
7245 West Alaska Drive, Suite 300
Lakewood, Colorado 80226

RE: Sherwood Forest Road Improvements

Dear Mr. Wulliman,

This letter transmits ERO Resources Corporation's (ERO) proposed Scope of Work to assist with ecological services associated with the Sherwood Forest Road Improvement project in Summit County, Colorado. ERO, a Colorado corporation, will conduct the work for Muller Engineering Company (hereinafter referred to in all accompanying documents as Client). ERO will conduct this work on a time-and-materials basis not to exceed \$3,500 for Task 1.

Please contact me if you have any questions or concerns regarding this scope and cost estimate.

Sincerely,

Accepted by Client:



Hidde Snieder
Biologist

Signature

Date

Accepted by ERO Resources Corporation:



Signature of Principal

5/24/23

Date

Attachments

ERO Resources Corporation

Scope of Work for Environmental Services for Sherwood Forest Road Improvements Summit County, Colorado

May 23, 2023

Background

Muller Engineering Company (Muller) has requested ERO Resources Corporation (ERO) prepare this Scope of Work (SOW) to perform the environmental services discussed below for the Sherwood Forest Road Improvement project. Muller has requested a wetland delineation of the project area in the Town of Blue River in Summit County, Colorado. This scope of work outlines the tasks anticipated for the environmental services related to the project.

Task 1. Identify and Map Wetlands, Open Water, and Channels

A qualified ERO ecologist will delineate all wetlands, open waters, and channels within the project area that may be under U.S. Army Corps of Engineers (Corps) jurisdiction through Section 404 of the Clean Water Act. Wetlands will be delineated following the methods in the revised online version of the *Corps' Wetland Delineation Manual* (1987) and the appropriate regional supplement. Open water and channels will be determined based on the presence of an ordinary high water mark as defined in 33 CFR Part 328. ERO will map the boundaries of wetlands, open water, and channels to submeter accuracy using a Global Positioning System (GPS) unit or, when appropriate, boundaries will be mapped onto an appropriately scaled aerial photograph. ERO will incorporate the wetland boundaries into project base mapping provided by the Client and will send the Client a revised base mapping file that includes a layer with the boundaries of wetlands, open water, and channels.

Products

- Map with wetlands, open water, and channel boundaries.

Assumptions

- The Client will arrange and provide permission to access the project area.
- Changes to the boundaries of the project area will require additional effort and ERO will coordinate with the Client to determine if changes in the scope or budget are necessary.
- This scope of work does not include a wetland delineation report; if a wetland delineation report becomes necessary ERO will prepare a new scope of work.
- This scope of work does not include any Clean Water Act Section 404 permitting. If a 404 permit becomes necessary, ERO will prepare a new scope of work.

Estimated Costs

The above Tasks 1 will be completed on a time-and-materials basis for a cost not to exceed \$3,500 (see below for breakout), including expenses billed at cost plus 6 percent.

Task 1. Identify and Map Wetlands, Open Water, and Channels	\$3,500
Total including expenses	\$3,500