SCOPE OF SERVICES
TASK ORDER 2024-2
UNDERWOOD CREEK DAYLIGHTING DESIGN SERVICES

A. BACKGROUND

This task order supplements the Underwood Creek Daylighting project scope of services authorized by the Village on January 17, 2024.

Purpose

- Evaluate channel and bank alternative refinements prior to proceeding with final design.
- Minimize cost increases and project delays in achieving compliance with CPKC design and construction requirements.
- Improve anticipated bid pricing related to soil disposal and concrete structures.

Overview of additional investigation and design activities included

- Geotechnical and environmental subsurface investigations along the proposed channel alignment.
- Alternatives Evaluation for channel alignment and bank treatments.
- Design of revised channel and bank treatments in selected alternative; corresponding hydraulic model modifications.
- Storm sewer modifications to accommodate adjacent drainage improvements.
- Project grant funding assistance.

The following design activities are not included in this current scope of services. Pending the outcome of the Alternatives Evaluation, the Village's traffic study, and the extent of design activities completed by adjacent property owners, they may be included in a future amendment.

- Pedestrian bridge and associated abutment design.
- Parking lot reconstruction design including paving, grading, and drainage outside of project limits, parking lot layout and striping design for vehicular and pedestrian traffic, parking lot site amenities and furnishings.

Discussion: CPKC

The Village is in the process of negotiating with CPKC the purchase of the former railroad spur corridor adjacent to the DPW yard. As part of project reviews, CPKC closely reviews any construction planned near their tracks that may affect their current or future operations. If project features are located within a defined zone adjacent to their tracks, CPKC requires that those features be designed to withstand Cooper E-80 train loading. CPKC approval is contingent on complying with extensive third-party structural review. In addition, CPKC further requires inspection by railroad personnel during construction. Because of the expense and time required for compliance with CPKC requirements, it is generally advantageous to minimize the extent to which project features,

including any temporary shoring that may be required during construction, are located within the railroad zone of influence.

Retaining Wall W3, directly east of the Sendik's building, is affected by these considerations. To maximize the amount of space available for Sendik's deliveries at their east loading dock, this retaining wall is located relatively close to the CPKC corridor. In its current location, the temporary shoring required for construction of Retaining Wall W3 is located within the railroad zone of influence from CPKC's existing tracks, and would also require a railroad easement for construction. In addition to considering the retaining wall location relative to the existing track configuration, CPKC notified the Village that a future third set of tracks within their mainline track corridor is included in their long-term planning and must be addressed in the project design.

The Village could elect to keep Retaining Wall W3 in its current location and proceed with the design, review, and railroad construction inspection required by CPKC. However, to avoid the associated design and construction costs and schedule delay, it is recommended that the channel alignment be shifted to the west so that project features (channel, retaining wall, temporary shoring) are outside the railroad zone of influence for current and future track configurations. Doing so eliminates railroad involvement from the design and construction process. To reduce the wall's footprint and its required distance from the railroad corridor, thereby maximizing the use of space available in the parking lot, Retaining Wall W3 is recommended to be designed as a cast-in-place structure or as a higher slope (average 1:1 horizontal:vertical) quarried stone bank revetment rather than a precast modular block wall. To avoid extending the channel bank further west toward Sendik's than it is currently when the channel alignment is shifted west, a retaining wall or quarried stone bank revetment is recommended to be built at the channel bank along the west project limit.

<u>Discussion: Abutments, concrete structures, amenities; Alternatives Evaluation</u>

Late in the design process (November 2018), the Village requested that abutments for a conceptual pedestrian bridge be shown on the drawings. Structural design of the abutments was to be done at a future time prior to construction. Therefore, if the Village gives final authorization for a pedestrian bridge, this is the appropriate time to proceed with the final design of the abutments, including selection of bridge type, size, and loading parameters, in coordination with Village staff and appropriate parties. The cast-in-place concrete bridge abutments will be in line with Retaining Walls W1 and W2. These walls, currently laid out as precast modular block walls, are recommended to be designed as reinforced cast-in-place concrete walls to facilitate integration with the cast-in-place bridge abutments.

Based on discussion at the June 10, 2024, PWUC meeting, the Village plans to authorize a traffic study to quantify downtown vehicular and pedestrian traffic patterns. The traffic study will help guide various design decisions, including whether and where a pedestrian bridge is sited. During these discussions regarding traffic movements, potential benefits of potentially locating a pedestrian path east of the channel between Watertown Plank Road and Wall Street, perhaps rather than west of the channel, were discussed.

The parking lot area adjacent to the project limits is apparently being redesigned by the adjacent property owners. It is anticipated that after the property owners' redesigns are completed and provided to the Village, drawings and specifications for the parking lot reconstruction, paving, and striping will be incorporated into the project construction drawings. Discussion regarding other user amenities within and outside the channel daylighting project area, including pedestrian paths, lighting, benches, trash receptacles, plantings, and signage, is still ongoing. The extent of design required for these features, as well as collaboration with the adjacent property owners, is still under discussion.

Drainage and parking lot features near the 890 Building and the Sendik's building will ultimately need to be incorporated into the project design to optimize the use and function of the area. For example, 890 Building downspouts that currently discharge directly to the stream channel will be piped to storm sewer laterals and connected to the project storm sewer system, allowing the area adjacent to the building to be used for parking. Existing private surface drainage piping between the 890 Building and Sendik's must be extended to connect to the project storm sewer system.

In light of these considerations, the following tasks are included in this current scope of work.

- Develop an Alternatives Evaluation to evaluate possible modifications to the channel and bank treatment configurations and refine the features to be included in the final design.
- After selection of a recommended channel and bank treatment alternative, proceed with the final design and construction drawings and specifications for the associated channel, bank, and pedestrian access features.
- Complete the hydraulic modeling of the revised channel alignment for design and for state/federal permitting.
- Modify the project storm sewer system to accommodate the drainage connection(s) for the Village Court building (890 Building) based upon a revised building storm drainage plumbing design provided by the property owner. Provide a manhole for a connection to a new private storm sewer between the Sendik's building and the 890 Building. The private storm sewer design will be completed by the property owner or added to this scope by amendment as authorized by the Village.

The following tasks are <u>not</u> included in this current scope of work but can be included pending completion of the Alternatives Evaluation, the Village's traffic study, and design activities completed by adjacent property owners.

- Pedestrian bridge and associated abutment design.
- Parking lot reconstruction design including paving, grading, and drainage outside of project limits, parking lot layout and striping design for vehicular and pedestrian traffic, parking lot site amenities and furnishings.

<u>Discussion: Subsurface investigations</u>

Approximately 21,000 cubic yards (CY) of soil will be excavated and hauled off-site for disposal during construction of the new Underwood Creek channel, accounting for a significant percentage of the

total project cost. Because disposal costs for contaminated soil can be several times higher than for non-contaminated soil, it is important to provide adequate information on soil contamination and associated disposal options so that Contractors can develop competitive bids. If sufficient soil quality information is not made available, bidders will generally make conservative assumptions about soil disposal costs, resulting in significantly higher bids than would otherwise be expected. In addition, because geotechnical soil borings were not previously conducted at the locations of the retaining walls, bridge abutments and road crossings included in the project, new borings at specific locations and depths are required to identify soil bearing capacities and related parameters needed for the efficient design of these features.

It is therefore recommended that a subsurface investigation program be implemented to collect both geotechnical and environmental subsurface information. Geotechnical borings will be used to evaluate strength and soil behavior related characteristics of the soil for use in the geotechnical and structural design of the project elements, including cast-in-place concrete features, road crossings, and sloped channel banks. Environmental borings will be used to identify the extent of contamination present in the soil to be excavated and describe disposal options for Contractor consideration during bidding, resulting in more competitive construction bids.

B. TASK DESCRIPTIONS

The proposed scope of work includes the tasks and services described below.

1. Environmental and geotechnical subsurface investigations

   This task addresses drilling, sampling, analysis and reporting to identify subsurface soil and groundwater properties and to determine associated construction and soil disposal parameters.

   Included in task scope:

   - Develop geotechnical and environmental drilling and sampling plans.
     - Preliminary geotechnical investigation plan includes up to 17 hollow stem auger borings to depths between 12 feet and 75 feet below ground surface, totaling approximately 612 feet of boring depth, conducted at the proposed locations of the various project structural elements and channel slopes.
     - Preliminary environmental investigation plan includes up to 30 direct push soil borings to depths up to 16 feet at approximate 50-foot intervals along the proposed channel alignment.
   - Subcontract drilling and laboratory analyses.
     - Soil samples will be collected continuously from each borehole. Up to three soil samples from each boring will be analyzed for one or more of the following: volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and/or Resource Conservation and Recovery Act (RCRA) metals. Up to 10 soil samples will also be analyzed for polychlorinated biphenyls (PCBs). In addition, Toxicity Characteristic Leaching Potential (TCLP) analysis will be performed if VOCs or RCRA metals concentrations exceed the “20x” rule, indicating that the

soil may have hazardous characteristics. For the purposes of this scope, we have assumed up to 10 samples will be analyzed for TCLP VOC and/or RCRA metals.
    - Up to four landfill waste characterization samples will be collected within the proposed daylighting corridor for laboratory analysis and landfill waste profiling. Each sample will be analyzed for typical parameters needed to obtain approval to dispose of soil at a local landfill (i.e. Protocol B).
- Develop summary reports.

Not included in task scope:

- This scope does not include development of WDNR-related documentation that may be required based upon investigation results and findings.

Deliverables:

- Geotechnical Data Report (GDR) for inclusion in project specifications.
- Geotechnical Interpretation Report (GIR) memorandum for internal design use.
- Environmental assessment sampling summary report including discussion of options for beneficial reuse of soil or other disposal options.

Assumptions:

- Soil cuttings generated during drilling operations will be drummed and stored on-site pending off-site disposal during project construction.

2. <u>Design modifications</u>

This task comprises various design improvements and modifications needed to refine alternative channel alignment and bank treatments, address stakeholder requirements and improve the competitiveness of bid pricing.

Included in task scope:

- Develop an Alternatives Evaluation that includes:
    - Up to three concept alternatives of stream channel alignment and bank treatment combinations (cast-in-place retaining wall, 1:1 quarried stone bank, 3:1 vegetated slope), and including path and water access configurations in the channel daylighting project area footprint.
    - Up to three concept alternative parking lot configurations, showing ingress/egress between Watertown Plank Road and Wall Street, vehicular and pedestrian travel lanes, and parking spaces. These alternatives will be developed after completion of the Village's traffic study.
- Adjust channel alignment so that temporary shoring is outside the railroad zone of influence for the existing track configuration and channel bank structures are outside the railroad zone of influence for a future third track.

  - Modify HEC-RAS model to reflect the realigned channel.
  - Modify the FEMA CLOMR work map and related documentation accordingly.
- Provide reinforced cast-in-place concrete designs and construction details for Retaining Walls W1 and W2 adjacent to Watertown Plank Road.
- Provide quarry stone sloped channel bank designs and construction details for bank sections south of the retaining walls and upstream of Wall Street.
- Modify storm sewer system (alignment and structures) to accommodate building drainage improvements at and adjacent to 890 Building.
  - The 890 Building owner has communicated their preference to have their roof drainage tie directly into the new Village storm sewer system rather than discharge to the ground surface adjacent to the building. Provide a manhole and associated storm sewer modifications to which the 890 Building can connect.
  - Modify grading and surface restoration adjacent to building.
  - Coordinate with private property parking lot designer to accommodate connection to private sewer located between 890 Building and Sendik's building.
- Develop landfill disposal option.
  - Coordinate with up to two local landfills to obtain landfill disposal waste profile information to include in project specifications.

Not included in task scope:

- This scope does not include design elements not mentioned above.
- This scope does not include public outreach assistance, renderings, or related materials.

Deliverables:

- Alternatives Evaluation technical memorandum summarizing the analyses and evaluation results.
- Revised construction drawings and specifications detailing the design modifications identified above.

Assumptions:

1. The Village will coordinate with adjacent property owners regarding required designs 'by others'.

C. SCHEDULE

It is assumed that Tasks 1 and 2 will commence in June 2024 and be completed by the end of December 2024. The scope of services described will commence upon receipt of the Village's Notice to Proceed (NTP).

D. FEE

Stantec's estimated fee to complete the work described is provided in Table 1 below. The work will be done on a Time & Materials basis, with a cost not to exceed the total identified without prior Village approval.

If additional budget is required to complete a task, or if out-of-scope work not currently included in the scope is required, Stantec will notify the Village of the required fee adjustment for approval prior to continuing the work.

Table 1 - Estimated Fee

Task	Name	Estimated Fee
1	Subsurface Investigations	$204,737
2	Design Modifications	$176,568
Total		**$381,305**