

WAC 173-219-210 Engineering report. (1) Submission of engineering report to lead agency. The engineering report is the technical basis for the design of a proposed reclaimed water facility. A generator must comply with the requirements of WAC 173-219-180 (1)(b) and (c) and include a section or stand-alone engineering report meeting the requirements of WAC 173-240-060 for the wastewater treatment facility or chapter 246-272B WAC, Part 4, for the on-site sewage systems, that will provide source water for the proposed reclaimed water facility. This does not apply if the source water is raw sewage.

(2) Engineering report contents. All engineering reports required under this chapter must reflect acceptable engineering practices and demonstrate the capacity of the generator to protect public health and the environment. The lead and nonlead agencies will determine the scope of the engineering report. Reports must include:

(a) Sufficient detail for a professional engineer to complete plans and specifications without substantial changes.

(b) Name and contact information for the owner and the owner's authorized representative(s).

(c) A project description and location maps. The maps must include:

(i) Location of all wastewater treatment and reclaimed water generation facilities, as well as all reclaimed and inadequately treated water storage facilities under direct control of the generator.

(ii) All additional facilities that may be under control of the generator, such as for storage and distribution of reclaimed water.

(iii) All potable water supply sources, wellhead protection areas for municipal water sources, and system facilities within one thousand feet of all identified potential reclaimed water generation, reclaimed water storage, and inadequately treated water storage facility areas, and any proposed use areas.

(d) Proposed quantity and quality of the reclaimed water generated by the reclaimed water facility, including an assessment that the proposed water quality meets the requirements for all proposed beneficial uses included in Table 3 of WAC 173-219-390.

(e) Description of who will operate and maintain the reclaimed water facility.

(f) Documentation of contact with potable water systems and their concerns, if any, as required in WAC 173-219-180 (1)(c).

(g) Applicable requirements of chapter 51-56 WAC, including pipe colors and labeling.

(h) Design information for the reclaimed water distribution system directly under the control of the generator to demonstrate compliance with the requirements of WAC 173-219-360, and if applicable, consistent with pressurized distribution systems in the most recent edition of health's *Water System Design Manual*.

(i) The anticipated amount, characteristics, and strength of the source water to be treated, including BOD₅, DO, TSS, and nitrate levels, and the degree of treatment required to generate proposed reclaimed water quality, and other influencing factors.

(j) Descriptions of proposed treatment processes, including preliminary flow diagrams of critical reclaimed water unit processes, as well as anticipated reliability features and controls. The report must contain sufficient detail to verify that the proposed facility will comply with the water quality and reliability requirements of this chapter.

(k) Description of alternative design options considered.

- (l) Hydraulic, organic, and influent loading rates to the reclaimed water treatment facility.
- (m) Summary of preliminary engineering design criteria for reclaimed water treatment processes, if required, including:
 - (i) Aeration/anaerobic organic carbon reduction.
 - (ii) Nutrient reduction, if required.
 - (iii) Disinfection system selection meeting the requirements of WAC 173-219-340.
 - (iv) Contact time within the disinfectant reactor.
 - (v) Coagulation and filtration processes, if required.
 - (vi) Reverse osmosis or comparable technology process, if required.
- (n) A description of compliance with treatment reliability standards in WAC 173-219-350.
- (o) A statement regarding or demonstration of compliance with:
 - (i) State Environmental Protection Act (SEPA), State Environmental Review Process (SERP), or National Environmental Protection Act (NEPA).
 - (ii) Any applicable state or local water quality management plan or any plan adopted under the Federal Water Pollution Control Act as amended.
 - (iii) RCW 90.46.130, including any compensation or mitigation plans.
 - (iv) Governor's Executive Order 05-05 Archaeological and Cultural Resources.
- (p) A pilot study proposal, if required. The lead agency may require a pilot reclaimed water facility study to evaluate the ability of the proposed facility to meet all reclaimed water quality requirements applicable to the project. The generator must include discussion and determination of the need for a pilot study in the engineering report and include the proposal for it, if required.
- (q) Proposed pipeline separation distances, both horizontal and vertical, consistent with the most recent edition of ecology's and health's *Pipeline Separation Design and Installation Reference Guide*, in order to ensure trench stability and adequate access for repair and replacement, to minimize impacts to nearby utility pipes, and to protect public health.
- (r) **Wetlands.** If a proposed beneficial use of the reclaimed water is for a wetland, or wetland restoration and/or enhancement, the reclaimed water engineering report must include the following:
 - (i) The wetland-rating category, size, hydrogeomorphic class, and vegetation class of the existing and proposed wetlands.
 - (ii) The beneficial uses of the existing and proposed wetland.
 - (iii) The hydrologic regime of the existing and proposed wetland, including depth and duration of inundation, average monthly water level fluctuations, and annual loadings of reclaimed water to the wetlands.
 - (iv) Demonstration that the proposed quality of reclaimed water meets the requirements for this beneficial use.
 - (v) Any studies conducted or additional information applicable to the specific project or site.
 - (vi) Information to support a claim of net environmental benefit, if proposed. At a minimum, a claim of net environmental benefit must demonstrate that the use of reclaimed water:
 - (A) Provides full and uninterrupted protection of all significant beneficial uses existing in the wetland prior to the use of reclaimed water.

(B) Creates new, or enhances existing, beneficial uses of the wetland.

(s) **Surface water augmentation.** If a proposed beneficial use of the reclaimed water is for surface water augmentation, the engineering report must also include the following:

(i) The location and proposed augmentation uses of the reclaimed water.

(ii) Demonstration of how the reclaimed water meets water quality standards at the point of release.

(iii) If applicable, identify potable water supply intakes that are within one thousand feet of the reclaimed water use area, and discuss whether a two hundred foot minimum separation distance between them is sufficient to protect the potable water supply intake(s) from physical impairment potentially created from a reclaimed water use for surface water augmentation. Include demonstration that reclaimed water quality and quantity will not cause need for intake modifications or additional treatment requirements for the production of potable water.

(t) **Groundwater/aquifer recharge.** If a proposed beneficial use of the reclaimed water is for aquifer recharge, the engineering report must also include the following:

(i) Information requested by the lead agency necessary to assess the specific treatment and use of reclaimed water for application to recharge groundwater.

(ii) Site-specific information presented in the following:

(A) Project operation plan.

(B) Conceptual model of the hydrogeologic system.

(C) Description of the legal framework.

(D) Environmental assessment and analysis of any potential adverse conditions or potential impacts to the surrounding ecosystem.

(E) Project mitigation plan, if required by the lead agency.

(F) Project monitoring plan.

(G) Pilot demonstration of project performance.

(u) **Recovery of reclaimed water stored in an aquifer.** Aquifer recharge and recovery projects will be evaluated based on the information provided in the engineering report under (t) of this subsection using the following criteria:

(i) Aquifer vulnerability and hydraulic continuity.

(ii) Aquifer boundaries and characteristics.

(iii) Geotechnical impacts of project operation.

(iv) Chemical compatibility of surface waters and groundwater.

(v) Recharge and recovery treatment procedures.

(vi) System operation.

(vii) Potential impairment of existing water rights.

(viii) Environmental impacts.

(ix) Pilot demonstration project performance.

(v) **On-site sewage treatment.** If the generator is or will be operating an on-site sewage treatment system, the generator may reference an approved engineering report, but the reclaimed water engineering report must also include the on-site sewage treatment system pre-design report, site and environmental review, and engineering report as required under chapter 246-272B WAC, Parts 3 and 4.

(w) **Conveyance in waters of state.** For projects proposing conveyance in waters of the state, the engineering report must include the technical basis for the proposal.

[Statutory Authority: RCW 90.46.015. WSR 18-03-166 (Order 06-12), § 173-219-210, filed 1/23/18, effective 2/23/18.]