

WEST VIRGINIA INFRASTRUCTURE COUNCIL

REQUIRED CONTENTS OF A PRELIMINARY ENGINEERING REPORT

A preliminary engineering report shall be required as an attachment to all pre-applications for funding submitted to the West Virginia Infrastructure and Jobs Development Council. The format of a preliminary engineering report shall follow this outline:

I. INTRODUCTION

- A. A brief narrative description of the project, including a description of the planning area, the implementing authority, and the scope and the need for the project shall be provided in this section of the report.
- B. Site map indicating project area location (site map shall not be larger than 11x17).

II. CURRENT SITUATION

- A. **Sources/Discharge** - Information related to the current potable water system and/or wastewater disposal practices (e.g., wells, mine sources, septic tanks, direct discharges, public sewers), and the names of all water sources and/or streams currently receiving effluent shall be provided in this section of the report. If applicable, current storm water disposal practices shall also be described in this section. Also, describe the adequacy of the existing raw water source and list all of the entities served by the existing water or wastewater system.
- B. **Customers** - Indicate population and customer counts, with nonresidential customers shown as equivalent dwelling units, in this section of the report. Also, indicate the number of metered and unmetered water customers. Please reference source of all customer counts.
- C. **Distribution/Collection** - A complete water distribution system and/or sewer system map(s) shall be included in this section. USGS mapping, at a scale of 1"=2000', showing both the existing and proposed systems, shall be used unless more detailed mapping is available. Industrial or business park proposals shall include a detailed site layout. Storm sewer proposals shall be shown on a 1"-2000' USGS map.
- D. **Treatment** - A description of the existing water and/or wastewater treatment (including pretreatment) facilities, including schematic diagrams, shall be provided in this section

of the report. The description of existing facilities shall include the physical condition, capacities, hours of current water plant operation, and other pertinent information for each component of the water or sewer facility. Show current unaccounted for water or estimated infiltration/inflow and list water and/or wastewater operators and their Bureau for Public Health Certification. This section shall also describe the need for the project. If the project is a proposed Abandoned Mine Lands water project, identify the mine causing damage to existing water sources.

E. Need for Project - Other documentation of need shall be included in this section of the report, including but not limited to:

i. SEWER NEEDS DOCUMENTATION

1. Septic tank failure rates,
2. West Virginia Health Department Reports or orders,
3. DEP Administrative Orders,
4. Penalty Orders, and Consent Decrees,
5. Orders of the Public Service Commission

ii. WATER NEEDS DOCUMENTATION

1. County Health department documentation of existing individual systems,
2. Bureau for Public Health Sanitary Surveys,
3. Bureau for Public Health Orders,
4. DEP orders,
5. Penalty Orders & Consent decrees,
6. PSC orders

iii. OTHER DOCUMENTATION

1. For storm sewers, list prior flood damage data (dates, amounts of damage, etc.), and copies of requests for storm channel improvements and/or dredging.

F. Existing Permits / Certificates - Provide a list of all existing environmental and other permits / certificates held by the facility (DEP, Health, PSC, APCC, EPA, COE, etc.).

III. FUTURE SITUATION

A. Population Projections - Population projections and supporting arguments for the growth rate selected shall be provided in this section of the report. Population figures must be translated into a customer count, with commercial/industrial flows being converted to equivalent dwelling units (EDU's) and then included in the customer count. Future growth capacity in rapidly growing areas should be quantified, with developable sites and owners identified. A consolidated water, sewer and economic development plan should be proposed for these areas.

B. Flow Projections - Water and wastewater flow projections, including the domestic water consumption of customers not currently connected to the water distribution system and/or

sewage collection system, shall be provided in this section of the report. Both average flow and peak daily flow (water and wastewater) shall be included in these projections. Where water is being purchased, provide evidence that water supplier can meet the projected water demand and include resolution of acceptance between the parties for said water purchases. Where sewage is being treated by another utility, provide evidence that said utility has the capacity and ability to treat the sewage and include resolution of acceptance between the parties for said sewage treatment.

C. Waste-Load Allocations - A waste load allocation (to be obtained from the Department of Environmental Protection) for the proposed project (water or wastewater treatment plants) and any other pertinent NPDES permit requirements, including pretreatment requirements for non-domestic discharges, shall be incorporated into this section of the report. Identify all streams receiving effluent or storm water discharges resulting from the proposed project and indicate any discharges that will not be treated. Describe solid wastes (including sludge) produced by the project, and methods and location of disposal. Also locate the proposed raw water source by latitude and longitude, and give distance to the nearest wastewater discharge upstream of intake.

D. Permits / Certificates Required - List all permits that will be required for the proposed project (DEP, Health, PSC, Highways, APCC, COE, PLC, etc.).

IV. ALTERNATIVES

An extensive evaluation of alternatives (including present worth analysis) must be provided. Alternative technologies, methods of treatment, methods of conveyance, sites and routes should be studied for each project. Simply evaluating whether to do or not do a project is not acceptable.

Additionally, an evaluation must be made of utilizing existing facilities, such as water and wastewater treatment plants of neighboring utilities versus construction of new facilities. Identify all utilities adjacent to the project area by name and the distance to the nearest connection point. If these systems are not be utilized, provide a detailed explanation.

Cost estimates and narratives describing all alternatives must be included in the report. Also, USGS maps, at a scale of 1"-2000', showing all alternatives is required (no map should be larger than 11" x 17").

V. PLAN SECTION AND PUBLIC PARTICIPATION

A brief discussion of the factors influencing the choice of the selected alternative shall be provided in this section of the report. Also, describe citizen participation and how the public's input was obtained.

VI. ENVIRONMENTAL INFORMATION

An assessment of the environmental impacts of the proposed project is



required. Unavoidable adverse impacts of the project, and the measures that will be taken to mitigate or minimize those impacts, shall be addressed in this assessment. Identify the 100 year flood elevation, and indicate whether the project will be subject to flooding and whether flood insurance is available for the proposed construction.

VII. PROJECT SUMMARIES

- A. Engineering Summary** - An engineering summary of the proposed project is required, including a description of all project elements (length and size of pipes, sizes of pumping stations and water tanks, capacities and descriptions of unit processes of the treatment plant, capacities of wells, number of fire hydrants, etc.).
- B. Cost Summary** - A project cost summary containing the following information is required:
- i. **PROJECT COSTS** - Provide preliminary cost estimates for treatment works and water distribution or sewage collection system construction business or industrial park or storm sewer system, ten percent (10%) contingency reserve, engineering services, administrative and legal services, land acquisition, and financing. Please round the total cost to the nearest thousand.
 - ii. **OPERATION AND MAINTENANCE COSTS** - Provide existing and proposed annual operation and maintenance costs for all categories as listed in the PSC annual report.
 - iii. **EXISTING DEBT** - Provide existing debt information including remaining debt, loan conditions (specify funding agency), term of loan in years, coverage, debt service per year, and total annual costs. Identify applicant's current or past delinquency on any State or Federal debt.
 - iv. **PROPOSED PROJECT FINANCING** - Provide proposed project financing, including anticipated loan and grant amounts and sources, and anticipated interest rate(s), term(s) of loan(s) and coverage rate(s).
 - v. **USER RATES PROJECTED** - Provide user charge information, including the number of existing and proposed customers, the existing rate schedule and the proposed rate schedule including resale contract rates. For business or industrial parks, information regarding proposed rental rates, fees, etc., must be included in the report.
- C. PROJECT SCHEDULE** - A project schedule shall be included in the report to detail the anticipated dates of critical project steps.
- D. LANDS AND RIGHTS-OF-WAY** - Provide status of land and/or rights-of-way acquisition (number required and number obtained).
- E. PUBLIC HEALTH BENEFITS** - Provide a summary of the public health benefits to be derived from the project.

- F. EVIDENCE OF FILING** - Provide status / evidence of the filing with the Public Service Commission (if applicable) of the engineering agreement between the engineer and the public service district, unless the public service district is applying for funding for an emergency project as defined by West Virginia Code §31-15A-8(a).
- G. EVIDENCE OF COMPLIANCE** - Provide evidence of the project sponsor's compliance with West Virginia Code §§5G-1-1, et seq. in its procurement of engineering services.