



January 13, 2016

Mr. Vydas Juskelis, P.E.
Director of Public Works
Village of Villa Park
20 South Ardmore Avenue
Villa Park, IL 60181

Subject: Engineering Services – Water System Audit

Dear Mr. Juskelis:

Villa Park has recently begun experiencing unaccounted for water losses from its water system. While water sold has been declining, the amount of water purchased from the DuPage Water Commission (DWC) has actually been increasing. This loss of water results in a financial drain on the Village and contributes to increasing water rates.

Additionally recently enacted rules published by the Illinois Department of Natural Resources (IDNR) in December 2014 require Lake Michigan water supply communities to tighten up their systems as part of the state's responsibility to conserve water drawn from Lake Michigan. The current allowable non-revenue water volume is equal to 12% or less of the total water supply. This standard will decrease to 10% by 2019.

Background

To address this problem, the Village is proposing to conduct a formal water audit as developed by the American Water Works Association and approved by the Illinois Environmental Protection Agency. The term "Water Audit" is defined as an examination of pumping, metering, and financial accounts to check their accuracy. The water audit works to trace the flow of water from the source, through the water distribution system, and into customer properties. The water audit normally is summarized in the form of a spreadsheet that details the variety of consumption and losses that exist in the water system.

The purpose of a water audit is to accurately determine the amount of unaccounted for water in a water distribution system thereby allowing the Village to develop a prioritized plan to eliminate all but the unavoidable losses. The work is divided into two segments. First, an attempt is made to identify the system's real losses including leakage from mains, storage and pumping facilities, and service lines. Second, an attempt is made to identify the water system's apparent losses including thefts, meter inaccuracies, and data handling errors. Detailed guidance for conducting a water audit can be found in the American Water Works Association's (AWWA) "Manual #36; Water Audits and Leak Detection", latest edition, will serve as the guidance document for this project.



Mr. Vydas Juskelis, PE
January 13, 2016
Page 2

Scope of Work

The proposed scope of work includes:

1. Meet with the Public Works staff to discuss the existing public water supply system and the Village's specific concerns with water loss issues, priorities, and schedule.
2. Gather available flow and billing data and other available information regarding water system operation including:
 - i. Meter locations, sizes, testing data, and age.
 - ii. Metered volumes for the past five years.
 - iii. Number and sizes of service connections.
 - iv. Pipeline lengths, sizes, materials, and age.
 - v. Pipeline break records including estimates of water loss for the past 5 years.
 - vi. Maintenance/incident records pertaining to the known use of water at non-metered locations such as fire hydrants for the past 5 years.
 - vii. Known water system problems and concerns that could be contributing to the issue.
 - viii. Reports prepared by Village's leak detection contractor.
3. Review the available information and resolve questions and discrepancies.
4. Audit water system using the AWWA/IWA Water Audit Software, Version 5.0.
5. Develop water system performance indicators including:
 - a. Volume of authorized consumption (metered connection use plus other unmetered uses such as firefighting).
 - b. Volume of non-revenue water as a percentage of water purchases from DWC.
 - c. Cost of non-revenue water as a percentage of the total annual operating cost.
 - d. Volume of apparent losses (unauthorized consumption, metering errors, & data handling errors).
 - e. Annual cost of apparent losses.
 - f. Volume of apparent losses per service connection per day (normalized apparent losses).
 - g. Volume of real losses (actual leakage and unmetered authorized consumption).
 - h. Annual cost of real losses.
 - i. Volume of real losses per service connection per day (normalized real losses).
 - j. Unavoidable annual real losses (based on length of water pipelines, number of service connections, lengths of service lines, and system pressure).
 - k. Infrastructure leakage index (ratio of real losses to unavoidable losses).
6. Develop a list of next steps intended to reduce the apparent and real water losses.
7. Prepare opinions of probable cost for each of the recommended actions.



Mr. Vydas Juskelis, PE
January 13, 2016
Page 3

8. Prepare a report summarizing the findings of this study and recommending a course of action.

Project Team

Stanley Consultants has extensive experience planning, designing, modifying, and troubleshooting water supply systems. Our team for this project will be Larry Thomas, PE, Deb Mathias, PE, and Ray Ames. Mr. Thomas has been involved in the planning, design and maintenance of multiple public water supplies. Ms. Mathias is very familiar with water system planning and has in-depth knowledge of the Villa Park water distribution system and finances based on her preparation of two water rate studies for the Village. Mr. Ames is certified as an Illinois Class 1 Operator and has extensive operating experience with the operation of public water supplies. Other members of the Stanley team will be involved as needed.

Compensation

We propose to perform the above scope of work on a time and expenses basis with a not to exceed limit of \$28,000. We expect to start work on this project upon your authorization to proceed.

We have attached a draft Professional Services Agreement for your review. If this agreement is acceptable, please execute and return.

Thank you for this opportunity to serve Villa Park. If you have any questions in regarding this proposal, please contact me at 815-355-0923 or thomaslarry@stanleygroup.com.

Sincerely,

Stanley Consultants, Inc.

Lawrence Thomas, PE
Water/Wastewater Department Manager



PROFESSIONAL SERVICES AGREEMENT

VILLAGE OF VILLA PARK, ILLINOIS WATER SYSTEM AUDIT

MARCH 28, 2014

THIS IS AN AGREEMENT made as of ~~January~~ March 28, 2014, 2016, between the Village of Villa Park, Illinois (Client) and Stanley Consultants, Inc. (Consultant) for the purpose of completing an audit of the water supply, storage, and distribution system (hereinafter called "Project").

Client and Consultant agree:

1. **Scope of Services.** Consultant shall perform professional services as stated in Exhibit 1.
2. **Compensation.** Client shall compensate Consultant for Consultant's services as stated in Exhibit 2.
3. **Terms and Conditions.** Consultant shall provide professional services in accordance with the terms and conditions stated in Exhibit 3. If client issues a purchase order or other document to initiate the commencement of services hereunder, it is agreed that any terms and conditions appearing thereon shall have no application and only the provisions of this Agreement shall automatically apply.
4. Client shall provide for payment from one or more lawful sources of all sums to be paid to Consultant.
6. Following exhibits are attached to and made part of this Agreement:

- Exhibit 1 - Scope of Services
- Exhibit 2 - Compensation
- Exhibit 3 - Standard Terms and Conditions

IN WITNESS WHEREOF, the parties below have executed this Agreement as of the day and year first above written.

STANLEY CONSULTANTS, INC.

VILLAGE OF VILLA PARK, ILLINOIS

By: 
Bruce Worthington, P.E.

By: 

Attest: 
Lawrence Thomas, P.E.

Attest: 

Address for giving notices:

8501 West Higgins Road
Suite 730
Chicago, IL 60631-2801

Address for giving notices:

20 South Ardmore Avenue
Villa Park, IL 60181

VILLAGE OF VILLA PARK, ILLINOIS

WATER SYSTEM AUDIT

EXHIBIT 1 – SCOPE OF SERVICES

PART 1 – BASIC SERVICES

Upon written authorization from Client to proceed, the Consultant shall perform Basic Services consisting of those described below.

A. General

- A.1 Consult with Client to define and clarify Client's requirements for the Project and review available data. Schedule a project initiation meeting with Client to discuss invoicing procedures, overall project schedule, critical project needs, and to determine a schedule for future meetings.
- A.2 Conditions of Service: Services described in this Exhibit are based on following conditions:
 - A.2.1 The following information and data will be provided by Client on which Consultant will rely:
 - A.1.1.1 Full information as to Client's requirements for Project.
 - A.1.1.2 Available information pertinent to the Project as listed below.
 - A.2.2 All recommendations and/or advice presented in reports and design documents are Consultant's opinions of probable project conditions. Project conditions are based on the information and data sources that are readily available to us, input by the Client, and other reliable sources, all of which are believed to be accurate. Our recommendations and/or advice are made on the basis of our experience and represent our judgment and opinions. We have no control over new and/or non-public information, changed conditions, cost of land, cost of labor, materials, equipment, and /or other construction costs, or over competitive bidding or market conditions. Therefore, we do not guarantee that actual conditions or actual costs will not vary from those presented in any report, study, plan, etc.
 - A.2.3 All cost estimates presented to Client are Consultant's opinions of probable project, construction, and/or operation and maintenance costs. Cost estimates are made on the basis of our experience and represent our best judgment. Consultant has no control over cost of labor, materials, equipment, contractor's methods, or over competitive bidding or market conditions. Therefore, Consultant does not guarantee that proposals, bids, or actual construction costs will not vary from estimates of project costs, construction, and/or operation and maintenance costs presented.

B. PROJECT STUDY PHASE

- B.1 Meet with the Public Works staff to discuss the existing public water supply system and the Village's specific concerns with water loss issues, priorities, and schedule.
- B.2 Gather available flow and billing data and other available information regarding water system operation.
 - B.2.1 Meter locations, sizes, testing data, and age.
 - B.2.2 Metered volumes for the past five years.
 - B.2.3 Number and sizes of service connections.
 - B.2.4 Pipeline lengths, sizes, materials, and age.
 - B.2.5 Pipeline break records including estimates of water loss for the past 5 years.
 - B.2.6 Maintenance/incident records pertaining to the known use of water at non-metered locations such as fire hydrants for the past 5 years.
 - B.2.7 Known water system problems and concerns that could be contributing to the issue.
 - B.2.8 Reports prepared by Village's leak detection contractor.
- B.3 Review the available information and resolve questions and discrepancies.
- B.4 Audit water system using the AWWA/IWA Water Audit Software, Version 5.0.
- B.5 Develop water system performance indicators including:
 - B.5.1 Volume of authorize consumption (metered connection use plus other unmetered uses such as firefighting).
 - B.5.2 Volume of non-revenue water as a percentage of water purchases from DWC.
 - B.5.3 Cost of non-revenue water as a percentage of the total annual operating cost.
 - B.5.4 Volume of apparent losses.
 - B.5.5 Annual cost of apparent losses.
 - B.5.6 Volume of apparent losses per service connection per day (normalized apparent losses).
 - B.5.7 Volume of real losses.

- B.5.8 Annual cost of real losses.
- B.5.9 Volume of real losses per service connection per day (normalized real losses).
- B.5.10 Unavoidable annual real losses (based on length of water pipelines, number of service connections, lengths of service lines, and system pressure).
- B.5.11 Infrastructure leakage index (ratio of real losses to unavoidable losses).
- B.6 Develop a list of next steps intended to reduce the apparent and real water losses.
- B.7 Prepare opinions of probable cost for each of the recommended actions.
- B.8 Prepare a report summarizing the findings of this study and recommending a course of action.
- B.9 Attend two project meeting in addition to the kick-off meeting.
- B.10 Provide up to 10 copies of the completed report.

PART 2 –ADDITIONAL SERVICES

The following Additional Services are not included in Basic Services and are at the Client's option. These services, if exercised by Client and agreed to by Consultant, shall be paid for in addition to compensation for Basic Services. Consultant is not authorized to proceed with performance of any Additional Services unless they are duly authorized, in writing, by Client.

C. GENERAL

- C.1 Preparing applications and supporting documents for private or governmental grants, loans or advances in connection with Project.
- C.2 Services resulting from significant changes in scope, extent or character of portions of Project including, but not limited to, changes in size, complexity, Client's schedule, or method of financing, and revising previously accepted studies and reports when such revisions are required by changes in Laws and Regulations enacted subsequent to effective date of this Agreement, or are due to any other causes beyond Consultant's control.
- C.3 Services required as a result of Client's providing incomplete or incorrect Project information on which Consultant had previously relied.
- C.4 Services required to hold additional review meetings, conduct additional site trips or provide additional copies of documents, over and above the number listed under Basic Services.
- C.5 Preparing to serve or serving as a Consultant or witness for Client in any litigation, arbitration or other dispute resolution process related to Project.

VILLAGE OF VILLA PARK, ILLINOIS

WATER SYSTEM AUDIT

EXHIBIT 2 - COMPENSATION

The Consultant's fees will be based on the total hours worked on the Project, including travel, plus expenses. The Consultant's current schedule of Hourly Fees and Charges is attached to this Exhibit. The actual hourly rates charged for individual employees are based on hourly compensation rates and an overhead multiplier of 2.95.

1. The Consultant's fee for the basic services associated with the water system audit as listed in Exhibit 1 will not exceed \$28,000.
2. The Consultant's fee for consultations and services beyond those listed in Exhibit 1 will be based on total hours worked, plus expenses, as described above. The Consultant shall provide the Client with an estimate of the total cost for each assignment prior to the start of the work.



Stanley Consultants

HOURLY FEES AND CHARGES

Fiscal Year 2015-2016

I. Office and Field Personnel, Professional Engineers/Land Surveyors Rates (per hour)

Regular Time:

Project Manager/Principal Officer	\$175.00 - \$300.00
Principal Engineer	\$155.00 - \$250.00
Senior Engineer	\$120.00 - \$210.00
Engineer	\$ 90.00 - \$160.00
3D Modeling/Visualization	\$ 95.00 - \$130.00
Professional Land Surveyor	\$ 80.00 - \$180.00
Engineering/Survey Technician	\$ 55.00 - \$160.00
Graphics Technician	\$ 50.00 - \$170.00
Construction Observation	\$ 65.00 - \$250.00
Clerical/Word Processing	\$ 40.00 - \$ 100.00

Overtime:

Client authorized services on Saturdays, Sundays, Holidays, and weekdays over normal working hours 1.3 x Regular Time

II. Reimbursable Costs:

Travel, Lodging, and Subsistence	Cost + 10%
Filing Fees, Permits, Title Company Charges, Government Review Fees	Cost + 10%
Reproductions	
Photocopying	\$0.13 each
Outside Services	Cost + 10%
Delivery Charges	Cost + 10%
Outside Consultants	Cost + 10%
ATV	\$35.00/day
Computer Charges (excluding operator time), phone & fax (long distance)	Cost + 10%

III. Compensation for purchases, items of expense, and other charges not scheduled above, incurred in connection with the performance of the work, shall be at cost plus 10%.

IV. Interest at the rate of 1½% per month will be charged on invoices not paid within 30 days.

V. Charges are subject to revision on or after March 26, 2016.



1. CLIENT'S RESPONSIBILITIES

- 1.1 Name CLIENT's representative with authority to receive information and transmit instructions for CLIENT.
- 1.2 Provide CLIENT's requirements for project, including objectives and constraints, design and construction standards, bonding and insurance requirements, and contract forms.
- 1.3 Provide available information pertinent to project upon which CONSULTANT may rely.
- 1.4 Arrange for access by CONSULTANT upon public and private property, as required.
- 1.5 Examine documents presented by CONSULTANT, obtain legal and other advice as CLIENT deems appropriate, and render written decisions within reasonable time.
- 1.6 Obtain consents, approvals, licenses, and permits necessary for project.
- 1.7 Advertise for and open bids when scheduled.
- 1.8 Provide services necessary for project but not within scope of CONSULTANT's services.
- 1.9 Indemnify CONSULTANT, its employees, agents, and consultants against claims arising out of CONSULTANT's design, if there has been a deviation from the design beyond the CONSULTANT's control or failure to follow CONSULTANT's recommendation and such deviation or failure caused the claims.
- 1.10 Promptly notify CONSULTANT when CLIENT learns of contractor error or any development that affects scope or timing of CONSULTANT's services.

2. PERIOD OF SERVICE

- 2.1 CONSULTANT is not responsible for delays due to factors beyond its control.
- 2.2 If CLIENT requests changes in project, compensation for and time of performance of CONSULTANT's services shall be adjusted appropriately.

3. CONSTRUCTION COST AND COST ESTIMATES

- 3.1 **Construction Cost.** Construction cost means total cost of entire project to CLIENT, except for CONSULTANT's compensation and expenses, cost of land, rights-of-way, legal and accounting services, insurance, financing charges, and other costs which are CLIENT's responsibility as provided in this Agreement.
- 3.2 **Cost Estimates.** Since CONSULTANT has no control over cost of labor, materials, equipment or services furnished by others, over contractors' methods of determining prices, or over competitive bidding or market

conditions, its estimates of project construction cost will be made on the basis of its employees' experience and qualifications and will represent their best judgment as experienced and qualified professionals, familiar with the construction industry. CONSULTANT does not guarantee that proposals, bids, or actual construction cost will not vary from its estimates of project cost.

4. GENERAL

4.1 Termination.

4.1.1 Either party may terminate their obligation to provide further services upon twenty (20) days' written notice, after substantial default by other party through no fault of terminating party.

4.1.2 CLIENT may terminate CONSULTANT's obligation to provide further services upon twenty (20) days' written notice if project is abandoned. In such event, progress payments due CONSULTANT for services rendered, plus unpaid reimbursable expenses and termination charge, shall constitute total compensation due.

4.2 Reuse of Documents.

4.2.1 All tangible items prepared by CONSULTANT are instruments of service, and CONSULTANT retains all copyrights. CLIENT may retain copies for reference, but reuse on another project without CONSULTANT's written consent is prohibited. CLIENT will indemnify CONSULTANT, its employees, agents, and consultants against claims resulting from such prohibited reuse. Said items are not intended to be suitable for completion of this project by others.

4.2.2 Submittal or distribution of items in connection with project is not publication in derogation of CONSULTANT's rights.

4.3 Payment.

4.3.1 CONSULTANT shall submit a monthly statement for services rendered and reimbursable expenses incurred. CLIENT shall make prompt monthly payments.

4.3.2 If CLIENT fails to make payment within thirty (30) days after receipt of statement, interest at maximum legal rate or at a rate of 18%, whichever is less, shall accrue; and, in addition, CONSULTANT may, after giving seven (7) days' written notice, suspend services until it has been paid in full all amounts due it.

4.3.3 CLIENT has provided or shall provide for payment from one or more lawful sources of all sums to be paid to CONSULTANT.

4.3.4 CONSULTANT's compensation shall not be reduced on account of any amounts withheld from payments to contractors.

4.3.5 If services performed by CONSULTANT are subject to state or local sales taxes, said taxes will be reflected in the invoices and remitted according to state law. If CLIENT claims a status that would make the transaction exempt, then CLIENT shall provide appropriate proof of exempt status to CONSULTANT.

4.4 **Controlling Law.** Agreement shall be governed by Illinois law.

4.5 **Successors and Assigns.**

4.5.1 The parties bind themselves, their successors, and legal representatives to the other party and to successors and legal representatives of such other party, in respect to all covenants and obligations of this Agreement.

4.5.2 Neither party shall assign, sublet, or transfer any interest in this Agreement without written consent of the other, provided CONSULTANT may employ such independent consultants, associates, and subcontractors as it may deem appropriate.

4.5.3 Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than the parties.

4.6 **CONSULTANT's Accounting Records.** Records of CONSULTANT's personnel time, reimbursable expenses, and accounts between parties shall be kept on a generally-recognized accounting basis.

4.7 **Separate Provisions.** If any provisions of this Agreement shall be held to be invalid or unenforceable, remaining provisions shall be valid and binding.

4.8 **Waiver.** No waiver shall constitute a waiver of any subsequent breach.

4.9 **Warranty.**

4.9.1 CONSULTANT shall use reasonable care to reflect requirements of all applicable laws, rules, or regulations of which CONSULTANT has knowledge or about which CLIENT specifically advises in writing, which are in effect on date of Agreement. CONSULTANT INTENDS TO RENDER SERVICES IN ACCORDANCE WITH GENERALLY ACCEPTED PROFESSIONAL STANDARDS, BUT NO OTHER WARRANTY IS EXTENDED, EITHER EXPRESS OR IMPLIED, IN CONNECTION WITH SUCH SERVICES. CLIENT's rights and remedies in this Agreement are exclusive.

4.9.2 CONSULTANT shall not be responsible for contractors' construction means, methods, techniques, sequences, or procedures, or for contractors' safety precautions and programs, or for contractors' failure to perform according to contract documents.

4.9.3 The CONSULTANT believes that any computer software provided under this Agreement is suitable for the intended purpose, however, it does not warrant the suitability, merchantability, or fitness for a particular purpose of this software.

4.10 **Period of Repose.** Any applicable statute of limitations shall commence to run and any alleged cause

of action shall be deemed to have accrued not later than completion of services to be performed by CONSULTANT.

4.11 **Indemnification.** To the fullest extent permitted by law, CONSULTANT shall indemnify and hold harmless CLIENT, CLIENT's officers, directors, partners, employees, and agents from and against any and all claims for bodily injury and for damage to tangible property caused solely by the negligent acts or omissions of CONSULTANT or CONSULTANT's officers, directors, partners, employees, agents, and CONSULTANT's consultants in the performance and furnishing of CONSULTANT's services under this Agreement. Any indemnification shall be limited to the terms and amounts of coverage of the CONSULTANT's insurance policies and Section 4.12, Limitation of Liability.

To the fullest extent permitted by law, CLIENT shall indemnify and hold harmless CONSULTANT, CONSULTANT's officers, directors, partners, employees, and agents and CONSULTANT's consultants from and against any and all claims for bodily injury and for damage to tangible property caused solely by the negligent acts or omissions of CLIENT or CLIENT's officers, directors, partners, employees, agents, and CLIENT's consultants with respect to this Agreement on the Project. In addition to the indemnity provided under this section, and to the fullest extent permitted by law, CLIENT shall indemnify and hold harmless CONSULTANT and its officers, directors, partners, employees, and agents and CONSULTANT's consultants from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) caused by, arising out of, or relating to the presence, discharge, release, or escape of asbestos, PCBs, petroleum, hazardous waste, or radioactive material at, on, under, or from the Project site.

4.12 **Limitation of Liability.** TO THE FULLEST EXTENT PERMITTED BY LAW, AND NOTWITHSTANDING ANY OTHER PROVISION OF THIS AGREEMENT, THE TOTAL LIABILITY, IN THE AGGREGATE, OF THE CONSULTANT (INCLUDING ITS OFFICERS, DIRECTORS, EMPLOYEES, AGENTS AND SUCONSULTANTS), TO CLIENT AND ANYONE CLAIMING BY, THROUGH OR UNDER CLIENT, FOR ANY AND ALL CLAIMS, LOSSES, COSTS, OR DAMAGES WHATSOEVER ARISING OUT OF, RESULTING FROM, OR IN ANY WAY RELATED TO THE PERFORMANCE OF SERVICES UNDER THIS AGREEMENT FROM ANY CAUSES, INCLUDING BUT NOT LIMITED TO NEGLIGENCE, PROFESSIONAL ERRORS OR OMISSIONS, OR WARRANTIES EXPRESSED OR IMPLIED, OF CONSULTANT OR CONSULTANT'S CONSULTANTS, SHALL NOT EXCEED \$100,000 OR THE TOTAL COMPENSATION RECEIVED BY CONSULTANT, WHICHEVER IS GREATER. THIS LIMITATION INCLUDES LIABILITY UNDER SECTION 4.11.

4.13 **Extent of Agreement.** This Agreement represents the entire agreement between the parties and may be amended only by written instrument signed by both parties.

4.14 **Subrogation Waiver.** The parties waive all rights against each other, and against contractors, consultants, agents, and employees of the other for damages covered by any property insurance during construction, and each shall require similar waivers from their contractors, consultants, and agents.