



Passaic Valley Sewerage Commission

REQUEST FOR QUALIFICATIONS AND PROPOSALS FOR PROFESSIONAL SERVICES FOR PASSAIC VALLEY SEWERAGE COMMISSION

DESIGN SERVICES AND DESIGN SERVICES DURING CONSTRUCTION FOR THE PLANTWIDE REPLACEMENT OF ELECTRICAL POWER CABLES

KENNETH J. LUCIANIN
Commissioner

MICHAEL DeFRANCISCI
Executive Director

GREGORY A. TRAMONTOZZI
General Counsel / Acting Clerk

**Passaic Valley Sewerage Commission
600 Wilson Avenue
Newark, New Jersey 07105**

JANUARY 2014

**REQUEST, SOLICITATION AND INVITATION
FOR QUALIFICATIONS AND PROPOSALS FOR**

**DESIGN SERVICES AND DESIGN SERVICES DURING CONSTRUCTION
FOR THE PLANTWIDE REPLACEMENT OF ELECTRICAL POWER CABLES**

Notice is hereby given that the Passaic Valley Sewerage Commission (“PVSC”), County of Essex, State of New Jersey, will accept sealed qualifications and proposals for professional services, not subject to public bidding pursuant to N.J.S.A. 40A:11-5, will be received by the Passaic Valley Sewerage Commission (“PVSC”), County of Essex and State of New Jersey for consideration of **DESIGN SERVICES AND DESIGN SERVICES DURING CONSTRUCTION FOR THE PLANTWIDE REPLACEMENT OF ELECTRICAL POWER CABLES**

All respondents must strictly comply with the submission requirements set forth herein.

The original and five copies of the proposal must be received at PVSC’s Warehouse Building, 600 Wilson Avenue, Newark, New Jersey 07105 (“the Warehouse Building”) on or before February 28, 2014 at 11:00 o’clock a.m. All proposals must be submitted in the form required per Section XI and Sections XIV through XVI hereof and as otherwise required herein. No late submissions will be accepted. All properly submitted proposals will be opened on February 28, 2014 at 11:00 o’clock a.m. in the PVSC training room at the Warehouse building. At that time and place, the sealed proposals will be publicly opened, announced and recorded for the following services:

**DESIGN SERVICES AND DESIGN SERVICES DURING CONSTRUCTION
FOR THE PLANTWIDE REPLACEMENT OF ELECTRICAL POWER CABLES**

GLOSSARY

The following definitions shall apply to and are used in this Request for Qualifications and Proposals:

"Qualified Respondent" - refers to a Respondent who (in the sole judgment of PVSC) has satisfied the qualification criteria set forth in this RFQ/RFP.

"RFQ/RFP" - refers to this Request for Qualifications and Proposals, including any amendments thereof or supplements thereto.

"Selected Respondent" or "Engineer" – refers to the Qualified Respondent selected by PVSC for the award of a contract to perform the Services.

"Services" - refers to the services to be provided by the Selected Respondent for the DESIGN SERVICES AND DESIGN SERVICES during construction in accordance with the provisions of this RFQ/RFP and the contract to be prepared by PVSC.

I. INTENT

PVSC intends to receive a response to the Request for Qualifications and compensation (fee) proposals for **DESIGN SERVICES AND DESIGN SERVICES DURING CONSTRUCTION**. Sealed proposals will be received and opened at the times, dates and place set forth in the notice attached at Page 2 hereof.

The General Qualification Criteria articulated herein at *Section IV* for the selection of **DESIGN SERVICES AND DESIGN SERVICES DURING CONSTRUCTION** have been specifically approved by PVSC. Those criteria and the other requirements herein are intended to be non-restrictive for the purpose of obtaining participation of qualified professionals and uniformity in the manner of submission of proposals.

The successful proposal shall become a part of the signed contract upon award and execution of said contract. There will be no award for **DESIGN SERVICES AND DESIGN SERVICES DURING CONSTRUCTION** until PVSC issues formal, written approval for the same.

Per N.J.S.A. 58:14-1 et seq., PVSC shall be the sole judge concerning the criteria set forth herein and the merits of the proposals submitted as well as the sole judge of the benefits to PVSC represented by the submissions pursuant to this Request, Solicitation and Invitation for Proposal. The basis of the award is the proposal PVSC deems to be most advantageous to PVSC, price and other factors considered.

Copies of this RFQ/RFP and associated reference documents identified in Attachment J of this document may be obtained from the following PVSC representative:

Thomas Fuscaldo, PVSC Purchasing Agent
600 Wilson Avenue
Newark, NJ 07105
Phone: (973) 817-5702
Email: tfuscaldo@pvsc.nj.gov

II. INSURANCE

This Request, Solicitation and Invitation for Proposal is for the appointment of a professional with PVSC or a position for which there is a bidding exemption under the New Jersey Local Public Contracts Law, N.J.S.A. 40A: 11-1 *et seq.* Each respondent should have the following insurance coverage at a minimum:

1. Statutory Workers' Compensation Insurance in compliance with the laws of the State of New Jersey \$500,000 / \$500,000 / \$500,000 and Employers Liability Coverage in the amount of \$1,000,000.
2. Comprehensive General Liability and Bodily Injury Insurance including death \$1,000,000 each occurrence. Combined Single Limit of \$1,000,000 for each occurrence.

3. Comprehensive Automobile Liability, Bodily Injury, Property Damage Insurance \$1,000,000 each occurrence. Combined Single Limit \$1,000,000 each occurrence.
4. Professional Liability Insurance for \$1,000,000 per claim and annual aggregate.

Attached hereto at *Attachment A* is the Certification of Insurance. The Certification must be executed and documents attached thereto by the respondent to the extent that the respondent believes that the attachment of such documents provides proof of insurance for appropriate purposes. Declaration pages shall be attached showing current coverages. During the term of the contract, it shall be the responsibility of the respondent/professional to provide PVSC with additional declaration pages of insurance in compliance with this paragraph showing current coverage when any insurance policy expires. Submission of proof of the required insurance coverage in the form of a certificate or certificates of insurance is a continuing condition precedent to service by the professional that receives the appointment.

III. Public Law 2005, Chapter 51, formerly EXECUTIVE ORDER No. 134 (2004)

A. Requirements. In order to safeguard the integrity of New Jersey State Government procurement by imposing restrictions to insulate the award of State contracts from political contributions that pose the risk of improper influence, purchase of access, or the appearance thereof, by Public Law 2005, C.51 (hereinafter, "Chapter 51") requires the submission of the Certification and Disclosure Form in *Attachment D* and the Statement of Ownership in *Attachment E*. The terms and conditions set forth in this Section are material terms of an Agreement with PVSC.

B. Definitions. For the purpose of this Section, the following definitions shall be in force:

a) Contribution – means a contribution reportable by the recipient under "The New Jersey Campaign Contributions and Expenditures Reporting Act." P.L. 1973, c. 83 (C.19:44A-1 et seq.), and implementing regulations set forth at N.J.A.C. 19:25-7 and N.J.A.C. 19:25-10.1 et seq. As of January 1, 2005, contributions in excess of \$300 during a reporting period are deemed "reportable" under these laws for all contracts awarded in excess of \$17,500.00 after October 15, 2004.

b) Business Entity – means any natural or legal person, business corporation, professional services corporation, Limited Liability Company, partnership, limited partnership, business trust, association or any other legal commercial entity organized under the laws of New Jersey or any other state or foreign jurisdiction. It also includes (i) all principals who own or control more than 10 percent of the profits or assets of a business entity or 10 percent of the stock in the case of a business entity that is a corporation for profit, as appropriate; (ii) any subsidiaries directly or indirectly controlled by the business entity; (iii) any political organization organized under 26 U.S.C.A.

Section 527 that is directly or indirectly controlled by the business entity, other than a candidate committee, election fund, or political party committee; and (iv) if a business entity is a natural person, that person's spouse or child, residing in the same household.

Pursuant to Chapter 51, all business entities which have been awarded a State contract after October 15, 2004, in an amount in excess of \$17,500, have a continuing obligation to disclose all contributions made during the term of such contract.

Such disclosures are to be submitted to PVSC using the standard certification and disclosure form, which may be downloaded from the Division of Purchase and Property's website.

Questions regarding Public Law 2005, Chapter 51 (N.J.S.A. 19:44A-20.13-20.25, superseding Executive Order 134 (2004)) including whether all "principals" of the respondent have submitted the necessary forms should be directed to the Department of the Treasury, Division of Purchase and Property, <http://www.state.nj.us/treasury/purchase/execorder134.shtml>

IV. PROFESSIONAL EVALUATION AND RANKING METHODOLOGY

A. GENERAL QUALIFICATION CRITERIA

The Respondent's shall have, at a minimum, prior experience with the assessment, recommendation and design of 15 kV electrical services, in a wastewater treatment plant with capacities of 200 MGD or more.

The factors that PVSC will use as part of evaluation may include, but are not limited to, the following:

QUALIFICATIONS/APPROACH:

1. The background, professional qualifications, education and training of the Respondent and its staff.
2. The Respondent's qualification specifically pertaining to the scope of work outlined in this RFQ/RFP.
3. The Respondent's proposed technical approach to meet the requirements and objectives of the RFQ/RFP, including phasing, in order to maintain continued operation in the facility.
4. The Respondent's execution of the requirements and procedures as set forth within the RFQ/RFP.
5. The Respondent's Man-Day Estimate of the hours to be expended on each task (Attachment G).

EXPERIENCE/PERSONNEL/SCHEDULE:

1. The Respondent's familiarity with the work, requirements, and procedures of PVSC, including if applicable, PVSC's prior experiences with the Respondent.
2. The Respondent's prior experience with Public Entities and/or Governmental Agencies.
3. The Respondent's proposed schedules.

REFERENCES/OFFICE LOCATION:

1. The Respondent's references.
2. Geographical location of the Respondent's offices and key personnel.

Selection of the Respondent will be made on a competitive basis that places great weight on qualifications and experience for the services, as described within the RFP, as well as the proposed fee.

Scheduled interviews with respondents may be required by the PVSC. Interviews may or may not become part of the overall criteria for evaluation.

Note: A site walk-thru visit is strongly recommended and will be considered as part of the Respondent's qualifications.

There will only be one site walk-thru visit guided by PVSC electrical engineering staff beginning at 9:00 am EST on February 18, 2014.

Attendance at the site walk-thru can be arranged by calling Michael Dox at (973) 817-5987.

B. COMPENSATION PROPOSAL

The Compensation Proposal shall be submitted in a sealed envelope separate from the Qualification Proposal and identified on the front cover as: "Compensation Proposal". Compensation Proposal(s) will only be reviewed for the qualified respondents based on the General Qualification Criteria as listed herein. Refer to Attachment "H" for the Summary of Total Project Cost proposal form.

V. **BACKGROUND**

Passaic Valley Sewerage Commission owns and operates a 330 MGD secondary wastewater treatment facility located in Newark, New Jersey. In the early 1980's, PVSC underwent a major expansion at which time most of the facilities process treatment equipment was installed and placed in service. The 140-acre facility contains more than

one mile of 15-foot-wide utility tunnels in which most of the electrical distribution cables are located.

In the wake of Superstorm Sandy, many of PVSC's facilities suffered extensive damage due to flood waters that submerged electrical equipment and distribution cables located in basements, equipment galleries, underground duct banks and utility tunnels. Most of these cables have been inspected and/or tested and a list of electrical cables known to be damaged is provided for information in Attachment "L". Many of the damaged cables have limited access due to location and loading of cable trays and underground raceways. Some low voltage and fiber cables, located in the same cable tray as the power cabling, have been recently replaced and may present an obstruction to the damaged cables.

VI. SCOPE OF WORK

1.0 General

The scope of this RFQ/RFP is to select a qualified consulting firm to provide the necessary DESIGN SERVICES AND DESIGN SERVICES DURING CONSTRUCTION for the replacement of damaged electrical power cables.

The investigation (Task 1) shall be based on the "List of Electrical Power Cables" (Attachment "L"). Attachment "L" is comprised of cables that have been designated as either "failed" or "unknown". The cables designated as "failed" shall not be tested, however these cables shall be inspected to verify the information (on the list) required for replacement (e.g. conductor size, cable type, lengths, etc.) as well as the location on the Cable Routing Plan (Appendix "J"). Cables designated as "unknown" shall be inspected (see Attachment "K", Recognition of Electrical Cable Failure) and tested if necessary, using accepted industry standards. The testing of such cables, if required, shall be reimbursed under Task 7 - Specialty Consulting/Testing Services.

The conceptual design (Task 1) shall explore the preferred method of removing and replacing the damaged cables "like-for-like", re-using the existing cable tray, duct bank, etc. as well as proposed, cost effective alternatives for the replacement of all damaged electrical power cables. The conceptual design shall include a cost benefit analysis of all alternatives (for each set of cables), along with a recommendation of the Engineer's preferred method of replacement, with justification and supporting documentation for the choice.

The Selected Respondent (Engineer) shall work with FEMA representatives to facilitate reimbursement for the services of this contract as well as complete the paperwork for approval of the electrical power cable replacement project. The cost for this shall be reimbursed under Task 6 – Administration of PVSC Funding Requirements.

The Engineer shall, as a minimum:

Present FEMA with a cost benefit analysis of the proposed alternatives for the replacement of each set of cables.

Present FEMA with a recommendation of the preferred method of replacement for each set of cables with justification and supporting documentation for the choice.

Provide FEMA with the necessary information/documentation to modify or create new project worksheets for the reimbursement of the services of this contract.

Provide FEMA with the necessary information/documentation to create new project worksheets for the reimbursement of the electrical power cable replacement project as recommended by the Engineer.

The cost for this FEMA work shall be reimbursed under Task 6 – Administration of PVSC Funding Requirements.

The Engineer shall include, where practical, cost effective alternatives for the new cable installations that will keep the plant operational should another Sandy-like storm cause flooding to these areas.

The scope generally includes the tasks as outlined below:

See APPENDIX A (Attachment J) for list reference documents provided on CD ROM disc.

Task 1 – Investigation and Conceptual Design

Subtask 1.1 - Investigation

A thorough field investigation, review and assessment shall be made to verify and confirm documentation supplied by PVSC. As part of the field investigation, the Engineer shall conduct, at a minimum, five 3-hour workshops with PVSC staff to gain understanding and knowledge of the existing electrical cabling and associated equipment and in the scope of this contract. This shall include history, present condition, operation, serviceability, reliability, redundancy and criticality.

An inventory and survey of each electrical cable shall be made by the Engineer. It is imperative that during the investigation phase, the Engineer shall field verify every existing cable listed in Attachment “L”. The cables designated as “failed” shall not be tested, however these cables shall be inspected to verify the information (on the list) required for replacement (e.g. conductor size, cable type, lengths, etc.) as well as the location on the Cable Routing Plan (Appendix “J”). Cables designated as “unknown” shall be inspected (see Attachment “K”, Recognition of Electrical Cable Failure) and tested if necessary, using accepted industry standards. The testing of such cables, if required, shall be reimbursed under Task 7 - Specialty Consulting/Testing Services.

The cable lengths listed in Attachment “L” are estimated and shall be verified and documented as part of this investigation.

The Engineer shall determine the new cabling required and sizing based on the existing equipment loading derived from drawings and field verification.

PVSC shall supply the Engineer access to the various documents which shall be field verified, including but not limited to:

1. Plans and specifications for the construction contracts.
2. Shop drawing records.
3. Operation and Maintenance records.
4. Boring data.
5. Other relevant documents.

The Engineer shall, at a minimum:

- a. Verify and update the “List of Electrical Power Cables” (Attachment “L”) and provide list in Microsoft Excel format.
- b. Verify and update the plant single line diagram and provide the updated drawing in AutoCAD format.
- c. Provide test report(s) for all cables tested under Task 7 - Specialty Consulting/Testing Services.
- d. Provide documentation detailing areas where non-damaged cables present an obstruction to the damaged cables being replaced.
- e. Provide an Investigation Report to brief PVSC’s executive management of the work completed during the investigation phase which shall include all findings.
- f. Provide outline of Conceptual Design Report for review.

Subtask 1.2 - Conceptual Design

The basis of the Conceptual Design shall be removing and replacing the damaged cables “like-for-like”, re-using the existing cable tray, duct bank, etc. In addition, the Engineer shall explore other cost effective design alternatives and provide a Conceptual Design Report for replacing the existing cables with minimal plant shutdown and mitigating future flood damage to the new cables. The Conceptual Design shall include provisions for all damaged cables to be removed and properly disposed of. Non-damaged cables that present an obstruction to the damaged cables, must be identified and temporarily moved or re-routed during the replacement process.

The Engineer shall create the Conceptual Design report in such a way that will allow PVSC to process multiple construction contracts for the cable replacement project. This may include grouping the cables to be replaced by process system and specifying proper phasing such that the treatment plant processes remain operational during the construction/replacement.

Alternatives shall be detailed and presented to PVSC with recommendations and cost benefit analysis. These alternatives shall include at a minimum:

- a. Removing and replacing the damaged cables “like-for-like”, re-using the existing cable tray, duct bank, etc. (PREFERRED METHOD OF CHOICE).
- b. Removing the damaged cables and re-routing new cables
 - i. in new cable tray or duct bank in the existing tunnels.
 - ii. outside in above ground or buried duct banks.
- c. A combination of the above alternatives.
- d. Other alternative methods that the engineer may determine as appropriate to meet intent.

The Conceptual Design Report shall include, as a minimum:

- a. Executive Summary.
- b. Proposed alternatives (with conceptual one-line diagrams), associated advantages / disadvantages and cost benefit analysis.
- c. Implementation timetables indicating the dates when cables should be replaced.
- d. Detailed routing plans (no “home runs”) for each alternative. Include routing paths, burial depths, and pile support methods. Provide routing plans for new cable installations in AutoCAD format.
- e. Identify/show underground utilities from past contracts and available information to provide support to conceptual routing paths.
- f. Temporary cabling/construction materials/equipment/generators (if required).
- g. Cost estimates detailing capital and operating costs for each alternative.
- h. Construction phasing diagrams to keep plant operational for each alternative.

- i. Equipment staging for each alternative.
- j. Structural, Geotechnical and Site Work for each alternative.
- k. Cost estimates for construction, permits, engineering for each alternative.
- l. Control schemes, schematic layouts, sketches, design criteria, etc. for each alternative.
- m. Recommendation of the preferred and proposed alternative for each set of cables and basis of design.

The treatment plant processes will be required to remain operational during the construction/replacement phase. For this reason, the investigation shall include determining which systems, that require cable replacements, do not have an operational redundant backup. In these cases, emergency backup generators during the cutover shall be included in the conceptual design to provide system resiliency. Equipment shutdowns that will not impact PVSC's ability to meet NJPDES permit requirements and/or Title V Air Permit requirements shall be coordinated with PVSC staff.

The Engineer shall attend (a minimum of 3) monthly progress meetings, at PVSC facility, during the Conceptual Design phase of the project.

The Engineer shall furnish a draft report and provide a formal presentation to brief PVSC's executive management of the work completed which shall include all options, costs and recommendations.

The draft report shall be due 45 days following the Notice to Proceed.

The Engineer shall revise the draft report, as may be appropriate, in response to PVSC's comments. After acceptance of the revised draft report, the Engineer shall provide five (5) copies of the final report.

The final report shall be due 15 days following acceptance of the draft report.

The Respondent shall submit a proposed time schedule for all work associated with Task 1.

Task 2 – Design Services

The engineer shall commence with Task 2, Design Services, upon written approval of the selected replacement method by PVSC.

Subtask 2.1 - Design

The scope of work at a minimum shall cover the following tasks. The respondent shall include, in its proposal, all the necessary engineering disciplines and/or specialties as necessary.

1. Prepare the engineer's opinion of probable construction cost estimate and time schedule.
2. Prepare design documents, consisting of construction drawings (22"x34" in size) and specifications.
 - a. Specifications shall include:
 - i. Title sheet, indicating project title, date, Commissioners names, contract number, and submission level.
 - ii. Separate CSI formatted Sections (Division 1-16).
 - iii. PVSC standard format front end to be modified for this project along with the latest edition of the Standard General Conditions of the Construction Contract prepared by the Engineers Joint Contract Documents Committee (EJCDC) with supplementary conditions as required. Documents shall be modified in include NJEIT funding requirements.
 - iv. The use of "canned" specifications shall not be permitted. PVSC expects that the specifications will be tailored to the work required under the Contract. Standard specifications may be used as a starting point, edited, and typed. However, specifications shall permit free and open competitive bidding.
 - v. The Engineer shall edit the text of the specifications and all notes on drawings so that they are internally consistent. The drawings shall not be used to repeat portions of the specifications. Generally, the specifications shall set forth what is to be done and the standards applicable thereto, while the drawings are to show designs, arrangements and dimensions.
 - b. Design and Construction Drawings shall include plans, profiles, sections, details, and schedules of suitable scales and clarity to fully depict the intended installation and construction
 - i. Title sheet and index - sheet indicating proposed drawing list, project title, date, Commissioners names, contract number, location maps, and submission level.
 - ii. Site Plans showing graphic illustrations of items such as:
 - Staging areas
 - Plant access
 - Plant layout with work areas identified
 - Above-ground structures referred to benchmarks or property lines.
 - Below-ground structures and utilities including runs to and from buildings, feeders, connections at existing manholes,

- and site equipment. In addition, excavation and backfill with details of limit lines.
- Electrical conduit and fiber optic routing/trenching
 - Existing and proposed landscaping showing trees, shrubbery and lawn areas.
 - Temporary structures, utilities, etc.
- iii. Demolition plans indicating:
- Relationship to remaining structures and protection of existing structures
 - Temporary work to be done
 - Equipment, conduit, structures, etc. to be removed or relocated
- iv. Phasing Plans showing:
- Sequence of construction activities (temporary and permanent). Indicate intent of methods to maintain continued operation in the facility as applicable to the type of project.
 - Relocation of the PVSC activities during each phase.
 - Any temporary utilities or connections
 - Development of Maintenance of Plant Operations (MOPO)
- v. Architectural, Structural, Mechanical, Electrical and Specialty plans to scale showing:
- Spaces labeled for function with dimensions or areas.
 - Location of doors, louvers, areaways, etc.
 - Dimensional column grid lines
 - General location of equipment to scale such as Boilers & accessories, breeching, piping, pumps, controls, Electrical, cable & conduits, concrete pads, HVAC, specialty systems and other systems/ equipment as required with points of interconnection with existing systems.
 - Intent of interconnections with existing systems. Including the interface with and/ or extension/ modification of existing systems, including piling systems.
- vi. Elevations/ Sections to scale showing:
- Proportions of construction
 - Relationship of new construction to existing and remaining equipment/structures.
 - Control panel layouts noting basic dimensions, elevations, and materials.
- vii. Details sheets showing;
- Symbols, abbreviations and legends
 - Equipment schedules
 - System diagrams/ schematics
 - Facility Signage
 - Pipe supports

- Control schemes/diagrams, narratives, and sequential logic
 - Reinforcing bar details, form work, etc.
 - Mechanical details
 - One line & elementary wiring diagrams for each type of electrical system
 - Conduit and cable schedules
 - Other details and specialty work including details of fabrication, assembly, installation, control, operation and maintenance.
3. Plans and Specifications (along with refined cost estimates and scheduling) shall be developed and submitted at the 25%, 75%, and 100% design. PVSC shall review each submittal prior to public bidding. Each submittal shall be provided with five (5) copies of the specifications, five (5) copies of the full size drawings, and two (2) copies of the reduced size (11"x17") drawings.

Subtask 2.2 - Meetings

The respondent shall include, in its proposal, all the necessary engineering disciplines and/or specialties as necessary.

1. Attend a kickoff meeting to review the work scope and construction method with PVSC.
2. Attend monthly design meetings for the duration of the project (estimated to be 3 years), to review findings, options & recommendations for the proposed work as well as brief PVSC on the status of the design effort.
3. Attend meetings to review the 25%, 75%, and 100% design documents.

Subtask 2.3 – Bidding Assistance

4. Upon acceptance of the final design documents, the Engineer shall assist PVSC in soliciting of Bids, including, but not limited to:
 - a. Advertise, dispense bid documents, maintain records of prospective bidders to whom documents had been issued and received, and process the Contractors deposits or charges for bidding documents.
 - b. Provide twenty-five (25) set of construction documents for distribution to prospective bidders. The Engineer shall respond to all prospective bidders' questions during the bid phase, and prepare addenda for revisions to the technical specifications and/or drawings, if necessary. The Engineer shall maintain the plan holders list.
 - c. Hold pre-bid meeting, prepare responses to bidders request for information, and issue addenda to clarify, correct, or change bidding documents.
 - d. Attend bid opening, prepare bid tabulation sheets, receive bid bonds, review and evaluate all bids for completeness, and prepare a bid report with a recommendation to PVSC for the award of the work.

- e. Conform all contract documents to include: highlighted/ballooned addenda, executed agreement, performance bonds, payment bonds, environmental maintenance bonds, certificates of insurance, etc. and issue eight (8) sets of conformed documents of which two (2) sets will be distributed to PVSC and six (6) sets will be distributed to the Contractor as “Issued For Construction” documents.

All work associated with Task 2 shall be completed within sixteen (16) weeks.

Task 3 - Design Services During Construction (DSDC)

Upon award of the construction contract by PVSC to a contractor, the construction phase will commence.

The scope of work at a minimum shall cover the following tasks. The respondent shall include, in its proposal, all the necessary engineering disciplines and/or specialties as necessary.

Subtask 3.1 - Issue Notice to Proceed

The Engineer shall send three (3) copies of the contract to the Contractor for execution, and request that the Contractor provide all required bonds and insurance documents. Upon receipt of the executed contract documents, the Engineer shall forward the contract to PVSC for final execution. The Engineer shall review the bonds and insurance documents for contract compliance. Once the contracts are fully executed, and bonds and insurance documents are acceptable, the Engineer, with the PVSC’s approval, shall issue the notice to proceed to the Contractor, which shall establish the start date of the construction contract.

Subtask 3.2 - Construction Liaison and Administration

The Engineer shall provide construction liaison services to assist the PVSC in expediting completion of the Contract (the “Work”).

The Engineer shall act as the PVSC’s representative; all the PVSC’s instructions to the Contractor shall be issued by the Engineer. The Engineer shall have the responsibility and authority to act on behalf of the PVSC to the extent stated in the general conditions of the contract documents.

The Engineer shall render formal written decisions on all claims of PVSC and Contractor relating to the acceptability of Contractor’s work or the interpretation of the requirements of the contract documents pertaining to the execution and progress of Contractor’s work. In rendering such decisions, the Engineer shall be fair and impartial.

Subtask 3.3 - Pre-Construction Meeting, Construction Site Visits and Progress Meetings

Prior to commencement of work at the site, the Engineer shall set-up a pre-construction conference with PVSC, the Contractor, funding agencies, and other governmental and/or utility agencies, as appropriate (i.e. town engineers, county engineers, local police and/or fire departments, water and sewer, etc.).

The Engineer shall provide the design related services throughout the active construction period (estimated to be 3 years in duration) for general review of the progress and quality of the construction work. The Engineer shall conduct monthly job meetings with the Contractor, PVSC and Resident Project Representative until the construction is completed. The Engineer shall produce minutes for all formal meetings.

The Engineer shall conduct visits to the site at intervals with sufficient frequency to familiarize itself to the various stages of construction in order to observe as an experienced and qualified design professional the progress and quality of the Work. Such visits and observations by Engineer are intended to familiarize itself with the progress and quality of the work. The Engineer shall, as assisted by the Resident Project Representative, exercise care and diligence in discovering and reporting to PVSC in writing the results of its visits, including defects and deficiencies in the construction work and shall recommend to PVSC the appropriate course(s) of action. Based on information obtained during such visits and such observations, the Engineer will determine if the Contractor's work is proceeding in accordance with the contract documents, and Engineer shall keep PVSC informed of the progress of the work. The Engineer shall promptly disapprove or reject work which does not comply with approved Shop Drawings or other submittals and the intent of the Contract Documents.

Subtask 3.4 - Baselines and Benchmarks

The Engineer shall, as appropriate, establish baselines and benchmarks for locating the work which are necessary to enable the Contractor to proceed.

Subtask 3.5 - Approval of Manufacturers/vendors

The Engineer shall evaluate all proposed manufacturers/vendors prior to submission of shop drawings. The Engineer shall attend meetings with the Contractor, manufacturer(s) and/or vendor(s) as required.

Subtask 3.6 - Review of Shop Drawings

Within (21) calendar days after receipt and /or in accordance with all project schedule requirements, the Engineer shall review, certify, approve, reject or take other appropriate action with respect to Shop Drawings, Samples, Submittals and other data for conformance with the information given in the Contract Documents and compatibility with the design concept of the completed project as a functioning whole as indicated in the Contract Documents. The Engineer shall not approve any submittals unless such submittals conform to the Contract Document intent. Such reviews and approvals or other action will not extend to means, methods, techniques, sequences or procedures of construction or to safety precautions and programs incident thereto. The Respondent shall submit with its Proposal an anticipated log of shop drawing submittals for the project.

Subtask 3.7 - Evaluation of Contractor Initiated Substitutions

The Contractor may propose an item that is materially different than what is required in the Contract Documents. The Engineer shall evaluate contractor initiated substitutions. The evaluation will consider compliance with design objectives and technical feasibility. If the substitution is considered acceptable, the Engineer shall prepare a cost estimate of the credit due to the PVSC. All substitution requests should be responded to within (30) days from the date of receipt by the Engineer.

Subtask 3.8 - Testing

Require such special inspections or tests of Contractor's work as deemed reasonably necessary, and receive and review all certificates of inspections, tests, and approvals required by Laws and Regulations or the Contract Documents. Engineer's review of such certificates will be for the purpose of determining that the results certified indicate compliance with the Contract Documents. The Engineer shall take appropriate action on tests results, including acceptance, rejection requiring additional testing or corrective work, or such other action the Engineer deems appropriate. The Engineer shall promptly reject work which does not conform to and comply with the testing requirements.

Subtask 3.8.1 - Defective Work

Advise PVSC and issue determinations to the Contractor that Contractor's work is disapproved and rejected while it is in progress if, on the basis of such observations, Engineer believes that such work will not produce a completed project that conforms generally to the contract documents or that it will prejudice the integrity of the design concept of the completed project as a functioning whole as indicated in the contract documents.

Subtask 3.9 - Request for Clarifications and Interpretations; Field Orders

The Engineer shall act as the initial interpreter of the requirements of the contract for construction, and as the PVSC's advisor on claims. The Engineer shall issue necessary clarifications and interpretations of the Contract Documents as appropriate for the orderly completion of Contractor's work. Such clarifications and interpretations will be consistent with the intent of, and reasonably inferable from, the Contract Documents. Engineer may issue field orders authorizing minor variations from the requirements of the Contract Documents.

The Engineer shall evaluate and respond to the Request for Information (RFI) and Request for Clarification (RFC) within 14 days unless it is a particular complex issue requiring additional examination. The Respondent is to include sufficient funds in his Proposal to pay the Design Engineer for assistance in responding to RFI/RFC's. The proposal is to assume that twenty (40) RFI/RFC's will be required.

Subtask 3.10 - Preparation of Design Related Change Orders

The Engineer shall promptly consult with and advise the PVSC concerning, and shall administer and manage, all change order requests and change orders. Recommend Change Orders and Work Change Directives to PVSC, as appropriate, and prepare Change Orders and Work Change Directives as required. Preparation also includes revisions to Drawings, Specifications, Materials and Equipment. A change order package should be prepared within 30 days from date of recognition of needed change to issuance. The proposal is to assume that ten (10) Change Orders will be required.

Subtask 3.11 - Contractor Payments

The Engineer shall review Applications for Payment and accompanying supporting documentation as prepared by the Resident Project Representative. The Engineer shall verify that the amounts that Resident Project Representative recommends Contractor be paid are accurate and appropriate. Based upon the Engineer's review, the Engineer shall provide a recommendation of payment which shall be in writing and will constitute Engineer's representation to PVSC, based on such observations and review, that, to the best of Engineer's knowledge, information and belief, Contractor's work has progressed to the point indicated, the quality of such work is in accordance with the Contract Documents (subject to an evaluation of the work as a functioning whole prior to or upon substantial completion, to the results of any subsequent tests called for in the Contract Documents and to any other qualifications stated in the recommendation), and the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe Contractor's work. In the case of unit price work, Engineer's recommendations of payment will include final determinations of quantities and classifications of Contractor's work.

Subtask 3.12 - Start-Up Services

1. The Engineer shall coordinate with the Contractor and Resident Project Representative on setting up the training sessions with the PVSC staff, which will provide the operator hands on instruction in the proper operation, maintenance, troubleshooting of the supplied equipment or system.
2. The Engineer shall prepare a comprehensive Facility Start-Up Plan including a step-by-step description of how the equipment, system or processes, and entire facility will be commissioned. The Engineer shall coordinate the review and approval of this plan with the Engineer of Record, PVSC and Resident Project Representative.
3. The Engineer shall develop an Operation and Maintenance (O&M) Manual in compliance with the requirements of N.J.A.C. 7:14A-6.12. O&M Manual shall be provided in electronic format.

Subtask 3.13 - Post Construction Assistance

1. Provide assistance in connection with the testing and adjusting of project equipment or systems.

2. Assist PVSC in training PVSC's staff to operate and maintain project, equipment, and systems.
3. Assist PVSC in developing procedures for control of the operation and maintenance of, and record keeping for project equipment and systems.
4. Together with PVSC, visit the project to observe any apparent defects in the work, assist PVSC in consultations and discussions with Contractor concerning correction of any such defects, and make recommendations as to replacement or correction of defective work, if present.
5. In company with PVSC or PVSC's representative, provide an inspection of the project within (1) month before the end of the correction period to ascertain whether any portion of the work is subject to correction.
6. The Post Construction services may commence during the Construction Phase and will terminate at the end of the correction period.

Subtask 3.13.1 - Substantial Completion

Promptly after notice from Contractor that Contractor considers the entire work ready for its intended use, the Engineer shall coordinate with the PVSC, Resident Project Representative and the Contractor a date for the Substantial Completion Inspection. In the company with PVSC, Resident Project Representative and the Contractor, conduct an inspection to determine if the work is substantially complete. At the substantial completion inspection, the Engineer shall inspect the work, add to the Contractor's list any other items to be completed or corrected; and, determine, in consultation with the PVSC and Resident Project Representative whether the work is substantially complete. If the work is not substantially complete, the process shall be repeated until the work is substantially complete. When the PVSC, Resident Project Representative, Contractor and the Engineer agree that the work is substantially complete, they shall each sign the Declaration of Substantial Completion. The Engineer shall assist the PVSC and Resident Project Representative in creating a single punch list of work to be completed prior to final inspections. The Engineer shall participate in final inspections to ensure punch list items are complete.

Subtask 3.13.2 - Record Drawings

Prepare and furnish the PVSC with Record Drawings ("As Builts") showing appropriate record information based on project annotated record documents received from the Contractor. The Engineer shall prepare record documents to include all changes to the contract documents in a format described herein.

Subtask 3.13.3 - Contract Closeout Assistance

The Engineer shall provide any necessary assistance to the PVSC and the Resident Project Representative in closing out the construction contract. Upon declaration of substantial completion, the Engineer shall assist in ensuring all contract documents,

including but not limited to supporting documentation, change orders, submittals, as-built drawings, maintenance and operating instructions & manuals, schedules, and guarantees are on file. The Engineer shall ensure that all required documents are transmitted to PVSC.

Subtask 3.13.4 - Final Notice of Acceptability of the Work

Conduct a final inspection to determine if the completed work of Contractor is acceptable so that Engineer may recommend, in writing, final payment to Contractor.

Task 4 - Other Direct Costs

Other Direct Costs and Out-of-Pocket Expenses authorized by the PVSC essential for the performance of the Project Work, and not included in the Contractor's overhead, to be paid at cost to the Contractor with no additional provisions for overhead and profit, in a total Not-to-Exceed \$10,000.00, and which may include the following items:

- Printing and reproduction of reports, special forms, or stationery for the services under this Contract.
- Mailing and shipping charges directly related to the Project.
- Specialized expenses including laboratory work.
- Miscellaneous out-of-pocket costs authorized and approved for the Project
- Task 4 does not include travel expenses. Travel expenses shall be included in the overall project cost.

Task 5 - Allowances

Subtask 5.1- Unforeseen Contingencies

The Respondent shall include in the proposal an allowance of \$100,000.00 to cover costs associated with unforeseen contingencies. This allowance item is intended to provide for work that may later be determined to be necessary for the completion of the DESIGN SERVICES AND DESIGN SERVICES during construction, but is not covered in the scope of work, tasks 1, 2, 3, 4, 6 and 7. Written authorization by PVSC for utilization of any part of the contingency allowance shall be required.

Task 6 –Administration of PVSC Funding Requirements

The Respondent shall include in the proposal an allowance of \$10,000.00 to cover the costs of the administration services associated with FEMA, as required in the Scope of Work as well as the NJEIT funding and loan requirements.

Task 7 – Specialty Consulting/Testing Services

Cables designated in the “List of Electrical Power Cables” (Attachment “L”) with condition “unknown” shall be inspected and tested if necessary. Testing of cables, if required, shall be reimbursed under Task 7. The Respondent is to provide a daily unit price cost for Specialty Consulting and/or Testing Services, if applicable, based on an allowance of \$50,000.00. The Contractor shall be paid based on a reimbursable basis for the actual daily unit price cost for the Specialty Consulting/Testing Services, if applicable. The Contractor costs for scheduling and coordination with the Specialty Consultant shall be incorporated and included within Tasks 1 through 3.

Task 8 – Consultant Responsibility

The Respondent shall supply and include in its costs all personnel, sub-consultants, and all services to complete the work in accordance with the Scope of Work. All notes, calculations, studies and computer documents generated for this project shall be the property of PVSC and turned over to PVSC at the conclusion of the project. The Respondent is to include time on site to conduct any necessary investigations or interviews and meet with PVSC as outlined in the Scope of Work. The Contractor shall provide PVSC with monthly progress reports and conduct progress meetings as outlined.

VII. QUALIFICATIONS

The Respondent shall have the qualifications and experience to perform this type of assignment and shall document its qualifications and experience to perform this job. It shall present representative assignments which shall detail the Respondent’s exact part in the assignment.

The Respondent is to provide with its Proposal the names and qualifications of all personnel who will be working on this project and their percentage of time to be spent on this project. This listing shall include the proposed staff with their experience on the type of work in this project. The Respondent shall provide a table (Attachment G) listing each task and an estimate of the hours to be expended on each task and the total hours of the project. The Commissioners reserve the right to interview any members of the project staff, and once approved, the staff may not be changed without written request to and approval from the Commissioners.

The Qualification Proposal shall include, as a minimum, the following information:

- a. Executive Summary
- b. All information required to demonstrate compliance with the PROFESSIONAL EVALUATION AND RANKING METHODOLOGY, Section IV of this RFQ.
- c. Team organization chart.

- d. Names and resumes for the key positions. Also indicate home office location for each person.
- e. Descriptions of similar projects completed (15 kV electrical services in a wastewater treatment plant with capacities of 200 MGD or more). References with contact information shall be provided for a minimum of 3 and a maximum of 6 projects.
- f. List of any work performed in past 10 years, for PVSC, as either a prime or subcontractor.
- g. Attachment "G", SUMMARY OF TOTAL MAN-DAY ESTIMATE.

Qualification Proposals may also contain any other information that the Respondent believes will help demonstrate the Respondent's qualifications relative to the evaluation criteria. However, exclusive of required forms and documents associated with required forms, the Qualification Proposal should be limited to 30 pages.

If the Respondent is a corporation, other than a professional corporation established pursuant to N.J.S.A. 14A:17-1, et seq., and will be offering or practicing professional engineering services in New Jersey as part of this agreement, it shall upon execution of this agreement provide a Certificate of Authorization in compliance with N.J.S.A. 45:8-56.

The Qualification Proposal shall be submitted in a sealed envelope separate from the Compensation Proposal and identified on the front cover as: "Qualification Proposal".

Qualifications will be evaluated and only the qualified respondents will have the Compensation Proposal opened and reviewed.

VIII. COMPUTER INTERNET COMMUNICATION

Following the Notice To Proceed, the Contractor shall set up either a computer Internet based system for the transfer of computer files to and from the PVSC via an e-mail or Internet connection. All reports shall be produced in the latest version of MS Word for Windows. All spreadsheets shall be produced using the latest version of MS Excel for Windows, and all drawings shall be produced in the latest version of AutoCAD. All documentation shall be turned over to PVSC in the latest electronic (AutoCAD, Word, Excel) format.

IX. COSTS

The Respondent shall supply and include in its costs all personnel, sub-consultants, and all services to complete the work in accordance with the Scope of Work. Attached hereto

within Attachment “G” and Attachment “H” are the Summary of Total Man-Day Estimate and Summary of Total Project Cost proposal forms, respectfully. Attachment “G” shall be submitted with the Qualification Proposal. Attachment “H” shall be submitted with the Compensation Proposal.

The Compensation Proposal shall be submitted in a sealed envelope separate from the Qualification Proposal and identified on the front cover as: “Compensation Proposal”. Compensation Proposal(s) will only be reviewed for the qualified respondents based on the General Qualification Criteria as listed herein.

Task 1 – Investigation and Conceptual Design - The Respondent shall provide tables of the complete breakdown of the project costs based on the scope of work described herein. The tables shall be prepared to include the estimated hours and associated costs as well as the total hours based on the scope of work. The Engineer shall be paid on a lump sum basis based on the complete breakdown of the project costs table and the project meetings and deliverables percentages described herein.

Task 2 – Design Services – The Respondent shall provide tables of the complete breakdown of the project costs based on the scope of work described herein. The tables shall be prepared to include the estimated hours and associated costs as well as the total hours based on the scope of work. The Engineer shall be paid on a lump sum basis based on the complete breakdown of the project costs table and the project meetings and deliverables percentages described herein.

Task 3 – Design Services During Construction (DSDC) – The Respondent shall provide tables listing each subtask, with an estimate of the hours to be expended and associated cost of each subtask, and the total hours and cost of this task. The Engineer shall be paid based on a reimbursable basis for the actual time spent on each subtask. The actual effort expended on each of the subtasks by the Engineer may differ from that estimated in the Respondent’s proposal. Although this variance is anticipated and acceptable to PVSC, the overall total cost for this task shall not be exceeded, without the written authorization of PVSC. **Duration of Construction is estimated to be 3 years.**

Task 4 – Other Direct Costs – Other Direct Costs and Out-of-Pocket Expenses authorized by the PVSC essential for the performance of the Project Work, and not included in the Contractor’s overhead, to be paid at cost to the Contractor with no additional provisions for overhead and profit, in a total Not-to-Exceed amount of \$10,000.00.

Task 5 – Allowances – The Respondent shall include in his proposal an allowances of \$100,000.00 to cover costs associated with unforeseen contingencies. This allowance item is intended to provide for work that may later be determined to be necessary for the completion of the project, but is not covered in the Scope of Work, tasks 1, 2, 3, 4, 6 and 7. Written authorization by PVSC for utilization of any part of the contingency allowance shall be required.

Task 6 – Administration of PVSC Funding Requirements – The Respondent shall provide hourly rates for providing administrative assistance of PVSC Funding requirements

pertaining to FEMA on an allowance of \$10,000.00. The Contractor shall be paid based on a reimbursable basis for the actual time spent on administrative assistance of PVSC Funding requirements. The actual effort expended on administrative assistance of PVSC Funding requirements by the Contractor may differ from that estimated in the Respondent's proposal. Although this variance is anticipated and acceptable to PVSC, the overall total cost for this task shall not be exceeded, without the written authorization of PVSC.

Task 7 – Specialty Consulting/Testing Services - The Respondent is to provide a daily unit price cost for Specialty Consulting and/or Testing Services, if applicable, based on an allowance of \$50,000.00. The Contractor shall be paid based on a reimbursable basis for the actual daily unit price cost for the Specialty Consulting/Testing Services, if applicable. The Contractor costs for scheduling and coordination with the Specialty Consultant shall be incorporated and included within Tasks 1 through 3.

Additional Work - The Contractor shall provide its hourly rates for additional work, not covered by the Scope of Work, should the Commissioners authorize Extra Work.

X. SUBMITTALS AND SCHEDULES

The Respondent shall submit with its Proposal, a schedule for all services to be provided, an anticipated log of shop drawing submittals and an anticipated list of new or modified drawings for the project. The Respondent shall be prepared to start on this project promptly upon notice to proceed. This project may be submitted to the New Jersey Environmental Infrastructure Trust (NJEIT) for funding. As such, in order to remain eligible for funding, the design for the project shall be submitted in accordance with the NJEIT submission deadline.

The schedule shall include the duration of Task 1 through 3.

XI. PROPOSAL

All proposals in response to this RFP shall be addressed to Michael DeFrancisci, Executive Director, and delivered not later than 11:00 am EST on _____. Six (6) copies of the proposal will be required.

XII. FURTHER INFORMATION

Further information may be obtained by calling Michael Dox at (973) 817-5987.

XIII. CONTRACT PERIOD

The contract period shall be for the duration to include the Contractor's completion of all Tasks identified in Section VI – Scope of Work.

XIV. PROPOSAL FORM

All proposals submitted in response to the within Request, Solicitation and Invitation for proposal shall utilize the form of correspondence on **Page 29** hereof as the cover sheet of such proposal. There shall be attached to said letter/cover sheet succeeding pages setting forth your proposal/responses. Your proposal must follow the format herein at **Pages 1 through 46 and include** a schedule for all services to be provided, an anticipated log of shop drawing submittals and an anticipated list of new or modified drawings for the project. In order for your proposal to meet the requirements of the Request, Solicitation and Invitation, the form of correspondence set forth herein below shall be fully completed and executed. Attachments or certifications set forth as attachments or certifications A, B, C, D, E, F, and I attached to this form, shall be completed and originally executed. Failure to attach required documents is cause for disqualification. The proposal shall include a copy of the Respondent's New Jersey Business Registration Certificate (BRC). Failure to provide proof of registration with proposal is considered a fatal defect and cannot be cured.

All erasures and/or changes to the original documentation submitted must be initialed by the individual making modifications to the proposal. Use separate and additional pages to respond specifically to each Section, specifically *Section IV Professional Evaluation and Ranking Methodology* hereof, which sets forth the criteria that PVSC will utilize in evaluating your proposal and determining the selection of the **DESIGN SERVICES AND DESIGN SERVICES DURING CONSTRUCTION FOR THE PLANTWIDE REPLACEMENT OF ELECTRICAL POWER CABLES** Contractor. In the event that the proposal is being made by a firm containing more than one person, the first page of the proposal, in the cover letter set forth on **Page 29**, shall also recite the name of the supervising Contractor, if any, and the name of the Contractor that the Contractor will assign to do the work of PVSC.

XV. MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE

Respondent agrees to comply with the requirements of P.L. 1975, c. 127 (N.J.A.C. 17:27-1.1 et seq.) the New Jersey Affirmative Action Rules. The mandatory language which is more specifically set forth in *Attachment F* and applicable regulations promulgate by the Treasurer of the State of New Jersey pursuant thereto are hereby incorporated herein by reference and made a part of this Request for Proposal.

XVI. PROOF OF NEW JERSEY BUSINESS REGISTRATION

N.J.S.A. 52:32-44 requires that each bidder submit proof of New Jersey Business Registration with the bid proposal.

All business organizations that do business with a public contracting agency are required to be registered with the State of New Jersey, Department of Treasury, Division of Revenue, and provide proof of that registration to the contracting agency at the time any submission is received. "Business Organization" means an individual, partnership, association, joint stock company, trust, corporation or other legal business entity or successor thereof.

FAILURE TO PROVIDE PROOF OF REGISTRATION WITH THE PROPOSAL IS CONSIDERED A FATAL DEFECT AND CANNOT BE CURED.

Proof of registration shall be a copy of the bidder's New Jersey Business Registration Certificate (BRC). A BRC is obtained from the New Jersey Division of Revenue. Further information may be obtained by visiting the following web site at the State of New Jersey: www.nj.gov/treasury/revenue/busregcert.shtml

N.J.S.A. 52:32-44 imposes the following requirements on contractors and all subcontractors that **knowingly** provide goods or perform services for a contractor fulfilling this contract:

- 1) The contractor shall provide written notice to its subcontractors and suppliers to submit proof of business registration to the contractor;
- 2) Prior to receipt of final payment from a contracting agency, a contractor must submit to the contracting agency an accurate list of all subcontractors or attest that none was used;
- 3) During the term of this contract, the contractor and its affiliates that they must collect and remit to the Director, New Jersey Division of Taxation, the use tax due pursuant to the Sales and Use Tax Act, (N.J.S.A. 54:32B-1 et seq.) on all sales of tangible personal property delivered into this State.

A contractor, subcontractor or supplier who fails to provide proof of business registration or provides false business registration information shall be liable to a penalty of \$25.00 for each day of violation, not to exceed \$50,000.00 for each business registration not properly provided or maintained under a contract with a contracting agency. Information on the law and its requirements is available by calling (609) 292-9292.

XVII. ACKNOWLEDGEMENT OF CLARIFICATIONS

The Acknowledgement of Receipt of Clarifications form serves as a proposer's acknowledgement of the receipt of clarifications which may have been distributed prior to the Request for Qualifications and Compensation (Fee) Proposal submission deadline.

Attached hereto at Attachment I is the Acknowledgement of Receipt of Clarifications form. This form must be executed and documents attached thereto by the Respondent.

XVIII. AUTHORITY TO AUDIT OR REVIEW CONTRACT RECORDS

Per N.J.S.A. 52:15C-14(d) et seq., the Engineer shall maintain all documentation related to products, transactions or services under this contract for a period of five years from the date of final payment. Such records shall be made available to the New Jersey Office of the State Comptroller upon request.

APPENDIX A

Date:

Mr. Michael DeFrancisci
Executive Director
Passaic Valley Sewerage Commission
600 Wilson Avenue
Newark, New Jersey 07105

Dear Mr. DeFrancisci:

The undersigned hereby submits the enclosed proposal for the position of **DESIGN SERVICES AND DESIGN SERVICES DURING CONSTRUCTION FOR THE PLANTWIDE REPLACEMENT OF ELECTRICAL POWER CABLES**

The undersigned hereby undertakes and promises to provide services for **DESIGN SERVICES AND DESIGN SERVICES DURING CONSTRUCTION FOR THE PLANTWIDE REPLACEMENT OF ELECTRICAL POWER CABLES** and to do all work requested as appropriate and required herein as well as the contract documents concerning the same, including all written amendments and changes thereto, if any, which are incorporated herein by reference and made a part of this proposal.

SIGNATURE

BUSINESS NAME

Type or Print Full Name

Title Date

Telephone Number

Fax-Telephone Number

ATTACHMENT B

CONFLICT OF INTEREST CERTIFICATION

THE UNDERSIGNED CERTIFIES TO PASSAIC VALLEY SEWERAGE COMMISSION ("PVSC"), COUNTY OF ESSEX, STATE OF NEW JERSEY THAT IN PERFORMING SERVICES TO PVSC HE/SHE IS AWARE OF NO CIRCUMSTANCE THAT WOULD CONSTITUTE A CONFLICT OF INTEREST, FINANCIAL OR OTHERWISE, BETWEEN HIMSELF/HERSELF (OR HIS/HER FIRM) AND THE INTERESTS OF PVSC. THE UNDERSIGNED CERTIFIES THAT HE/SHE HAS MADE A SEARCH OF HIS/HER FIRM'S CLIENT BASE AND HAS EXECUTED THIS CERTIFICATION SUBSEQUENT TO SUCH SEARCH.

THE UNDERSIGNED ACKNOWLEDGES THIS IS A CONTINUING CERTIFICATION, AND SHALL REMAIN IN EFFECT FOR THE TERM OF THE SERVICES CONTAINED IN THE SOLICITED REQUEST FOR PROPOSAL. I CERTIFY THAT THE FOREGOING STATEMENTS MADE BY ME ARE TRUE. I AM AWARE THAT IF ANY OF THE FOREGOING STATEMENTS MADE BY ME ARE FALSE, PVSC IS FREE TO TERMINATE ANY PROFESSIONAL SERVICES AGREEMENT ENTERED INTO WITH THE UNDERSIGNED AND/OR HIS OR HER FIRM.

Applicant

Signature: _____

Typed:

Firm Name: _____

Title: _____

Date: _____

ATTACHMENT D



State of New Jersey
Division of Purchase and Property
 Two-Year Chapter 51 / Executive Order 117 Vendor Certification and
 Disclosure of Political Contributions

CHAPT 51/EO 117-1

For AGENCY USE ONLY	
General Information	
Solicitation, RFP or Contract No. _____	Award Amount _____
Description of Services _____	
Agency Contact Information	
Agency _____	Contact Person _____
Phone Number _____	Agency Email _____

Part 1: Vendor Information

Full Legal Business Name _____
 (Including trade name if applicable)

Business Type Corporation Limited Partnership Professional Corporation General Partnership
 Limited Liability Company Sole Proprietorship Limited Liability Partnership

Address 1 _____ Address 2 _____

City _____ State _____ Zip _____ Phone _____

Vendor Email _____ Vendor FEIN _____

Part 2: Public Law 2005, Chapter 51/ Executive Order 117 (2008) Certification

I hereby certify as follows:

1. On or after October 15, 2004, neither the below-named entity nor any individual whose contributions are attributable to the entity pursuant to Executive Order 117 (2008) has solicited or made any contribution of money, pledge of contribution, including in-kind contributions, company or organization contributions, as set forth below that would bar the award of a contract to the vendor, pursuant to the terms of Executive Order 117 (2008).
 - a) **Within the preceding 18 months**, the below-named person or organization has not made a contribution to:
 - (i) Any candidate committee and/or election fund of any candidate for or holder of the public office of Governor or *Lieutenant Governor*,
 - (ii) Any State, county, *municipal* political party committee, OR
 - (iii) Any *legislative leadership committee*.
 - b) **During the term of office of the current Governor(s)**, the below-named person or organization has not made a contribution to
 - (i) Any candidate, committee and/or election fund of the Governor or *Lieutenant Governor*, OR
 - (ii) Any State, county or *municipal* political party committee nominating such Governor in the election preceding the commencement of said Governor's term.
 - c) **Within the 18 months immediately prior to the first day of the term of office of the Governor(s)**, the below-named person or organization has not made a contribution to
 - (i) Any candidate, committee and/or election fund of the Governor or *Lieutenant Governor*, OR
 Any State, county, *municipal* political party committee of the political party nominating the successful gubernatorial candidate(s) in the last gubernatorial election.

PLEASE NOTE: Prior to November 15, 2008, the only disqualifying contributions include those made by the vendor or a principal owning or controlling more than 10 percent of the profits or assets of a business entity (or 10 percent of the stock in the case of a business entity that is a corporation for profit) to any candidate committee and/or election fund of the Governor or to any state or county political party within the preceding 18 months, during the term of office of the current Governor or within the 18 months immediately prior to the first day of the term of Office of Governor.

ATTACHMENT D (Cont.)

Part 3: Disclosure of Contributions Made

CHAP 51/EXO 117-2

Check this box if no reportable contributions have been made by the above-named business entity or individual.

Name of Recipient _____	Address of Recipient _____
Date of Contribution _____	Amount of Contribution _____
Type of Contribution (i.e. currency, check, loan, in-kind _____)	
Contributor Name _____	
Relationship of Contributor to the Vendor _____	
Contributor Address _____	
City _____	State _____ Zip _____

If this form is not being completed electronically, please attach pages for additional contributions as necessary. Otherwise click "Add a Contribution" to enter additional contributions.

ATTACHMENT D (Cont.)

Part 4: Certification

CHAPT 51/EO 117-3

I have read the instructions accompanying this form prior to completing this certification on behalf of the above-named business entity. I certify that, to the best of my knowledge and belief, the foregoing statements by me are true. I am aware that if any of the statements are willfully false, I am subject to punishment.

I understand that this certification will be in effect for two (2) years from the date of approval, provided the ownership status does not change and/or additional contributions are not made. If there are any changes in the ownership of the entity or additional contributions are made, a new full set of documents are required to be completed and submitted. By submitting this Certification and Disclosure, the person or entity named herein acknowledges this continuing reporting responsibility and certifies that it will adhere to it.

(CHECK ONE BOX A, B or C)

- (A) I am certifying on behalf of the above-named business entity and all individuals and/or entities whose contributions are attributable to the entity pursuant to Executive Order 117 (2008).
- (B) I am certifying on behalf of the above-named business entity only.
- (C) I am certifying on behalf of an individual and/or entity whose contributions are attributable to the vendor.

Signed Name _____ Print Name _____
Phone Number _____ Date _____
Title/Position _____

Agency Submission of Forms

The agency should submit the completed and signed Two-Year Vendor Certification and Disclosure forms, together with a completed Ownership Disclosure form, either electronically to cd134@treas.state.nj.us, or regular mail at Chapter 51 Review Unit, P.O. Box 039, 33 West State Street, 9th Floor, Trenton, NJ 08625. The agency should save the forms locally and keep the original forms on file, and submit copies to the Chapter 51 Review Unit.

ATTACHMENT E

STATEMENT OF OWNERSHIP
NOTICE FOR CORPORATIONS AND PARTNERSHIPS

Chapter 33 of the Public Laws of 1977 (N.J.S.A 52:25-24.2 et seq.) provides that no Corporation or Partnership shall be awarded any State, County, Municipal or School District contracts for the performance of any work or the furnishing of any materials or supplies, unless prior to the receipt of the proposal or accompanying the proposal of said corporation or partnership there is submitted a statement. The statement shall set forth the names and home addresses of all stockholders in the corporation or partnership who own ten percent (10%) or more of its stock of any class or all individual partners in the partnership who own ten percent (10) % or greater interest therein. If one or more such stockholder or partner is itself a corporation or partnership, the stockholders holding 10% or more of the corporation stock, or the individual partners owning 10% greater interest in that partnership, as the case may be shall also be listed. See below:

STOCKHOLDER OR PARTNERSHIP DISCLOSURE STATEMENT

CONSULTANT: (CHECK ONE)

 SOLE PROPRIETORSHIP **PARTNERSHIP** **CORPORATION**
 JOINT VENTURE **OTHER-specify** _____

Please check the appropriate paragraph:

I certify that the list below contains the names and home addresses of all individuals holding 10% or more ownership of the undersigned. If no, so state.

I certify that no one individual owns 10% or more of the undersigned.

NAME OF CONSULTANT

SIGNATURE OF PRESIDENT, VICE PRESIDENT

PRINT NAME

**THIS STATEMENT MUST BE SIGNED BY A DULY AUTHORIZED COMPANY OFFICIAL
SIMULTANEOUS WITH THE CONTRACT TO BE ENTERED WITH PASSAIC VALLEY
SEWERAGE COMMISSION**

TITLE

OWNERS

NAME:
HOME
ADDRESS:

NAME:
HOME:
ADDRESS:

PERCENTAGE OF OWNERSHIP: _____ PERCENTAGE OF OWNERSHIP: _____

PLEASE ADD ADDITIONAL SHEETS FOR NAMES IF NECESSARY

ATTACHMENT F

P.L.1975.C.127 (N.J.A.C. 17:27)
MANDATORY AFFIRMATIVE ACTION LANGUAGE
PROCUREMENT, PROFESSIONAL AND SERVICES CONTRACTS

During the performance of this contract, the contractor agrees as follows:

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the contractor will take affirmative action to ensure that such applicants are recruited and employed, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.

The contractor or subcontractor, where applicable, will send to each labor union or representative or workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

The contractor or subcontractor agrees to make good faith efforts to employ minority and women workers consistent with the applicable county employment goals established in accordance with N.J.A.C. 17:27-5.2, or a binding determination of the applicable county employment goals determined by the Division, pursuant to N.J.A.C. 17:27-5.2.

The contractor or subcontractor agrees to inform in writing its appropriate recruitment agencies including, but not limited to, employment agencies, placement bureaus, colleges, universities, labor unions, that it does not discriminate on the basis of age, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex, and that it will discontinue the use of any recruitment agency which engages in direct or indirect discriminatory practices.

ATTACHMENT F (Cont.)

The contractor or subcontractor agrees to revise any of its testing procedures, if necessary, to assure that all personnel testing conforms with the principles of job-related testing, as established by the statutes and court decisions of the State of New Jersey and as established by applicable Federal law and applicable Federal court decisions.

In conforming with the applicable employment goals, the contractor or subcontractor agrees to review all procedures relating to transfer, upgrading, downgrading and layoff to ensure that all such actions are taken without regard to age, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex, consistent with the statutes and court decisions of the State of New Jersey, and applicable Federal law and applicable Federal court decisions.

The contractor shall submit to the public agency, after notification of award but prior to execution of a goods and services contract, one of the following three documents:

Letter of Federal Affirmative Action Plan Approval

Certificate of Employee Information Report

Employee Information Report Form AA302

The contractor and its subcontractors shall furnish such reports or other documents to the Div. of Contract Compliance & EEO as may be requested by the office from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Div. of Contract Compliance & EEO for conducting a compliance investigation pursuant to **Subchapter 10 of the Administrative Code at N**

ATTACHMENT G

SUMMARY OF TOTAL MAN-DAY ESTIMATE

DESCRIPTION OF WORK	Estimate of Man-Days							Total Man-Days
	Project Manager	Project Engineer	Principal Engineer	Engineer/Scientist	Designer/Drafter	Technician	Support	
Hourly Rates - - - ->								
Task 1 – Investigation & Conceptual Design								
1.1 Investigation								
1.2 Conceptual Design								
Subtotals								
Task 2 – Design Services (per Scope of Work)								
2.1 Design								
2.2 Meetings								
2.3 Bidding Assistance								
Subtotals								
Task 3 - DSDC (per Scope of Work)								
3.1 Notice to Proceed								
3.2 Liaison and Administration								
3.3 Meetings								
3.4 Baselines and Benchmarks								
3.5 Approval of Manufacturers/vendors								
3.6 Shop Drawings								
3.7 Contractor Initiated Substitutions								
3.8 Testing								
3.9 RFI's & Field Orders								
3.10 Change Orders								
3.11 Payment Requests								
3.12 Start-Up Services								
3.13 Post Construction Assistance								
Subtotals								
							Total Man-Day Estimate	

This table shall be submitted with the “Qualification Proposal”.

ATTACHMENT H

SUMMARY OF TOTAL PROJECT COST

DESCRIPTION OF WORK	Estimate of Labor Costs							Total Labor Cost
	Project Manager	Project Engineer	Principal Engineer	Engineer/ Scientist	Designer/ Drafter	Technician	Support	
Hourly Rates ---->								
Task 1 – Investigation & Concept. Design (per S of W)								
1.1 Investigation (Including Workshops)								
1.2 Conceptual Design								
Task 2 – Design Services (per Scope of Work)								
2.1 Design								
2.2 Meetings								
2.3 Bidding Assistance								
Task 3 - DSDC (per Scope of Work)								
3.1 Notice to Proceed								
3.2 Liaison and Administration								
3.3 Meetings								
3.4 Baselines and Benchmarks								
3.5 Approval of Manufacturers/vendors								
3.6 Shop Drawings								
3.7 Contractor Initiated Substitutions								
3.8 Testing								
3.9 RFI's & Field Orders								
3.10 Change Orders								
3.11 Payment Requests								
3.12 Start-Up Services								
3.13 Post Construction Assistance								
								Total Labor Cost

Summary of Costs

Description	Cost
Task 1 – Investigation/Concept. Design	
Task 2 –Design Services	
Task 3 – DSDC	
Task 4 – Other Direct Costs	\$10,000.00
Task 5 – Allowances	\$100,000.00
Task 6 – Admin. PVSC Funding Req.	\$10,000.00
Task 7 – Specialty Consulting Services	\$50,000.00
TOTAL PROJECT COST	

This table shall be submitted with the “Compensation Proposal.”

ATTACHMENT I

ACKNOWLEDGEMENT OF RECEIPT OF CLARIFICATIONS

The undersigned Respondent hereby acknowledges receipt of the following clarifications to the Request for Qualifications and Compensation (Fee) Proposal. By indicating date of receipt, Respondent acknowledges the submitted qualifications and proposal takes into account the provisions of the issued clarification(s). Note that the PVSC's record of clarification(s) issued shall take precedence and that failure to include provisions of changes in qualifications and proposal may be submit for rejection of the qualifications and proposal.

**PROFESSIONAL SERVICES FOR
DESIGN SERVICES AND DESIGN SERVICES DURING CONSTRUCTION FOR THE
PLANTWIDE REPLACEMENT OF ELECTRICAL POWER CABLES**

Directions: Complete Part I or Part II, whichever is applicable

**PART I: LISTED BELOW ARE THE DATES OF ISSUE FOR EACH
CLARIFICATION RECEIVED IN CONNECTION WITH THIS
RFQ/RFP:**

CLARIFICATION #1, DATED _____ , _____

CLARIFICATION #2, DATED _____ , _____

CLARIFICATION #3, DATED _____ , _____

CLARIFICATION #4, DATED _____ , _____

**PART II: ___ NO CLARIFICATION WAS RECEIVED IN CONNECTION WITH THIS
RFQ/RFP.**

DATE: _____

NAME _____ SIGNATURE _____

ATTACHMENT J

Reference Documents

Description

Below is the list of reference documents contained on CD.

- Drawings for the following contracts:
 - 484 Final Clarifiers and Effluent Pumping Facilities
 - 487 Electric Feeder System
 - 496 Sludge Storage and Pumping Facilities

- PVSC one-line diagrams generated from original contracts

- Cable Routing Plan

ATTACHMENT K

(NOTE: Attachment K is included in this RFQ/RFP for information only. This document outlines the criteria used by FEMA to categorize cables designated as “failed” in Attachment “L”, List of Electrical Power Cables. The Engineer shall use accepted industry standards when inspecting cables designated as “unknown” in Attachment “L”.)

DR-4086-NJ Passaic Valley Sewage Commission Recognition of Electrical Cable Failure

All stranded Electrical cable is insulated with either rubber, PVC, and/or a polyethylene coating and all these insulating materials are capable of resisting water permeation. However, all of the aforementioned electric cables contain voids (spacing between the individual strands) within the insulated casing. If water is presented at the terminated ends and/or splices, then water can migrate into and through the casing. In this disaster, not only were the electrical wires submersed in water, they were submersed in salt water (sea water) up to and above point of termination/splice caused by a flood, which presents additional causes of failure.

Cable testing can detect failure in cables that has been submersed in water, be it fresh or salt, if a conductive path to either ground or another phase is present. When testing is performed, electrical cables are removed from their termination points and isolated from any possible contact with ground or another phase. This can cause insulation readings to be deceiving because an insulator tester (meg-ohm meter) does not differentiate between conductive metals or water, which by nature is conductive. In other words, the tester can identify water as a conductor.

A “failure” of an electrical cable is defined as its inability to safely and efficiently allow current to flow from source to load. A “failed” cable can still conduct electricity, but do it less efficient due to its increased resistance from the reactive chemical make-up of flood waters, which, in this disaster contains salt and other chemicals. The efficiency will decrease as the chemical make-up of flood water begins to physically alter the conductor.

Testing of electrical cables identify the degradation of insulation with respect to its proximity to ground or additional phases, and/or increased resistance of the conductors which detract from its ability to conduct current. In this disaster, there are two (2) probable causes of “failure”.

- a. Water providing a path to ground and/or an additional phase, with the cable terminated.
- b. Chemical degradation of the conductor.

Acceptance of electrical cables should not only be identified by the minimum standards of insulation levels as set forth by IEEE, NETA, ICEA, or NEMA. Dielectric Absorption Ratio of the tested cable should also be taken into consideration as well as consistency of readings of like cables with similar age and use.

ATTACHMENT K (Cont.)

DR-4086-NJ
Passaic Valley Sewage Commission
Recognition of Electrical Cable Failure

Upon the consideration of the aforementioned, the following guidelines are recommended for determining replacement of electrical cables.

- I. All cables that are obviously leaking flood water will be deemed eligible for replacement.
- II. The Applicant has satisfactorily proven that Control, Signal, and Instrumentation wire, 12 gauge or smaller which have been submersed at the non-watertight terminations and/or splices and show obvious signs of deterioration constitute failure and are eligible for replacement.
- III. All cables that show an unacceptable, insulation reading below 1 MΩ per 1kV of rated voltage (or $R = K \log_{10} D/d$) or Dielectric Absorption Ratio < 1.25 will be eligible for replacement.
- IV. All like cables with significant inconsistent insulation readings as agreed upon with the Applicant shall be deemed eligible for replacement.

Per FEMA standards, a 20 - 25% sampling of cable testing will be utilized to determine failure rate in order to establish replacement/repair costs for identical systems, i.e. Final Clarifier Facility is comprised of twelve (12) identical systems which experienced exact same conditions of the disaster, therefore, testing of three (3) of those systems will represent the damage to the other nine (9).

Passaic Valley Sewerage Commission

List of Electrical Power Cables

Line	Source CB	ID		Condition	From	To	Bus	Voltage	Sets	# Cond.	Cond. Size	Ground	Type	End-To-End Distance	Total Feeder length	Ground Length	Comments	Comments 2		
1	AA7	1	1	a	Failed	Substation 1 (Swgr A)		Substation 4 (Swgr D)	A	15kV	1	3	500 MCM		XLPE(IAC)	1100	3300 FT	0	Flood Water Intrusion at Terminations/splices	
2	AB7	2	1	b	Failed	Substation 1 (Swgr A)		Substation 4 (Swgr D)	B	15kV	1	3	500 MCM		XLPE(IAC)	1100	3300 FT	0	Flood Water Intrusion at Terminations/splices	
3	AA4	3	1	c	Failed	Substation 1 (Swgr A)		Switchgear G at Oxygen Production	A	15kV	2	3	500 MCM		XLPE(IAC)	1750	10500 FT	0	Flood Water Intrusion at Terminations/splices	
4	AB4	4	1	d	Failed	Substation 1 (Swgr A)		Switchgear G at Oxygen Production	B	15kV	2	3	500 MCM		XLPE(IAC)	1750	10500 FT	0	Flood Water Intrusion at Terminations/splices	
5	AA8	5	1	e	Failed	Substation 1 (Swgr A)		Substation N,S,8 at Sludge Handling	A	15kV	2	3	500 MCM		XLPE(IAC)	1375	8250 FT	0	Flood Water Intrusion at Terminations/splices	
6	AB8	6	1	f	Failed	Substation 1 (Swgr A)		Substation N,S,8 at Sludge Handling	B	15kV	2	3	500 MCM		XLPE(IAC)	1375	8250 FT	0	Flood Water Intrusion at Terminations/splices	
7	AA3	7	1	g	Failed	Substation 1 (Swgr A)		Substation 3 (Swgr B)	A	15kV	2	3	500 MCM		XLPE(IAC)	900	5400 FT	0	Flood Water Intrusion at Terminations/splices	
8	AB3	8	1	h	Failed	Substation 1 (Swgr A)		Substation 3 (Swgr B)	B	15kV	2	3	500 MCM		XLPE(IAC)	900	5400 FT	0	Flood Water Intrusion at Terminations/splices	
9	AA6	9	1	i	Failed	Substation 1 (Swgr A)		Substation 4 (Swgr C)	A	15kV	2	3	500 MCM		XLPE(IAC)	1100	6600 FT	0	Flood Water Intrusion at Terminations/splices	
10	AB6	10	1	j	Failed	Substation 1 (Swgr A)		Substation 4 (Swgr C)	B	15kV	2	3	500 MCM		XLPE(IAC)	1100	6600 FT	0	Flood Water Intrusion at Terminations/splices	
11	AA9	11	1	k	Failed	Substation 1 (Swgr A)		Switchgear West at SHTF (Zimpro)	A	15kV	2	3	500 MCM		XLPE(IAC)	2000	12000 FT	0	Flood Water Intrusion at Terminations/splices	
12	AB9	12	1	l	Failed	Substation 1 (Swgr A)		Switchgear East at SHTF (Zimpro)	B	15kV	2	3	500 MCM		XLPE(IAC)	2000	12000 FT	0	Flood Water Intrusion at Terminations/splices	
13																				
14	2A1	13	2	a	Failed	Substation 2 (T2A)		Switchgear 2 at EPS	A	5kV	4	3	500 MCM		XLPE(IAC)	725	8688 FT	0	Flood Water Intrusion at Terminations/splices	
15	2B1	14	2	b	Failed	Substation 2 (T2B)		Switchgear 2 at EPS	B	5kV	4	3	500 MCM		XLPE(IAC)	725	8688 FT	0	Flood Water Intrusion at Terminations/splices	
16																				
17	BA3	15	3	a	Failed	Substation 3 (Swgr B)		Transformer T-3A Primary	A	15kV	2	3	250 MCM		XLPE	25	150 FT	0	Not In Tunnel	Flood Water Intrusion at Terminations/splices
18	BB3	16	3	b	Failed	Substation 3 (Swgr B)		Transformer T-3B Primary	B	15kV	2	3	250 MCM		XLPE	52	312 FT	0	Not in tunnel	Flood Water Intrusion at Terminations/splices
19	BA2	17	3	c	Failed	Substation 3 (Swgr B)		Transformer T-3C Primary	A	15kV	1	3	4/0 AWG	1/0	XLPE	35	105 FT	35	Not In Tunnel	Flood Water Intrusion at Terminations/splices
20	BB2	18	3	d	Failed	Substation 3 (Swgr B)		Transformer T-3D Primary	B	15kV	1	3	4/0 AWG	1/0	XLPE	35	105 FT	35	Not In Tunnel	Flood Water Intrusion at Terminations/splices
21	1AA3	19	3	e	Failed	Substation 3 (Swgr 1A)		Switchgear 1B at IPS	A	5kV	1	3	4/0 AWG	1/0	XLPE	680	2040 FT	680		Flood Water Intrusion at Terminations/splices
22	1AB3	20	3	f	Failed	Substation 3 (Swgr 1A)		Switchgear 1B at IPS	B	5kV	1	3	4/0 AWG	1/0	XLPE	680	2040 FT	680		Flood Water Intrusion at Terminations/splices
23	BA4	21	3	g	Failed	Substation 3 (Swgr B)		Transformer T-02E at O2 Deck East	A	15kV	1	3	4/0 AWG	1/0	EPR(IAC)	940	2820 FT	940		Flood Water Intrusion at Terminations/splices
24	BB4	22	3	h	Failed	Substation 3 (Swgr B)		Transformer T-02E at O2 Deck East	B	15kV	1	3	4/0 AWG	1/0	EPR(IAC)	910	2730 FT	910		Flood Water Intrusion at Terminations/splices
25	BA6	23	3	i	Failed	Substation 3 (Swgr B)		Transformer T-02W at O2 Deck West	A	15kV	1	3	4/0 AWG	1/0	EPR(IAC)	1350	4050 FT	1350		Flood Water Intrusion at Terminations/splices
26	BB6	24	3	j	Failed	Substation 3 (Swgr B)		Transformer T-02W at O2 Deck West	B	15kV	1	3	4/0 AWG	1/0	EPR(IAC)	1350	4050 FT	1350		Flood Water Intrusion at Terminations/splices
27	BA5	25	3	k	Failed	Substation 3 (Swgr B)		Transformer T-"OS"(18A) at Scrubber	A	15kV	1	3	4/0 AWG	1/0	EPR(IAC)	1350	4050 FT	1350		Flood Water Intrusion at Terminations/splices
28	BB5	26	3	l	Failed	Substation 3 (Swgr B)		Transformer T-"OS"(18B) at Scrubber	B	15kV	1	3	4/0 AWG	1/0	EPR(IAC)	1350	4050 FT	1350		Flood Water Intrusion at Terminations/splices
29	1AA2	27	3	m	Failed	Substation 3 (Swgr 1A)		Substation M (Transformer T-M)	A	5kV	1	3	4/0 AWG	1/0	XLPE	875	2625 FT	875	Not in tunnel	Flood Water Intrusion at Terminations/splices
30	1AB2	28	3	n	Failed	Substation 3 (Swgr 1A)		Substation M (Transformer T-M)	B	5kV	1	3	4/0 AWG	1/0	XLPE	850	2550 FT	850	Not in tunnel	Flood Water Intrusion at Terminations/splices
31	1AA4	29	3	o	Failed	Substation 3 (Swgr 1A)		Switchgear 1C at WWPS	A	5kV	1	3	500 MCM		XLPE	500	1500 FT	0	Not In Tunnel	Flood Water Intrusion at Terminations/splices
32	1AB4	30	3	p	Failed	Substation 3 (Swgr 1A)		Switchgear 1C at WWPS	B	5kV	1	3	500 MCM		XLPE	500	1500 FT	0	Not In Tunnel	Flood Water Intrusion at Terminations/splices
33	1AA5	31	3	q	Failed	Substation 3 (Swgr 1A)		Switchgear 1D At RAWPS Pump Station	A	5kV	1	3	2/0 AWG		XLPE	680	2040 FT	0		Flood Water Intrusion at Terminations/splices
34	1AB5	32	3	r	Failed	Substation 3 (Swgr 1A)		Switchgear 1D At RAWPS Pump Station	B	5kV	1	3	2/0 AWG		XLPE	680	2040 FT	0		Flood Water Intrusion at Terminations/splices
35	3A2	33	3	s	Failed	Substation 3 (Swgr 3)		MCC-1 at IPS	A	600V	1	4	500 MCM	4/0	XHHW-2	550	2200 FT	550	Not in tunnel	Flood Water Intrusion at Terminations/splices
36	3B2	34	3	t	Failed	Substation 3 (Swgr 3)		MCC-1 at IPS	B	600V	1	4	500 MCM	4/0	XHHW-2	550	2200 FT	550	Not in tunnel	Flood Water Intrusion at Terminations/splices
37																				
38		35	4	a	Failed	Substation M		Admin Building	A	600V	2	4	500 MCM	4/0	XHHW-2	450	3600 FT	900	Not in tunnel	Flood Water Intrusion at Terminations/splices
39		36	4	b	Failed	Substation M		Admin Building	B	600V	2	4	500 MCM	4/0	XHHW-2	450	3600 FT	900	Not in tunnel	Flood Water Intrusion at Terminations/splices
40		37	4	c	Failed	Substation M		Grit Incinerator	A	600V	3	4	500 MCM	4/0	XHHW-2	450	5400 FT	1350	Not in tunnel	Flood Water Intrusion at Terminations/splices
41		38	4	d	Failed	Substation M		Grit Incinerator	B	600V	3	4	500 MCM	4/0	XHHW-2	450	5400 FT	1350	Not in tunnel	Flood Water Intrusion at Terminations/splices
42																				
43		39	5		Failed	Switchboard MS at Admin Building		MCC at Lab Building		600V	1	4	500 MCM	4/0	XHHW-2	350	1400 FT	350	Not In Tunnel	Flood Water Intrusion at Terminations/splices
44																				
45	2A4	40	6	a	Failed	Substation 2 (Swgr 2)		Transformer T-CL1 at Chlorine Substation	A	5kV	1	3	250 MCM		XLPE(IAC)	775	2325 FT	0		Flood Water Intrusion at Terminations/splices
46	2B4	41	6	b	Failed	Substation 2 (Swgr 2)		Transformer T-CL2 at Chlorine Substation	B	5kV	1	3	250 MCM		XLPE(IAC)	775	2325 FT	0		Flood Water Intrusion at Terminations/splices
47																				
48		42	7	a	Failed	Substation M		Security Building		600V	1	4	1/0 AWG	4/0	XHHW-2	195	780 FT	195	Not in tunnel	Flood Water Intrusion at Terminations/splices
49		43	7	b	Failed	Substation M		Vehicle Maintenance		600V	1	4	1/0 AWG	4/0	XHHW-2	500	2000 FT	500	Not In Tunnel	Flood Water Intrusion at Terminations/splices
50																				
51		44	8	a	Failed	Chlorine Substation		MCC-11	A	600V	1	4	350 MCM	1/0	XHHW-2	502	2008 FT	502	Not In Tunnel	Flood Water Intrusion at Terminations/splices
52		45	8	b	Failed	Chlorine Substation		MCC-11	B	600V	1	4	350 MCM	1/0	XHHW-2	502	2008 FT	502	Not In Tunnel	Flood Water Intrusion at Terminations/splices
53																				
54	GB3	46	9	a	Failed	Switchgear G at Oxygen Production		Transformer T-OP1 at Substation "OP"(18)		15kV	1	3	4/0 AWG		XLPE	200	600 FT	0		Flood Water Intrusion at Terminations/splices
55	GA3	47	9	b	Failed	Switchgear G at Oxygen Production		Transformer T-OP2 at Substation "OP"(18)		15kV	1	3	4/0 AWG		XLPE	200	600 FT	0		Flood Water Intrusion at Terminations/splices
56																				
57		48	10	a	Failed	STP Switchgear		Transformer T13 at STP		15kV	1	3	4/0 AWG		XLPE	75	225 FT	0		Flood Water Intrusion at Terminations/splices
58		49	10	b	Failed	STP Switchgear		Transformer T14 at STP		15kV	1	3	4/0 AWG		XLPE	70	210 FT	0		Flood Water Intrusion at Terminations/splices
59		50	10	c	Failed	STP Switchgear		Transformer T15 at STP		15kV	1	3	4/0 AWG		XLPE	65	195 FT	0		Flood Water Intrusion at Terminations/splices
60																				
61	2EA4	51	11	a	Failed	Substation 2 (Swgr 2E)		Switchgear 2E-5 at Primary Clarifiers	A	600V	3	4	500 MCM	4/0	XHHW-2(IAC)	425	5100 FT	1275		Flood Water Intrusion at Terminations/splices

Passaic Valley Sewerage Commission
List of Electrical Power Cables

Line	Source CB	ID		Condition	From	To	Bus	Voltage	Sets	# Cond.	Cond. Size	Ground	Type	End-To-End Distance	Total Feeder length	Ground Length	Comments	Comments 2
62	2EB4	52	11	b	Failed	Substation 2 (Swgr 2E)		600V	3	4	500 MCM	4/0	XHHW-2(IAC)	425	5100 FT	1275		Flood Water Intrusion at Terminations/splices
63	2EA3	53	11	c	Failed	Substation 2 (Swgr 2E)		600V	3	4	500 MCM	4/0	XHHW-2(IAC)	440	5280 FT	1320		Flood Water Intrusion at Terminations/splices
64	2EB3	54	11	d	Failed	Substation 2 (Swgr 2E)		600V	3	4	500 MCM	4/0	XHHW-2(IAC)	440	5280 FT	1320		Flood Water Intrusion at Terminations/splices
65	2EA2	55	11	e	Failed	Substation 2 (Swgr 2E)		600V	3	4	500 MCM	4/0	XHHW-2(IAC)	725	8700 FT	2175		Flood Water Intrusion at Terminations/splices
66	2EB2	56	11	f	Failed	Substation 2 (Swgr 2E)		600V	3	4	500 MCM	4/0	XHHW-2(IAC)	725	8700 FT	2175		Flood Water Intrusion at Terminations/splices
67																		
68	4A3	57	12	a	Failed	Substation 4 (Swgr 4)		600V	2	4	750 MCM	4/0	XHHW-2(IAC)	315	2520 FT	630		Flood Water Intrusion at Terminations/splices
69	4B3	58	12	b	Failed	Substation 4 (Swgr 4)		600V	2	4	750 MCM	4/0	XHHW-2(IAC)	315	2520 FT	630		Flood Water Intrusion at Terminations/splices
70	4A4	59	12	c	Failed	Substation 4 (Swgr 4)		600V	3	4	500 MCM	4/0	XHHW-2(IAC)	504	6048 FT	1512		Flood Water Intrusion at Terminations/splices
71	4B4	60	12	d	Failed	Substation 4 (Swgr 4)		600V	3	4	500 MCM	4/0	XHHW-2(IAC)	504	6048 FT	1512		Flood Water Intrusion at Terminations/splices
72	4A2	61	12	e	Failed	Substation 4 (Swgr 4)		600V	4	4	500 MCM	4/0	XHHW-2(IAC)	200	3200 FT	800		Flood Water Intrusion at Terminations/splices
73	4B2	62	12	f	Failed	Substation 4 (Swgr 4)		600V	4	4	500 MCM	4/0	XHHW-2(IAC)	200	3200 FT	800		Flood Water Intrusion at Terminations/splices
74																		
75	CA2	63	13	a	Failed	Substation 4 (Swgr C)		15kV	1	3	4/0 AWG	1/0	XLPE(IAC)	920	2760 FT	920		Flood Water Intrusion at Terminations/splices
76	CB3	64	13	b	Failed	Substation 4 (Swgr C)		15kV	1	3	4/0 AWG	1/0	XLPE(IAC)	675	2025 FT	675		Flood Water Intrusion at Terminations/splices
77	CA3	65	13	c	Failed	Substation 4 (Swgr C)		15kV	1	3	4/0 AWG	1/0	XLPE(IAC)	920	2760 FT	920		Flood Water Intrusion at Terminations/splices
78	CB2	66	13	d	Failed	Substation 4 (Swgr C)		15kV	1	3	4/0 AWG	1/0	XLPE(IAC)	675	2025 FT	675		Flood Water Intrusion at Terminations/splices
79																		
80	DA3	67	14	a	Failed	Substation 4 (Swgr D)		15kV	1	3	4/0 AWG	1/0	XLPE(IAC)	1060	3180 FT	1060		Flood Water Intrusion at Terminations/splices
81	DB3	68	14	b	Failed	Substation 4 (Swgr D)		15kV	1	3	4/0 AWG	1/0	XLPE(IAC)	1060	3180 FT	1060		Flood Water Intrusion at Terminations/splices
82	DA2	69	14	c	Failed	Substation 4 (Swgr D)		15kV	1	3	4/0 AWG	1/0	XLPE	52	156 FT	52	Not In Tunnel	Flood Water Intrusion at Terminations/splices
83	DB2	70	14	d	Failed	Substation 4 (Swgr D)		15kV	1	3	4/0 AWG	1/0	XLPE	52	156 FT	52	Not In Tunnel	Flood Water Intrusion at Terminations/splices
84																		
85	1AA1	71	15		Failed	Substation 3 (Transformer T-3A)		5kV	4	3	500 MCM		XLPE	48	576 FT	0	Not in tunnel	Flood Water Intrusion at Terminations/splices
86																		
87	1AB1	72	16		Failed	Substation 3 (Transformer T-3B)		5kV	4	3	500 MCM		XLPE	66	792 FT	0		Flood Water Intrusion at Terminations/splices
88																		
89		73	17		Failed	Warehouse Disc. Sw.		5kV	1	3	1/0 AWG	1/0	XLPE	6	18 FT	6	Not In Tunnel	Flood Water Intrusion at Terminations/splices
90																		
91	1CA2	74	18		Failed	WWPS (Swgr 1C)		5kV	2	3	1/0 AWG	1/0	XLPE	250	1500 FT	500	Not In Tunnel	Flood Water Intrusion at Terminations/splices
92																		
93	AA5	75			Unknown	Substation 1		15kV										
94	AB5	76			Unknown	Substation 1		15kV										
95	AA2	77			Unknown	Substation 1		15kV										
96	AB2	78			Unknown	Substation 1		15kV										
97																		
98		79			Unknown	Transformer T-"OS"(18A) at Scrubber		600V										
99		80			Unknown	Transformer T-"OS"(18B) at Scrubber		600V										
100		81			Unknown	Substation 3 (Transformer T-3C)		600V										
101		82			Unknown	Substation 3 (Transformer T-3D)		600V										

 Not Marked on Plan Drawing