Scope of Work (SOW) - DRAFT - 2025-10-16

AI Consulting and Automation Services for the Lake County Lake Lovers Pilot Monitoring Project

Between:
Consultant: Gunoo Shin, working with Kaiden Simon
Client: Global Water Works (GWW)

Contact: Gerry Munley for technical matters, process details, version reviews

Contact: Paul Spiewak (or Mary?) for non-technical matters
Project: Lake County Lake Lovers Pilot Monitoring Project

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1. Project Overview

Global Water Works, in collaboration with Lake County Lake Lovers and the Lake County Health Department, seeks to streamline lake monitoring and reporting through automation and AI. Gunoo Shin will design and implement a data management system that aggregates, cleans, and visualizes lake monitoring data for improved tracking, communication, and decision-making.

This work will serve as a **pilot project** to demonstrate scalable automation for lake data management.

While not included in this scope of work, it is anticipated that future modifications will include additional chemical parameters such as chemical concentrations (iron, nitrate, silica), biological data; modifications or additions to data visualizations (graphs and spreadsheets); links for understanding and interpreting the data.

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2. Scope of Work

Task 1: Data Cleanup and Aggregation

- Clean, format, and merge existing files from the **KOR database** and **Google Form submissions**.
- Ensure consistent formatting, remove duplicates, and align headers across sources.
- Prepare the master aggregated dataset for ongoing updates.

Inputs:

- Raw KOR Data File (sample in Google drive)
- Aggregated Manual Data File, http://bit.ly/LCLLManualData (to be cleaned up as detailed in): Google Sheet Link

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Task 2: Automated Upload to Google Map

The data visualization on the Google Map currently shows only Level 1 (general public view). There are 2 more levels. Level 2 and Level 3 are ready to be added to the Google Map via a link. Level 2 is for experts. Level 2 displays some (to be determined) of the graphics Gerry has created. Level 3 is a downloadable table of all parameters for all timepoints for the selected lake.

- Set up a process (API or script) that automatically uploads Google Form data to the **Lake Lovers Google Map** as new data is added. Adding data from the ProDSS via KOR will also act as a trigger to update the Lake Lovers Google Map.
- Ensure fields in the Google Form correspond with map attributes (lake name, date, parameters, comments, etc.).
- Include ability to correct mistakes in data uploads and handle missing data.
- Test permissions and functionality to allow **at least two Lake Lovers team members** to manage uploads.
- Generate **automated one-page summary charts** (in PowerPoint or Google Slides format) using Google Form data.
- Include key metrics (e.g., phosphorus concentration, turbidity water clarity/Secchi, temperature, observations).
- Upload and organize charts monthly to the shared drive.

Output:

- Updated Google Map table for each lake: http://bit.ly/2025PilotMap
- One-page slides for each lake: Google Slides Example

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Output:

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Task 4: Summary of Excel Charts

- Create a summary of Excel-based charts for each lake (modeled after Gerry Munley's format). Each lake may have multiple "sites" such as the lake's inlet, outlet, and deepest point.
- Aggregate trends by lake and parameter, providing charts for: Air and water temperature over time, Water Clarity (Secchi depth) over time for up to 3 sites; DO over time for up to 3 sites, ORP over time for up to 3 sites; pH over time for up to 3 sites; Phosphate over time for up to 3 sites; Total Dissolved Solids (for up to 3 sites); and Trophic State Index based on Secchi disk distance.
- Prepare outputs suitable for stakeholder presentations and public communication.

Output:

- "Summary of Charts" file compiling trends for each lake.

Task 5 : Weather Data Integration

- Integrate weather data (e.g., from **Weather Underground API** or similar) to display **last week's rainfall** for each lake area.
- Add rainfall data as a layer or reference on the Google Map and include in the summary charts.
- Add air temperature data as a layer or reference on the Google Map and include in the summary charts (current air temp, previous 7-day maximum and minimum).
- Document the setup for future maintenance by Lake Lovers team members.

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3. Deliverables

As clients, LCLL is uncertain of the time commitment needed to review/respond to the versions. If it will take a couple hours of Gerry's time, a review period of 1 week after

the version is done is likely achievable, but flexibility for our review period of the versions needs to remain flexible due to availability.

Deliverable	Description	Format/Platform	Target date
MVP System	Initial working version with cleaned data and automated upload	Google Drive / Map	Within 10 days of start
First Review Version	Updated version with feedback incorporated	Google Drive	1 week after MVP
Second Version	Refinements after second review	Google Drive	1 week after first review
Final Version	Complete, tested version hosted for team use	Google Drive / API	1 week after final review
Migration & Testing	Final transfer to Lake Lovers Drive and functionality check	Google Drive	1 week post-final version

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4. Timeline

As clients, LCLL is uncertain of the time commitment needed to review/respond to the versions. If it will take a couple hours of Gerry's time, a review period of 1 week after the version is done is likely achievable, but flexibility for our review period of the versions needs to remain flexible due to availability.

- **Start Date:** Upon approval and receipt of initial payment
- **MVP Delivery:** Within **10 days** of project start
- **First Review:** No later than **1 week after MVP**
- **Second Version: 1 week after review feedback**
- **Second Review: 1 week after second version**
- **Final Version: 1 week after final review**
- **Migration & Testing: 1 week after final delivery**

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5. Fees and Payment Terms

- **Total Project Fee:** $2,000 USD
    - **$1,000 (50%)** due at project start
    - **$1,000 (50%)** due upon completion and approval of final deliverables
- **Bonus Payment of $250 for Weather integration**, automating the addition of rainfall data for the prior week and air temperature as part of the manual data upload.
- Fee includes all development, consultation, and up to **$500 in API costs** (e.g., ChatGPT, Google Maps, or Weather APIs).
- Additional consulting beyond this scope (e.g., AI-based data analysis for November reception) will be quoted separately.

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6. Hosting and Handoff

- The system will be hosted on a **Google Drive and/or API-connected site** that:
    - Is accessible by at least **two Lake Lovers team members**.
    - Includes documentation for data updates, chart generation, and troubleshooting.
    - Can be maintained without ongoing developer support once training is completed.

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7. Ownership and Access

- All datasets, charts, and automation scripts developed for this project will be the property of **Global Water Works** and **Lake County Lake Lovers**.
- Gunoo Shin and Kaiden Simon will retain rights to the automation framework for future non-conflicting use.
- API keys or accounts purchased specifically for this project will be transferred to GWW at completion.

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8. Acceptance Criteria

- MVP and final versions function as described (automated uploads, chart creation, map updates).
- Weather integration accurately displays rainfall and air temperature data.
- Two Lake Lovers representatives confirm successful access and operation.
- Final version uploaded and verified on Lake Lovers Google Drive.

Authorized Signatures

For Global Water Works	**For Consultant (Gunoo Shin)**
Name: Mary Conley Eggert	Name: Gunoo Shin
Title: Co-Executive Director	Title: AI Consultant
Date: _____	Date: _____
Signature: _____	Signature: _____
