ECOLOGY COMMENTS AND RESPONSES TO COMMENTS

FOR THE

NEWPORT WASHINGTON 2023 FACILITY PLAN

Contents

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Responses to Ecology Comments –

Resubmittal Date: December 2022
Comments Received: February 2023

Text from WAC 173-240-060	Explanation	Meets requirements? Yes/No/NA	Comments:	Response:
060(1) Planning Requirements The engineering report for a domestic wastewater facility shall include each appropriate (as determined by Ecology) item required in WAC 173-240-050 for general sewer plans unless an up-to-date general sewer plan is on file with Ecology. Normally, an engineering report is not required for sewer line extensions or pump stations. See WAC 173-240-020(13) and 173-240-030(5). The facility plan described in 40 CFR 35 is an "engineering report."	The report must comply with an up-to-date general sewer plan (WAC 173-240-050) that is on file with Ecology. The community must certify that its general sewer plan adequately addresses the current conditions and service area. If Ecology does not have an adequate, up-to-date, existing general sewer plan, it will identify those portions of Section 050 that include in the engineering report. Where no up-to-date general sewer plan exists, the entity may expand the engineering report to meet the requirements for a general sewer plan, including local approval requirements in Chapters 35.63, 36.70, 36.94, and 56.08 RCW. Ecology does not normally require an engineering report for sewer line extensions or pump stations that conform with an Ecology approved general sewer plan, where Ecology does not provide financial assistance.	Yes	GSP was submitted with the Engineering Report. It has been reviewed and returned with comments. Comments on the GSP question the assumptions and lack of modeling to predict the expected growth rate over the next 20 years.	The assumptions and rationale for a growth rate much higher than the historical have been added to the GSP. The growth in surrounding communities was used as a guide for estimating Newport's future growth. Recent interest in Newport would indicate the community is poised for the growth which neighboring communities have experienced. Even if that growth rate is not recognized in the planning period, it was considered necessary to evaluate system capacities based on that higher growth. The preferred treatment alternative, repair and upgrades of the existing plant, does not include any improvements that increase the capacity of the existing plant, since increased capacity is not needed in the planning period even with the higher growth rate. Collection system capacities are also adequate for the planning period, even with the higher growth rate, so no facilities will be oversized if that growth rate is not realized.
060(2) Sufficiently Complete The engineering report shall be sufficiently complete so that plans and specifications can be developed from it without substantial changes.	"Sufficiently complete" as used in the regulations is defined to mean the report must contain sufficient design information to allow an engineer not involved in writing the report to produce construction drawings for the facility as envisioned by the report writer without any need for process change or more than minor unit-sizing modifications. "Substantial change" means a change in the selected treatment process, facility size, design criteria, performance standards, or environmental impacts, or an increase in total project cost. A substantial change requires an amendment to the approved engineering report. "Adequate detail" means that the report includes suitable attention to the individual elements and components that make up the whole proposed project.	No	The report does not include adequate detail to support the alternative chosen. The report does not include the expected O&M costs associated with each alternative over the life of the project.	Refer to "Page Specific Comment" responses. A table has been included in chapter 8 summarizing each alternatives advantages, disadvantages, capital cost, annual O&M cost, and 20-year net present worth.
060(3) Minimum Information Required	The engineering report shall include the following information, together with any other relevant data as requested by Ecology:			
(a) The name, address, and telephone number of the owner of the proposed facilities, and their authorized representative.	The report must include the name, address, and telephone number of the owner and the owner's representative. The named person or position must have the authority to sign contracts relating to this project. Examples of the owner's representative include the mayor, chair of the city council sewer committee, city manager, public works director, etc. Additionally, the entity may identify a specific project contact person other than the legal representative.	No	The owner is not identified. It is the Town's WWTP but the specific authorize representative is not named.	Added owner's representative information to Chapter 1.

(b) A project description including a location map and a map of the present and proposed service area.	The project description includes the where, what, and why of the report and documentation of the need for the proposed project. Include a location map of the project area, along with a map showing the current and proposed sewer service area. Scale the map(s) so that at least one map shows the complete, current, and proposed service areas along with the relationship of this service area to adjacent service areas. One map must show the existing collection system changes and the proposed locations of land treatment of wastewater. Include a current zoning map for the service area to support the population and waste load projection process.		Please provide a map showing the dischargers upstream and downstream of the discharge.	Map has been included in Chapter 2.
(c) A statement of the present and expected future quantity and quality of wastewater, including any industrial wastes which may be present or expected in the sewer system.	This includes an analysis of the current waste load (flow, BOD, TSS, etc.) received by the treatment plant, its sources (the percentages of domestic, commercial, and industrial dischargers), the characteristics of industrial discharges/pretreatment, the current I/I flows, CSOs as defined in Chapter 173-245 WAC, diurnal flow and loading variations, and seasonal load and flow variations. Include at least one full year of CURRENT wastewater flow and loading data to justify appropriate design parameters for the new system (more than one year of data is preferable). Data must include sufficient detail to demonstrate the degree of flow and loading variability expected. Wastewater characterization must also identify any constituents that may have a detrimental impact on any proposed unit process (i.e., chemicals toxic to microbes, constituents that may interfere with disinfection, high variability in peak flows and loading). Proponents must ensure that laboratory data were obtained from an Ecology accredited laboratory. Proponents must obtain flow data from meters that have a documented history of proper calibration. Include the location of influent and effluent sampling, the type of samples taken, and the locations of treatment process return streams. To demonstrate that the data is truly representative of current conditions, RCW 90.48.495 requires the entity consider water conservation measures in sewer plans. Include a discussion of water conservation measures considered or under way and their anticipated impact on public sewer service. Estimate the future (normally 20 years from the date of the report) waste load and sources of wastewater including the above items. Base the estimates on the present (or known future) zoning pattern, council of government's population forecasts, historical population trends, existing industrial users, and anticipated future industrial wastewater sources.	No	The proposed alternative is based on future regulations. Please provide the data and listings that would support selction of a preferred alternative. Please see comments on the population estimates in the GSP. This community is proposing a population growth of 2.5 percent. Even duing past economic booms, the growth has not exceeded 1%. The GSP must provide adiquated documentation to support expected growth rate. This is very important as the sizing and thus the cost of the treatment units and the estimated solids will depend on this. An over designed facility will not be an asset to Newport.	A detailed alternatives comparison table has been included to summarize the considerations for the selection of a preferred alternative. The assumptions and rationale for a growth rate much higher than the historical have been added to the GSP. The growth in surrounding communities was used as a guide for estimating Newport's future growth. Recent interest in Newport would indicate the community is poised for the growth which neighboring communities have experienced. Even if that growth rate is not recognized in the planning period, it was considered necessary to evaluate system capacities based on that higher growth. The preferred treatment alternative, repair and upgrades of the existing plant, does not include any improvements that increase the capacity of the existing plant, since increased capacity is not needed in the planning period even with the higher growth rate. Collection system capacities are also adequate for the planning period, even with the higher growth rate, so no facilities will be oversized if that growth rate is not realized.
	Include a copy of the current discharge permit and any compliance orders in the engineering report. For new discharges, include a draft permit. Use the evaluation results of Sections 3(e), (h), and (I) to estimate the degree of treatment needed in lieu of the existence of a current permit or a draft permit prepared by Ecology.			

(d) The degree of treatment required based upon applicable permits and regulations, the receiving water, the amount and strength of wastewater to be treated, and other influencing factors.	At a minimum, the engineering report must contain an evaluation of the WWTP discharge compliance with water quality criteria (Chapter 173-201A WAC). For municipal WWTPs, this means an analysis of ammonia and chlorine that may indicate the need for nitrification or dechlorination. If the receiving water is listed on the 303(d) list as impaired, the analysis must include the parameters identified in the impairment listing. Design values must align with waste load allocations established in a TMDL, if available. Additionally, the report must evaluate the effects of industrial discharges to the collection system on the final effluent, including the potential for toxic materials to pass through the treatment facility to the final effluent or sludge. The engineering report must determine if the discharge from a proposed system will cause a measurable change in existing water quality measured at the boundary of the chronic mixing zone if one has been authorized. A measurable change is any one of the following: 1) Temperature 2) Dissolved oxygen decrease of 0.2 mg/L or greater. 3) Bacteria count increase of 2 cfu or greater. 4) pH change of 0.1 units or greater. 5) Turbidity increase of 0.5 NTU or greater or. 6) Any detectable increase in the concentration of a toxic pollutant or radioactive substance. The proponent must consult with regional Ecology staff to determine the level of analysis needed to comply with the Antidegradation provisions of WAC 173-201A-300 to 330.	Yes	The degree of treatment will essentially be the same as the existing facility. I do not expect limits to change in the next permit. The facility plan is not requesting an increase in flow so an Teir II Antidegradation evaluation will not be needed.	Noted.

(e) A description of the receiving water, applicable water quality standards, and how water quality standards will be met at the boundary of any applicable dilution zone. (173-201A-10Q WAC)	Give the name, location (river mile, latitude/longitude, waterway segment number, township/range, etc.), and water quality classification of the proposed receiving water. Summarize any existing receiving water data (monitoring stations reporting to STORET, CRMS, USGS reports, NOAA reports, FERC license reports, data collected for this report, etc.). Include data collected for this report in an appendix to the report. For fresh water streams and rivers, determine and provide the 7Q10 (seven day, ten-year recurrence low flow) flow in the report. This is the flow used for calculating mixing zone sizing in streams and rivers. For salt water and estuaries, determine and provide current velocity, appropriate salinity, density, and temperature profile conditions in the report. This information is then used to design and evaluate the size and shape of allowable mixing zones. Evaluate toxic chemicals in the effluent (toxic pollutant scan may be required). This includes an evaluation of the effects of toxic chemicals on migratory fish (i.e., barrier to fish migration). Evaluate the applicable numerical Water Quality Criteria (EPA) and determine which criteria are limiting for this discharge (see Ecology's "Permit Writer's Manual"). The NPDES permit may contain requirements for whole effluent toxicity testing and limits (WET rule, Chapter 173-205 WAC). Identification of the various chemicals that may be present in the discharge and the species present in the receiving water may affect the need or frequency of biomonitoring WET testing. In salt water, evaluate not only the effects of chemical discharges, but also the impacts of bacterial discharges on shellfish beds (certification or decertification). Refer to the criteria and information in the DOH documents "Special Sewage Works Design Consideration for Protection of Waters Used for Shellfish Harvest," "Water Supplies or Other Areas of Special Public Health Concern," and "Shellfish and Domestic Wastewater Discharge Outfall Projects," Oct. 1995 (interagency permit streamline). For groundwater discharges, address the minimum requirements of the hydrogeologic study. These requirements are listed in E3-4 and are fully described in the "Implementation Guidance for Ground Water Quality Standards" (Ecology, 1996; Revised October 2005).	NO	The report is for a facility with average design flow of 0.5 MGD A priority pollutant scan is not required. WET testing is not required for the report. Please include the data used in an appendix to the report.	7Q10 added to ch4 as well as ambient river data and text regarding WET and priority testing
(f) The type of treatment process proposed, based	Consider at least one of each of the following wastewater treatment categories and options: fixed growth processes, suspended growth processes, land treatment processes, lagoons, innovative treatment processes, nonstructural alternatives (operational changes), and no action. The report must include the no action alternative. Rank the alternatives considered (with their reasons) according to their ability to meet the receiving water quality standards, costs, and other objectives of the engineering report.		The AKART analysis does not identify and evaluate all of the options available. The report should at least consider land treatment. The AKART looks at Activated sludge and membrane treatment technology. There are a number of possible package plant types that may work well for this community given the expected treatment level will remain the same. If the selected alternative is not the lowest cost effective alternative, provide discussion to support the decision to not choose the cost effective alternative. If the proponent will seek Ecology funding from the Centennial Clean Water Fund and/or the Sate Revolving Fund, project eligibility may be limited if the least cost alternative is not selected. Consult with regional Ecology staff in advance to identify how alternative selection may impact project eligibility.	See discussion in Ch 6. Discharge allowed October - April: 80 acres under irrigation and 4.5 million gallons of storage. No surface discharge : 230 acres & 90 MG of storage--> City thinks this is not an option, However a variation of reuse may be a way to cost effectively manage heat load in the summer.

upon the character of the wastewater to be handled, the method of disposal, the degree of treatment required, and a discussion of the alternatives evaluated and the reasons they are unacceptable.	From this group of ranked alternatives, select for further development and evaluation a top group of three to five distinct, final alternatives that meet the report's objectives. Further evaluation includes environmental impact, applicability to available site(s), cost effectiveness (capital cost and present worth cost), ease of operation, and other criteria deemed important by the community. Base costs on EPA cost curves, CAPDET analysis, or any other cost estimating method acceptable to Ecology. A final alternate recommended for implementation should rank first in this further evaluation. The selection of the recommended alternate includes a discussion of why the other alternates were not selected. If the selected alternative is not the lowest cost effective alternative, provide discussion to support the decision to not choose the cost effective alternative. If the proponent will seek Ecology funding from the Centennial Clean Water Fund and/or the Sate Revolving Fund, project eligibility may be limited if the least cost alternative is not selected. Consult with regional Ecology staff in advance to identify how alternative selection may impact project eligibility.	No	None of the treatment options evaluated provided the 20 year O&M costs associated with the option. Please provide a more complete evaluation and include the 20 yr O&M costs associated with each treatment option that is a reasonable possibility. If an option may be eliminated because it is clearly not viable i.e., the do nothing option then the O&M costs are not required. Once you are to the 2-3 most viable options, then the O&M cost must be provided. Please provide a table with the options, the pros, cons, capital cost, Operatios cost, Maintenance cost and reason for selection or elimination.	O&M costs for each alternative have been calculated and are reported in Table 8-1. Appendix contains a summary of the calculations. Costs for the selected alternative as shown in the draft and the other competing alternative have been significantly updated. The selected Alternative B addresses the upgrades deemed necessary to address the most critical treatment process needs to assure water quality compliance and worker safety issues.
(g) The basic design data and sizing calculations of each unit of the treatment works. Expected efficiencies of each unit, the entire plant, and character of effluent anticipated.	Provide basic design data and sizing calculations for all of the final alternates as part of the ranking process. Use the data to estimate construction and operation and maintenance costs for cost comparisons as required in 3(p) below. The detailed sizing calculations and design criteria used for sizing the selected alternative treatment systems must agree with the appropriate chapters of this manual or other authoritative reference. Thoroughly justify any deviation from the design criteria in this manual. Section 3(c) above provides the basic hydraulic and pollutant loading data to be used for sizing the treatment systems. Describe the age, capacities, and adequacy of all existing treatment units used in the upgraded facilities.	No	The report does not provide the sizing calculations for the proposed treatment units.	Added design volumes to figure 6-6
(h) Discussion of the various sites available and the advantages and disadvantages of the site(s) recommended. The proximity of residences or developed areas to any treatment works. The relationship of a 25-year and 100-year flood to the treatment plant site and the various plant units.	This is part of the alternative evaluation process (c) through (f). When evaluating multiple potential treatment plant sites, assess their topography, flood potential, impacts to existing wetlands, soils suitability for construction, zoning, and proximity to residential areas. Do not limit flood analysis to determining whether or not a site is included within a flood plain mapped on a FEMA Flood Insurance Rate Map (FIRM). Evaluate the flooding potential of any drainage way passing through or near the site for site flooding potential. Show the existence of wetlands on a proposed site on the site map. Mapping the extent of wetlands may require the use of a wetlands specialist. Compare wall and floor elevations to potential 100-yr flood elevations to ensure that basins are not over-topped or buildings flooded if major flooding occurs. Consider using a continuous hydrologic and hydraulic model with long term (20+ years) precipitation record to model the development and its contributing drainage area to evaluate the hydraulic capacity of the conveyance system and flooding potential. During the planning stage, conduct adequate soils analyses at the final alternate sites to understand the ability of the soils to structurally support the proposed structures or provide the wastewater treatment required. That is, perform enough soils analyses to ensure that during design or construction a “changed site condition” clause does not need to be invoked because the soils are unable to perform as required).	no	Please discuss the proximity of any residential locations in proximity to the selected site for the preferred alternative.	A map of residences in proximity to the selected alternative has been provided. The new facility is in close proximity to the existing facility and does not impact adjacent residences any more than the existing facility.

(i) A flow diagram showing general layout of the various units, the location of the effluent discharge, and a hydraulic profile of the system that is the subject of the engineering report and any hydraulically related portions.	Proponent must present flow diagrams for each of the final alternates considered. Reports must include a schematic flow diagram showing all wastewater liquid and solids flow paths. Include proposed sampling locations as well as a scaled site layout (with the site topography) that shows how proposed treatment units fit on the land available. Develop hydraulic profile(s) in detail for the selected alternate. Include the hydraulic profile for at least the high plant flow and high receiving water flow/elevation and low plant flow conditions. Include hydraulic profiles for other critical flow conditions if necessary to justify unique design elements or operating conditions.	No	Need to provide both flow diagram and hydraulic profile for the preferred alternative. Please see comment about providing an adiquate AKART evaluation. Please provide flow diagram and hydraulic profile for selected alternative.	Flow diagram and HGL of selected alternative have been added to Chapter 6.
(j) A discussion of infiltration and inflow problems, overflows and bypasses, and proposed corrections and controls.	Evaluate the existing treatment plant flows showing the degree of I/I in the collection system. The analysis must include a review of the age and characteristics of the existing sewerage system, flow monitoring in the system and location of sewer lines with high I/I. A complete evaluation of I/I in a system requires at least one year of testing to establish the baseline flows and conditions for further evaluations. Refer to section C1-7 for further guidance on conducting I/I investigations. Identify discharge locations for sanitary sewer overflows (SSOs) and combined sewer overflows (CSOs) on a map and discuss their current frequency and impacts on receiving water. Include any recommendations of how to eliminate SSOs and minimize CSOs and their effect on the receiving water. Ecology will not approve plans that will result in an increase of the frequency or impact of SSO and/or CSO discharges. Chapter 173-245 WAC requires municipalities to submit a CSO reduction plan if their sewer system contains any CSOs. The final project recommendation must include plans for I/I reduction, SSO elimination, and incorporate recommendations presented in a CSO control plan that conform to Chapter 173-245 WAC.	No	Please see comments in the GSP regarding I&I evaluation.	See revised GSP with response to Ecology review comments included.
(k) A discussion of any special provisions for treating industrial wastes, including any pretreatment requirements for significant industrial sources.	Identify any industrial wastes that require special handling by the treatment plant and discuss proposed methods for handling those wastes. Reference appropriate treatability studies for existing industrial wastewaters to identify the potential to interfere with proposed treatment plant unit processes. Identify the extent of industrial pretreatment needed to ensure stable plant operation and water quality protection.	NA	GSP indicates that there an no industrial dischargers connected to the collection system for Newport or Oldtown.	
(l) Detailed outfall analysis or other disposal method selected.	See 3(e) above. The outfall location and diffuser design, whether existing or proposed, must ensure effluent discharge will meet applicable water quality standards presented in Chapter 173-201A WAC. The report must include a detailed outfall analysis to justify that water quality standards will be met at the point of discharge or at the boundaries of acute and chronic mixing zones as defined by 173-201A-400 WAC. The analysis must be consistent with Ecology's "Guidance for Conducting Mixing Zone Analyses" (Publication 97-e12) and EPA's "Technical Support Document for Water Quality-based Toxics Control". Ecology encourages the use of computer dilution models, such as PLUMES or CORMIX, that are calibrated to actual conditions in the field to develop the outfall analysis. The analysis must include all critical flow and loading situations expected for the facility. For river discharges the low flow must represent the 7Q10 flow or other regulated low flow. Marine discharges must use mean lower low water elevation and seasonal conditions that result in the greatest stratification in the water column. Ecology considers the outfall and diffuser a basic unit of the treatment system and proponents must include them in the data for 3(g) above. For land treatment of wastewater, see (4) below.	No	Must describe the outfall pipe and diffuser. What shape is it in? Must provide a model using Cormix demonstrating that the mixing zone size and dilution factors under the 7Q10 river flow. It is not necessary to do a mixing zone evaluation but you must provide the size and dilution factors for the outfall and diffuser.	Added info to chapter ch 5 (5.5.7), mixing zone and dilution factors discussed in 4.5, noted both technology and water quality based limits.

(m) A discussion of the method of final sludge disposal and any alternatives considered.	Include a residual solids management plan that evaluates the expected solids quantities and quality, and the potential disposal or beneficial use options (including regional biosolids disposal and utilization options). The management plan includes evaluating sludge treatment options at the plant and relating these treatment options to the sludge disposal or biosolids utilization options considered. The proponent must ensure compliance with applicable laws and regulations (40 CFR 503 and 258), Ecology's Minimal Functional Standards and local permits. Guidance on the content of a residual solids management plan is available in Chapter S of this manual and from Ecology's Regional Biosolids Coordinator.	No	Need to expand on this. The organization was hard to follow. Please provide each option and the pros and cons. Please provide the design assupmption and sizing calculation for the identified preferred alternative. Please provide a description of the solids handling requirements for each option. Are there additional solids handling requirements for a membrane filtration facility?	Added discussion to Ch 7. City sends unclassified biosolids to Barr-Tech which is the planned future disposal method for each alternative.
(n) Provision for future needs.	The proponent must discuss the future wastewater needs of the community with an emphasis on identifying potential alternatives to accommodate for future growth. The discussion should include the potential to expand an existing treatment plant on a given site, construction a new plant on an alternate site (including locations to construct a new facility), and the ability to extend the sewerage system. Identify the population, industrial, and commercial growth expectations of the service area. Growth expectations should consider high, medium, and low growth profiles. The time frame for this evaluation may range from five years for a phased project to 20 years for complete build out of the service area. Ecology recommends that proponents include 20 years of treatment capacity in each project.	Yes	This did include a discussion of toxics. The City does not have any industries so it is unlikely that they would be required to treat for toxics.	Noted.
(o) Staffing and testing requirements for the facilities.	The comparison of alternatives must discuss the potential staffing needs of each final treatment alternative, including staffing levels and specialization needs of each. EPA's document "Estimating Staffing for Municipal Wastewater Facilities" provides an acceptable estimating tool for this purpose. Evaluate the facility during the design phase facility classification under Chapter 173-230 WAC. The staffing plan must include at least one operator matching the facility classification as the operator in responsible charge. Describe the selected alternative in adequate detail to evaluate the facility classification.	No	The City would be required to have a Group III operator for a membrane treatment facility. It may require that the operator be onsite all the time an may require that someone be available on the weekends. Please provide the staffing requirements for each alternative. Please provide the facility classification for each alternative. Please include backup power requirements. Please provide the unit process testing requirements for the preferred alternative and the approximate costs associated with the internal testing required to operate the system.	Alternatives 1-3 have a Group II operator classification. Alternative #4 has a Group III operator classification. Standard effluent testing is all that will be required for the MBR plant. DO is continuously monitored. All other processes are automated.
(p) An estimate of the costs and expenses of the proposed facilities and the method of assessing costs and expenses. The total amount shall include both capital costs and also operation and maintenance costs for the life of the project, and shall be presented in terms of total annual cost and present worth.	The cost estimate must be the engineer's best opinion of probable final costs based on an intermixed estimate of quantities and costs. Proponents interested in obtaining construction financial assistance from Ecology must provide a project financing (user charge) evaluation. The financing evaluation must include the potential Ecology grant or loan funding in addition to an analysis that does not include any Ecology grant or loan funding. Also include a present worth analysis of O&M costs for each of the final alternates as part of the ranking process.	No	As previously stated the costs associated with the preferred alternative must include all costs including daily operations i.e. are chemical aditives required if so how much, Staffing cost, power costs, maintenance costs i.e. life a membrane and expected replacement cost. The life is typically 10-15 year so will need to be replace once or during the 20 yr design period.	The operation and maintenance costs have been summarized in the plan along with a more detailed evaluations of deficiencies and related capital costs to address the deficiencies. The detailed O&M cost evaluations and capital costs are included in the appendices.
(q) A statement regarding compliance with any applicable state or local water quality management plan or any such plan adopted pursuant to the federal Water Pollution Control Act as amended.	Identify any applicable water quality management plan connected to the proposed project and discuss how the project is connected to that plan.	NA		

(r) A statement regarding compliance with SEPA and NEPA, if applicable.	Prepare an environmental report that identifies the potential environmental impacts of the project. Include a copy of the completed SEPA checklist along with the appropriate adopted SEPA determination (Determination of No significance, mitigation plan, Environmental Impact Statement, etc.) in the engineering report. The action taken that requires SEPA is the adoption of the engineering report and its recommended project. For federally funded projects, excluding SRF Loans, append a NEPA environmental assessment or reference to an applicable FEIS and final NEPA action in the engineering report. The local government must make final SEPA declaration prior to approval of the engineering report. If the project anticipates Ecology SRF or Centennial Grant funding, the proponent must also complete the SERP process. This process is in addition to the SEPA process, but can be replaced by NEPA. See G1-2.6 for more information about SERP.	No	Final submittal will require SEPA	SEPA has been completed and will be included in final submittal.
060(4) Land Application Discharges The engineering report for projects utilizing land application, including seepage lagoons, irrigation, and subsurface disposal, shall include information on the following together with appropriate parts of subsection C(3) of this table, as determined by Ecology: (a) Soils and their permeability. (b) Geohydrologic evaluation of such factors as: (i.) Depth to ground and ground water movement during different times of the year. (ii.) Water balance analysis of the proposed discharge area. (iii.) Overall effects of the proposed facility upon the ground water in conjunction with any other land application facilities that may be present. (c) Availability of public sewers. (d) Reserve areas for additional subsurface disposal.	Section (4)(c) refers to the availability of public sewers connected to a conventional treatment facility. One criterion (especially for grant/loan considerations) used to compare conveyance and treatment at a WWTP versus treatment on-site is a 20-year present worth calculations. If the present worth to convey wastewater to a larger, conventional facility is equal or lower than treatment in an approved on-site wastewater treatment facility, then the entity should select conveyance and treatment. If an approved on-site treatment process costs less (present worth basis), site soils can provide drainage, and the entity has addressed other environmental and local concerns, the proponent should select the on-site treatment. The selection process is related to long-term reliability of the treatment and disposal process. Section (4)(d) requires adequate area for 100% replacement of the drain field if the entity selects subsurface disposal (see DOH's "Design Standards for Large On-Site Sewage Systems"). See Chapter E3 for determining the ground water quality criteria for land treatment process. NOTE: WAC 173-240-035 restricts the use of subsurface wastewater disposal systems if other methods are available. Satisfying the above requirements will satisfy the reasonability test (WAC 173-240-035).	No	The AKART should at least discuss land treatment as a possible option. If it is not an option, please provide a discussion on why it was eliminated.	See discussion in chapter 6 Discharge allowed October - April: 80 acres under irrigation and 4.5 million gallons of storage. No surface discharge : 230 acres & 90 MG of storage--> City thinks this is not an option, However a variation of reuse may be a way to cost effectively manage heat load in the summer.

Washington Department of Ecology Comment	Comment Addressed	Comment Response
Include an appendix with all of the design calculations for the pumps, pipes, and unit process for the preferred alternative.	Y	Appendix with calcs added

Page	Section	Washington Department of Ecology Comment	Comment Addressed?	Response
ES-1	Executive Summary	It is WAC 173-240-060 not 173-240-030.	Y	Reference to WAC 173-240-030 has been revised to WAC 173-240-060
1-1	1.1	It is WAC 173-240-060 not 173-240-030.	Y	See above.
1-2	Figure 1-1	Please show the service boundary for Newport and for Old Town	Y	Figure 1-1 of the collection systems has been revised to show service boundaries.
1-3	1.2	The bullet list indicates there is a Receiving Station, this is the septic receiving station. The GSP states that they do not accept septic wastes. Why aren't they accepting septic wastes?	Y	Septic receiving station is still in place but is no longer used due to operational concerns. Operators report that discharges to the septic receiving station are typically highly anerobic and contain an excess of FOG. The anaerobic digester is offline in its current state, so operators are concerned about septic discharges interfering with ability to treat influent to the WWTP.
1-4	1.2	Executive Summary states that biosolids are land applied. Are they sent to a compost facility or are they land applied?	Y	Biosolids are sent to BarrTech Composting for processing and 'disposal' via composting. Report has been updated.
1-4	Table 1-1	has errors in numbering of the Appendices. Please double check numbering.	Y	Appendices have been revised since original draft. Numbering updated.
2-2	2.3	It looks like Figure 2-1 includes other City owned maintenance features. Is the structure that appears to be a roads sand stockpile considered part of the wastewater treatment plant footprint?	Y	The structures are used for general maintenance activities including shop space and stockpiling. The structures are on the same City-owned parcel as the wastewater treatment plant.
3-3	3.2.1	EPA guidance on I&I was based on domestic flows per person prior to low flow devices. Best professional judgment should be used here for recommendations. The facility is clearly impacted by I&I issues. I would encourage Newport to address I&I in both the city proper and in the MOA with Old Town. Simply writing off I&I because of a 40 year old guidance document is not	Y	The City recognizes that extraneous flow due to inflow and infiltration has negative impacts on the WWTP and that meeting criteria in the 1985 EPA Guidance Document is not necessarily indicative of a sewer system with low I/I. Report has been revised to make this clear. The City is actively investigating I/I and procuring funding for identified I/I reduction projects.

3-9	3.3	Population estimates use 2.5%. As discussed in the GSP, the historic growth does not support this estimate. Please provide the model used to identify a growth rate of 2.5%.	Y	The assumptions and rationale for a growth rate much higher than the historical have been added to the GSP. The growth in surrounding communities was used as a guide for estimating Newport's future growth. Recent interest in Newport would indicate the community is poised for the growth which neighboring communities have experienced. Even if that growth rate is not recognized in the planning period, it was considered necessary to evaluate system capacities based on that higher growth. The preferred treatment alternative, repair and upgrades of the existing plant, does not include any improvements that increase the capacity of the existing plant, since increased capacity is not needed in the planning period even with the higher growth rate. Collection system capacities are also adequate for the planning period, even with the higher growth rate, so no facilities will be oversized if that growth rate is not realized.
3-11	3.4	As previously stated, the use of old guidance to evaluate whether the City is experiencing unacceptable inflow and infiltration is not adequate. The old guidance was based on a much higher water use per capita low flow devices have change the per capita estimate from 100 to 70 gpcd. The operators experience higher flows and plant difficulties in the wet season. If you were able to shave off the peaks due to the wet season what would be the design flow needed for the upgrade. How significant would the savings be? Will the I&I make it difficult to achieve the % removal required?	Y	See response regarding I/I above. Recommendations do not include increasing the design flow for upgrades.
4-2	4.2	For the list of uses, it looks like you used 173-201A Table 602: All Streams Flowing into Idaho. The Pend Oreille River flows from Idaho into Washington. This should not be Char spawning/rearing. From the Canadian Border to Idaho border this is just spawning/rearing.	Y	List has been revised to include "spawning/rearing" without "Char."
4-3	4.2.1	The Pend Oreille River is on the 305 b list as a category 4A for Temperature. This is no longer on the 303(d) list because a TMDL has been approved and is being implemented. The river is on the 303(d) list for pH in the downstream segment.	Y	Report updated to note Pend Oreille River near Newport was 303(d) listed for temperature but a TMDL has now been approved since 2019.
4-3	4.2.2	The natural conditions criteria which allowed for a 0.3 degree increase was denied by EPA.	Y	Discussion of the natural conditions criteria has been removed.

4-3	4.2.2	With respect to the Temperature TMDL on the Pend Oreille, seven facilities have National Pollutant Discharge Elimination System permits to discharge to surface waters. However, only four facilities (the town of Ione, city of Newport, Ponderay Newsprint and the Pend Oreille Mine) discharge when the river temperatures exceed 20^{o}C. All seven facilities will be required to monitor temperatures, and the four facilities will have temperature limits placed in their permits.	Y	Report has been revised. a waste load allocation of 47,600,000 kcal/d was assigned to Newport to protect against future temperature increases. The waste load allocation was calculated based on the permitted capacity of 0.5 MGD and an effluent temperature of 22.9 °C. The heat waste load allocation limit is not expected to require any facility improvements over the next 20 years; however, effluent temperature should be closely monitored to track heat discharged to determine when mitigation may be required.
4-3	4.2.2	Newport was assigned a waste load allocation of 47.6x10^{6} kcal/d. So Newport will have a temperature limit in the permit based on the waste load allocation.	Y	See above.
4-5	4.2.3	WQS for PCBs is 7 pg/L.	Y	Revised report to 7 pg/L.
4-5	4.2.3	The report states that Newport may have to treat for PCBs or other toxics. Unless Newport has an industry that may discharge PCBs or other toxics to the collection system, they will not have to complete a priority pollutant scan. The permit writers manual has guidance for implement testing using high resolution methods. Unless there is a reason such as an industrial discharger, itis unlikely that a small community discharging less than a million gallons of wastewater per day would have to test for toxics.	Y	Report is revised to note that Ecology's current PCB position is that small communities will not have to test for priority pollutants unless an industry that may discharge toxics locates in Newport (or Oldtown).
4-6	4.3	Last paragraph should say Group II certified Operator. A class II plant is on that requires backup power to assure ongoing operations during an outage. This will be a Class II plant but a Group II operator unless the technology changes (membrane treatment) and requires a Group III operator.	Y	Nomenclature has been corrected in report to "Group II"
4-6	4.4	Violations were only evaluated from 2015 to 2020. I am not sure why you cut this off at 2020. According to the PARIS database, Newport had 18 violations in 2020 and 2021. This is a significant number of violations. These violations were primarily in months with significant I&I. Violations were for fecal coliform and solids. Newport did not report any violations in 2015-18. They did report two months of temperature violations and one fecal violation in 2019. I am not sure why they started to report violation. It is my understanding that they did have an operator change and that the new operator is very diligent in providing representative data.	Y	Report has been updated to note the violations in 2021 and 2022. The violations are not associated with high flows (all flows ~0.2 MGD) and continue to stem from difficulty flow pacing chlorine (freezing conditions) and operating when one clarifier is out of service. The operators continue to optimize the functionality of the equipment available.
4-6	4.4	The fecal violation reports indicated that they were a result of increased flow due to I&I and the inability of the facility to flow pace the chlorine. I&I has had a negative impact on the facility's compliance.	Y	See above.
4-7	4.5	Has a mixing study been done in the past? If so please include it as an appendix.	Y	No mixing zone study has been done.
4-7	4.5	Please see WAC 173-201A-400(7)a for the size limitation for the mixing zone. These are not correct.	Y	Revised description of chronic and acute mixing zone size limitations.

4-7	4.5	Ecology evaluates the dilution factors based on flow. What is the size of the mixing zone at the 7q10 flow. Does the mixing zone exceed the size restrictions?	Y	Newport's chronic mixing cannot exceed more than 300 feet plus the depth of water above the outlet ports downstream, or more than 100 feet upstream, cannot be wider than 25% of the river's width nor take up more that 25% of the rivers flow. The acute mixing zone cannot exceed more than 10% of the chronic mixing zone. The actual mixing was not modeled nor measured in the field since the potential to exceed criteria (in the maximum sized mixing zone allowed, see above) is very low. Future permits may require the mixing zone to be modeled or measured.
4-8	4.6	Ecology typically does not require priority pollutant scans or high resolution testing for facility that discharge less than 1MGD. The average flow for this facility is 0.5MGD and that will go down with I&I reduction efforts. I do not expect Newport to have to worry about toxics unless an industry known to discharge toxics moves into the community.	Y	Report revised to note that small community dischargers typically do not have to monitor for toxics unless there is an industry using the system that may discharge toxics.
4-8	4.6	I am not sure what this means, please clarify: "The City should review the existing pretreatment program and source control programs with an eye towards reducing the compliance effort to meet future discharge limits for toxics."	Y	Revised report "Should toxic testing be required, and results find toxics reductions are necessary, the City should review existing dischargers to find potential source control opportunities with an eye towards reducing the compliance effort to meet potential discharge limits for toxics... , toxics impacts by industries wishing to locate in Newport's service area may have on wastewater facilities, should be well understood before allowing industries to locate in the area."
4-8	4.6	The report refers back to Chapter 3 regarding the growth rate and the flows. Please see my previous comment on growth rate used in the report.	Y	See response above.
5-1	5.1	5.1 Calls out the wrong figure in the last sentence. The final figure called out should be Figure 5-2.	Y	Revised figure callout. Note numbering has generally changed due to insertion and deletions during revisions.
5-9	5.4.3.2	They have two screens why is flow sent down stream when the drum screen is out of service?	Y	Report has been revised for clarity. Correct they have two screens, and flow is not sent downstream unscreened unless an event caused both screens to be out of service.
5-12	5.4.4	The surface overflow rate is related to the surface area and the daily flow. What is the diameter? What is the surface area? What is the average load Max month load and Peak load used for these calculations?	Y	Table revised for clarity. Diameter, surface area, average load max month and peak load now reported with hydraulic retention times.
5-12	5.4.4	The report indicates that the concrete is structurally sound but the structure does not meet recommended design criteria. The side wall depth should be 8-14 feet. Is this deep enough to adequately settle the primary solids with out getting scour and sending solids to the oxidation ditch? Should it be retrofitted and brought on line. Does the under sizing of this unit cause any treatment or operational issues?	Y	Facility is structurally sound, and performs adequately under existing loading. Adequate HRT will not be achieved under 2041 loading.
5-16	5.4.5.1	Is lack of redundant unit a deficiency?	Y	Yes, noted in report that it cannot be taken offline for any maintenance or repair work because there is no redundancy in the oxidation aerator ditch.

5-18	5.4.6	The ASCE MOP indicates that secondary clarifiers should be 12-16 feet deep. These are not deep enough. What affect is that having on the settling and the operations of the clarifier. They have had solids overflowing into the chlorine contact chamber. Is this part of the problem?	Y	The secondary clarifiers are anticipated to be sufficient throughout the planning period with both clarifiers online; however, taking one clarifier offline for maintenance or other makes it difficult to maintain in compliance with permit. A third clarifier would be needed to allow either of the existing clarifiers to be brought offline and still reliably produce effluent in compliant with the permit.
5-19	5.4.6	The staff have indicated to me that they have had issues with solids settling in the secondary clarifier. They indicated that they had solids settling in the chlorine contact chamber. Has this issue been resolved?	Y	Frequent repairs made to the secondary clarifiers, as described above, cause solids to settle in the chlorine contact chamber. This issue has not been resolved yet.
5-22	5.4.7	Did the staff mention that they have solids settling in the chlorine contact chamber?	Y	See the two responses above.
5-22	5.4.7	Chlorine gas has safety issues. They should be listed.	Y	Report now notes chlorine gas used in the disinfection is highly toxic and can be extremely hazardous if improperly handled. List of potential dangers is presented.
5-22	5.4.8	Has the City consulted with the US Army Corp of Engineers and Ecology's Shorelines and Environmental Assessment Program regarding shoreline work?	Y	Yes. Note the project was performed by others, and the City has indicated a JARPA has been submitted
5-22	5.4.8	In what shape is the 10-inch diameter cast-iron outfall pipe? Did the City camera the pipe and inspect the outfall for this report? If not, that should be done.	Y	City does not have records of a camera inspection of the outfall. Noted that outfall should be camera inspected .
5-24	5.5.2	The first sentence is not clear. I think it is saying, if the digester were functional, the operating and design conditions are listed in Table 5-7. Is this correct? Then I think you are say that if they upgrade the needed pumps etc. the digester would be useable for the remainder of the planning period. Please clarify.	Y	Correct. Report has been revised to more clearly note that Table 5-7 presents values if the Anaerobic Digester were to be restored to its original condition.
5-31	5.6.2	Is the utility water system potable water or treated effluent?	Y	Potable water from the municipal system is being used because the reclaimed water system is not functional. This is now clarified in the report.
5-31	5.6.2	Page 5-31 the system uses 171,000 gallon of potable water monthly. Please indicate how this water is used. Is it used for irrigation of the grounds? This seems like a lot of water if it is just used for spray bars, lab, and cleaning.	Y	Water used in headworks operations and maintenance, sludge pump station, and belt filter press. Note that screens have historically been used with wash sprayed every time the drum rotates to prevent accumulation of wet wipes which has destroyed a screen in the past.
5-32	5.6.2	Above, you indicated that the system does not meet backflow prevention requirements. This should be identified as a deficiency and should have recommendation for upgrade.	Y	Noted and recommendation made for upgrading back flow to current standards.
6-1	Chapter 6	The chapter discusses each alternative but does not include O&M for the each alternative. Please provide each alternative in a table with a side by side comparison of capital cost, O&M costs, and pros and cons.	Y	Refer to Table 8-1 for side-by-side comparison of capital cost, O&M, and the advantages and disadvantages of each alternative.
6-1, 6-2	Chapter 6	WAC 173-240-060 (3)p requires that cost estimate include design life O&M costs (power, chemical use, internal process testing, operational staffing and lab costs).	Y	Yes, O&M for each alternative have been calculated and are reported in Table 8-1. Appendix contains summary of O&M calculaitons.
6-1, 6-2	Chapter 6	Please correct the reference to Appendix 6-A and 6-B to 4-A and B.	Y	Appendix numbering corrected.
6-2, 6-3	6.3	Additional oxidation ditch may require dam safety review and possibly a permit.	Y	Noted.

6-2, 6-3	6.3	WAC 173-240-060 (3)p requires that cost estimate include design life O&M costs (power, chemical use, replacement parts, internal process testing, operational staffing, and lab costs).	Y	Yes, O&M for each alternative have been calculated and are reported in Table 8-1. Appendix contains summary of O&M calculaitons.
6-2, 6-3	6.3	Please correct the reference to Appendix 6-A and 6-B to 4-A and B.	Y	Appendix numbering corrected.
6-3	Figure 6-2	Are the setbacks between proposed oxidation ditch and the fence and what looks like private property?	Y	Setback shown in the figure is 25'.
6-3	6.3	Please correct the reference to Appendix 6-A and 6-B to 4-A and B.	Y	Appendix numbering corrected.
6-4	6.4	WAC 173-240-060 (3)p requires that cost estimate include design life O&M costs (power, chemical use, replacement parts, process testing, operational staffing and lab costs).	Y	Yes, O&M for each alternative have been calculated and are reported in Table 8-1. Appendix contains summary of O&M calculaitons.
6-4	6.4	Please correct the reference to Appendix 6-A and 6-B to 4-A and B.	Y	Appendix numbering corrected.
7-1	7.1	The outline is difficult to follow. Please flesh out and explain each biosolid alternative, provide the costs associated including O&M.	Y	Chapter 7 has been revised to now be subsections describing each biosolids alternative.
8.1	Chapter 8	The section should include a table with the capital cost for the treatment and appropriate biosolids option, the O&M costs, the power costs, the staffing and staffing costs (i.e. membrane option requires Group III operator and more onsite operation time and internal testing).	Y	Table inserted showing alternatives, advantages, disadvantages, capital cost, annual O&M, and net present worth.
8.1	Chapter 8	Include a flow and hydraulic gradient figure for the preferred alternative.	Y	HGL Figure inserted into Chapter 6.
8.1	Chapter 8	If Newport select other than the least cost option the provides the appropriate level of treatment and addresses deficiencies then Ecology funding may not be available.	Y	Noted
8.1	Chapter 8	It is not the City's ranking criteria but the engineers stamped recommendation based on best professional judgement that determines the preferred alternative. If the City does not agree with the engineers recommendation then that should be noted in the report.	Y	The selected Alternative B addresses the upgrades deemed necessary to address the most critical treatment process needs to assure water quality compliance and worker safety issues. This is the alternative recommended by the engineer and agreed upon by the City.
Appendix	Appendix 4	Include all operational and maintenance costs, staffing costs, and any expected replacement cost during the life of the project (i.e. replacement membranes, pumps, ...).	Y	O&M costs for each alternative have been calculated and are reported in Table 8-1. Appendix contains summary of O&M calculations.

Responses to Ecology Comments –

Resubmittal Date: May 2023
Comments Received: September 2023

Ecology Comments:

1. The executive summary should be updated to include all the all the alternatives evaluated including alternative F, land treatment.
2. Alternatives: Newport did not evaluate a package type wastewater treatment facility. Please compare the cost of a small plant such as a SBR or Aero-Mod or Biolac or other such small single wall constructed or modular type treatment facility.

Out of a curiosity, I looked into the cost of an Aero Mod and fond it to be much less expensive than the selected alternative. I am not recommending an Aero Mod facility for Newport, but I am requesting that Newport at least compare the smaller package or modular type wastewater treatment plants, designed for small communities, to preferred Alternative B.

I do recognize that the types of facilities may not include headworks, solids conditioning (belt press and chemical addition) or disinfection and costs would need to include connections to existing facilities. An addition advantages of going with a single wall construction type of plant may be that Newport does have tanks onsite that could be used as equalization tanks to improve treatment and reduce the size (cost) of the required treatment processes. If these types of plant are not the right fit for Newport, please provide the reasons for not including or selecting as a recommendation.

Comment Response:

1. For the facility plan, we have updated the executive summary to include all of the alternatives evaluated including Alternative F, land treatment.

2. We have completed an in-depth evaluation of a gravity-settling package treatment plant, based on discussions with Aero-Mod. This is added to the report as Alternative G and is included now in the Executive Summary and in the main body of the report, along with an exhibit excerpt. The alternative is also included in the exhibit summary Table 8-1. The detailed cost estimate is also included in Appendix F and the full exhibit in Appendix G. This Alternative G incorporates the treatment elements of the Aero-Mod package plant into the processes to be retained, such as headworks, solids handling and disinfection. To compare the costs of this alternative to the preferred Alternative B, we also included the needed improvements to the processes to be retained and the needed shop/lab/office improvements. The conclusion of the analysis and the cost estimate is that this alternative will cost $33M, or about $3M more than the

preferred Alternative B. We did confirm with Aero-Mod the costs that you had gotten from them, but there are significant other costs in removing the unused primary processes and dealing with topography to fit the Aero-Mod into the existing site space and hydraulic flow profile. If you have any questions about any of this, I would be glad to discuss them with you. You will find the required improvement items in the cost estimates in Appendix F.

Responses to Ecology Comments –

Resubmittal Date: October 2023
Comments Received: December 2023

Diana,
The ***bold and italicized*** sections of the paragraphs which follow address comments discussed in our 12-5-2023 Teams meeting with Ecology, Newport and J-U-B staff:

1. Phasing of the selected Alternative B is addressed in the Executive Summary Section ES-6 and in Section 8-2 Capital Improvement Plan of the report.
2. Discussion about the condition of the lab and office operations building is added to Section 5-9, Table 5-10. The condition of process buildings was discussed previously in this same table.
3. Section 6-7, Alternative G Gravity Settling Package Treatment Plant, has been updated with additional discussion of the site and the resulting challenges and costs associated with constructing the package treatment plant on this site.
4. The design calculations for Alternative G are referenced in Section 8-2 and included in Appendix I. The design calculations are attached as a separate document.

ES-6 Capital Improvement Plan

It is estimated that the selected Alternative B could be implemented in the next 5-years as funding is secured:

- 2023 to 2025: Secure funding for permitting, environmental review, and design engineering (up to $2.3 M in 2023 dollars).
- 2025 to 2028: Secure funding for construction (up to $28.1 in 2023 dollars)

This selected Alternative B has the flexibility for phased implementation, which would allow for improvements to be prioritized by objectives and completed in separate phases based on funding availability and an evaluation of rate impacts and the ability of the wastewater customers to bear the costs of the improvements. The proposed phasing plan, developed through discussions with Newport administrative and WWTP staff, is as follows:

Preliminary Design Phase , 2024

This preliminary design phase has the following objectives:

1. ***Define the specifics of the improvements to be implemented,***
2. ***Evaluate potential cost savings,***
3. ***Confirm the phasing of improvements,***
4. ***Refine the costs at an appropriate level to make funding requests.***

Phase 1 Improvements , Design 2024/2025, Construct 2026

This phase will include the following elements:

1. ***Complete oxidation ditch upgrades,***
2. ***Construct new Secondary Clarifier #3,***
3. ***Complete Pumphouse #2 Upgrades,***
4. ***Initiate purchasing for backup generator,***

Phase 1 focuses on water quality and compliance with the facility's discharge permit. It addresses the top priorities for improved redundancy and effectiveness in the treatment process. It is this phase that assures the treatment facility has the capacity to address the growth that may occur in the 20-year planning period. Subsequent phases address the maintenance issues typical of a treatment facility as it ages. Phase 1 also initiates the ability to provide power to the entire plant in the event of a power utility failure, which is absolutely essential to reliable treatment during emergency events requiring an alternate power source. The procurement of the backup generator occurs in this phase, while the final installation occurs in Phase 2.

Phase 2 Improvements , Design 2025/2026, Construct 2027/2028
This phase will include the following elements:

1. ***Overall site: backup generator/combine power sources, water line/hydrant***
2. ***Headworks improvements,***
3. ***Clarifier #1 and #2 mechanical equipment upgrades,***
4. ***Pumphouse #1 upgrades,***

Phase 2 finalizes the installation of emergency backup power, ensuring that the facility will operate if utility power is interrupted. Phase 2 also prioritizes maintenance issues that assure ongoing operational functionality and worker safety.

Phase 3 Improvements, Design 2027/2028, Construct 2029
This phase will include the following elements:

1. ***Overall site: Vactor truck purchase, yard valve replacement, SCADA system implementation***
2. ***Aerobic digester and building improvements,***
3. ***Belt filter press upgrades,***
4. ***New shop/office/lab building***

Phase 3 provides for maintenance upgrades of the existing facility and provides operational monitoring and control features that assure a rapid response by operations staff. It also addresses issues critical for worker safety and welfare and provides a facility for protection and maintenance of the vehicles and mobile equipment essential to facility operations.

5.9 Evaluation Summary

A summary of each unit process ***and the associated building facilities*** is included in Table based on discussions in the preceding sections of this chapter.

Table 5-10: Summary of Observed Unit Process *and Building* Conditions

Item	Observed Conditions
Influent Flow Meters	• Measures inflow between 0.059 MGD to 5.700 MGD • Recording log antiquated
Receiving Station	• Not in use for septic haulers to dump • May need to be regraded to block storm water flow from entering (I/I)
Headworks	• The channel upstream of the bar rack where sampling occurs accumulates grit and solids, which impact the sampling process. This channel needs to be re-shaped. The sampler, located outside the building, has experienced freezing and needs to be enclosed or moved indoors. • Normal operation for bar rack, but upstream channel gates are very difficult to operate and require replacement. • The original mechanical fine screen had issues with warping and not being fully efficient, requires replacement with a newer version of the screen. • Second mechanical fine screen installed, 2.0 MGD capacity per screen. • The electrical controls for the screens require that both screens be shut off if service is required. The controls need to be updated so that one screen can continue to run while the other screen is offline. • Vortex grit chamber operating well, some difficult priming, pump piping needs support. • Heating system is problematic and requires replacement. • Configuration of building makes maintenance of equipment difficult and potentially hazardous to workers due to challenging access and lack of lifting equipment. Reconfiguration of the building and the addition of a traveling bridge crane would resolve these concerns. • The retaining walls on the exterior of the building are deteriorated in several sections and require repair. • An air gap skid system is needed for the domestic water feed into the building to prevent cross-contamination of the drinking water system.
Primary Clarifier	• Offline, not in use • Would require extensive rehabilitation to resume use. • All components need replacement
Secondary Treatment – Oxidation Ditch	• Functions well, plenty of capacity. • Concrete outlet structure damaged, in need of repair • 40-hp aerator/mixer does not have variable speed control, often works harder than needed, not efficient, requires upgrade. • Aerator shed needs replacement. • Grating on the inlet distribution box is badly corroded and needs replacement. • No backup power in event of power outage. • Foam spray system is inadequate and needs replacement.
Secondary Clarifier(s)	• Concrete in both clarifiers is serviceable. • Aeration basin concrete damage preventing proper function of outlet weirs. • Metal weirs should be replaced or resurfaced and reinstalled level. • Secondary clarifiers cannot be taken offline for maintenance. • Mechanical parts of secondary Clarifier #1 need to be replaced. • Mechanical parts of secondary Clarifier #2 need to be resurfaced.
Chlorine Contact Basin	• Adequately sized for use during planning period. • Concrete is cracked, but does not interfere with operation • Auto-sampler freezes in the winter.

Item	Observed Conditions
	• Reduction of spike inflow and infiltration (max day flow) would help regulate performance. • Flow paced dosing recently installed
River Outfall	• Discharges below low water level for Pend Oreille River. • No issues noted. • Slope erosion concerns.
Primary Sludge Pump Station	• Pumps outdated, not in use, and cannot be maintained. Confined space to access. • Replacement or rehabilitation should be coordinated with work on the Primary Clarifier.
Anaerobic Digester	• Not in use, solids need to be removed. • All components need to be replaced
Activated Sludge Pump Station 1 and 2	• Groundwater leaks into pump room. Sump pump often plugs and fails. Basement walls require sealing. • Numerous valves do not work well, requiring repairs or replacement. • Poor ventilation in pump room, must be upgraded to meet Class 1, Division 1 requirements • Sump pump system requires upgrades for capacity. • No SCADA monitoring system. • No backup power, could affect rest of WWTF. • The restroom in Pump Station #2 has rotting/moldy wall, deteriorated flooring and requires a complete remodel. • Confined space entry measures are required for safe ingress/egress and extraction. ***The existing spiral staircase is not acceptable for ingress/egress or extraction and an improved access is needed.*** • The gas chlorination system will require upgrades if not replaced with UV disinfection equipment.
Aerobic Digester	• Steel building covering the aerobic digester is badly corroded, needs replacement. Walkways are connected to the building and will also require replacement. • The decant pipe system needs to be replaced and the waste line supports need to be replaced. • The digester lift station currently only has one pump and requires an upgrade with two pumps on a rail system. • Concrete basins have not been inspected for leaks.
Belt Filter Press	• Conveyor leaks and drops solids. Spray boxes need to be upgraded to a more effective model. • Polymer room heaters do not work. Main area heaters also need to be replaced. • Spray nozzles plug. • The pressure bladder tank requires replacement. • Lift station pumps and rails are due for replacement. • Polymer system and control panel upgraded in 2021. • The sludge thickener system is now longer functional and requires repair and upgrade. • An external domestic water feed line is needed, with air gap skid system for backflow prevention. • An overhead traveling bridge hoist is needed to lift and replace heavy equipment items. • The floor drains need to be repaired. • The wall around the conveyor system needs to be repaired.

Item	Observed Conditions
Yard Piping	• No deficiencies reported. • Due for inspection.
Electrical Service	• Facility processes do not currently have backup power during power outages. • Two feeds come from the single power utility and do not provide backup to each other. Combination into a single feed will facilitate backup power provisions.
Lab and Office Operations Building	• ***The existing lab and office space is undersized and both facilities are included in the same room. A break room is not included, resulting in workers having to eat at their desks and on the same counters where wastewater samples are being handled and where lab work is being performed.*** • ***The last improvements to the facility were in the 1980's and ceilings, windows, hallways, finishes, fixtures, furnishings and restroom facilities are in need of significant repairs and upgrades. It is highly likely that there is asbestos in the mastic of the flooring, the roof has leaks that have been repaired multiple times, there are ceiling tiles that periodically fall down and several electrical and plumbing issues.*** • ***There has been a recent risk assessment of the facility with a recommendation that major improvements need to be done for both OSHA and L&I compliance.*** • ***The parking accommodations for this facility are insufficient and do not provide protection to the existing and future needed fleet and maintenance vehicles.*** • ***As an accredited laboratory, the current facility does not provide the proper separated spaces for the laboratory testing procedures.*** • ***The process site utilities severely restrict the expansion and improvement of the existing facility. A new constructed space in a new location would allow for separation of lab and office/breakroom. A new facility would provide health and safety benefits to the operators as well as a more controlled site appropriate for the accredited laboratory. The option of a shop structure integrated into the new facility would provide the needed storage and maintenance space for rolling stock, equipment and vehicles needed to properly run the facility and collection system.***

6.7 Alternative G – Gravity-Settling Package Treatment Plant

An additional alternative that has been evaluated is the replacement of key treatment processes with a gravity-settling package treatment plant, which would provide water quality results comparable to the existing treatment processes. The Aero-Mod package treatment plant was used as the basis for this evaluation, with sizing, configuration and costs based on proposal by the manufacturer. Other manufacturers could also provide a package plant which would produce similar results to the Aero-Mod system and with a similar footprint based on the capacity needed. This alternative was evaluated to determine if it may be more cost effective than upgrades to the existing processes, as outlined previously in Alternative B. In this alternative, the Aero-Mod core treatment processes (aeration stages and clarification) would replace the existing oxidation ditch

and the existing clarifiers and pumping facilities, as shown in Figure 6-8 below. The headworks, aerobic digester, belt filter press and chlorine contact chamber are considered adequate, with some maintenance upgrades, to be retained through the planning period to save cost. The Aero-Mod process package would be inserted in the hydraulic flow path downstream from the existing headworks. Although the existing oxidation ditch would no longer be used for treatment of the wastewater, it was evaluated for equalization storage, with a pump station incorporated to return stored excess flows through the new treatment processes. This alternative is technically viable, but requires removal of existing unused primary treatment facilities and the existing topographical characteristics of the site would require a number of site improvements to be able to fit the package treatment plant within the available area in the appropriate location for operation. ***In order to protect piping and structures critical to the operation of the plant, insertion of the package treatment plant would require deep excavation into the hillside and associated shoring and retaining structures to relocate the existing access roads and existing essential utilities. The operation of the sludge dewatering belt filter press requires the storage of sludge in the existing aerobic digester. Plumbing improvements have been incorporated to accommodate the transfer of sludge from the package treatment plant to the aerobic digester. These improvements are outlined in detail in the cost estimates provided in Appendix F discussed in the next section.***

The estimated cost for the incorporation of a package treatment plant into the existing screening, solids dewatering and disinfection processes is estimated at $33.1M (2023 dollars) including contingency, sales tax, design engineering, construction management engineering, and legal and administrative costs. The cost above is for present cost comparison and does not include escalations for inflation which could occur over the years of implementation. See Appendix F for a detailed cost estimate for Alternative G. See Appendix G for the exhibits for Alternative G. ***See Appendix I for the design criteria calculations and sizing for the package treatment plant from the supplier of the Aero-Mod package plant used as a basis for this evaluation.***

8-2 Capital Improvement Plan

It is estimated that the selected Alternative B could be implemented in the next 5-years as funding is secured:

- 2023 to 2025: Secure funding for permitting, environmental review, and design engineering (up to $2.3 M in 2023 dollars).
- 2025 to 2028: Secure funding for construction (up to $28.1 in 2023 dollars)

This selected Alternative B has the flexibility for phased implementation, which would allow for improvements to be prioritized by objectives and completed in

separate phases based on funding availability and an evaluation of rate impacts and the ability of the wastewater customers to bear the costs of the improvements. The proposed phasing plan, developed through discussions with Newport administrative and WWTP staff, is as follows:

Preliminary Design Phase , 2024

This preliminary design phase has the following objectives:

1. ***Define the specifics of the improvements to be implemented,***
2. ***Evaluate potential cost savings,***
3. ***Confirm the phasing of improvements,***
4. ***Refine the costs at an appropriate level to make funding requests.***

Phase 1 Improvements , Design 2024/2025, Construct 2026

This phase will include the following elements:

1. ***Complete oxidation ditch upgrades,***
2. ***Construct new Secondary Clarifier #3,***
3. ***Complete Pumphouse #2 Upgrades,***
4. ***Initiate purchasing for backup generator,***

Phase 1 focuses on water quality and compliance with the facility's discharge permit. It addresses the top priorities for improved redundancy and effectiveness in the treatment process. It is this phase that assures the treatment facility has the capacity to address the growth that may occur in the 20-year planning period. Subsequent phases address the maintenance issues typical of a treatment facility as it ages. Phase 1 also initiates the ability to provide power to the entire plant in the event of a power utility failure, which is absolutely essential to reliable treatment during emergency events requiring an alternate power source. The procurement of the backup generator occurs in this phase, while the final installation occurs in Phase 2.

Phase 2 Improvements , Design 2025/2026, Construct 2027/2028

This phase will include the following elements:

1. ***Overall site: backup generator/combine power sources, water line/hydrant***
2. ***Headworks improvements,***
3. ***Clarifier #1 and #2 mechanical equipment upgrades,***
4. ***Pumphouse #1 upgrades,***

Phase 2 finalizes the installation of emergency backup power, ensuring that the facility will operate if utility power is interrupted. Phase 2 also prioritizes maintenance issues that assure ongoing operational functionality and worker safety.

Phase 3 Improvements, Design 2027/2028, Construct 2029

This phase will include the following elements:

1. ***Overall site: Vactor truck purchase, yard valve replacement, SCADA system implementation***
2. ***Aerobic digester and building improvements,***
3. ***Belt filter press upgrades,***
4. ***New shop/office/lab building***

Phase 3 provides for maintenance upgrades of the existing facility and provides operational monitoring and control features that assure a rapid response by operations staff. It also addresses issues critical for worker safety and welfare and provides a facility for protection and maintenance of the vehicles and mobile equipment essential to facility operations.

A rate study (under separate cover) has been completed to estimate the rate impacts of the implementation of the treatment plant preferred alternative, in addition to collection system improvements outlined in the General Sewer Plan. Sample worksheets of this rate analysis are included in ***Appendix J***. This rate study will be updated as funding options are finalized and the study will be used to guide City Council actions on the implementation of rate adjustments for the improvement projects.