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Additional Work Authorization

Sent via email to Ray Schwab | schwabr@villageoflombard.org

Date:	4/03/2024	**Client:**	Village of Lombard, Illinois
Project Name:	Charles Lane Basin Improvements	**ERA Project No.:**	W22049.00

The work described in this Additional Work Authorization (AWA) is outside of the original scope of work anticipated for the professional service contract between Engineering Resource Associates, Inc. (ERA) and the Village of Lombard (Village). ERA will proceed as expeditiously as possible to complete the described services upon written authorization.

Reason(s) for Services:
The first DuPage County permit review and subsequent permit review meeting has made it clear that DuPage County will require FEQ modeling to demonstrate that proposed improvements to Charles Lane Pond will provide a watershed benefit. To demonstrate that the project is a watershed benefit the County is requiring FEQ modeling to show the following:

1. Pond improvements do not create negative impacts downstream (unacceptable increases in flow or flood elevations within the East Branch and Tributary)
2. Show that providing compensatory storage by either raising the pond berm a few inches or eliminating the berm all together does not negatively impact flood flows and elevations and/or is effective floodplain storage.
3. Revisions to Charles Lane Pond do not violate any detention requirements that the facility may have been constructed for.

It is our understanding that if the above described FEQ modeling demonstrates a watershed benefit the County would likely support a potential variance to the County ordinance for detention and floodplain requirements for a regional stormwater facility improvement. It is also our understanding that DuPage County will assist ERA and the Village with the hydrology portion of the FEQ analysis as described in Task 2 below.

Included in this AWA is the FEQ modeling efforts, assistance in the DuPage County variance process, additional design of Charles Lane Pond control features that may be required to show a watershed benefit which may include revisions to the storm sewer coming into the pump station, revision to the storm sewer leaving the pump station, revisions to the spillway, etc.

SCOPE OF WORK

Task 1 – Additional Progress and Permitting Meetings
The expansion of the scope of work requires additional design and progress meetings with the Village of Lombard (virtual and in-person) and additional meetings with DuPage County permitting department.

Task 2 – FEQ Modeling, Results Analysis and Documentation
ERA will update the regulatory FEQ hydrologic and hydraulic models for Charles Lane Basin. The following subtasks are anticipated to complete the modeling.

Data Collection, Research and Review

A) Obtain plan information from Tollway Authority and review for relevant data.
B) Investigate control structures for the Lombard Lagoons (Tollway Ponds)

Hydrology Work (DPC Dependent)

A) Request floodplain mapping shapefile information for this drainage area from DPC. This data is important to maintain consistency within the East Branch DuPage River model tributary area boundaries.
B) Identify those areas that may be inter-basin divides using ERA's XP-SWMM drainage areas as a guide.
C) Subdivide areas based on anticipated hydraulics and inter-basin divides. Send new shapefile to DPC to rerun land cover for the project area. Place generated land cover information into existing conditions FEQ model.

Hydraulics Work

A) Structures to include for existing conditions model:
    a. Charles Lane Pond Direct Connection to the EB DuPage River,
    b. Charles Lane Pond Pump,
    c. Charles Lane Pond 687.5 grate rating,
    d. Charles Lane Pond overflow,
    e. Additional Charles Lane Pond hydraulic structures as model tolerances permit,
    f. Unnamed EB DuPage River Reach Route 53 & I355 structure,
    g. Unnamed EB DuPage River Reach Finley Road structure.
B) Storm Sewers converging on the project area d/s of Finley Road, tie in with subcatchment design.
C) Approximately 10 cross sections to be developed u/s of Route 53 through Finley Road.
D) Maintain the Lombard Lagoons (Tollway Ponds) and d/s control structure as designed.

Existing Conditions Model

A) Create an EB DuPage River stub to reduce computation time and simplify debugging. Do this for both the LNG and BIG time series files.
B) Create FEQ model based on the hydraulic and hydrology elements determined/provided.
C) Run FEQ model through the LNG series of storms (continuous series).
D) Run FEQ model through the BIG series of storms (extreme series).
E) Run BFILTER & PVSTATS and smooth the data using DPC hydraulic evaluation methodology.

Proposed Conditions Analysis Modeling

A) Adjust the storage to the pond per design (Eliminating or raising berm).
B) Adjust Finley Road structure.
C) Revisions to Charles Lane outfall control structures (new culvert through berm, changes to the pond control structures, etc.) This assumes no change to the pump operations.
D) Run Proposed FEQ model through the LNG series of storms (continuous series).
E) Run Proposed FEQ model through the BIG series of storms (extreme series).
F) Run BFILTER & PVSTATS and smooth the data using DPC hydraulic evaluation methodology.

Comparative Analysis

A) Create a spreadsheet that directly compares existing and proposed PVSTATS outputs.
B) Determine if Charles Lane Pond is detached from the 100-year floodplain or a part of it.
C) Create a new map showing the floodplain information.

Task 3 – Permitting Revisions/Variance Assistance

ERA will revise the DuPage County permit submittal to show that the proposed improvements will be a regional watershed benefit. The resubmittal will go through the detention and floodplain section codes one by one to demonstrate how the design meets the ordinance requirements or why a variance should be supported.

Task 4 – FEQ Related Design Revisions

ERA will incorporate the additional design recommended by the FEQ analysis into the final plans. It is assumed that this will include some combination of berm revisions, overflow revisions, culvert addition through the berm, outfall improvements, control structure improvements, etc.

BUDGET

TASK No.	WORK DESCRIPTION	HOURS	WEIGHTED HOURLY RATE	FEE	% OF GRAND TOTAL
1	Additional Progress and Permitting Meetings	8	$180	$1,400.00	3.02%
2	FEQ Modeling Results Analysis and Documentation	220	$146	$32,000.00	68.97%
3	Permitting Revisions/Variance Assistance	36	$154	$5,600.00	12.07%
4	FEQ Related Design Revisions	58	$127	$7,400.00	15.95%
	TOTALS	**322**	**$159.99**	**$46,400.00**	**100%**

By: Engineering Resource Associates, Inc.

Marty Michalisko	Principal		4/03/2024
Name	**Title**	**Signature**	**Date**

Agreement to perform the services is hereby granted under the terms and conditions set forth in the contract (contract document number SS 18 01) accepted on March 3, 2022 by the Village of Lombard President and Board of Trustees. I acknowledge the above and authorize ERA to proceed with the change of work as described above.

By: Village of Lombard, Illinois **Client**

Keith T. Giagnorio	Village President		4/18/24
Authorized Name	**Title**	**Signature**	**Date**