

APPENDIX V

Outline for a Preliminary Engineering Report for Community Development Block Grant - Economic Development Infrastructure Projects

I. The Preliminary Engineering Report (PER)

The Preliminary Engineering Report (PER) outline describes the minimum information that should be included in the PER. The PER is submitted as part of an application to the Community Development Block Grant – Economic Development (CDBG-ED) program for an infrastructure project related to an economic development proposal. **The PER must be prepared by a professional engineer licensed to practice in Montana.**

The outline addresses planning requirements for water or wastewater infrastructure projects in support of an economic development project. Reports prepared in this format should meet the Montana Department of Environmental Quality (DEQ) planning requirements under the applicable Circular DEQ-1, DEQ-2 or DEQ-3.

The PER should provide the necessary explanation needed to understand the existing situation, analyze any alternatives, and propose a specific plan based upon the most reasonable solution. Sufficient information must be provided to adequately assess the need for the proposal, feasibility of doing the project, and what the projected costs would be.

The engineer should provide adequate documentation where noted, using technical supporting information (reports, studies, lab analyses, etc. as necessary). Engineers are encouraged to cite supporting technical information and summarize the data if appropriate, rather than attaching lengthy supporting technical information. If the information required by the PER outline is not provided, the application may be rejected or the CDBG-ED program may need to contact the applicant for additional information before the application review can continue.

Environmental resources that may be impacted by the proposed project must be identified and evaluated. This is accomplished by completing the *Full Environmental Checklist for CDBG Economic Development Projects*, analyzing the potential impacts of the project on the identified environmental resources in the PER, and requesting that several State and Federal agencies comment on the selected alternative in order to identify any specific concerns that they may have about the proposed project. This process is explained in more detail in Chapter 2 of the CDBG Grant Administration Manual.

II. PER OUTLINE

The following is a suggested outline that provides guidance regarding the type and level of detail under each of the required headings. It should be noted that the outline is by no means all-inclusive. The engineer should use judgment in presenting sufficient information in the preparation of the PER, taking into account that different systems require varying levels of detail. The level of effort required to prepare the report and the depth of analysis within the report should be proportional to the size and complexity of the proposed project.

Section II.B, is for an evaluation of existing facilities associated with the entire system. The intent of this requirement is not to force the unnecessary expenditure of time or money conducting a detailed engineering study and evaluation of system components not being replaced or improved as part of this project. However, in order for the CDBG-ED program to properly evaluate an application and make meaningful funding decisions, it is necessary for it to know the condition of the system, the improvements that have been made in the past, and how the proposal will affect the system. Drawings, schematics, and the level of detail required to convey this information is left to the professional judgment of the engineer preparing the PER.

The following basic outline represents the minimum information required to produce an acceptable PER:

A. Executive Summary

Provide a summary of why the engineering study was undertaken, a brief description of the basic needs or deficiencies of the system, a brief description of the alternatives considered, a brief description of the preferred alternative, and the estimated total cost to construct the preferred alternative

B. Project Area Definition

1. Identify planning area and existing/potential service area

Using narrative and drawings, describe the area under consideration. The project planning area may be larger than the service area ultimately determined to be economically feasible. The description should include the following information:

a. Location – Indicate legal and natural boundaries, latitude and longitude, major obstacles, elevations, etc, using maps, photographs, and sketches of the planning area.

b. Physical Characteristics of the Area – Describe the physical character of the project area including geology, topography, soil types, groundwater, surface water, vegetation, etc. that may have an impact on the project costs, performance, simplicity, etc. or allow for a more complete understanding of the problem. Provide a copy of the USGS topographic quadrangle map, FEMA floodplain map, wetlands inventory map, and USGS soil identification map in instances where maps have been published.

c. Environmental Resources Present – Provide information on the location and significance of important land resources, historic sites, endangered species/critical habitats, etc., using maps, photographs, studies and narrative. Generally discuss any potential environmental impacts that the project may have on the broad geographical area where the project is to be constructed. Attach any other exhibits, maps, or correspondence that may be applicable to help identify environmental resources present.

The information collected through the *Full Environmental Checklist for CDBG Economic Development Projects* is the basis for identifying the environmental resources in the area that may be affected. The checklist must be signed by a professional engineer and included as an attachment to the PER. If there has been a previous environmental assessment completed for the project area, please include a copy of the assessment in addition to the completed checklist.

At a minimum, state whether any of the following issues will or will not be potentially affected:

- Land use/formally classified lands – (farmland, range land, forestland)
- Biological resources
- Water resource Issues – (quality and quantity)
- Surface
- Groundwater
- 100/500 year floodplains
- Wetlands, including stream crossings
- Cultural resources
- Socio-economic/Environmental justice issues – If the proposed project will be located in a minority or low-income community, analyze if the location of the proposed project will have, or will be perceived to have, disproportionately high adverse human health or environmental effects to the community. If the project will have no disproportionate effects, this should be stated. If the project will have, or may be perceived to have disproportionately, high, or adverse human health, or environmental effects to the community, the analysis must include a description of the efforts made to include minority and low-income populations into the National Environmental Policy Act (NEPA) process.

d. Growth Areas and Population Trends – Identify specific areas of concentrated growth. Provide population projections for the project planning area and concentrated growth areas for the project design period. Base population projections on historical records or economic projections, citing recognized sources.

2. Evaluate condition of existing facilities

Describe the condition of the existing facilities. Note: Provide sufficient detail as necessary for the reviewer to understand the condition of all components of the system. The engineer should use judgment in presenting sufficient information in the preparation

of the PER, taking into account that different systems require varying levels of detail. The level of effort required to prepare the report and the depth of analysis within the report should be proportional to the size and complexity of the proposed project.

a. Layout – Provide a layout for the existing system. The map should provide basic information on the location and size of the components in the system, especially in the case of distribution and collection mains.

b. History – Provide a brief history of the facilities, including when the system was constructed, major improvements and any past problems.

c. Analysis of Existing Facilities – Analyze the system to determine its present condition and ability to meet current and future standards. Are the existing central facilities suitable for continued use? Analyze the capacity for future growth. Justify statements regarding the condition of existing facilities by providing documentation as necessary, and citing the source of information.

C. Describe and document the need for the project and identify any problems to be solved

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1. Health and Safety – Describe concerns, compliance issues, and relevant regulations. Attach correspondence to/from federal, and state regulatory agencies and documentation such as violation of discharge permits, notice of violations, administrative orders, or boil orders.

2. System Operation and Maintenance (O&M) – Discuss operational, administrative and management capacity.

3. Growth – Describe the system capacity that is necessary to meet needs during the planning period. Discuss any consideration given to designing for phased construction. Provide number of new users to be served by this project.

4. Unresolved Problems – Describe any of the problems identified above that are not to be addressed and the reasons for not addressing them. Discuss phasing if applicable.

D. General Design Requirements for Improvements

Describe the general design requirements that will need to be met such as Design Standards for Water Works, regulatory requirements and permits, source(s) of water supply, water protection, water use/demand data, treatment, pumping, transmission/distribution, storage, water meters/conservation, design flows, etc

III. ALTERNATIVE SOLUTIONS

Describe all available alternatives to the proposed project if any, including a no action alternative.

A. Cost Summary for the Preferred Alternative.

Provide an itemized estimate of the project administration and construction costs based on the anticipated period of construction. Include administrative line items such as personnel, office costs, training, legal services, interim interest, bond services, audit costs and other costs associated with the proposed project. Include construction line items for preliminary engineering, engineering design services, construction management, construction costs, land purchase costs, and contingency.

VI. RECOMMENDATIONS AND IMPLEMENTATION

A. Funding Strategy. Describe the proposed funding strategy and resultant user costs.

B. Implementation. Describe how the project will be implemented and any special concerns regarding implementation. Provide a project schedule. Include as part of the schedule the time line for obtaining all project funding. Identify any items that have the potential to delay or prevent the project from going forward.

C. Public Participation. Describe any public participation, meetings, hearings, or comments received from the public about the PER, environmental concerns, or the proposed project in general. Include minutes of meetings, copies of sign-in sheets, and proof of advertisement.