

UNIFORM PRELIMINARY ENGINEERING REPORT FOR MONTANA PUBLIC FACILITY PROJECTS

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This outline is the current Preliminary Engineering Report (PER) template and replaces the previous W2ASACT PER outline. Applicants who have begun or completed a PER using the December 2025, 14th Edition of the Uniform Application for Montana Public Facility Projects may continue to use that format for the upcoming funding cycle.

The outline specifies the information to include in the PER; the level of detail may vary with project complexity. Following the outline is strongly encouraged to facilitate review. A PER is required when applying for federal and state funding for public facilities in Montana, as listed in this publication, and must be prepared by a professional engineer licensed in Montana.

W2ASACT funding agencies require an Executive Summary in every PER. Most agencies also require completion of the Uniform Environmental Checklist.

Environmental resources that may be affected by the proposed project must be identified and evaluated. This is done by completing the Uniform Environmental Checklist, analyzing potential impacts in the PER, and seeking comments from relevant state and federal agencies on the selected alternative. The section titled “Environmental Related Requirements” describes this process in more detail. Note that Rural Development requires a stand-alone Environmental Report, and CDBG must be contacted separately to determine its environmental documentation requirements.

Funding agencies differ in their environmental review, preferred alternative selection, and PER adoption requirements. Public review and notification procedures also vary. Failure to follow a specific agency’s requirements may lead to additional engineering or environmental work, including further review and public notice. Applicants should contact each prospective funding agency early to confirm its specific requirements.

Before final PER adoption, at least one public meeting is required to obtain public comment. The meeting must be properly noticed, and the public must have an opportunity to comment on the project. Meeting minutes should document the discussion and all comments received. Applicants must also consult individual program application guidelines for any additional hearing requirements.

The December 2025, 14th Edition of the Uniform Preliminary Engineering Report for Montana Public Facility Projects incorporates formatting changes to comply with Montana Code Annotated 18-5-605, which requires accessible information for people who are blind or visually impaired. The December 2025 edition also adds factors for irrigation projects in the Proposed Project section.

GENERAL OUTLINE OF A PRELIMINARY ENGINEERING REPORT

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DETAILED OUTLINE OF A PRELIMINARY ENGINEERING REPORT

The following is a more detailed 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, considering that different systems require varying levels of detail (facultative lagoons versus mechanical plants, groundwater sources versus surface water treatment, land filling versus transportation, etc.). 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 2.c of this outline requires 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 to conduct a detailed engineering study and evaluation of system components not being replaced or improved as part of this project. However, in order for funding agencies to properly evaluate an application and make meaningful funding decisions, it is necessary for them to know the condition of all of the components of the system, the improvements that have been made to the various components of the system in the past, and how the remaining improvements that will be needed will be phased. It is therefore required that the general condition of all components of the system be discussed in the PER in enough detail to provide an

understanding of the overall condition of the entire 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.

0) EXECUTIVE SUMMARY

Provide a summary of why the engineering study was undertaken, a brief description of the basic needs or deficiencies of the system being studied, a brief description of the alternatives considered, a brief description of the preferred alternative, the estimated total cost to construct the preferred alternative and the net cost per user based on the proposed funding plan. Note any other pertinent conclusions.

1) PROJECT PLANNING EXISTING FACILITIES

Describe the area under consideration. Service may be provided by a combination of central, cluster, and/or centrally managed individual facilities. The description should include information on the following:

- a) Location. Provide scale maps and photographs of the project planning area and any existing service areas. Include legal and natural boundaries and a topographical map of the service area.
- b) Environmental Resources Present. Provide maps, photographs, and/or a narrative description of environmental resources present in the project planning area that affect design of the project. Environmental review information that has already been developed to meet requirements of NEPA or MEPA.
- c) Population Trends. Provide U.S. Census or other population data (including references) for the service area for at least the past two decades if available. Population projections for the project planning area and concentrated growth areas should be provided for the project design period. Base projections on historical records with justification from recognized sources.
- d) Community Engagement. Describe the utility's approach used (or proposed for use) to engage the community in the project planning process. The project planning process should help the community develop an understanding of the need for the project, the utility operational service levels required, funding and revenue strategies to meet these requirements, along with other considerations.

2) EXISTING FACILITIES

Describe each part (e.g. processing unit) of the existing facility and include the following information:

- a) Location Map. Provide a map and a schematic process layout of all existing facilities. Identify facilities that are no longer in use or abandoned. Include photographs of existing facilities.

- b) History. Indicate when major system components were constructed, renovated, expanded, or removed from service. Discuss any component failures and the cause for the failure. Provide a history of any applicable violations of regulatory requirements.
- c) Condition of Existing Facilities. Describe present condition; suitability for continued use; adequacy of current facilities; and their conveyance, treatment, storage, and disposal capabilities. Describe the existing capacity of each component. Describe and reference compliance with applicable federal, state, and local laws. Include a brief analysis of overall current energy consumption. Include a reference an asset management plan if applicable.
- d) Financial Status of any Existing Facilities. Note: Some agencies require the owner to submit the most recent audit or financial statement as part of the application package. Provide information regarding current rate schedules, annual O&M cost (with a breakout of current energy costs), other capital improvement programs, and tabulation of users by monthly usage categories for the most recent typical fiscal year. Give status of existing debts and required reserve accounts.
- e) Water/Energy/Waste Audits. If applicable to the project, discuss any water, energy, and/or waste audits which have been conducted and the main outcomes.

3) PROJECT NEED

Describe the needs in the following order of priority:

- a) Health, Sanitation and Security. Describe concerns and include relevant regulations and correspondence from/to federal and state regulatory agencies. Include copies of such correspondence as an attachment to the report.
- b) Aging Infrastructure. Describe the concerns and indicate those with the greatest impact. Describe water loss, inflow and infiltration, treatment or storage needs, management. adequacy, inefficient designs, and other problems. Describe any safety concerns.
- c) Reasonable Growth. Describe the reasonable growth capacity that is necessary to meet needs during the planning period. Facilities proposed to be constructed to meet future growth needs should generally be supported by additional revenues. Consideration should be given to designing for phased capacity increases. Provide number of new customers committed to this project.

4) ALTERNATIVES CONSIDERED

This section should contain a description of the alternatives that were considered in planning a solution to meet the identified needs. Documentation of alternatives considered is often a report weakness. Alternative approaches to ownership and management, system design (including resource efficient or green alternatives), and sharing of services, including various forms of partnerships, should be considered. In addition, the following alternatives should be considered, if practicable: building new centralized facilities, optimizing the current facilities (no

construction), developing centrally managed decentralized systems, including small cluster or individual systems, and developing an optimum combination of centralized and decentralized systems. Alternatives should be consistent with those considered in the NEPA, or MEPA. Technically infeasible alternatives that were considered should be mentioned briefly along with an explanation of why they are infeasible, but do not require full analysis. For each technically feasible alternative, the description should include the following information:

- a) **Description.** Describe the facilities associated with every technically feasible alternative. Describe source, conveyance, treatment, storage and distribution facilities for each alternative. A feasible system may include a combination of centralized and decentralized (on-site or cluster) facilities.
- b) **Design Criteria.** State the design parameters used for evaluation purposes. These parameters should comply with federal, state, and agency design policies and regulatory requirements.
- c) **Map.** Provide a schematic layout map to scale and a process diagram if applicable. If applicable, include future expansion of the facility.
- d) **Environmental impacts.** Provide information about how the specific alternative may impact the environment. Describe only those unique direct and indirect impacts on floodplains, wetlands, other important land resources, endangered species, historical and archaeological properties, etc., as they relate to each specific alternative evaluated. Include generation and management of residuals and wastes.
- e) **Land Requirements.** Identify sites and easements required. Further specify whether these properties are currently owned, to be acquired, leased, or have access agreements.
- f) **Potential Construction Problems.** Discuss concerns such as subsurface rock, high water table, limited access, existing resource or site impairment, or other conditions which may affect cost of construction or operation of facility.
- g) **Sustainability Considerations.** Sustainable utility management practices include environmental, social, and economic benefits that aid in creating a resilient utility.
- h) **Water and Energy Efficiency.** Discuss water reuse, water efficiency, water conservation, energy efficient design (i.e. reduction in electrical demand), and/or renewable generation of energy, and/or minimization of carbon footprint, if applicable to the alternative. Alternatively, discuss the water and energy usage for this option as compared to other alternatives.
 - i. **Green Infrastructure.** Discuss aspects of project that preserve or mimic natural processes to manage stormwater, if applicable to the alternative. Address management of runoff volume and peak flows through infiltration, evapotranspiration, and/or harvest and use, if applicable.
 - ii. **Other.** Discuss any other aspects of sustainability (such as resiliency or operational simplicity) that are incorporated into the alternative, if applicable.

- i) **Cost Estimates.** Provide cost estimates for each alternative, including a breakdown of the following costs associated with the project: construction, non- construction, and annual O&M costs. A construction contingency should be included as a non-construction cost. Cost estimates should be included with the descriptions of each technically feasible alternative. O&M costs should include a rough breakdown by O&M category (see example below) and not just a value for each alternative. Information from other sources, such as the recipient's accountant or other known technical service providers, can be incorporated to assist in the development of this section. The cost derived will be used in the life cycle cost analysis described in Section 5a.

Table 1 Example O&M Cost Estimate

PROJECTED SYSTEM OPERATION AND MAINTENANCE COST	
Personnel (i.e. Salary, Benefits, Payroll Tax, Insurance, Training)	
Administrative Costs (e.g. office supplies, printing, etc.)	
Water Purchase or Waste Treatment Costs	
Insurance	
Energy Cost (Fuel and/or Electrical)	
Process Chemical	
Monitoring & Testing	
Short Lived Asset Maintenance/Replacement*	
Professional Services	
Residuals Disposal	
Miscellaneous	
Total	\$0.00

*See Appendix A for example list.

5) ALTERNATIVE SELECTION

Selection of an alternative is the process by which data from the previous section, "Alternatives Considered" is analyzed in a systematic manner to identify a recommended alternative. The analysis should include consideration of both life cycle costs and non- monetary factors (i.e. triple bottom line analysis: financial, social, and environmental). If water reuse or conservation, energy efficient design, and/or renewable generation of energy components are included in the proposal provide an explanation of their cost effectiveness in this section.

- a) Life Cycle Cost Analysis. A life cycle cost present worth analysis (an engineering economics technique to evaluate present and future costs for comparison of alternatives) should be completed to compare the technically feasible alternatives. Do not leave out alternatives because of anticipated costs; let the life cycle cost analysis show whether an alternative may have an acceptable cost. This analysis should meet the following requirements and should be repeated for each technically feasible alternative. Several analyses may be required of the project has different aspects, such as one analysis for different types of collection systems and another for different types of treatment.
 - i. The analysis should convert all costs to present day dollars.

- ii. The planning period to be used is recommended to be 20 years, but may be any period determined reasonable by the engineer and concurred on by the state or federal agency.
- iii. The discount rate to be used should be the “real” discount rate taken from Appendix C of OMB Circular A-94 and found at: <https://www.whitehouse.gov/wp-content/uploads/2023/11/CircularA-94>
- iv. The total capital cost (construction plus non-construction costs) should be included.
- v. Annual O&M costs should be converted to present day dollars using a uniform series present worth (USPW) calculation.
- vi. The salvage value of the constructed project should be estimated using the anticipated life expectancy of the constructed items using straight line depreciation calculated at the end of the planning period and converted to present day dollars.
- vii. The present worth of the salvage value should be subtracted from the present worth costs.
- viii. The net present value (NPV) is then calculated for each technically feasible alternative as $NPV = C + USPW(O\&M) - SPPW(S)$.
 - (1) NPV (Net Present Value): This is the total present worth of all costs and benefits over the project's lifespan, discounted to the present time. In this context, where costs are treated as positive and salvage value (a benefit) as negative, a lower (more negative) NPV is generally preferred for cost-minimization studies.
 - (2) C (Capital Cost): The initial investment cost incurred at the start of the project (at time $t=0$). This value is already a present worth.
 - (3) USPW(O&M) (Uniform Series Present Worth of O&M Costs): This is the present worth of the series of annual uniform Operating and Maintenance (O&M) costs occurring over the project's life. This typically uses the Uniform Series Present Worth factor, $[\frac{1 - (1+i)^{-n}}{i}]$, where i is the discount rate and n is the project life.

- (4) SPPW(S) (Single Payment Present Worth of Salvage Value): This is the present worth of the salvage value (S) the estimated monetary worth of the asset at the end of its useful life (t=n). Since salvage value is typically considered a revenue or recovery (a cash inflow), it is subtracted from the total costs. This typically uses the Single Payment Present Worth factor, $[1/(1+i)^n]$.

Net present value (NPV) is calculated for each technically feasible alternative as
 $NPV = C + USPW(O\&M) - SPPW(S)$.

C: Up-front capital cost at time zero.

USPW(O&M): Present worth of uniform annual operation and maintenance costs over the project life.

The Uniform Series Present Worth (USPW) factor converts a constant annual amount over n years into its equivalent present value at discount rate i.

$$USPW = \frac{(1+i)^n - 1}{i(1+i)^n}$$

SPPW(S): Present worth of the salvage value at the end of the project life, subtracted because it is a cost recovery.

- ix. A table showing the capital cost, annual O&M cost, salvage value, present worth of each of these values, and the NPV should be developed for state or federal agency review. All factors (major and minor components), discount rates, and planning periods used should be shown within the table.
- x. Short lived asset costs (see Appendix A for examples) should also be included in the life cycle cost analysis if determined appropriate by the consulting engineer or agency. Life cycles of short-lived assets should be tailored to the facilities being constructed and be based on generally accepted design life. Different features in the system may have varied life cycles.
- b) Non-Monetary Factors. Non-monetary factors, including social and environmental aspects (e.g. sustainability considerations, operator training requirements, permit issues, community objections, reduction of greenhouse gas emissions, wetland relocation, reliability, operability) should also be considered in determining which alternative is recommended and may be factored into the calculations.

6) PROPOSED PROJECT (Recommended Alternative)

The engineer should include a recommendation for which alternative(s) should be implemented. This section should contain a fully developed description of the proposed project based on the preliminary description under the evaluation of alternatives. Include a schematic for any treatment processes, a layout of the system, and a location map of the proposed facilities. At least the following information should be included as applicable to the specific project:

- a) Preliminary Project Design.

- b) Drinking Water.
 - i. Water Supply. Include requirements for quality and quantity. Describe recommended source, including site and allocation allowed.
 - ii. Treatment. Describe process in detail (including whether adding, replacing or rehabilitating a process) and identify location of plant and site of any process discharges. Identify capacity of treatment plant (i.e. maximum daily demand).
 - iii. Storage. Identify size, type and location.
 - iv. Pumping Stations. Identify size, type, location and any special power requirements. For rehabilitation projects, include description of components upgraded.
 - v. Distribution Layout. Identify general location of new pipe, replacement or rehabilitation, lengths, sizes and key components.
- c) Wastewater/Reuse (refer to Circular DEQ-2, Chapter10)
 - i. Collection System/Reclaimed Water System Layout. Identify general location of new pipe, replacement or rehabilitation: lengths, sizes, and key components.
 - ii. Pumping Stations. Identify size, type, site location, and any special power requirements. For rehabilitation projects, include description of components upgraded.
 - iii. Storage. Identify size, type, location and frequency of operation.
 - iv. Treatment. Describe process in detail (including whether adding, replacing or rehabilitating a process) and identify location of any treatment units and site of any discharges (end use for reclaimed water). Identify capacity of treatment plant (i.e. average daily flow).
- d) Solid Waste.
 - i. Collection. Describe process in detail and identify quantities of material (in both volume and weight), length of transport, location and type of transfer facilities, and any special handling requirements.
 - ii. Storage. If any, describe capacity, type, and site location.
 - iii. Processing. If any, describe capacity, type, and site location.
 - iv. Disposal. Describe process in detail and identify permit requirements, quantities of material, recycling processes, location of plant, and site of any process discharges.
- e) Stormwater.
 - i. Collection System Layout. Identify general location of new pipe, replacement or rehabilitation: lengths, sizes, and key components.
 - ii. Pumping Stations. Identify size, type, location, and any special power requirements.
 - iii. Treatment. Describe treatment process in detail. Identify location of treatment facilities and process discharges. Capacity of treatment process should also be addressed.
 - iv. Storage. Identify size, type, location and frequency of operation.
 - v. Disposal. Describe type of disposal facilities and location.

- vi. Green Infrastructure. Provide the following information for green infrastructure alternatives:
 - (1) Control Measures Selected. Identify types of control measures selected (e.g., vegetated areas, planter boxes, permeable pavement, rainwater cisterns).
 - (2) Layout: Identify placement of green infrastructure control measures, flow paths, and drainage area for each control measure.
 - (3) Sizing: Identify surface area and water storage volume for each green infrastructure control measure. Where applicable, soil infiltration rate, evapotranspiration rate, and use rate (for rainwater harvesting) should also be addressed.
 - (4) Overflow: Describe overflow structures and locations for conveyance of larger precipitation events.
- f) Irrigation
 - i. Water Source. Identify the water source and include information on the water rights that controls and limits the use of the water source.
 - ii. Withdrawal and Control. Identify the location, size, capacity and design elements of the structures that manage the initial flow of water from the source into the irrigation network.
 - (1) Storage, reservoirs, dams and other control structures.
 - (2) Intake Structure/Headworks.
 - (3) Pumping Station.
 - (4) Headgates / Head Regulators.
 - (5) Filters/screens.
 - iii. Conveyance System. Identify the location, size, capacity and design consideration for the infrastructure that transports water from the source/intake to the general vicinity of the irrigated fields.
 - (1) Main Canals: Large-capacity channels (often unlined, or lined with concrete) that carry the primary volume of water.
 - (2) Pipelines.
 - (3) Conveyance Structures:
 - (4) Aqueducts / Flumes: Elevated structures to carry water across valleys or depressions.
 - (5) Siphons: Closed conduits that carry water under a road, railway, or natural depression by gravity pressure.
 - (6) Drops / Chutes: Structures used to safely lower the water elevation in the canal to prevent erosion on steep slopes.
 - iv. Distribution System. Identify the location, size, capacity and design of the network that takes water from the main conveyance system and delivers it to the individual farm or field level.

- (1) Secondary and Tertiary Canals/Laterals.
 - (2) Control Valves and Turnouts.
 - (3) Flow Measurement Structures.
 - (4) Operational Controls. Centralized controllers or timers, especially in highly automated systems, to manage the timing and duration of water delivery to different zones.
- v. Drainage System. System designed for removing excess water from the fields, preventing waterlogging, and maintaining soil health.
- (1) Field Drains.
 - (2) Collector Drains / Main Drains.
- g) Project Schedule. Identify proposed dates for submittal and anticipated approval of all required documents, land and easement acquisition, permit applications, advertisement for bids, loan closing, contract award, initiation of construction, substantial completion, final completion, and initiation of operation.
- h) Permit Requirements. Identify any construction, discharge and capacity permits that will/may be required as a result of the project.
- i) Sustainability Considerations (if applicable).
- j) Water and Energy Efficiency. Describe aspects of the proposed project addressing water reuse, water efficiency, and water conservation, energy efficient design, and/or renewable generation of energy, if incorporated into the selected alternative.
- k) Green Infrastructure. Describe aspects of project that preserve or mimic natural processes to manage stormwater, if applicable to the selected alternative. Address management of runoff volume and peak flows through infiltration, evapotranspiration, and/or harvest and use, if applicable.
- l) Other. Describe other aspects of sustainability (such as resiliency or operational simplicity) that are incorporated into the selected alternative, if incorporated into the selected alternative.
- m) Total Project Cost Estimate (Engineer's Opinion of Probable Cost). Provide an itemized estimate of the project cost based on the stated period of construction. Include construction, land and right- of-ways, legal, engineering, construction program management, funds administration, interest, equipment, construction contingency, refinancing, and other costs associated with the proposed project. The construction subtotal should be separated out from the non-construction costs. The non-construction subtotal should be included and added to the construction subtotal to establish the total project cost. An appropriate construction cost estimate should be added as part of the non-construction subtotal: For projects containing both water and waste disposal systems, provide a separate cost estimate for each system as well as a grand total. If applicable, the cost estimate should be itemized to reflect cost sharing including apportionment between funding sources. The engineer may rely on the owner for estimates of cost for items other than construction, equipment, and engineering.

- n) Annual Operating Budget. Provide itemized annual operating budget information. The owner has primary responsibility for the annual operating budget, however, there are other parties that may provide technical assistance. This information will be used to evaluate the financial capacity of the system. The engineer will incorporate information from the owner's accountant and other known technical service providers.
- o) Income. Provide information about all sources of income for the system including a proposed rate schedule. Project income realistically for existing and proposed new users separately, based on existing user billings, water treatment contracts, and other sources of income. In the absence of historic data or other reliable information, for budget purposes, base water use on 100 gallons per capita per day. Water use per residential connection may then be calculated based on the most recent U.S. Census, American Community Survey, or other data for the state or county of the average household size. When large agricultural or commercial users are projected, the report should identify those users and include facts to substantiate such projections and evaluate the impact of such users on the economic viability of the project.
- p) Annual O&M Costs. Provide an itemized list by expense category and project costs realistically. Provide projected costs for operating the system as improved. In the absence of other reliable data, based on actual costs of other existing facilities of similar size and complexity. Include facts in the report to substantiate O&M cost estimates. Include personnel costs, administrative costs, water purchase or treatment costs, accounting and auditing fees, legal fees, interest, utilities, energy costs, insurance, annual repairs and maintenance, monitoring and testing, supplies, chemicals, residuals disposal, office supplies, printing, professional services, and miscellaneous as applicable. Any income from renewable energy generation which is sold back to the electric utility should also be included, if applicable. If applicable, note the operator grade needed.
- q) Debt Repayments. Describe existing and proposed financing with the estimated amount of annual debt repayments from all sources. All estimates of funding should be based on loans, not grants.
- r) Reserves. Describe the existing and proposed loan obligation reserve requirements for the following:
 - i. Debt Service Reserve For specific debt service reserve requirements consult with individual funding sources. If General Obligation bonds are proposed to be used as loan security, this section may be omitted, but this should be clearly stated if it is the case.
 - ii. Short-Lived Asset Reserve – A table of short-lived assets should be included for the system (See Appendix A for examples). The table should include the assets, the expected year of replacement, and the anticipated cost of each. Prepare a recommended annual reserve deposit to fund replacement of short-lived assets, such as pumps, paint, and small equipment. Short-lived assets include those items

not covered under O&M; however, this does not include facilities such as a water tank or treatment facility replacement that are usually funded with long-term capital financing.

- iii. Long-Term Reserve – or capital reserve accounts which is set aside and cannot be used for routine O&M. These funds finance the future repair, renewal, replacement, or major capital improvement of its long-lived assets. Its main purpose is to ensure that a public entity or association can pay for high-cost, non-recurring projects.

7) CONCLUSIONS and RECOMMENDATIONS

Provide any additional findings and recommendations that should be considered in development of the project. This may include recommendations for special studies, highlighting the need for special coordination, a recommended plan of action to expedite project development, and any other necessary considerations.

APPENDIX A: EXAMPLE LIST OF SHORT-LIVED ASSET INFRASTRUCTURE

Short-lived assets in infrastructure refer to components or equipment with expected lifespans much shorter than the main system components - notably items needing routine replacement or maintenance within a couple of decades as compared to core, long-lived assets like buildings or large pipelines. Costs for short-lived assets include the cost to repair, rehabilitate or replace those system components.

Examples of short-lived assets are provided below:

Drinking Water Utilities

Source Related: Pumps; pump controls; pump motors; telemetry; intake/well screens; water level sensors; pressure transducers, etc.

Treatment Related: Chemical feed pumps; altitude valves; valve actuators; field process instrumentation equipment; granular filter media; air compressors & control units; pumps; pump motors; pump controls; water level sensors; pressure transducers; sludge collection & dewatering; UV lamps; membranes; back-up power generators; chemical leak detection equipment; flow meters; SCADA systems, etc.

Distribution System Related: Residential and small commercial meters; meter boxes; hydrants & blow offs; pressure reducing valves; cross connection control devices; altitude valves; alarms & telemetry; vaults, lids, and access hatches; security devices and fencing; storage reservoir painting/patching, etc.

Wastewater Utilities

Treatment Related: Pump; pump controls; pump motors; chemical feed pumps; membrane filters fibers; field & process instrumentation equipment; UV lamps; centrifuges; aeration blowers; aeration diffusers and nozzles; trickling filters, RBCs, etc.; belt presses & driers; sludge collecting and dewatering equipment; level sensors; pressure transducers; pump controls; back-up power generator; chemical leak detection equipment; flow meters; SCADA systems, etc.

Collection System Related: Pump; pump controls; pump motors; trash racks/bar screens; sewer line rodding equipment; air compressors; vaults, lids, and access hatches; security devices and fencing; alarms & telemetry; chemical leak detection equipment, etc.

APPENDIX B: ENVIRONMENTAL RELATED REQUIREMENTS

All state and federally funded projects are subject to either the Montana Environmental Policy Act (MEPA) or National Environmental Policy Act of 1969 (NEPA), or both. MEPA seeks to avoid or mitigate adverse impacts on the natural and human environment by mandating careful consideration of the potential impacts of any development assisted with state funds or approved by a state agency. NEPA establishes national policy, goals, and procedures for protecting, restoring, and enhancing environmental quality.

Both laws seek to avoid adverse impacts on the environment by mandating careful consideration of the potential impacts on any development assisted with federal funds or approved by a state agency. To avoid delays, adding significantly to project costs, or even prevent a project from being carried out, all applicants applying to the funding programs listed in this publication must take potential environmental impacts into account when planning a project. As a result, local officials will be able to make more informed decisions related to the potential environmental consequences of projects and the actions that will be required to mitigate those consequences. Therefore, environmental resources that may be impacted by the proposed project must first be identified by completing the Uniform Environmental Checklist and then evaluated in the preliminary engineering report (PER). Depending on the funding source, or if the project changes from what was proposed in the PER, additional environmental actions may be required at later stages of the project.

ENVIRONMENTAL REQUIREMENTS WHEN COMPLETING THE PER

Environmental impacts are first analyzed when preliminary engineering is completed for a proposed project. The first step is to complete the Uniform Environmental Checklist, which then becomes the basis for the analysis that is included in the PER. The checklist is used to identify environmental resources present in the project area and any potential impacts that the project may have on them. Once the checklist has been completed, the engineer must include in the PER an analysis of the impact that the project would have on the environment, and the appropriate short and long-term measures to be used to mitigate any of the potentially adverse impacts.

Step 1 – Complete the Uniform Environmental Checklist.

The Uniform Application Checklist is now available online:

dnrc.mt.gov/docs/conservation/WASACT/Uniform_App_Environmental_Checklist_and_Instructions.doc

[X](#)

The Uniform Environmental Checklist can be completed through an information search and by visiting the area where the project may take place. The checklist does not have to be completed by an engineer; a local official, grant writer or other non-engineering person may perform the actions necessary to complete the checklist if they have the ability to do so. However, the project engineer is required to sign the Uniform Environmental Checklist, certifying that he or she has reviewed the checklist and the information presented, and that it accurately identifies the environmental resources in the area and the potential impacts that the project could have on those resources.

Since the environmental analysis within the PER is based upon the information obtained through the completion of the checklist, it is ultimately the responsibility of the engineer preparing the PER to ensure that the environmental checklist has been properly completed. If the checklist is not completed by the project engineer, it is strongly recommended that the person completing the checklist consult with the engineer to ensure that all needed information is obtained. If the project engineer cannot reasonably ensure that all potential environmental impacts have been adequately identified, steps should be taken before completing the PER to ensure that the information is obtained.

Step 2 – Analyze Potential Environmental Impacts in the PER.

Once the checklist has been completed, the engineer must include in the PER an analysis of the impacts that the project would have on the environment, and the appropriate short and long-term measures to be used to mitigate any of the potentially adverse impacts. The environmental resources present in the project area and the impact that the project may have on them are generally discussed in Section II. Problem Definition. Unique impacts by an alternative are also discussed in Section IV. Alternatives Analysis. Depending on the potential impact that an alternative may have on the environment, letters may need to be sent to specific agencies to obtain additional information. The potential impacts that an alternative may have on the environment is required to be considered as part of the evaluation and selection of the preferred alternative.

Once the selected alternative has been identified, a more detailed analysis is performed along with discussion about how potentially adverse impacts would be mitigated. At this time, several state and federal agencies are required to be contacted regarding the specific proposal to identify any concerns that they may have about the proposed project. The comments provided by these agencies may provide additional, or more detailed, information to the engineer about the environmental resources present that may be potentially impacted and specific measures for mitigating those impacts. Detailed studies, such as wetland delineation, are not required during the preliminary engineering phase. These more detailed studies are performed later as required, probably during the final design of the project.

At a minimum, each of the state and federal agencies listed below must be provided with the following information about the selected alternative, and requested to provide comment on the proposed project:

- 1) A map of the area surrounding the project that identifies the project site, adjacent streets, and other identifiable objects,
- 2) Line drawings or sketches of the project, and
- 3) A narrative description of the project's elements and its location.

State and federal agencies that must be sent information include:

- 1) Montana Department of Environmental Quality;
- 2) Montana Department of Fish, Wildlife and Parks;
- 3) Montana Department of Natural Resources and Conservation;
- 4) U.S. Fish and Wildlife Service;
- 5) U.S. Army Corps of Engineers;

- 6) Montana Historical Society (State Historic Preservation Officer) - In addition to the information identified above, point out any known historic/archeological resources within the project area that may have any local or state significance, and provide any known historic/archeological survey that has been conducted for the project area; and
- 7) Federally listed Tribes affected by the project, the Tribal Historic Preservation Officer (THPO).

POTENTIAL AGENCY CONTACTS FOR ENVIRONMENTAL RESOURCES

- 1) DOC Department of Commerce, Census and Economic Information Center, 301 S. Park Ave., PO Box 200505, Helena, MT 59620-0505. Phone (406) 841-2739
- 2) DEQ Department of Environmental Quality, Permitting and Compliance Division, 1520 E. 6th Ave., PO Box 200901, Helena, MT 59620-0901. Phone (406) 444-4323.
- 3) DFWP Department of Fish, Wildlife and Parks, 1420 E. 6th, Helena, MT 59620. Phone (406) 444-2535.
- 4) DOLI Department of Labor and Industry, 1327 Lockey, PO Box 1728, Helena, MT 59624. Phone (406) 444-9091.
- 5) DNRC Department of Natural Resources and Conservation, 1625 11th Ave., PO Box 201601, Helena, MT 59620-1601. Phone (406) 444-2074. Attention Resource Development Bureau Engineer.
- 6) MDT Department of Transportation, 2701 Prospect Ave., PO Box 201001, Helena, MT 59620. Phone (406) 444-6200.
- 7) SHPO State Historic Preservation Office, 1410 8th Ave., PO Box 201202, Helena, MT 59620. Phone (406) 444-7715.
- 8) BIA Bureau of Indian Affairs, 316 N. 26th St., Billings, MT 59101. Phone (406) 247-7970.
- 9) BLM Bureau of Land Management, 5001 Southgate Dr., Billings, MT 59101. Phone (406) 896-5000.
- 10) FAA Federal Aviation Administration, 2725 Skyway Dr., Helena, MT 59602. Phone (406) 449-5271.
- 11) NPS National Park Service, PO Box 25287, Denver, CO 80225-0287. Phone (303) 969-2850.
- 12) NRCS Natural Resource Conservation Service, 10 E. Babcock St., Bozeman, MT 59771. Phone (406) 587-6811.
- 13) OSHA Occupational Safety and Health Administration, 2900 4th Ave. N., Billings, MT 59101. Phone (406) 247-7494.
- 14) USACE U.S. Army Corps of Engineers, 10 West 15th Street, Suite 2200, Helena MT 59626. Phone (406) 441-1375.
- 15) USDOT U.S. Department of Transportation, 585 Shephard Way, Helena MT 59601. Phone (406) 449-5303.
- 16) USEPA U.S. Environmental Protection Agency, Montana Office, Federal Building, 10 West 15th Street, Suite 3200, Helena, MT 59625. Phone (406) 457-5000.
- 17) USFWS U.S. Fish and Wildlife Service, Ecological Services, 585 Shepherd Way, Helena, MT 59601. Phone (406) 449-5225.
- 18) USFS U.S. Forest Service, Region 1, PO Box 7669, Missoula, MT 59807. Phone (406) 329-3150.

Summary of Environmental Requirements When Completing the PER

- ✓ Complete the Uniform Environmental Checklist.
- ✓ Discuss the environmental resources present in the project area and the impact that the project may have on them in Section II. Problem Definition.
- ✓ Discuss any unique impacts by a particular alternative in Section IV. Alternatives Analysis. Request information from specific State or Federal agencies if needed.
- ✓ Consider environmental resources as part of the evaluation and selection of the preferred alternative.
- ✓ Perform a more detailed environmental analysis, along with discussion about how potentially adverse impacts would be mitigated once the selected alternative has been selected. Request comments from required State and Federal agencies.
- ✓ Include a copy of the correspondence sent to and received from State and Federal agencies.

Note for Those Applying for Rural Development Funding

Rural Development requires a stand-alone Environmental Report. Applicants should coordinate with the RD Area Specialist to determine if the project will likely be a Categorical Exclusion (CE) with a report or an Environmental Assessment (EA). Please contact USDA RD Staff <https://www.rd.usda.gov/mt>.

Note for Those Applying for MCEP or CDBG Funding

Please refer to the MCEP or CDBG application guidelines on CDD website:

commerce.mt.gov/Infrastructure-Planning/. It is also recommended that all applicants contact Commerce staff for technical assistance relating to the environmental documentation needed to be submitted with a MCEP or CDBG application.