

**VILLAGE OF CARPENTERSVILLE
PROFESSIONAL SERVICES AGREEMENT**

This PROFESSIONAL SERVICES AGREEMENT ("**Agreement**") is dated as of the 19th day of July, 2016, and is by and between the VILLAGE OF CARPENTERSVILLE, an Illinois home rule municipal corporation ("**Village**"), and the Consultant identified in Section 1A of this Agreement.

IN CONSIDERATION OF the recitals and the mutual covenants and agreements set forth in this Agreement, and pursuant to the Village's statutory and home rule powers, the parties agree as follows:

SECTION 1. CONSULTANT.

A. Engagement of Consultant. The Village desires to engage the Consultant identified below to perform and to provide all necessary professional consulting services to perform the work in connection with the project identified below:

Consultant Name:	<u>Engineering Enterprises, Inc.</u>
Address:	<u>52 Wheeler Road</u> <u>Sugar Grove, Illinois 60554</u>
Telephone Number	<u>(630) 466 - 6700</u>
E-mail	<u></u>
Project Name/Description:	<u>Chemical Feed System Addition</u>
Contract Amount:	<u>\$49,294</u>

B. Project Description. Professional Service Agreement to provide engineering services for the design and construction of a Chemical Feed System for the purpose of Phosphorus Removal within the Carpentersville Wastewater Facilities, as more fully described in the proposal attached to this Agreement as **Attachment A ("Proposal")**.

C. Representations of Consultant. The Consultant represents that it is financially solvent, has the necessary financial resources, and is sufficiently experienced and competent to perform and complete the consulting services that are set forth in the Proposal ("**Services**") in a manner consistent with the standards of professional practice by recognized consulting firms providing services of a similar nature.

SECTION 2. SCOPE OF SERVICES.

A. Retention of the Consultant. The Village retains the Consultant to perform, and the Consultant agrees to perform, the Services.

B. Services. The Consultant shall provide the Services pursuant to the terms and conditions of this Agreement.

C. **Commencement; Time of Performance.** The Consultant shall commence the Services immediately upon receipt of written notice from the Village that this Agreement has been fully executed by the Parties ("**Commencement Date**"). The Consultant shall diligently and continuously prosecute the Services until the completion of the Services or upon the termination of this Agreement by the Village, but in no event later than **January 1, 2018**. (after the Commencement Date ("**Time of Performance**"). The Village may modify the Time of Performance at any time upon 15 days prior written notice to the Consultant. Delays caused by the Village shall extend the Time of Performance in equal proportion to the delay caused by the Village; provided, however, that the Consultant shall be responsible for completion of all work within the Time of Performance, notwithstanding any strike or other work stoppage by employees of either the Consultant or the Village.

D. **Reporting.** The Consultant shall regularly report to the Director of Public Works, or his designee, regarding the progress of the services during the term of this Agreement.

SECTION 3. COMPENSATION AND METHOD OF PAYMENT.

A. **Agreement Amount.** The total amount paid by the Village for the Services pursuant to this Agreement shall not exceed the amount identified as the Agreement Amount in Section 1.A of this Agreement. No claim for additional compensation shall be valid unless made in accordance with Sections 3.D or 3.E of this Agreement.

B. **Invoices and Payment.** The Consultant shall submit invoices in an approved format to the Village for costs incurred by the Consultant in performing the Services. The amount billed in each invoice for the Services shall be based solely upon the rates set forth in the Proposal. The Village shall pay to the Consultant the amount billed within 45 days after receiving such an invoice.

C. **Records.** The Consultant shall maintain records showing actual time devoted and costs incurred, and shall permit the Village to inspect and audit all data and records of the Consultant for work done pursuant to this Agreement. The records shall be made available to the Village at reasonable times during the term of this Agreement, and for one year after the termination of this Agreement.

D. Claim In Addition To Agreement Amount.

1. The Consultant shall provide written notice to the Village of any claim for additional compensation as a result of action taken by the Village, within 15 days after the occurrence of such action.

2. The Consultant acknowledges and agrees that: (a) the provision of written notice pursuant to Section 3.D.1 of this Agreement shall not be deemed or interpreted as entitling the Consultant to any additional compensation; and (b) any changes in the Agreement Amount shall be valid only upon written amendment pursuant to Section 8.A of this Agreement.

3. Regardless of the decision of the Village relative to a claim submitted by the Consultant, the Consultant shall proceed with all of the work required to complete

the Services under this Agreement, as determined by the Village, without interruption.

E. Additional Services. The Consultant acknowledges and agrees that the Village shall not be liable for any costs incurred by the Consultant in connection with any services provided by the Consultant that are outside the scope of this Agreement ("**Additional Services**"), regardless of whether such Additional Services are requested or directed by the Village, except upon the prior written consent of the Village.

F. Taxes, Benefits, and Royalties. Each payment by the Village to the Consultant includes all applicable federal, state, and Village taxes of every kind and nature applicable to the Services, as well as all taxes, contributions, and premiums for unemployment insurance, old age or retirement benefits, pensions, annuities, or similar benefits, and all costs, royalties, and fees arising from the use on, or the incorporation into, the Services, of patented or copyrighted equipment, materials, supplies, tools, appliances, devices, processes, or inventions. All claims or rights to claim additional compensation by reason of the payment of any such tax, contribution, premium, cost, royalty, or fee are hereby waived and released by the Consultant.

G. Final Acceptance. The Services, or, if the Services are to be performed in separate phases, each phase of the Services, shall be considered complete on the date of final written acceptance by the Village of the Services or each phase of the Services, as the case may be, which acceptance shall not be unreasonably withheld or delayed.

SECTION 4. PERSONNEL; SUBCONTRACTORS.

A. Key Project Personnel. The Key Project Personnel identified in the Proposal shall be primarily responsible for carrying out the Services on behalf of the Consultant. The Key Project Personnel shall not be changed without the Village's prior written approval.

Engineering Enterprises, Inc.
1. Jeff Freeman, PE, CFM, LEED AP
2. Stephen Dennison, PE
3. Larry Nolan
Archer Consulting Engineers
1. Larry McElheny, PE
2. Mike Schiro

B. Availability of Personnel. The Consultant shall provide all personnel necessary to complete the Services including, without limitation, any Key Project Personnel identified in this Agreement. The Consultant shall notify the Village as soon as practicable prior to terminating the employment of, reassigning, or receiving notice of the resignation of, any Key Project Personnel. The Consultant shall have no claim for damages and shall not bill the Village for additional time and materials charges as the result of any portion of the Services which must be duplicated or redone due to such termination or for any delay or extension of the Time of Performance as a result of any such termination, reassignment, or resignation.

C. **Approval and Use of Subcontractors.** The Consultant shall perform the Services with its own personnel and under the management, supervision, and control of its own organization unless otherwise approved in advance by the Village in writing. All subcontractors and subcontracts used by the Consultant shall be acceptable to, and approved in advance by, the Village. The Village's approval of any subcontractor or subcontract shall not relieve the Consultant of full responsibility and liability for the provision, performance, and completion of the Services as required by this Agreement. All Services performed under any subcontract shall be subject to all of the provisions of this Agreement in the same manner as if performed by employees of the Consultant. For purposes of this Agreement, the term "Consultant" shall be deemed also to refer to all subcontractors of the Consultant, and every subcontract shall include a provision binding the subcontractor to all provisions of this Agreement.

D. **Removal of Personnel and Subcontractors.** If any personnel or subcontractor fails to perform the Services in a manner satisfactory to the Village and consistent with commonly accepted professional practices, the Consultant shall immediately upon notice from the Village remove and replace such personnel or subcontractor. The Consultant shall have no claim for damages, for compensation in excess of the amount contained in this Agreement, or for a delay or extension of the Time of Performance as a result of any such removal or replacement.

SECTION 5. CONFIDENTIAL INFORMATION.

A. **Confidential Information.** The term "***Confidential Information***" shall mean information in the possession or under the control of the Village relating to the technical, business, or corporate affairs of the Village; Village property; user information, including, without limitation, any information pertaining to usage of the Village's computer system, including and without limitation, any information obtained from server logs or other records of electronic or machine readable form; and the existence of, and terms and conditions of, this Agreement. Village Confidential Information shall not include information that can be demonstrated: (1) to have been rightfully in the possession of the Consultant from a source other than the Village prior to the time of disclosure of such information to the Consultant pursuant to this Agreement ("***Time of Disclosure***"); (2) to have been in the public domain prior to the Time of Disclosure; (3) to have become part of the public domain after the Time of Disclosure by a publication or by any other means except an unauthorized act or omission or breach of this Agreement on the part of the Consultant or the Village; or (4) to have been supplied to the Consultant after the Time of Disclosure without restriction by a third party who is under no obligation to the Village to maintain such information in confidence.

B. **No Disclosure of Confidential Information by the Consultant.** The Consultant acknowledges that it shall, in performing the Services for the Village under this Agreement, have access, or be directly or indirectly exposed, to Confidential Information. The Consultant shall hold confidential all Confidential Information and shall not disclose or use such Confidential Information without the express prior written consent of the Village. The Consultant shall use reasonable measures at least as strict as those the Consultant uses to protect its own confidential information. Such measures shall include, without limitation, requiring employees and subcontractors of the Consultant to execute a non-disclosure agreement before obtaining access to Confidential Information.

SECTION 6. STANDARD OF SERVICES AND INDEMNIFICATION.

A. Representation and Certification of Services. The Consultant represents and certifies that the Services shall be performed in accordance with the standards of professional practice, care, and diligence practiced by recognized consulting firms in performing services of a similar nature in existence at the Time of Performance. The representations and certifications expressed shall be in addition to any other representations and certifications expressed in this Agreement, or expressed or implied by law, which are hereby reserved unto the Village.

B. Indemnification. The Consultant shall, and does hereby agree to, indemnify, save harmless, and defend the Village against all damages, liability, claims, losses, and expenses (including attorneys' fees) that may arise, or be alleged to have arisen, out of or in connection with the Consultant's performance of, or failure to perform, the Services or any part thereof, or any failure to meet the representations and certifications set forth in Section 6.A of this Agreement.

C. Insurance. The Consultant shall provide, at its sole cost and expense, liability insurance in the aggregate amount of \$1,000,000, which insurance shall include, without limitation, protection for all activities associated with the Services. The insurance shall be for a minimum of \$1,000,000 per occurrence for bodily injury and \$1,000,000 per occurrence for property damage. The Consultant shall cause the Village to be named as an additional insured on the insurance policy described in this Section 6.C. Not later than 10 days after the Commencement Date, the Consultant shall provide the Village with either: (a) a copy of the entire insurance policy; or (b) a Certificate of Insurance along with a letter from the broker issuing the insurance policy to the effect that the Certificate accurately reflects the contents of the insurance policy. The insurance coverages and limits set forth in this Section 6.C shall be deemed to be minimum coverages and limits, and shall not be construed in any way as a limitation on the Consultant's duty to carry adequate insurance or on the Consultant's liability for losses or damages under this Agreement.

D. No Personal Liability. No elected or appointed official or employee of the Village shall be personally liable, in law or in contract, to the Consultant as the result of the execution of this Agreement.

SECTION 7. CONSULTANT AGREEMENT GENERAL PROVISIONS.

A. Relationship of the Parties. The Consultant shall act as an independent contractor in providing and performing the Services. Nothing in, nor done pursuant to, this Agreement shall be construed: (1) to create the relationship of principal and agent, employer and employee, partners, or joint ventures between the Village and Consultant; or (2) to create any relationship between the Village and any subcontractor of the Consultant.

B. Conflict of Interest. The Consultant represents and certifies that, to the best of its knowledge: (1) no elected or appointed Village official, employee or agent has a personal financial interest in the business of the Consultant or in this Agreement, or has personally received payment or other consideration for this Agreement; (2) as of the date of this Agreement, neither Consultant nor any person employed or associated with Consultant has any interest that would conflict in any manner or degree with the

performance of the obligations under this agreement ; and (3) neither consultant nor any person employed by or associated with Consultant shall at any time during the term of this Agreement obtain or acquire any interest that would conflict in any manner or degree with the performance of the obligations under this Agreement.

C. No Collusion. The Consultant represents and certifies that the Consultant is not barred from contracting with a unit of state or local government as a result of: (1) a delinquency in the payment of any tax administered by the Illinois Department of Revenue, unless the Consultant is contesting, in accordance with the procedures established by the appropriate revenue act, its liability for the tax or the amount of the tax, as set forth in Section 11-42.1-1 *et seq.* of the Illinois Municipal Code, 65 ILCS 5/11-42.1-1 *et seq.*; or (2) a violation of either Section 33E-3 or Section 33E-4 of Article 33E of the Criminal Code of 1961, 720 ILCS 5/33E-1 *et seq.* The Consultant represents that the only persons, firms, or corporations interested in this Agreement as principals are those disclosed to the Village prior to the execution of this Agreement, and that this Agreement is made without collusion with any other person, firm, or corporation. If at any time it shall be found that the Consultant has, in procuring this Agreement, colluded with any other person, firm, or corporation, then the Consultant shall be liable to the Village for all loss or damage that the Village may suffer, and this Agreement shall, at the Village's option, be null and void.

D. Termination. Notwithstanding any other provision hereof, the Village may terminate this Agreement at any time upon 15 days written notice to the Consultant. In the event that this Agreement is so terminated, the Consultant shall be paid for Services actually performed and reimbursable expenses actually incurred, if any, prior to termination, not exceeding the value of the Services completed, which shall be determined on the basis of the rates set forth in the Proposal.

E. Compliance With Laws and Grants.

1. **Compliance with Laws.** The Consultant shall give all notices, pay all fees, and take all other action that may be necessary to ensure that the Services are provided, performed, and completed in accordance with all required governmental permits, licenses, or other approvals and authorizations that may be required in connection with providing, performing, and completing the Services, and with all applicable statutes, ordinances, rules, and regulations, including, without limitation: any applicable prevailing wage laws; the Fair Labor Standards Act; any statutes regarding qualification to do business; any statutes requiring preference to laborers of specified classes; any statutes prohibiting discrimination because of, or requiring affirmative action based on, race, creed, color, national origin, age, sex, or other prohibited classification, including, without limitation, the Americans with Disabilities Act of 1990, 42 U.S.C. §§ 12101 *et seq.*, and the Illinois Human Rights Act, 775 ILCS 5/1-101 *et seq.* The Consultant shall also comply with all conditions of any federal, state, or local grant received by the Village or the Consultant with respect to this Agreement or the Services. Further, the Consultant shall have a written sexual harassment policy in compliance with Section 2-105 of the Illinois Human Rights Act.

2. Liability for Noncompliance. The Consultant shall be solely liable for any fines or civil penalties that are imposed by any governmental or quasi-governmental agency or body that may arise, or be alleged to have arisen, out of or in connection with the Consultant's, or any of its subcontractors, performance of, or failure to perform, the Services or any part thereof.

3. Required Provisions. Every provision of law required by law to be inserted into this Agreement shall be deemed to be inserted herein.

F. Default. If it should appear at any time that the Consultant has failed or refused to prosecute, or has delayed in the prosecution of, the Services with diligence at a rate that assures completion of the Services in full compliance with the requirements of this Agreement, or has otherwise failed, refused, or delayed to perform or satisfy the Services or any other requirement of this Agreement ("***Event of Default***"), and fails to cure any such Event of Default within ten business days after the Consultant's receipt of written notice of such Event of Default from the Village, then the Village shall have the right, without prejudice to any other remedies provided by law or equity, to pursue any one or more of the following remedies:

1. Cure by Consultant. The Village may require the Consultant, within a reasonable time, to complete or correct all or any part of the Services that are the subject of the Event of Default; and to take any or all other action necessary to bring the Consultant and the Services into compliance with this Agreement.

2. Termination of Agreement by Village. The Village may terminate this Agreement without liability for further payment of amounts due or to become due under this Agreement after the effective date of termination.

3. Withholding of Payment by Village. The Village may withhold from any payment, whether or not previously approved, or may recover from the Consultant, any and all costs, including attorneys' fees and administrative expenses, incurred by the Village as the result of any Event of Default by the Consultant or as a result of actions taken by the Village in response to any Event of Default by the Consultant.

G. No Additional Obligation. The Parties acknowledge and agree that the Village is under no obligation under this Agreement or otherwise to negotiate or enter into any other or additional contracts or agreements with the Consultant or with any vendor solicited or recommended by the Consultant.

H. Village Board Authority. Notwithstanding any provision of this Agreement, any negotiations or agreements with, or representations by the Consultant to, vendors shall be subject to the approval of the Village Board of Trustees. For purposes of this Section 7.H, "vendors" shall mean entities engaged in subcontracts for the provision of additional services directly to the Village. The Village shall not be liable to any vendor or third party for any agreements made by the Consultant without the knowledge and approval of the Village Board of Trustees.

I. **Mutual Cooperation.** The Village agrees to cooperate with the Consultant in the performance of the Services, including meeting with the Consultant and providing the Consultant with such non-confidential information that the Village may have that may be relevant and helpful to the Consultant's performance of the Services. The Consultant agrees to cooperate with the Village in the performance and completion of the Services and with any other consultants engaged by the Village.

J. **News Releases.** The Consultant shall not issue any news releases, advertisements, or other public statements regarding the Services without the prior written consent of the Village Manager.

K. **Ownership.** Designs, drawings, plans, specifications, photos, reports, information, observations, calculations, notes, and any other documents, data, or information, in any form, prepared, collected, or received from the Village by the Consultant in connection with any or all of the services to be performed under this Agreement ("**Documents**") shall be and remain the exclusive property of the Village. At the Village's request, or upon termination of this Agreement, the consultant shall cause the Documents to be promptly delivered to the Village.

SECTION 8. GENERAL PROVISIONS.

A. **Amendment.** No amendment or modification to this Agreement shall be effective until it is reduced to writing and approved and executed by the Village and the Consultant in accordance with all applicable statutory procedures.

B. **Assignment.** This Agreement may not be assigned by the Village or by the Consultant without the prior written consent of the other party.

C. **Binding Effect.** The terms of this Agreement shall bind and inure to the benefit of the Village, the Consultant, and their agents, successors, and assigns.

D. **Notice.** All notices required or permitted to be given under this Agreement shall be in writing and shall be delivered (1) personally, (2) by a reputable overnight courier, or by (3) by certified mail, return receipt requested, and deposited in the U.S. Mail, postage prepaid. Unless otherwise expressly provided in this Agreement, notices shall be deemed received upon the earlier of: (a) actual receipt; (b) one business day after deposit with an overnight courier, as evidenced by a receipt of deposit; or (c) four business days following deposit in the U.S. mail, as evidenced by a return receipt. By notice complying with the requirements of this Section 8.D, each party shall have the right to change the address or the addressee, or both, for all future notices and communications to the other party, but no notice of a change of addressee or address shall be effective until actually received.

Notices and communications to the Village shall be addressed and delivered to:

Bob Cole, Director of Public Works
Carpentersville Public Works Facility
1075 Tamarac Drive
Carpentersville, Illinois 60110
Attention: Village Manager

With a copy to:

Hart M. Passman, Village Attorney
Holland & Knight LLP
131 S. Dearborn, 30th Floor
Chicago, Illinois 60603

Notices and communications to the Consultant shall be addressed and delivered to:

Jeffrey W. Freeman, PE, CFM, LEED AP, Vice President

Engineering Enterprises, Inc.

52 Wheeler Road

Sugar Grove, IL 60554

E. Third Party Beneficiary. No claim as a third party beneficiary under this Agreement by any person, firm, or corporation shall be made or be valid against the Village.

F. Provisions Severable. If any term, covenant, condition, or provision of this Agreement is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remainder of the provisions shall remain in full force and effect and shall in no way be affected, impaired, or invalidated.

G. Time. Time is of the essence in the performance of all terms and provisions of this Agreement.

H. Calendar Days and Time. Unless otherwise provided in this Agreement, any reference in this Agreement to "day" or "days" shall mean calendar days and not business days. If the date for giving of any notice required to be given, or the performance of any obligation, under this Agreement falls on a Saturday, Sunday, or federal holiday, then the notice or obligation may be given or performed on the next business day after that Saturday, Sunday, or federal holiday.

I. Governing Laws. This Agreement shall be governed by, construed and enforced in accordance with the internal laws, but not the conflicts of laws rules, of the State of Illinois.

J. Authority to Execute.

1. **The Village.** The Village hereby warrants and represents to the Consultant that the persons executing this Agreement on its behalf have been properly authorized to do so by its corporate authorities.

2. **The Consultant.** The Consultant hereby warrants and represents to the Village that the persons executing this Agreement on its behalf have the full and complete right, power, and authority to enter into this Agreement and to agree to the terms, provisions, and conditions set forth in this Agreement and that all legal actions needed to authorize the execution, delivery, and performance of this Agreement have been taken.

K. Entire Agreement. This Agreement constitutes the entire agreement between the parties to this Agreement and supersedes all prior agreements and negotiations between the parties, whether written or oral, relating to the subject matter of this Agreement.

L. Waiver. Neither the Village nor the Consultant shall be under any obligation to exercise any of the rights granted to them in this Agreement except as it shall determine to be in its best interest from time to time. The failure of the Village or the Consultant to exercise at any time any such rights shall not be deemed or construed as a waiver of that right, nor shall the failure void or affect the Village's or the Consultant's right to enforce such rights or any other rights.

M. Consents. Unless otherwise provided in this Agreement, whenever the consent, permission, authorization, approval, acknowledgement, or similar indication of assent of any party to this Agreement, or of any duly authorized officer, employee, agent, or representative of any party to this Agreement, is required in this Agreement, the consent, permission, authorization, approval, acknowledgement, or similar indication of assent shall be in writing.

N. Grammatical Usage and Construction. In construing this Agreement, pronouns include all genders and the plural includes the singular and vice versa.

O. Interpretation. This Agreement shall be construed without regard to the identity of the party who drafted the various provisions of this Agreement. Moreover, each and every provision of this Agreement shall be construed as though all parties to this Agreement participated equally in the drafting of this Agreement. As a result of the foregoing, any rule or construction that a document is to be construed against the drafting party shall not be applicable to this Agreement.

P. Headings. The headings, titles, and captions in this Agreement have been inserted only for convenience and in no way define, limit, extend, or describe the scope or intent of this Agreement.

Q. Exhibits. Exhibit A attached to this Agreement are, by this reference, incorporated in and made a part of this Agreement. In the event of a conflict between an Exhibit and the text of this Agreement, the text of this Agreement shall control.

R. Rights Cumulative. Unless expressly provided to the contrary in this Agreement, each and every one of the rights, remedies, and benefits provided by this Agreement shall be cumulative and shall not be exclusive of any other rights, remedies, and benefits allowed by law.

S. Counterpart Execution. This Agreement may be executed in several counterparts, each of which, when executed, shall be deemed to be an original, but all of which together shall constitute one and the same instrument.

19th IN WITNESS WHEREOF, the Parties have executed this Agreement on this day of July, 2016.

ATTEST:

VILLAGE OF CARPENTERSVILLE

By: Therese Wilde
Therese Wilde, Village Clerk

By: J. Mark Rooney
J. Mark Rooney, Village Manager

ATTEST:

By: Angie Smith
Title: Executive Assistant



CONSULTANT

By: Jeffrey W. Freeman
Its: VICE PRESIDENT

ATTACHMENT A DISCUSSION, PROJECT OPTIONS, PROPOSAL

A very important consideration in the project evaluation is the physical dosage point for the chemical, and this is tied to the operation of the WWTF for biological phosphorus (Bio-P) removal. It is beneficial to utilize Bio-P removal as much as possible because it is more cost effective to removal phosphorus biologically compared to chemically. When using Bio-P removal for a majority of your P removal, supplementing with chemical phosphorus (Chem-P) is known as chemical polishing. Depending on your system, some chemical polishing could be required all year or it could only be required seasonally.

Relating this to your WWTF, it appears that you've been successful at optimizing your system for Bio-P removal with your existing equipment. Many of your Effluent P monthly averages over the past year have been below 1.0 mg/L (pending permit limit). Therefore, it would be ideal to continue to allow the Oxidation Ditch to perform Bio-P removal as much as possible, and supplement with chemical polishing. If adding chemical before the Oxidation Ditch, you would not get the complete benefit of Bio-P removal because the chemical is already reacting with incoming phosphorus before the Bio-P removal process has a chance to occur. Therefore, much more chemical must be utilized to remove phosphorus in this scenario, compared to taking advantage of the Bio-P removal process.

A standard design for similar systems includes injection of chemical into the Flow Diversion Structure between the Oxidation Ditch and the Final Clarifiers. Injecting into this structure allows for mixing of the chemical prior to entering the Final Clarifiers, where the precipitant is settled and handled in your biosolids treatment system. A side benefit to injecting the chemical after biological treatment (and using less chemical) is a decrease in production of biosolids, which impacts O&M costs related to biosolids treatment and disposal. When using more chemical (i.e. Ferric Chloride), the biosolids have a correlating higher amount of precipitant (i.e. Iron) in addition to the phosphorus removed.

As a result of previous conversation with you and our analysis of your system, we've decided to look at three different options for the location of the Ferric Chloride System equipment:

Option 1 – Chemical Equipment in the Headworks Building

Option 2 – Chemical Equipment in the Administration Building

Option 3 – Chemical Equipment in a New Stand-Alone Structure Next to the Biosolids Control Building

Here is a brief summary of the details and costs for each option:

Option 1 – Chemical Equipment in the Headworks Building

This option includes installation of new chemical storage tanks for bulk chemical delivery and a chemical feed pump skid with all associated electrical, controls, and piping in the open area in your existing Headworks Building. The feed would remain inside the building and go into the influent flow post-screening. Since this is a Class 1,

Division 1 Hazardous Rated Area, due to the open channel raw sewage flow, special consideration must be given to properly rated electrical components. This would add to the cost of the electrical and control work, as well as the chemical pump equipment. Site piping/work would be eliminated due to containing the system inside the Headworks Building (lower cost). However, adding chemical to the head of the plant (prior to Bio-P removal), increases the chemical cost usage compared to feeding after Bio-P removal. It would also increase the amount of biosolids to be treated and disposed.

Construction Cost Estimate: \$220K

O&M Cost Estimate: \$44K *(Includes Chemical, Maintenance, and Electrical Costs; Does Not Include Costs Associated with Biosolids Treatment and Disposal)*

20 Year Present Worth Cost Estimate: \$870K

Option 2 – Chemical Equipment in the Administration Building

This option includes installation of new chemical storage tanks for bulk chemical delivery and a chemical feed pump skid with all associated electrical, controls, and piping in the old Biosolids Loading Room in your existing Administration Building. New underground chemical feed piping would be installed between the chemical pumps and the Influent Pump Station. Again, adding chemical to the head of the plant (prior to Bio-P removal), increases the chemical cost usage compared to feeding after Bio-P removal. It would also increase the amount of biosolids to be treated and disposed.

Construction Cost Estimate: \$250K

O&M Cost Estimate: \$44K *(Includes Chemical, Maintenance, and Electrical Costs; Does Not Include Costs Associated with Biosolids Treatment and Disposal)*

20 Year Present Worth Cost Estimate: \$900K

Option 3 – Chemical Equipment in a New Stand-Alone Structure Next to the Biosolids Control Building

This option includes installation a new pre-packaged Fiberglass Reinforced Plastic (FRP) structure, mounted on a new concrete pad south of the existing Biosolids Control Building. The structure would include HVAC and pre-wiring for an electrical connection. Further analysis of MCC-7 in the Biosolids Control Building is required to verify capacity for a new ~125A breaker for electrical to the structure. Minor modification to site lighting in this area may be required. This option would require less chemical usage due to feeding after Bio-P removal. Therefore, chemical totes could be utilized instead of large storage tanks and bulk deliveries. A chemical feed pump skid with all associated electrical, controls, and piping would be installed inside the structure. New underground chemical feed piping would be installed between the chemical pumps and the Flow Diversion Structure west of the Final Clarifiers. The amount of biosolids to be treated and disposed would be reduced with this option.

Construction Cost Estimate: \$288K

O&M Cost Estimate: \$21K *(Includes Chemical, Maintenance, and Electrical Costs; Does Not Include Costs Associated with Biosolids Treatment and Disposal)*

20 Year Present Worth Cost Estimate: \$605K

Summary: Capital Construction Costs would be higher with Option 3, but 20 Year Present Worth Costs would be quite a bit lower compared to the other options. This is a direct result of chemical cost savings due to feeding after Bio-P removal.

Engineering Fee Estimate

I've attached our Engineering Fee Estimate for this work. This would not effectively change, no matter which of the noted options is chosen, because the engineering effort would be very similar across the board. Note the breakout between design and construction engineering fees. The construction observation fees (Item 3.4) are based on approximately 6-8 site visits at key milestones during construction. In an effort to minimize cost, it is assumed Village Staff can help with monitoring the Contractor.

Please note that you may want to consider a separate "temporary" chemical feed system in the Headworks Building for excess flows. This system would consist of a chemical pump and tubing; and you would simply hook up the pump/tubing to a chemical tote and feed into the excess flow path. We did not include this in our estimates, but could easily assist with design of this system, if required.

Regarding project schedule, we do not anticipate any issues meeting the NPDES permit requirements for submittal of Plans/Specs (July 2017) and Construction Completion (July 2018).

ENGINEERING ENTERPRISES, INC.
CONSULTING ENGINEERS

DATE: 07/20/16
ENTERED BY: STD

ATTACHMENT A:
ESTIMATE OF LEVEL OF EFFORT AND ASSOCIATED COST FOR PROFESSIONAL ENGINEERING SERVICES

Chemical Feed System Addition
Village of Carpentersville, Kane Co., IL

WORK ITEM NO.	WORK ITEM	ENTITY	PRINCIPAL IN CHARGE	SENIOR PROJECT MANAGER	PROJECT ENGINEER	CAD TECH	ADMIN.	WORK ITEM HOUR SUMM.	COST PER ITEM	
										HOURLY RATE
PROJECT FACILITATION										
1.1	Project Administration		1	2				3	\$ 545	
			1	2				3	\$ 545	
			Project Facilitation Subtotal:							\$ 545

CHEMICAL FEED SYSTEM ADDITION - DESIGN										
2.1	Attend Design Kickoff Meeting and One Progress Meeting		8	8	8			24	\$ 3,952	
2.2	Review Existing Operational Data and Prepare Ferric Chloride Feed Rate Calculations			8	4			12	\$ 1,850	
2.3	Prepare Project Manual with Plans			32	48	40		122	\$ 17,288	
2.4	Coordinate IEPA Construction Permit			4	8			12	\$ 1,752	
2.5	Bidding and Contracting			1	8	12		23	\$ 3,328	
			9	60	80	40		193	\$ 28,257	
			Chemical Feed System Addition - Design Subtotal:							\$ 28,257

CHEMICAL FEED SYSTEM ADDITION - CONSTRUCTION										
3.1	Attend Pre-Construction Meeting and One Construction Progress Meeting			8	8			16	\$ 2,472	
3.2	Review Pay Applications			4	8			12	\$ 1,752	
3.3	Review Shop Drawings, RFIs			16	16			32	\$ 4,844	
3.4	Construction Observation, Punch List, and As-Built Drawings			20	48	8		76	\$ 10,824	
				48	80	8		136	\$ 19,992	
			Chemical Feed System Addition - Construction Subtotal:							\$ 19,992
			10	110	160	48	4	332	\$ 48,794	
			PROJECT TOTAL:							\$ 48,794

DIRECT EXPENSES	
Printing	\$ 100
Vehicle - Construction	\$ 400
DIRECT EXPENSES =	\$ 500

LABOR EXPENSES	
Engineering Expenses =	\$ 42,290
Drafting & GIS Technician Expenses =	\$ 6,192
Administrative Expenses =	\$ 312
TOTAL LABOR EXPENSES =	\$ 48,794
TOTAL COSTS =	\$ 49,294

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ATTACHMENT A
PROPOSAL