

**VILLAGE OF GRAYSLAKE  
ENGINEERING SERVICES  
WORK ORDER  
GHA PROJECT NO. 4990.006**

**Project: Water Use Projections & Water System Additions**

**Project Understanding**

In light of changes in existing water demands, recent discussions regarding the required infrastructure improvements for Cornerstone Development, as well as the potential for other properties to develop adjacent to its current corporate limits, the Village of Grayslake has requested that GHA prepare a Village-wide model of their water distribution system. The model would be utilized along with updated water use projections to review and update the need for certain planned system improvements, including the evaluation of the potential to add a second connection CLCJAWA water distribution system. Based on these analyses, a connection fee program will be developed in order to fund the required system improvements.

**Scope of Services**

The work required consists of the following primary tasks, detailed below:

**A. Project Management, Coordination**

The following tasks are anticipated during this phase of the project.

**1. Project Management**

Oversee activities included in the scope to successfully complete the project including preparation of the water model, evaluation of various alternatives, and preparation of the final report to the Village.

Representatives from GHA will attend an initial kick-off meeting with the Village to review land use plans, annexations, changes in existing water demands, and to confirm various model assumptions. A total of (2) additional meetings with Village staff are included. GHA will prepare meeting minutes and distribute to all attendees.

If directed by Village staff, GHA will attend a Village Board meeting to present the final report and share key findings.

**2. Preliminary Coordination with CLCJAWA**

If the model analysis (discussed further below) demonstrates significant benefits from a second connection to the CLCJAWA main in the Central Range area, GHA will coordinate with Village staff to make an initial inquiry to CLCJAWA to determine the feasibility for such a connection.

**B. Water Model Development**

Though a Village-wide model was created and calibrated during preliminary discussions with the Alter Group in 2015, throughout the review process it was noted by the development team that the water model was provided for the sole purpose of review of the proposed Cornerstone development and was not authorized for any other uses. Accordingly, GHA will utilize existing atlas information and other system and operational details provided by the

Village to prepare a detailed water model for Village use. The model will be calibrated using the fire flow testing information provided during that process.

A GIS parcel map will be created indicating projected water uses for various areas of the Village. These water uses will be incorporated into the proposed model.

### C. Water Model Analysis & Review

Once the model has been completed and calibrated to existing fire flows, GHA will utilize the revised water use projections and potential future improvements to assess the need for additional upgrades to the Village's water distribution and storage system. The following items will be reviewed and considered:

- GHA will review the need for additional pump stations and/or reservoir storage that may be required to achieve the Village's storage objectives.
- GHA will review the need for the proposed 1.5 million gallon water tower for the Central Range area, develop recommended timing for any needed improvements, and provide a concept-level cost estimate for the required improvements.
- GHA will review how the revised water use projections affect the need for previously proposed loops to the Village's watermain system and make recommendations regarding proposed sizing.
- GHA will evaluate the effect of a second CLCJAWA connection within the Central Range area and assess how a potential connection would impact the proposed improvements, including the following:
  - Impacts to pumping and storage requirements for the Central Range Area;
  - Impacts on system performance, including potential impacts to the Village's ability to maintain a single pressure zone;
  - The potential to utilize the connection for fire and emergency situations only;
  - Potential to reduce the need for additional local reservoir storage and the cost impacts associated with this reduced storage need.
- GHA will evaluate the effect of emergency interconnects with other CLCJAWA member agencies as recommended in the CLCJAWA Supply Reliability study from July 2008.

### D. Final Report

A final report will be provided to the Village detailing the study findings. The report will review the model development and assumptions, discuss the scope, timing, and costs associated with any required system improvements, and outline a recommended connection fee program to fund the proposed system improvements.

### **Estimate of Manhours and Fee**

#### Phase of Service:

A. Project Management (40 hours):	\$ 5,360.00
B. Water Model Development (40 hours):	\$ 4,400.00
C. Water Model Analysis & Review (120 hours):	\$ 13,740.00
D. Final Report (32 hours)	\$ <u>4,288.00</u>
Total Services (232 hours):	\$ 27,788.00

Note: Proposed upper limit of compensation is \$ 27,788.00.  
This fee will not be exceeded without prior written approval of the Village.

**Proposed Schedule**

GHA is prepared to begin work immediately upon notice to proceed and is prepared to provide a final report within 60 days.

Gewalt Hamilton Associates, Inc.  
Submitted By:



Daniel J. Strahan, P.E., CFM  
Associate/Senior Engineer

Village of Grayslake  
Accepted By:



Name: Mike Ellis

Title: Village Manager

Date: 5/01/16

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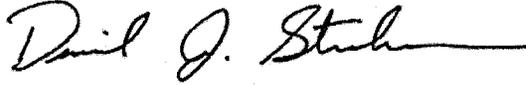
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Accepted By:



Name: Mike Ellis

Title: Village Manager

Date: 4/28/16