



REVISED EXHIBIT A

SCOPE OF WORK

City of Lake Forest Park

Town Center to Burke-Gilman Trail Connector – Phase 2: 30% Design

September 19, 2024

During the term of this Agreement, the consultant team (Consultant) including the prime and subconsultants shall perform professional services for the City of Lake Forest Park (LFP) to advance the design of a tunnel alternative (or bridge) for the Town Center to Burke-Gilman Trail Connector (Project).

The Scope and Level of Effort for Phase 2 of the design includes:

- Phase 2: 30% Design of Bridge Option

Additional future phases are not included in this scope.

Project tasks and subtasks of Phase 2 are described in the Scope of Work below.

Project Description

LFP desires to design a pedestrian/bicycle non-motorized grade-separated crossing of SR-522 to connect the Lake Forest Park Town Center to the Burke-Gilman Trail (BGT). Overpass and underpass options were evaluated in Phase 1 of the project. Phase 2 will progress the design development of the overpass option with the midblock crossing and south ramp parallel to the BGT to minimize grade impacts to existing trail.

This is the bridge design preferred by King County in Phase 1 being progressed to a 30% design level. This alignment of the bridge crosses the SR 522 at mid-block, to the east of the driveway entrance into the Town Center site. The proposed design consisted of an overpass over the SR 522 with south approach structure parallel and north of the BGT. Acquisition of the bank property and insurance property will be necessary to accommodate the overpass.

The selected grade separated structure will conform to AASHTO Shared-Use Path Guidelines and provide a safe pedestrian/bike route across SR 522 roadway for users connecting with the BGT, LFP Town Center, transit, and other local destinations.

The general scope of Phase 2 will include:

- Advancing design to a 30% design drawing package for the bridge option..
- Developing 30% construction staging sequence and temporary trail detours drawings.
- Preparing a geotechnical memo confirming a proof-of-concept review for the selected design.
- Preparing a Cost Estimate for the bridge.



Project Schedule

The anticipated project schedule for Phase 2 (30% Design) is as shown below. The key milestone dates for Phase 2 have been roughly indicated in the schedule.

The project schedule may be subject to adjustment by mutual agreement, whether initiated by LFP or Consultant.

The following preliminary schedule is proposed to develop the 30% design package:

- October 2024: Notice to Proceed
- February 2025: Submission of 30% Design Package for the bridge.

Intellectual Property

The documents listed as “**Deliverables**” in the Detailed Task Description of this scope of work and other exhibits or presentations for the work covered by this AGREEMENT and associated supplements will be furnished by the Consultant to LFP upon completion of the various tasks of work. Whether the documents are submitted in electronic media or in tangible format, any use of the materials on another project or on extensions of this project beyond the use for which they were intended, or any modification of the materials or conversion of the materials to an alternate system or format will be without liability or legal exposure to Consultant. LFP will assume all risks associated with such use, modifications, or conversions. The Consultant may remove from the electronic materials delivered to LFP, all references to the Consultant involvement and will retain a tangible copy of the materials delivered to LFP which will govern the interpretation of the materials and the information recorded.

PHASE 2 – DETAILED TASK DESCRIPTION

General Assumptions:

1. *The level of effort for each task and subtask is limited to the amount of labor and expenses indicated in Level of Effort provided in Exhibit B. The budget may be transferred between tasks, provided the total contracted amount is not exceeded.*
2. *Additional services beyond the described services herein will be considered Extra Work.*
3. *The Project duration is anticipated to be five (5) months for Phase 2 as described in the schedule above.*
4. *The Consultant is responsible for meeting deadlines for their tasks only; Consultant has no control over those portions of the schedule related to the tasks performed by LFP or any third party.*
5. *The analyses, design, plans, specifications, and estimate performed or prepared as part of the Project will be in English units.*
6. *LFP has the authority to approve the Proposed Scope of Work and schedule changes.*



Task 100 – Project Management

This task includes services necessary to plan, perform and control the various elements of the Project to meet the needs and expectations of LFP and other stakeholders.

Work under this task will be performed by V+M.

Subtask 100.1 – Coordination

Under this subtask, the Consultant Project Manager will provide overall direction and coordination of activities with LFP and amongst the Consultant team.

Project Management tasks will include:

- **LFP Meetings** – Consistent communication with the LFP PM and meetings with key LFP staff and outside stakeholders.
- **Interdisciplinary Communication** – As-needed communication between discipline leads and conveying information and decisions between geotechnical, environmental, permitting, civil, landscape, estimating and structural.
- **Project Budget** – Establish anticipated spending rates and monitor progress using Earned Value reporting. Correct budget deviations early.
- **Schedule** – Establish a baseline schedule at project commencement that gets respected and updated. Make and hold decisions on configuration consistent with the baseline schedule.
- **Drawing Standards** – Adopt LFP drawing template for border and use V+M standard layers for AutoCAD drawings.
- **Review/Comment Periods** – It is assumed that there will be a formal Review/Comment period at the end of Phase 2.

Subtask 100.2 – Administration

This will include preparation of meeting minutes, monthly invoices complete with brief progress statement and earned value reporting. Monthly invoices will include copies of subconsultant invoices and payment remittance documentation, if any.

Assumptions:

- *Drawings will be produced using AutoCAD.*
- *The Consultant's Project Manager will meet with the LFP PM on a regular basis throughout the project, assumed to be 1 hour per week. This is assumed to be via telephone.*
- *In person meetings will take place at Lake Forest Park City Hall. Meeting durations indicated exclude travel time.*
- *Meetings are anticipated to include:*
 - a. *Kick-Off Meeting with LFP (1 count) @ 1 hour*
 - b. *Stakeholder meetings with:*



- i. City Staff – 2 meetings @ 1 hours each*
- ii. King County Parks (1 count) @ 1 hour*
- iii. City Council (1 count) @ 1 hour*
 - 1. Assist with preparation of materials for milestone meeting*
 - 2. V+M's Project Manager may be asked to attend.*
- c. Internal project team coordination meetings held on an as-needed basis during project duration (assumed 4 count).*

Deliverables:

- *Monthly Invoices and Progress Report in pdf format (1 copy)*



Task 200 – Cost Estimate

The cost estimate presented in Phase 1 will be updated in Phase 2 to reflect the 30% design. The updated estimate will also capture recent inflation in the unit costs and will include high level input based on the design and construction staging.

Work under this task will be performed by Wirthlin Consulting Group.

Subtask 200.1 – Management

Attend project team meetings to review the selected design concept and discuss cost implications and construction staging schemes.

Assumed meetings specific to this task include:

- Coordination calls (2 meetings @ 1 hour each)

Subtask 200.2 – Cost Estimate

Prepare a high-level opinion of probable cost of the selected grade separated design.

Assumptions:

- *Real estate costs and easements required for the project will be estimated by LFP.*

Deliverables:

- *Phase 2 – Opinion of Probable Cost.*



Task 300 – Geotechnical

Phase 2 will be based on the Geotechnical Report produced in Phase 1 of the project. The report summarized the results of the subsurface soil investigation as well as provided geotechnical engineering analysis and preliminary recommendations which will feed into the design phase.

A Proof-of-Concept review will be provided in Phase 2, to verify that the design concepts presented in the structural drawings are feasible and in line with the subsurface conditions determined in Phase 1.

Work under this task will be performed by GeoEngineers.

Subtask 300.1 – Management

Attend project team meetings to review the design concepts and discuss geotechnical feasibility and implications.

Assumed meetings specific to this task include:

- Coordination calls (Totaling 2 hours)

Subtask 300.2 – Proof of Concept Review

The Proof-of-Concept Review will evaluate the geotechnical system presented in the design drawings for the selected option in Phase 2 to ensure that the design loading and considerations discussed in the Geotechnical Report have been met. A review and discussion with V+M of the feasibility of the foundation system presented will be part of this task.

Deliverables:

- *Proof-of-Concept Review email of conclusions/findings*
- *Meeting minutes*



Task 400 – Environmental & Permitting

This task covers the environmental and permitting evaluations for Phase 2. The scope of services outlined below includes assessment and evaluation of project impacts to a level of detail suitable for the 30% design and supporting permitting efforts for the selected option.

Environmental & Permitting work will be performed by GeoEngineers.

Subtask 400.1 – Permitting Feasibility Assessment

The scope of services under this subtask include:

- Review proposed conceptual design, including approximate alignment, grading and restoration extents for the proposed bridge alternative.
- Identify permitting requirements based on conceptual design information provided.
- A review of applicable permits will be performed during Phase 2 to inform the project process for formal permit applications in future phases of work.

Subtask 400.2 – Stream Design Concept Support

The scope of services under this subtask includes:

- Review prior design work in upstream restored section of Lyon Creek and recently replaced culverts under SR 522 and the Town Center Access Drive.
- Estimate bottom width and bank full width of channel section based on prior work.
- Perform simplified calculations to estimate a 100-year water surface elevation through the structure assuming normal depth.
- Recommend freeboard above the 100-year water surface elevation for the existing trail bridge crossing over Lyon Creek on the BGT.
- Identify anticipated hydraulic opening width based on prior work to understand if the proposed ramp pier has impacts on stream capacity.

Assumptions:

- *This effort will use the flows established for the upstream design work already completed by others.*
- *Proposed channel section will be informed from upstream design section*
- *Hydrology and hydraulic models will not be prepared for this phase of work.*
- *Permit applications, including environmental and WSDOT, will not be prepared during this phase, and will be included in a future phase of work.*

Deliverables:

- *Memo summarizing results of above assessments, as well as identify additional data gaps and design considerations not evaluated at this phase.*



Task 500 – Hazardous Materials Assessment (NOT USED)

This task is not used in Phase 2.



Task 600 – Civil

Work includes civil engineering, utility review/coordination, and stormwater management. Data collected and concept design determined in Phase 1 will form the basis of information for this task.

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Work within this task will be performed by MIG.

Subtask 600.1 – Civil Infrastructure Concept Design Update

A review of the current site conditions will confirm that utility impacts for the bridge are still consistent with Phase 1 assumptions.

Assumptions:

- *SCL will provide power line clearance requirements.*
- *No new storm drainage outfalls will likely be required as part of this project.*

Deliverables:

- *Brief (2 page) technical memo documenting any new utility infrastructure considerations.*



STRUCTURAL
DESIGN

*Exhibit A – Scope of Work
City of Lake Forest Park
Town Center to Burke-Gilman Trail Connector*

Task 700 – Public Outreach (NOT USED)

This task is not used in Phase 2.



Task 800 – Structural

The scope under this task involves developing a design package, including proposed construction staging sequence and bike detour route, based on the bridge option.

Structural design work will be performed by V+M.

Subtask 800.2 – Design of 30% Bridge

The selected grade separation alternative will be taken to a 30% level. Drawings will be progressed to reflect preliminary details of the preferred alternative, including structural layout, geometry, construction staging considerations, as well as a proposed bike detour route. The design drawings will be accompanied with a Design Narrative Memorandum describing the selected structural system. This memo can be incorporated into the TS&L in a future phase of work.

Pier placement along the bank of Lyon Creek for the bridge option will be evaluated to possibly simplify the span configuration for the bridge ramp structure.

The preliminary Basis of Design Report completed in Phase 1 will be refined to reflect design criteria for the selected grade separated option. This document will summarize best design practices and establish the Codes and Standards to be used in the design.

Assumptions:

- Drawings will be produced using AutoCAD.

Deliverables:

- Revised Basis of Design Report
- Design Narrative Memorandum
- 30% design drawings for the bridge option
 - For the 30% for the bridge, the drawing list includes:
 - i. Cover Sheet and Index*
 - ii. General Structural Notes*
 - iii. Suggested Construction Sequence*
 - iv. Site Plan*
 - v. Bridge Plan and Elevation (General Arrangement)*
 - vi. Alignment and Profile*
 - vii. Foundation Layout and Details*
 - viii. Abutment Outlines*
 - ix. Pier Details (plan, elevation, details)*
 - x. Steel Superstructure Details (girder plan and elevation, floor beam layout, camber diagram, floor beams, plan bracing, etc.)*



xi. Deck Layout and Details

xii. Railing Plan and Details

xiii. Trail Grading and Sections

- Sketches showing temporary bike and pedestrian detours during construction. Proposed construction staging for the bridge option will be prepared using PDF markups.



Task 900 – Cost Benefit Analysis

Work includes Level of Service analysis and Synchro modelling.

Work within this task will be performed by Fehr & Peers.

Subtask 900.1 – Existing Conditions Assessment and Data Collection

Existing conditions will include Level of Service (LOS) analysis at up to two (2) intersections during the weekday evening peak period (4:00 – 6:00 PM) and a likely weekend daytime peak period (1:00 – 3:00 PM). The following two intersections will be studied:

1. SR 522 & Ballinger Way NE
2. SR 522 & NE 170th Street

Fehr & Peers will collect 24-hour, evening weekday peak period, and weekend vehicular traffic, pedestrian, and bicycle movement counts at these intersections. The previous Synchro network will be updated with the new counts. The signal timing will also be updated based on information provided by the City of Lake Forest Park and/or WSDOT.

Fehr & Peers will also observe the volume distribution of at-grade versus grade-separated pedestrian and bicycle volumes at up to two (2) intersections within the Puget Sound to provide additional context on travel behavior when a grade-separated crossing option exists above a multilane arterial.

Subtask 900.2 – Future Conditions Forecasting

Fehr & Peers will use any available modeling outputs conducted in the City of Lake Forest Park to reference and/or generate future year traffic and non-motorized volume forecasts. No new travel demand modeling is assumed for this task. Additionally, the forecasts will account for changes in pedestrian volumes generated from the future Sound Transit Bus Rapid Transit station near the Lake Forest Park Town Center. The future year for analysis will be confirmed with the City.

Forecasts for the pedestrian and bicycle volumes on the proposed bridge will consider several factors:

1. Travel time comparisons between at-grade and grade-separated travel paths based on proposed designs of the bridge, including access and egress points
2. The volume distributions observed between at-grade and grade-separated crossing volumes at other locations collected in Task 900.1.

Subtask 900.2 – Level of Service and Benefit Analysis

The forecast change in at-grade pedestrian volumes will be applied to the Synchro networks which may allow for changes to cycle lengths and phases. The level-of-service (LOS) for each of the study intersections will be performed using methodology provided in highway capacity manual (HCM), 6th Edition, as incorporated in the Synchro 11 Traffic Analysis software. The following scenarios are proposed to be studied as part of the LOS analysis:

1. Future “No Build” condition - Includes the Sound Transit BRT and future volume growth developed in Task 900.2)



2. Future “Build” condition - Includes the changes to pedestrian and bicycle volumes based on Task 900.2 analysis)

The results of this analysis for both scenarios will be reported in terms of average delay per vehicle and intersection LOS. Additionally, changes to pedestrian and bicycle travel times between the Burke-Gilman Trail and the Lake Forest Park Town Center will be documented based on provision of the grade-separated facility.

Subtask 900.3 – Final Transportation Impact Analysis Memorandum

Fehr & Peers will prepare a single Technical Memorandum that summarizes the LOS intersection analysis and benefits analysis. The memo will undergo up to two (2) rounds of consolidated comments and review by City staff.

Assumptions:

- *Fehr & Peers will coordinate via phone and email to discuss key findings during the project.*
- *Analysis will consider Weekday PM Peak Hour and Weekend Daytime Peak Hour only. The Peak Hour will be determined by completing a 24-hour tube count at the intersection under weekday and weekend conditions.*
- *All traffic analysis will be completed using Synchro traffic analysis software, which uses HCM 6th Edition methodology.*
- *Traffic data collection will be completed by a subconsultant, and it is assumed that data collection will take one week to complete and be provided to Fehr & Peers.*
- *Traffic signal timing information for the study intersections will be provided by the City.*
- *Should tasks be requested beyond those outlined in this scope, we will submit a scope and budget amendment to the City for written authorization before proceeding on out-of-scope tasks or expenses.*

Deliverables:

- *Technical Memorandum.*



Task 1000 – Management Reserve

The management reserve is to provide LFP with flexibility to authorize additional funds, beyond those estimated for the tasks of the scope of work, for allowable unforeseen costs, or for reimbursing the Consultant for additional work requested by LFP toward completing the project.

Payment from the management reserve fund must be authorized in writing by the City's contract manager before the Consultant performs the additional work. Such written authorization will include a description of the work to be performed and shall specify the amount of the payment.



STRUCTURAL
DESIGN

*Exhibit B – Level of Effort
City of Lake Forest Park
Town Center to Burke-Gilman Trail Connector*

REVISED EXHIBIT B

LEVEL OF EFFORT

City of Lake Forest Park

Town Center to Burke-Gilman Trail Connector

SUMMARY OF PROJECT COSTS

Project: Town Center to Burke-Gilman Trail Connector
Owner: City of Lake Forest Park
Prime: V+M Structural Design, Inc.
Phase 2: 30% Design

WORK TASKS		FEES BY COMPANY					COST
		V+M	Wirthlin Consulting Group	GeoEngineers	Fehr & Peers	MIG	
100	Project Management						\$11,489
100.1	Coordination	\$7,756					\$7,756
100.2	Administration	\$3,733					\$3,733
200	Cost Estimate						\$3,661
200.1	Management		\$523				\$523
200.2	Cost Estimate		\$3,138				\$3,138
300	Geotechnical						\$2,372
300.1	Management			\$474			\$474
300.2	Proof of Concept Review			\$1,897			\$1,897
400	Environmental & Permitting						\$7,457
400.1	Part A: Permitting Feasibility Assessment			\$3,467			\$3,467
400.2	Part B: Stream Design Concept Support			\$3,990			\$3,990
500	Hazardous Materials Assessment (NOT USED)						\$0
600	Civil and Landscape						\$994
600.1	Civil Infrastructure Concept Design Update					\$994	\$994
700	Public Outreach (NOT USED)						\$0
800	Structural						\$49,808
800.1	10% Revised Tunnel Design						\$0
800.2	Light 30% Tunnel or 30% Overpass	\$43,538					\$43,538
800.3	Updated Renderings	\$6,270					\$6,270
900	Cost Benefit Analysis						\$16,000
900.1	Cost Benefit Analysis				\$16,000		\$16,000
TOTAL NHR COST (SUM OF TASKS 1 THROUGH 10)		\$61,297	\$3,661	\$9,829	\$16,000	\$994	\$91,780
1000	Owner's Reserve						\$7,223
Other Direct Costs		\$145					\$145
Grand Total		\$61,442	\$3,661	\$9,829	\$16,000	\$994	\$99,148