HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915

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April 9, 2025

City of Rochester Hills
1000 Rochester Hills
Rochester Hills, MI 48309

Attn: Ms. Tracey Balint, P.E., City Engineer

Re: Water System Study Updates
Proposal for Professional Engineering Services

HRC Job No. 20250297

Dear Ms. Balint:

Thank you for the opportunity to submit a proposal for professional engineering services to assist you with completing your water system regulatory reporting requirements. As you are aware, Asset Management Program updates and Lead and Copper Rule (LCR) revisions to Michigan's Safe Drinking Water Act (MI-SDWA), as well as America's Water Infrastructure Act (AWIA), have placed additional regulatory requirements on water supply systems to perform self-assessments of their systems. These new requirements, along with existing water system reliability and general planning requirements, have produced significant reporting obligations for water supply systems. Hubbell, Roth & Clark, Inc. (HRC) is proposing to help the City streamline the work to complete the aforementioned regulatory reporting requirements and has been working with the Michigan Department of Environment, Great Lakes and Energy (EGLE) to align the submission of these reporting requirements so that no extra effort is expended providing duplicate information on multiple reporting platforms.

HRC has wide-ranging experience assisting municipalities in all aspects of water supply system operation from planning to design and construction, water quality testing, hydrant flow testing, hydraulic modeling and especially regulatory reporting. In addition to extensive work in the City of Rochester Hills, HRC has completed reliability study and general plan updates for numerous other communities in Southeast Michigan including but not limited to; Highland Township, Bloomfield Township, the cities of Sterling Heights, Berkley, Ferndale, Pontiac, Troy, Grosse Pointe Farms, South Lyon, Wixom and Petoskey and the Village of Beverly Hills. Each of these systems possess a diverse range of facilities, configurations, demands and operational parameters, which has cultivated our knowledge and understanding of hydraulic modeling, water system operations and permitting and the regulatory requirements for each.

The following summarizes the tasks included in this proposal and their reporting deadline:

Task 1 – Water Reliability Study update **(due by 12/31/2025)**
Task 2 – General Plan update (including WAMP and DSMI) **(due by 12/31/2025)**
Task 3 – Risk & Resilience Assessment update (RRA) **(due by 12/31/2025)**
Task 4 –Emergency Response Plan update (ERP) **(due by 6/30/2026)**

Our understanding of the scope of work is based upon:

- EGLE's recommendation to the City to submit an updated Water Reliability Study and General Plan to satisfy the requirements of Part 12 and Part 16 of Michigan's Safe Drinking Water Act (MI-SDWA).
- Knowledge of the rules of the Michigan Safe Drinking Water Act, 1976 PA 399 as amended, and the work required to complete Water System Reliability Study and General Plan updates.
- Experience with the City's water system and previous hydraulic modeling, Water Reliability Studies and General Plans completed by HRC.
- Understanding of EPA's Risk & Resilience Assessment (RRA) & Emergency Response Plan (ERP) contents.

TASK 1: WATER RELIABILITY STUDY UPDATE

As mentioned previously, HRC has extensive experience completing Reliability Studies for numerous municipal water supply systems in Southeast Michigan, which generates a well-defined knowledge of the practices and processes needed to submit a complete, clear, and concise report and, in turn, earns a good rapport with EGLE staff. In 2020, HRC completed a comprehensive upgrade to the City's existing hydraulic model to go along with the Reliability Study and General Plan update. This upgrade included the addition of parcel associated water use data into the model and system-wide hydrant flow testing to calibrate the model.

As part of EGLE's recent survey of your water supply facilities (Water System Sanitary Survey), they have requested a schedule to complete the update to your Reliability Study and General Plan by December 31, 2025.

Tasks to Comply with Part 12 MI-SDWA – Reliability Study:

The tasks involved to address the Part 12 requirements are as follows:

- Update the Existing Conditions Computer Model
- Model Confirmation (with Hydrant Testing)
- Update Future Conditions Computer Model and Mapping
- Update Recommended Future System Improvements
- Report Preparation
- Meetings

1. Update the Existing Conditions Computer Model

In 2020, HRC updated the existing conditions hydraulic model of the City's water distribution system as part of the Reliability Study update, with a focus on the water use inputs into the model. For this update, we propose to update the hydraulic model to include every pipe in the distribution system from the City's GIS data. The original model was developed without all pipes included due to computational limitations. However, computing improvements now allow all pipes to be included, which will be a benefit for the City to use for future improvements (including upcoming PRV designs), fire flow for insurance, and EGLE water system basis of design permitting. Additionally, HRC will update the hydraulic model with any overall adjustments to water use since 2020. Lastly, HRC will communicate with City operations personnel to review any changes in operation, pressure re-districting, pressure fluctuations, break frequency/locations, resident complaints, etc. to uncover any trends that may be present in the system.

The review will include:

- Range of pressure and flow supply for average day, max day and peak hour demands since 2020 (WAMR).
- Pressure reducing valve (PRV) summer/winter settings
- Water use/billing records for the last three (3) years for residential and business owners (preferably in spreadsheet format linked to a parcel number) – total and daily flows if possible
- Top 20 water users, total, daily, and hourly flows if possible
- Updated GIS export of all water main in the system
- Discussions with operations staff and other operational data
- Review of the City's adopted fire code for any changes that may impact previous recommendations

The City's current hydraulic model was developed in WaterGEMS. We will continue to utilize this software to update the City's hydraulic model. HRC owns a license to this software for our use on this project. We note that WaterGEMS is able export the model into the freely available EPANET, so that use of this proprietary software does not limit future use of the model by the City.

2. Model Confirmation (with Hydrant Test Data)

The City's existing hydraulic model was calibrated with the last Reliability Study update with over 30 hydrant flow tests taken and incorporated into the modeling software. While it is good practice to update the calibration of your hydraulic model as much as possible, the frequency of a comprehensive calibration can be extended for water systems under certain conditions. The City's water distribution system is fully developed and, to our knowledge, has not changed in its operation since the last model calibration. In this case, and as discussed, it is reasonable to believe that a comprehensive calibration is not needed at this time. However, it is recommended that some model confirmation be completed to verify that the system is still functioning as the model predicts. This can be accomplished by flow testing fire hydrants in strategic locations throughout the City (at a much smaller scale than for a full calibration) and comparing them to model results.

In 2020, the City completed all of the hydrant flow testing with current staff. It is assumed that the City will again provide this service for the work needed to obtain confirming hydrant flow data. HRC will provide the City with a map of the hydrants to be flowed and will review this map with the City prior to performing the testing. We can also review hydrant flow tests recently performed by the City and confirm if they can be used for some or all of the flow tests needed for model confirmation.

Should the hydrant flow testing reveal disparities between the model and field conditions, additional model analysis and hydrant testing should be completed. The proposed scope to complete the additional analysis and testing will be discussed prior to any work being completed and can be negotiated at a later date.

3. Develop Future Conditions Computer Model and Mapping

5-year and 20-year population projections for future flows will be developed based on communication with City staff, SEMCOG, and any other available resources. The additional demand and/or known future system changes will be input into the future conditions model. Future fire flow capabilities will also be evaluated.

4. Develop Future System Improvements

In the event that insufficient flows and/or pressures are observed after completion of the updated hydraulic model and subsequent calibration as described in the previous tasks, the following is the scope of work to prioritize the necessary improvements to the water system based upon data provided from the hydraulic model indicating areas of insufficient capacity and pressure:

- Identify areas of low model predicted available fire flows
- Prioritize recommended improvements
- Develop exhibits to illustrate the recommended improvements
- Preliminary construction cost estimates for recommended improvements

5. Report Preparation

The existing technical report will be updated and submitted in accordance with the requirements to demonstrate compliance with Part 12 of MI-SDWA that will include the data collection process, the data analysis methodology, a summary of results for existing and future condition models and recommendations. HRC will provide the City a digital copy of the report and up to two (2) bound copies of the report, if requested.

6. Meetings

Throughout this process, HRC will provide monthly project updates to the project team as well as up to two (2) project meetings with City staff to update the project progress, share interim results, confirm assumptions, and solicit input. As noted above, we will need City assistance to verify the model results against actual field results. We will coordinate these meetings through your office as needed.

HRC anticipates approximately 190 hours to complete this task at an estimated cost of $25,760. A breakdown of the items of work within these tasks along with our estimated hours and associated fees is provided on the attached Table 1.

TASK 2: GENERAL PLAN UPDATE

HRC has historically completed General Plans as a part of the Reliability Study. However, due to the added general plan requirements in Part 16 of Michigan's SDWA for a water asset management plan and distribution system materials inventory including service lines, we propose to complete this task separately for separate submission to assist with EGLE's review.

As part of EGLE's recent survey of your water supply facilities (Water System Sanitary Survey), it is our understanding that they requested a schedule to complete the update to your Reliability Study and General Plan by December 31, 2025.

Tasks to Comply with Part 16 MI-SDWA – General Plan:

In order to satisfy the requirements of a General Plan as described in Part 16 of Michigan's SDWA, the following items will be included:

- General layout of the waterworks system, including the location of all valves, hydrants, and water mains.
- Rated capacity of the waterworks system.
- Distribution system materials inventory, including public and private water service lines, and an inventory of water main size, material and age.
- Service area maps including existing and future service area boundaries.
- Hydraulic analysis showing pressure contours of the distribution system under peak hour conditions.
- Water asset management program, including summary of criticality assessments and capital improvements plan.

1. General Layout of the Waterworks System

HRC will prepare and include a map showing the layout of the entire water distribution, including the location of valves, hydrants, water mains, pumps, and pumping facilities. This information will have been used to develop the Reliability Study but will be provided in the format required for the General Plan.

2. Rated Capacity of the Waterworks System

The results of the Reliability Study will be used to provide the required information of the capacity of water system, provided in the format required for the General Plan.

3. Distribution System Materials Inventory

Part 16 of the Michigan SDWA has been expanded in recent years to include a distribution system materials inventory (DSMI), described as including all materials in the service lines, including the portion on private property. HRC assisted the City with the required preliminary DSMI deadline of January 1, 2020, and the required complete DSMI revised deadline of October 16, 2024. It is our understanding that the City is continuing to update the service line inventory, recording information on service line materials during normal work activities (i.e., meter reading and changeouts, service line repairs, water main installation, etc.).

For this task, we will combine the service line materials and water system information provided by the City's GIS to update the DSMI (distribution system materials inventory) and create an inventory of water main size, material and age in the format EGLE has required for the General Plan.

4. Service Area Maps

The results of the Reliability Study will be used to develop service area maps showing existing and potential future service area boundaries, in the format required for the General Plan.

5. Hydraulic Analysis

The results of the Reliability Study will be used to perform hydraulic analyses showing system pressure contours under peak demand, in the format required for the General Plan.

6. Water Asset Management Program

The majority of the work required for the General Plan is the addition of a water asset management program, as described in Rule 1606 of the Michigan SDWA. HRC prepared a water asset management program (WAMP) for the City in 2018. We will update the City's WAMP, which includes six core components:

Asset Inventory
1) Level of Service
2) Critical Assets
3) Revenue Structure
4) Capital Improvement Project Plan
5) Asset Management Plan Report

1, Asset Inventory

EGLE has stated that only a summary of the asset inventory method is required, and not the full dataset. The City maintains a geographic information system (GIS) of the water distribution system, which will meet the requirements for the horizontal asset inventory. The current inventory catalogs for the City's vertical assets, including over 50 PRV sites and two (2) booster pumping stations, are stored in the City's CMMS software (Lucity) and loosely linked to the City's GIS. It is our understanding that this information is fairly complete and would meet the requirements for a vertical asset inventory. HRC proposes as part of the Water AMP to summarize the City's organizational approach to documenting the water system's horizontal and vertical assets to meet the minimum requirements of the proposed AMP rule. Review and/or updating of the assets will not be included under this base scope of services.

However, there is an opportunity during this AMP process to review and update the vertical asset inventory, improve the integration of the vertical asset inventory into the City's GIS and better pair the inventory with the City's asset management software to enhance the utilization of the management capabilities within the software. An additional cost item for this work to upgrade the vertical asset inventory can be provided at your request.

2. Level of Service

Level of Service (LOS) defines the way in which the City desires the water system to perform over the long term. HRC will review the previous LOS based on the City Council goals and objectives statement, an existing conditions summary and coordinate with City staff to discuss level of service and determine what the key factors/goals the City wishes to attain for the water system. A final LOS statement will be prepared based on City feedback.

3. Critical Assets

HRC will assist the City to update the risk assessment methodology, rating each major component of the water system, reviewing failure history, and estimating the probability of failure. This will include estimating the remaining life and replacement value of assets, performing a Business Risk Evaluation (BRE), and creating a priority list of the most critical system assets. Determining an asset's criticality will allow the City to understand areas of need and to define a

plan for allocating capital expenditures. We project that this task will include one to two meetings with the City to discuss and review the probability and consequence of failure analysis.

4. Revenue Structure

EGLE requires that the City submit current operation and maintenance budget and revenue reports. If system expenses exceed system revenues, a plan will need to be developed for closing the gap. HRC proposes to assist the City's Finance Department with developing this information and summarizing the results for the AMP report.

5. Capital Improvement Project Plan

It is our understanding that the City currently has an approved 5-year CIP. HRC will review this approved plan and compare it to the hydraulic results from the Water Reliability Study and the BRE completed as part of the AMP to provide recommended updates to future CIPs. HRC will also provide recommendations for a 20-year CIP as required by EGLE.

6.Asset Management Plan Report

The AMP will be developed in a straight-forward manner to specifically fulfill the AMP rules of the SDWA. The report will be provided in draft format to the City for review. After review the draft report and incorporation of City comments, the AMP documents will be finalized and incorporated into the General Plan report.

7. Report Preparation

The General Plan will be updated and submitted in accordance with the requirements to demonstrate compliance with Part 16 of MI-SDWA, with the general plan, DSMI and WAMP items specifically identified to assist with EGLE's review. HRC will provide the City a digital copy of the report and up to (2) bound copies of the report, if requested.

8. Meetings

Throughout this process, HRC will provide monthly project updates to the project team as well as up to two (2) project meetings with City staff to update the project progress, share interim results, confirm assumptions, and solicit input. As noted above, we will need City assistance to perform the critical asset analysis and review other asset priorities in the water asset management plan. We will coordinate these meetings through your office as needed.

HRC anticipates 130 hours to complete this task at an estimated cost of $18,100. A breakdown of the items of work within these tasks along with our estimated hours and associated fees is provided on the attached Table 1.

TASK 3: RISK AND RESILIENCE ASSESSMENT UPDATE

America's Water Infrastructure Act of 2018 (AWIA) required communities to certify to the U.S. Environmental Protection Agency (EPA) that they have completed a Risk and Resilience Assessment (RRA) and an Emergency Response Plan (ERP) in 2020-2021 and requires that both plans must be updated every five (5) years. The U.S. EPA has issued the following certification deadlines based on community water system (CWS) population served:

CWS Population Served	RRA Certification Deadline	ERP Certification Deadline
Over 100,000	March 31, 2025	September 30, 2025
50,000 – 99,999	December 31, 2025	June 30, 2026
3,301 – 49,999	June 30, 2026	December 31, 2026

For water systems like the City of Rochester Hills that supply a population between 50,000 – 99,999, **the RRA must be certified as completed prior to December 31, 2025.**

Our update of your Risk and Resilience Assessment (RRA) shall include:

- Review of updates to your water supply and distribution system
- Risks to the system from malevolent acts and natural hazards
- Resilience of system components
- Monitoring practices
- Financial infrastructure of the utility
- Use, storage, or handling of various chemicals
- Operation and maintenance
- Evaluation of capital and operational needs for risk and resilience management of the system
- Consider increased threat of cyber-attacks and current cybersecurity measures

AWIA does not stipulate the specific methodology to complete the RRA. To prepare the RRA, HRC will utilize available software such as the EPA's Vulnerability Self-Assessment Tool (VSAT) to efficiently meet the requirements of AWIA.

HRC proposes two (2) online meetings to review the scope and update existing details and information and estimated threat likelihood values. We propose to include one (1) new or significantly updated asset-threat scenario related to cybersecurity in the risk and resilience assessment. For the final product, HRC will provide the City all of the utilized worksheets to develop the RRA as well as a brief memo describing the process. However, for EPA certification, all that is necessary to submit is EPA's certification statement, which can be submitted electronically or via email.

We anticipate approximately 50 hours to complete this task at an estimated cost of $7,370. A breakdown of the items of work within these tasks along with our estimated hours and associated fees is provided on the attached Table 1.

TASK 4: EMERGENCY RESPONSE PLAN UPDATE

For water systems like the City of Rochester Hills that supply a population between 50,000 – 99,999, **the ERP must be certified as completed prior to June 30, 2026,** or within six months of submitting certification of the Risk and Resilience Assessment (RRA).

Our update of your Emergency Response Plan (ERP) shall include:

- Strategies and resources to improve the resilience of the system, including the physical security and cybersecurity of the system,
- Plans and procedures that can be implemented, and identification of equipment that can be utilized, in the event of a malevolent act, proximity hazard or natural hazard that threatens the ability of the community water system to deliver safe drinking water,
- Actions, procedures and equipment, which can obviate or significantly lessen the impact of a malevolent act, proximity hazard or natural hazard on the public health and the safety and supply of drinking water provided to communities and individuals, including the development of alternative source water options, relocation of water intakes and construction of flood protection barriers, and
- Strategies that can be used to aid in the detection of malevolent acts, proximity hazards or natural hazards that threaten the security or resilience of the system.

AWIA places a greater emphasis on source water and finished water protection, proximity and natural hazards, and cybersecurity, along with an examination of the financial infrastructure and the consideration of operations, maintenance, and asset management. Lastly, the ERP needs to be developed and informed by the findings of the Risk and Resilience Assessment. For compliance purposes, it is essential for water systems to ensure that they have integrated, as appropriate, the policies, plans, and procedures defined in AWIA to improve the resilience of the utility in the event of a malevolent act or natural hazard based on the findings of the Risk and Resilience Assessment.

To update your Emergency Response Plan (ERP), the HRC project team will conduct an online kickoff meeting to discuss the ERP process and tasks and any changes or updates to the water system. It is important that key water system management personnel are intimately involved on the ERP development team, and that a defined ERP manager is designated. This involvement will provide significant support for the ERP development process.

At the kickoff meeting, the HRC project team will recap the findings of the Risk and Resilience Assessment update with and review the main principles of the previous ERP, including the following:

- Preparedness
- All-hazards approach
- Document maintenance
- Staff preparation
- Resilience
- Scalability
- Stakeholder engagement

The HRC project team will also review the previous outline of the ERP with the group and assign roles and responsibilities for ERP updating and any development required. The sections of the ERP should include, but not be limited to, the following:

1. Utility Information
2. Resilience Strategies
3. Emergency Plans and Procedures
4. Mitigation Actions
5. Detection Strategies

After the kickoff meeting, the HRC project team will continue to communicate with the ERP update team to obtain updates to information such as contact lists for internal and external personnel, vendors, suppliers, contractors, etc. and their updated information, emergency preparedness roles and responsibilities, provisions for electrical power and other critical resources, cyber/IT recovery procedures, mutual aid procedures, contractor and vendor support. This step in the ERP update will require meaningful assistance from the City and we anticipate the necessary City staff will be active in this process to help gather and provide the requisite information. HRC will provide a draft copy of the ERP update and schedule a review workshop with the ERP update team to collect comments and walk through any incomplete or missing components of the ERP.

At the workshop, the HRC project team will discuss the detailed system standard operating procedures and example hazard-specific response plans. We will also discuss your local emergency planning committees and partnerships. Lastly, the workshop will discuss plans for Emergency Action Guidelines such as safety policies, record-keeping, and reporting, work schedules, after-action procedures, and plan maintenance information such as training and exercises, ERP review, update frequency and documentation control. HRC will provide standard, general procedures for the City's use and reference.

The HRC Project Team will then finalize the ERP and submit to the City of Rochester Hills so that you may certify to the EPA that the requirements of the ERP portion of the AWIA have been completed. The ultimate goal for the finished product will be to develop plans, procedures, and resources that will help lower the impact and improve response to emergencies and disasters.

HRC proposes two (2) online meetings, one to kick off the ERP update process and the second to workshop the draft ERP. We anticipate approximately 60 hours to complete this task at an estimated cost of $8,670. A breakdown of the items of work within these tasks along with our estimated hours and associated fees is provided on the attached Table 1.

SUMMARY

Anticipated engineering costs were developed in accordance with our Engineering Services Contract and are separated into four (4) tasks as described above. The total cost to assist with completing the City's water system regulatory reporting requirements is estimated to be $59,900 which will not be exceeded without prior authorization. A breakdown of the items of work within these tasks along with our estimated hours and associated fees is provided on the attached Table 1. HRC will invoice the City on a monthly basis as the work proceeds in accordance with our Engineering Services Contract.

We are prepared to begin upon your authorization to proceed and propose to complete the Tasks as described above. We recommend that any hydrant flow testing needed for model confirmation be conducted now, in Spring, when temperatures begin to warm up but before the high water use period in the Summer. This information is needed fairly early in the process for updating the Water Reliability Study, so the timing is important for model development. In addition, for the RRA and ERP, we propose to begin each task three (3) months prior to the certification deadline.

Thank you for the opportunity to continue to serve the City of Rochester Hills. If you have any questions or require any additional information, please contact the undersigned.

Very truly yours,

HUBBELL, ROTH & CLARK, INC.

Daniel W. Mitchell, P.E.
President

Bradley Shepler, P.E.
Senior Associate

BTC/
Attachment

pc: City of Rochester Hills; L. Luedeman
HRC; B. Clarke, K. Siemen, File

Accepted By: CITY OF ROCHESTER HILLS

Signature: _____

Written Name: _____

Title: _____

Dated: _____

CITY OF ROCHESTER HILLS
PROFESSIONAL ENGINEERING SERVICES FOR WATER SYSTEM STUDY UPDATES

TABLE 1
ESTIMATED HOURS AND FEES

April 9, 2025 **HRC Job No. 20250297**

Task Description	Rate Classification & Estimated Hours: Principal	Associate/ Managing Engineer	Project Engineer	Staff Engineer	Total Hours	Estimated Fees
TASK 1 - WATER RELIABILITY STUDY UPDATE						
1 Update the Existing Conditions Computer Model	-	2	4	24	30	$ 3,830
2 Model Confirmation (with Hydrant Test Data)	-	2	8	24	34	$ 4,410
3 Develop Future Conditions Computer Model and Mapping	1	2	4	12	19	$ 2,620
4 Develop Future System Improvements	1	4	8	16	29	$ 4,050
5 Report Preparation	-	6	12	36	54	$ 7,170
6 Meetings (assumed 2 meetings)	2	6	8	8	24	$ 3,680
TASK 1 PROJECT SUBTOTAL	**4**	**22**	**44**	**120**	**190**	**$ 25,760**
TASK 2 - GENERAL PLAN UPDATE						
1 General Layout of the Waterworks System	-	-	1	2	3	$ 390
2 Rated Capacity of the Waterworks System	-	1	1	1	3	$ 450
3 Distribution System Materials Inventory	-	1	8	4	13	$ 1,830
4 Service Area Maps	-	-	1	2	3	$ 390
5 Hydraulic Analysis	-	-	-	2	2	$ 240
6 Water Asset Management Program	2	6	16	34	58	$ 7,960
7 Report Preparation	-	2	6	16	24	$ 3,160
8 Meetings (assumed 2 meetings)	2	6	8	8	24	$ 3,680
TASK 2 PROJECT SUBTOTAL	**4**	**16**	**41**	**69**	**130**	**$ 18,100**
TASK 3 - RISK AND RESILIENCE ASSESSMENT (RRA) UPDATE						
1 Review of Background Information and Previous RRA	-	-	4	2	6	$ 820
2 Meeting to Review of System Updates and Operations for Risk and Resilie	-	2	2	2	6	$ 900
3 Cybersecurity Assets and Threats Review	1	2	4	4	11	$ 1,660
4 Evaluation of Capital and Operational Needs	-	2	4	2	8	$ 1,190
5 Meeting to Review & Gather Any Additional Information Needed	1	2	2	4	9	$ 1,370
6 Completion of Risk and Resilience Assessment	-	2	4	4	10	$ 1,430
TASK 3 PROJECT SUBTOTAL	**2**	**10**	**20**	**18**	**50**	**$ 7,370**
TASK 4 - EMERGENCY RESPONSE PLAN UPDATE						
1 Review of Previous ERP and New Information	-	-	2	4	6	$ 770
2 Kickoff Meeting	1	2	4	4	11	$ 1,660
3 Development of Draft Emergency Response Plan	-	2	6	4	12	$ 1,720
4 Workshop with ERP Development Team	-	2	4	6	12	$ 1,670
5 Final Plan Preparation	-	2	6	6	14	$ 1,960
6 Project Administration and Monthly Reporting	1	2	2	-	5	$ 890
TASK 4 PROJECT SUBTOTAL	**2**	**10**	**24**	**24**	**60**	**$ 8,670**
PROJECT TOTAL	**12**	**58**	**129**	**231**	**430**	**$ 59,900**

ESTIMATED FEE SUMMARY

PERSONNEL	HOURS	RATE	TOTAL
Principal	12	$ 225.00	$ 2,700.00
Associate/Managing Engineer	58	$ 185.00	$ 10,730.00
Project Engineer	129	$ 145.00	$ 18,710.00
Staff Engineer	231	$ 120.00	$ 27,720.00
TOTAL ESTIMATED NOT-TO-EXCEED COST			**$ 59,900.00**