

LAKE ZURICH AND ECHO LAKE REGIONAL STUDY AND FLOOD MITIGATION PROJECT - SCOPE OF SERVICES

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To: Kurt Woolford, Executive Director
Lake County Stormwater Management Commission

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Scope Understanding

The Lake County Stormwater Management Commission (LCSMC) and the Village of Lake Zurich are seeking engineering services for the modeling, analysis, and reporting for the North Flint Creek Tributary, starting with the upstream flows into Lake Zurich and the downstream point ending past Echo Lake at the pipe outflows under Miller Road near the intersection with Breckenridge Drive. This downstream boundary ties into a FEMA-studied floodplain, and the tributary area upstream includes Lake Zurich and Echo Lake. (See attached location/tributary area map)

Study Objective 1: Echo Lake is a privately managed lake located primarily in Unincorporated Ela Township. The Village of Lake Zurich property constitutes approximately 8% of the lake, while one parcel of private property accounts for approximately 2% of the lake. The Echo Lake Community Corporation owns the remaining 90% of the lake. A pipe was installed beneath the lake to bypass upstream baseflow around Echo Lake. In the event of pipe failure, significant environmental and flooding consequences would follow. To mitigate this risk, the project scope includes analyzing and designing alternatives to resolve the issue, as well as developing cost estimates for future funding efforts.

Study Objective 2: Lake Zurich is just upstream of Echo Lake and consistently maintains a water level near the 100-year base flood elevation (BFE). This has generated some flood-related concerns from residents, caused drainage system problems flowing into the lake, and exacerbated shoreline erosion problems around the lake. The elevated water level results in persistently inundated stormwater infrastructure tributary to the lake, reducing flow capacity and heightening flood risks. Additionally, the lake's outfall remains unregulated. Anecdotal reports suggest that the tributary area contributing to Lake Zurich may be more extensive than initially assessed in the FEMA Flood Insurance Study (FIS). This possibility is due to the redesign of Route 22, which could have redirected water into the lake. This analysis and study will assess the water surface elevation level (WSEL) in Lake Zurich, analyze the Mionske Drive drainage system, and create a report of these conditions, data collected, and analysis results.

This project's modeling and alternatives analysis will involve developing a SWMM-based hydrologic and hydraulic (H&H) model to evaluate the benefits and cost-effectiveness of potential designs. Findings from the report and a preliminary design will inform efforts to reroute the Echo Lake bypass pipe and address flooding concerns for residents of Lake Zurich. Additionally, the field data collected will be used to update the Village of Lake Zurich's GIS asset database for its stormsewer and catch basin inventories.

GHA will be teaming with Baxter & Woodman to perform the following tasks, anticipated to fulfill the scope objectives:

1. PROJECT MANAGEMENT (FEE ESTIMATE: \$12,500)

- A. Manage project activities, including
 - a. Budget
 - b. Schedule
 - c. Task tracking
 - d. Goal setting
 - e. Scope management
- B. Attend bi-weekly 30-minute check-in meetings with the project team.

2. PROJECT INITIATION, COORDINATION, & DATA COLLECTION (FEE ESTIMATE: \$59,000)

- A. Coordinate with LCSMC and the project team to ensure goals are achieved.
- B. Collect and review public and private source data, such as as-built plans, USGS maps, CMAP data, County topographic maps, FEMA maps, NRCS soil data, permits, and other pertinent data.
- C. Perform a field inspection of the project area to verify the existing drainage patterns, overland flow routes, and stormwater infrastructure.
- D. Identify data gaps as follows:
 - a. Categorize data gaps into critical data necessary to complete work and supporting data that adds value and improves the final work product.
 - b. Prepare a memo to support survey needs.
- E. Collect a survey of existing conditions at the proposed project site, as shown in the attached Survey Limits exhibit. The survey will meet or exceed the Minimum Standards of Practice as set forth by the Illinois Administrative Code for a Topographic Survey.

3. HYDRAULIC ANALYSIS OF EXISTING CONDITIONS/REPORT (FEE ESTIMATE: \$68,000)

- A. Create an existing conditions SWMM-based model for the tributary joining North Flint Creek at the intersection of Del Court and Miller Road.
 - a. The extent of the model will be from Miller Road to Lake Zurich and include Echo Lake, the bypass pipe under Echo Lake, and the Mionske Drive drainage system.
 - b. The model will be developed with consideration of the stakeholders' desired outcomes.
 - c. The model will be calibrated utilizing historical rainfall, high water mark, and other pertinent data.
 - d. A QA/QC of the existing conditions model will be performed and documented.
- B. Report out results and recommendations

4. ALTERNATIVES ANALYSIS (FEE ESTIMATE: \$10,500)

- A. Perform a stormwater analysis to analyze the conceptual design scenarios.
- B. A QA/QC of the proposed conditions model will be performed and documented.
- C. Prepare a summary report and recommendations.

5. PRELIMINARY DESIGN (FEE ESTIMATE: \$18,500)

- A. Prepare preliminary design plans (50%) for rerouting the Echo Lake bypass pipe.
- B. Evaluate permitting requirements.
- C. Create an EOPC based on the preliminary engineering plans.

6. STAKEHOLDER ENGAGEMENT (FEE ESTIMATE: \$6,500)

- A. Attend bi-monthly 30-minute check-in meetings with the following stakeholders:
 - a. LCSMC
 - b. Village of Lake Zurich
 - c. Elia Township
 - d. Gewalt Hamilton Associates
 - e. Baxter & Woodman
- B. Additional coordination with the following stakeholders will be included:
 - a. Lake Zurich Property Owner's Association (POA).

8. PROJECT DELIVERABLES

- A. Lake Zurich and Tributary Analysis Report
 - i. System Capacities
 - ii. Data Collection Summary
 - iii. Recreation/Stormwater Relationship
 - B. Echo Lake Pipe Preliminary design plans (50%).
 - C. Echo Lake Pipe Preliminary EOPC
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- A not-to-exceed amount of \$175,000 will be followed for the scope of work.
 - The project is expected to be complete by April 6, 2026, and a draft project timeline will be provided to the Village and SMC at the project kickoff meeting.
 - Additional scope items requested by the Village of Lake Zurich will be performed at the Village's cost.

The map displays Lake Zurich, Illinois, and its surrounding neighborhoods. Key features include:

- Lake Zurich:** The central body of water, labeled "Lake Zurich" and "Lake Zurich Golf Club".
- Parks and Trails:** Manor Park, Kuechmann Park, Oak Ridge Park, White Oaks Pond Park, and various trails like Waukegan Creek Trail and White Oak Creek Trail.
- Residential and Commercial Areas:** Lakeview Apartments, Zantes Park, Holiday Inn Express, The Barn at Paulus Park, and various other developments.
- Infrastructure:** Major roads like N Milwaukee Rd (Route 124) and N Lincoln Rd (Route 122) are shown.
- Inset Map:** A smaller map in the bottom right corner shows the location of Lake Zurich within the greater Chicago area, highlighting its proximity to the city center and surrounding suburbs.

