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DOCUMENT TITLE: Utility Plan Policy Document			
DOCUMENT NUMBER: POL-0003-004	REVISED DATE: 01/01/2024	APPROVED DATE: 01/01/2024	EFFECTIVE DATE: 01/01/2024
AUTHOR(S): NFRWQPA	SUPERSEDES REVISION: Amended and Approved: POL-0003-003 September 1, 2022	SOURCE OF COPIES: NFRWQPA 257 Johnstown Center Dr.; Unit 206 Johnstown, CO 80534 www.nfrwqpa.org	
DOCUMENT FILENAME: 2024 JANUARY 5 POL-0003-004 PLAN AMENDMENT POLICY - EFFECTIVE JANUARY 1, 2024.DOCX			

ABSTRACT

This guidance document provides necessary information and direction to management and operation agencies, utility departments, consultants, planners, or wastewater managers for amending the North Front Range Water Quality Planning Association (NFRWQPA, Association) 208 Areawide Water Quality Management Plan (208 AWQMP). The primary goal of the 208 AWQMP is to provide regional land-use management planning mechanisms for reasonable, feasible, and economical wastewater service to areas designated for development within the South Platte watershed. The 208 AWQMP should consider the water quality impacts the treatment system and interrelated service areas nonpoint pollution sources have on receiving waters in the watershed. Recommendations in the 208 AWQMP for protecting, maintaining, or restoring impaired waters within the South Platte watershed originates from information provided in agency Utility Plans. The 208 AWQMP should include any strategy and actions for meeting all applicable, and known future, water quality standards, classifications, and TMDLs, while quantifying the potential impact a discharger may have on other dischargers and the river basin. Utility Plans are the primary support documents to construct and periodically update the regions 208 AWQMP. As planning documents, the 208 AWQMP, Utility Plans, and Site Applications all collectively overlap to protect, maintain, or restore the regional watershed quality. Figure 1 below shows the relationship of the 208 AWQMP, Utility Plans, and Site Applications all have overlapping information and must support each other to gain 208 AWQMP amendment approval.

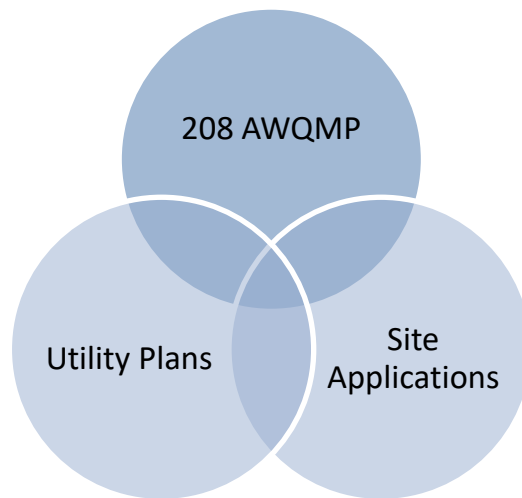


Figure 1 Relationship of planning documents

Purpose:

The Regional Plan adopted by NFRWQPA details the regional considerations for protection of water quality and is known as the 208 Areawide Water Quality Management Plan (208 AWQMP). In so doing, the 208 AWQMP projects growth and development trends in the area and establish a rational plan for accommodating related urbanization. The 208 AWQMP objective is to avoid unacceptable adverse water quality and environmental impacts, which might be caused by allowing numerous wastewater services to provide services in an uncoordinated fashion. The 208 AWQMP amendment process maintains flexibility in the plan to accommodate unanticipated events in the best interests of the region. These events include site approvals for new facilities or projects and service area boundary changes. Pursue in conjunction projects requiring both Site Location and Design Approval (Regulation No. 22) and a 208 AWQMP amendment.

State regulations specify to amend the 208 AWQMP to incorporate projects not identified in the plan before approval of Site Location and Design applications. Amendment of the 208 AWQMP adds time to the site location and design approval process. The added time can be minimized by the expeditious pursuit of a plan amendment as soon as possible before submission of the site approval application.

Any significant modification of wastewater utility service area (WUSA) boundaries of an existing Management Agency or any formation of a new Management or Operation Agency requires an amendment of the 208 AWQMP. According to State Regulations, a new wastewater collection and treatment facility must be a designated Management Agency in the 208 AWQMP to review and approve. Likewise, any new Operating Agency responsible for controlling all aspects of the collection, treatment, and discharge within its service area boundaries requires an amendment of the 208 AWQMP. An application for a 208 AWQMP amendment should be submitted to NFRWQPA by the responsible Management/Operating Agency.

Amendments include the upmost attention to detail and are incorporated into the 208 AWQMP through routine updates and as needed. Amendments include, but are not limited to:

- Changes in planning or management agency designation or membership.
- Changes that impact water quality or have generated public controversies.
- Changes to stream standards, classifications, or regulations approved by the Commission.
- Changes that affect the local, regional, state, or Commission policies and guidelines.
- Changes that alter watershed management strategies.
- Changes to discharge permits or permitting processes.
- Changes to facility capacity.
- Changes to a service area population projection.
- Wastewater utility service area formation of greater than or equal to 35 acres.
- Addition of greater than or equal to 10 acres to a wastewater utility service area.
- Other changes identified by the Division or Commission can be subject to an informational hearing process (Policy #98-2, 2018).

The following 208 AWQMP amendment process details the criteria for determining whether a given project would require an amendment or not, and it represents the amendment procedure. An applicant should be aware of this procedure, and the supplemental information and processing time it requires.

1) Determination of Amendment Requirement.

- a) NFRWQPA evaluates the proposed project and determines whether a 208 AWQMP amendment is necessary.

2) Basis for Determination.

- a) No amendment necessary if the proposed project is in conformance with the 208 AWQMP.
- b) A 208 AWQMP amendment will not typically be required when:
- i) The project proposes changes in treatment processes for improving water quality that does not increase the capacity of the treatment plant.
 - ii) The project is a lift station to serve an area that is within the approved service area of the applying Operations Agency, with the lift station and population served already included in the 208 AWQMP projections through an approved Utility Plan.
 - iii) The project proposes a minor adjustment in service area boundaries involving less than 10 acres.
- c) A 208 AWQMP amendment is typically necessary if the proposed project involves providing sewerage service which meets one, or more, of the following:

- i) Formation of a wastewater utility service area greater than or equal to 35 acres, or addition of greater than or equal to 10 acres to an existing wastewater utility service area.
- ii) The addition of an area to a defined service area that is an increase of population greater than 667 people or 50,000 gpd (population equivalent of 667 people based on 75 gpcd).
- iii) The formation of a Management/Operation Agency, or addition of a new domestic wastewater treatment facility receiving >2,000 gallons per day to the region producing a permitted discharge, or effluent treated for reuse under Regulation No. 84.
- iv) The amount of sewage generated and served through a treatment facility, pump station, or interceptor increases more than 50,000 gpd.
- v) An amendment will be required if it involves a proposal to serve a new area or provide increased capacity more than 50,000 gpd.

3) Amendment Procedure.

- a) Upon initial submittal of a Site Location and Design Application or the submittal of a 208 AWQMP amendment request to NFRWQPA by the responsible Management/Operating Agency, a determination of whether the application is complete is made first, generally within 30 days of receiving the submittal. Incomplete applications are returned to the applicant.
- b) For complete applications, NFRWQPA then decides on whether a plan amendment is necessary. If a 208 AWQMP amendment is required, NFRWQPA requests the proper information necessary for the project from the applicant according to Section 4 within 30 days.
- c) Incomplete applications do not proceed until determined complete by NFRWQPA.
- d) For wastewater utility service area boundary changes by any Management or Operating Agency, a public notice is circulated for the next 60-days by NFRWQPA. The Association gives the executive director the authority to modify WUSA boundaries within existing WUSAs, resulting in insignificant nonpoint and point flow and loading exchanges and water quality impacts between DMOAs that agree to the modification. To determine flow and loading concerning nonpoint and point source collection and treatment regionally, the incorporation of new or additional WUSA areas must go through the application process. Projects included are wastewater utility service area formations greater than or equal to 35 acres or additions to a

wastewater utility service area greater than or equal to 10 acres. Public notice may include notice to, but not limited to, the project sponsor, the applicant, the Management and or Operating Agency, local jurisdiction planning and health departments, other potentially affected Management and Operations Agencies, membership via email, association website, and local newspapers. Comments are requested from all referral agencies notified. Once the public notice period (60-days) is complete, the association schedules a *public hearing* at the next available association meeting for consideration of the 208 AWQMP amendment.

- e) For new Management or Operation Agencies, a public notice is circulated for the next 60-days by NFRWQPA. Projects included are new Management or Operation Agencies intending to create a wastewater utility service area greater than or equal to 35 acres. Public notice may consist of notice to, but not limited to, the project sponsor, the applicant, the Management and or Operating Agency, local jurisdiction planning and health departments, other potentially affected Management and Operations Agencies, membership via email, association website, and local newspapers. Comments are requested from all referral agencies notified. Once the public notice period (60-days) is complete, the association schedules a *public hearing* at the next available association meeting for consideration of the 208 AWQMP amendment.
- f) For new domestic wastewater treatment facilities, a public notice is circulated for the next 60-days by NFRWQPA. Projects included are new domestic wastewater treatment facilities associated with the formation of a new or existing Management or Operation agency; and, Management and Operation agencies with approved wastewater utility service areas in the 208 AWQMP proposing new domestic wastewater facilities. Public notice may include notice to, but not limited to, the project sponsor, the applicant, the Management and or Operating Agency, local jurisdiction planning and health departments, other potentially affected Management and Operations Agencies, membership via email, association website, and local newspapers. Comments are requested from all referral agencies notified. Once the public notice period (60-days) is complete, the association schedules a *public hearing* at the next available association meeting for consideration of the 208 AWQMP amendment.
- g) For 208 AWQMP amendments for increasing or decreasing treatment capacity or updating population projections for current identified domestic wastewater treatment facilities or wastewater utility service areas within the plan, a public notice is circulated for the next 60-days by NFRWQPA. Public notice may include notice to, but not limited to, the project sponsor, the applicant, the Management and or Operating Agency, local jurisdiction planning and health departments, other potentially affected Management and Operations Agencies, NFRWQPA membership via email, association website, and local newspapers. Comments are requested from all referral

agencies notified. Once the public notice period (60-days) is complete, the association schedules a *public hearing* at the next available association meeting for consideration of the plan amendment.

- h) For 208 AWQMP amendments for lift stations and interceptors not identified in the plan nor documented within approved Utility Plans, a public notice is circulated for the next 60-days by NFRWQPA. Public notice may include notice to, but not limited to, the project sponsor, the applicant, the Management and or Operating Agency, local jurisdiction planning and health departments, other potentially affected Management and Operations Agencies, membership via email, association website, and local newspapers. Comments are requested from all notified. Once the public notice period (60-days) is complete, the association schedules a *public hearing* at the next available association meeting for consideration of the plan amendment.

4) Project Information Necessary for 208 AWQMP Amendment.

- a) The required information for a project allows a determination of whether a plan amendment is necessary and the processing of the amendment. Most of this necessary information is also required to process a site location and design application (i.e., Regulation No. 22).
- b) All public wastewater treatment agencies submitting a 208 AWQMP amendment request (including a service area boundary change is required to have a current (10-years or newer) utility plan, which has been approved by NFRWQPA before the plan amendment request.
- c) Provide the project or facility location, including geographical wastewater utility service area boundaries on a map, and the existing population of the proposed wastewater utility service area, and the 5, 10, 15, and 20-year population projections.
- d) Provide the project or facility design hydraulic and organic loading capacity and the expected initial flows and loadings as well as the 5, 10, 15, and 20-year loading projections.
- e) Provide the project names of existing sewer service entities within 5 miles of the proposed service area and facility, a map indicating their boundaries, and direction of gravity flow from the proposed area.
- f) Provide the project estimated construction costs, and an estimate of the cost differential between building the proposed facility and the least costly alternative for connecting to an existing facility identified above in section (e) including a map indicating construction required to accomplish any such connection.

- g) For the project, provide a letter from all existing sanitation districts or other sewer service entities within 5 miles stating the feasibility of providing service to the service area and the justification for not connecting to an existing facility where feasible.
- h) Identification of other permittees discharging to the same receiving water body segment and downstream discharges on main streams and any effect the proposed discharge would have on any of them and the river basin water quality (i.e., TMDL loading). TMDL loading analysis should be coordinated with the division.
- i) For the project, provide the proximity to the nearest domestic drinking water source or diversion downgradient from the discharge. Identify all drinking water providers and districts within 1-mile of the proposed service area, project, or facility, a map indicating their boundaries (crosshatched) as well as domestic water wells, and direction of groundwater flow from the proposed area.
- j) For the project, provide the proposed permit (PELs) or Notice of Authorization effluent water quality-based limits as developed by the Water Quality Control Division for any discharge or treated reuse effluent.
- k) For the project, provide an analysis of treatment alternatives considered and a detailed justification for choosing the selected option in terms of surface or groundwater quality and other environmental impacts and economic and institutional considerations.
- l) For the project, institutional arrangements such as a contract or covenant terms for all users. Institutional arrangements must include Articles of Incorporation and By-laws for homeowners' groups to include powers and authority to ensure proper operation and maintenance of the facility for its projected life.
- m) For the project, provide the agency and personnel management capabilities for controlling the wastewater throughout and maintaining treatment within the capacity limitations of the facility on a continuous long-term basis. Documentation would include user contracts, operating agreements, and pretreatment requirements.
- n) Potential for water reuse, including water rights limitations and any water augmentation plan. Including a management plan for receiving and treating all possible water rights scenarios for new or existing wastewater utility service areas or additions for the scope of the project. Agencies are expected to provide sewage service within their wastewater utility service areas to existing and new customers.

- o) For the project, provide the present population and flow commitments of existing facilities of the Management or Operation Agency, to demonstrate the adequate capacity for existing or new development.
- p) For the project, indicate as to how this project relates to existing and envisioned facilities and the needs of a regional service area for the entire drainage basin.
- q) For new wastewater utility service areas or additions, a map delineating the additional area requested and a report on the reasons that this area would best be served by the entity seeking the expansion of their wastewater utility service area. The service agency requesting a 208 AWQMP amendment to its wastewater utility service area must provide adequate long-term planning information including, at a minimum, the following factors over a 20-year planning period:
 - i) The identified wastewater utility service area.
 - i. Illustrated by a map from the Association's GIS website; <https://data-nfrwqpa.hub.arcgis.com/app/6dade190ad8b427cbfacd2545c237be7>.
 - ii) Population datasets, forecasts, and land use status.
 - iii) Collection system requirements.
 - iv) Treatment facility requirements.
 - v) Costs of capital improvement projects.
 - vi) Sequence and timing of capital improvement projects.
 - vii) User Rates and sewer tap fees necessary to finance improvements when required.
 - viii) A management plan for receiving and treating all possible water rights scenarios (Mapping, see (i) above).
 - ix) The entity requesting the amendment must also submit, at a minimum, the following current information:
 - (1) Population
 - (2) Peak and average flow
 - (3) Peak and average loading
 - (4) Inflow / infiltration
 - (5) Treatment capacity, hydraulic and organic
 - (6) NPDES permit requirement and constraints

5) The following information is the Association's WUSA Development Policy and Consolidation Policy adopted into the region's 208 AWQMP.

a) 208 AWQMP WUSA Development Policy (2022)

Development standards encourage regional collaboration between Designated Management and Operating Agencies (DMOAs) to build easy-to-maintain treatment and collection systems that are

economically feasible rather than costly short-term solutions driven by urban development demands. Local governments recognize that water pollution is caused by and has adverse effects on regional development. Even as wastewater and other treatment facilities have improved, water quality goals have become more difficult to meet. Significant regional issues include stormwater management, construction and nonpoint source pollution, biosolids management, wasteload allocations as part of the TMDL setting processes, watershed implementation and screening, water quality monitoring, and use of OWTs require innovative, cooperative and affordable long-term regional solutions. Since established local government municipal boundaries or special district boundaries frequently do not follow hydrologic boundaries, there can be an increased cost of service associated with this type of urban growth. The wastewater treatment facility for a given municipality or special district can treat wastewater flows from multiple watersheds using force mains and lift stations at a higher cost than gravity flow systems. Due to multiple service area designations, the duplication of infrastructure can occur within a watershed. Duplication of infrastructure can also result in the underutilization of many transmission, collection, and treatment systems. Local plans have been the driving force behind changes to water supply and/or wastewater service areas. In-fill development could be limited in some areas because of insufficient capacity in existing infrastructure and limited opportunities to upgrade these systems. Two critical components for urban development are wastewater service and supply. Along with transportation facilities, these utilities form the skeleton built by a region. Typical wastewater treatment or water supply systems are designed to accommodate projected development through at least a 20-year time period, with some long-range system designs established for 50 years or more. Individual facilities are often sized to meet growth projections for the next 10 or 20 years. Some facilities, such as major interceptors, may be sized for the ultimate development anticipated in a sanitary sewer service area. Excess capacity in transmission, collection or treatment facilities has sometimes been used by some communities to subsidize development. As a result, population and employment projections developed for some facility plans became self-fulfilling and resulted in population and flow increases occurring faster than anticipated. Since the tax base from commercial development and the desire for new growth have been two driving factors in urban development, competition has been fierce among local governments and special districts for service area designations. The advent of the *WUSA Development Standards* changed the approach so that infrastructure decisions could be made beyond the 20-year planning horizon and, in some instances, consider the region's projected ultimate development. Water and wastewater planning must develop long-range, staged utility plans for the most feasible future service area incorporating these WUSA Development Standards. Although future development patterns can affect water management decisions, these standards allow the focus to be on ensuring protection and maintenance of clean lakes and streams, not using water quality regulation to force some predetermined land-use configuration. Instead, WUSA Development Standards support local decisions at a regional level, rather than water quality regulations potentially affecting where and when urban development occurs. Therefore, WUSA Development Standards establish BMPs for DMOAs, in cooperation with the general-purpose governments they serve and surrounding or adjacent DMOAs to:

- 1) Identify the areas they intend to serve in the long-term (30-50years); and
- 2) Provide a means to resolve territorial issues related to wastewater service areas before facilities are designed and constructed.

- 3) Establish accepted practices across the region to ensure that the North Front Range Water Quality Planning Association supports projects as they proceed through regulatory processes overseen by the Water Quality Control Division and Water Quality Control Commission.
- 4) Ensure compliance with water quality rules and regulations overseen by the Water Quality Control Division and Water Quality Control Commission.

The following Wastewater Utility Service Area (WUSA) development standards for the Association optimize regional collection systems using the best available technology at the lowest cost options while providing the general public with economically feasible solutions. The WUSA Development standards shall also adhere to those construction standards within the WQCD Policy DPR-1, as well as requirements in other WQCC and WQCD regulations, policies and guidance. In Region-2, water supply is and will remain a limited resource. A local DMOA coordinated water supply planning involving the water providers will be needed to maximize water supply capacities. It cannot be assumed that all water providers will find sufficient quantities of water to meet all development expectations. Those water providers with surplus water resources could outgrow those providers with limited capacities dictating projected urban development, which will require sanitary services. The foundation of water quality planning is forecasting expected wastewater collection and treatment needs, which is tied to future population projections and urban development. Forecasts define wastewater flow rates and the capacity needed to collect and treat the projected volume of wastewater. Datasets and forecasts for WUSAs are included in the 208 AWQMP.

1. **Nonproliferation of Wastewater Treatment Facilities.** Prior to siting new facilities, existing wastewater treatment facilities should be expanded or consolidated instead of developing new facilities unless not legally or technically feasible.
 - a. New WWTFs are not supported within a 5-mile radius of existing WWTFs.
 - b. New Regional WWTFs may be built following decommissioning of one or more WWTFs within a 5-mile radius.
 - c. New Regional WWTFs may not be built when adjacent collection system service sewer lines are available within two miles of each other.
 - d. A maximum of two lift stations are preferred over building new WWTFs.
 - e. Existing WWTFs within a 5-mile radius of each other are required jointly to explore consolidation in the Utility Plan process, considering current treatment facilities' life cycle costs and the ability for consolidation regarding their sewer collections systems, i.e., line sizing or capacity. Submitting a thorough examination/assessment report with a record of public consideration and decision for inclusion into the 208 Areawide Water Quality Management Plan (208 AWQMP). **Including providing a chosen mechanism for how the regional DMOAs will keep exploring consolidation over the 20-year planning period and provide periodic reports to the Association documenting activities.**
 - f. WUSAs with collection sewer systems within 2.5-miles of each other are encouraged to examine partnerships and consolidation over WWTF

capacity increases or lift stations to provide the general public with economically feasible solutions.

- g. Partnerships and Consolidation of WUSAs are encouraged to optimize regional collection systems by topography and significant landmarks.
 - h. Consolidation can result in economies of scale for wastewater treatment and better planning to meet increasingly stringent water quality regulations. Additionally, consolidation generally results in lower user rates over time.
 - i. Before siting new facilities, existing wastewater treatment facilities should be expanded or consolidated instead of developing new facilities unless not legally or technically feasible.
 - j. The Project will not result in excess capacity in existing water or wastewater treatment services or create duplicate services.
2. The following additional criteria apply to any development of major new domestic water and wastewater treatment systems or major extensions of existing domestic water and wastewater treatment systems:
- a. The Project shall be reasonably necessary to meet projected community development and population demands in the areas to be served by the Project or comply with regulatory or technological requirements.
 - b. To the extent feasible, water and wastewater treatment facilities shall be consolidated with existing facilities within the area.
 - c. New domestic water and sewage treatment systems shall be constructed in areas which will result in the proper utilization and optimization of existing treatment plants and the orderly development of domestic water and sewage treatment systems of adjacent communities.
 - d. The Project shall be permitted in those areas in which the anticipated growth and development that may occur as a result of such extension can be accommodated within the financial and environmental capacity of the area to sustain such growth and development.
 - e. New domestic water and sewage treatment systems shall be permitted in those areas in which the anticipated growth and development that may occur as a result of such extension outside of current urban development can be accommodated within the financial and environmental capacity of the area to sustain such growth and development.
3. Gravity sewers are preferred over lift stations.
- a. If it can be served by gravity, it shall be served by gravity.
 - b. Including examining if an adjacent DMOA WUSA may serve a sewer area by gravity more efficiently, it shall be preferred.
4. Interceptors shall be sized for consolidation sited within 2-miles of an adjacent service area. Interceptors may be staged for ultimate build-out with appropriate economic or right-of-way justification.

5. Lift Stations are allowed when economically infeasible to a gravity sewer within a 5-mile radius.
 - a. Proposed lift stations shall include topographical maps illustrating the proposed force main elevations in an elevation profile; additionally, proposed lift stations shall include a gravity line elevation profile displaying sewer line sizes and cost comparisons.
 - b. No Lift Stations are allowed when gravity sewer service is available within a 2.5-mile radius.
 - c. Lift Stations shall be designed for the build-out capacity for the regional service area intended to be served in the long-term.
 - d. Proposed Lift Stations within 2.5 miles of an adjacent sewer service agency that is down gradient must provide a letter of agreement for construction documenting that the area in question cannot be served by the adjacent agency that is down gradient. Agreements must confirm public meeting minutes and the decision.
6. OWTSs are not allowed when a sewer service line is available, according to the local county health department code and Regulation #43.
7. DMOAs must serve new urban developments that flow by gravity within their approved WUSA. Economic hardship is not considered regarding the DMOA or the Developer.
8. Private Wastewater Operations are Discouraged. The ownership and management of wastewater treatment facilities by homeowner associations or private wastewater operators should not be allowed unless there is no other option. The preferred choice is for the local DMOA to assume ownership and operation of lift stations.
9. Economic Feasibility. The Term Economic Feasibility goes beyond the upfront capital cost of the Project being considered. Economic Feasibility should include the long-term maintenance and operation costs of the Project and the financial burden on ratepayers and residents. The Financial burden consists of the existing tax burden and fee structure for government services, including but not limited to assessed valuation, mill levy, rates for water and wastewater collection and treatment, and costs of water supply. Thus, the Project's net effect is the residents' financial burdens and is considered part of the Economic Feasibility of projects. Beyond the financial burden of the ratepayers and residents, the Project should consider the impacts on the local economy. Description of the local economy including but not limited to revenues generated by the different economic sectors and the value of productivity of different lands. Local economic impacts and net effects of the Project on the local economy and opportunities for economic diversification can be illustrated by examining regional opportunities for consolidation. The determination of technical and financial feasibility of the Project may include but is not limited to the following considerations:

- a. Amount of debt associated with the Project.
 - b. Debt retirement schedule and sources of funding to retire the debt.
 - c. Estimated construction costs and construction schedule with the Project.
 - d. Estimated annual operation, maintenance, and monitoring costs with the Project.
 - e. Estimated user rates over the 20-year planning period of the Project.
 - f. Changes in costs of water and wastewater treatment.
 - g. Estimated local economy impacts over the 20-year planning period of the Project.
 - h. Changes in assessed valuation.
 - i. Changes in Tax revenues and fees to local governments that will be generated by the Project.
 - j. Changes in tax revenues caused by agricultural lands being removed from production.
 - k. Changes in opportunities for economic growth and diversification.
10. The Project will not create an undue financial burden on existing or future residents of the Association 208 Planning-Region 2.
 11. The Project will not significantly degrade any current or foreseeable future sector of the local economy of the Association 208 Planning-Region 2.
 12. The Project will not have a significant adverse effect on the quality or quantity of recreational opportunities and experience of the Association 208 Planning-Region 2.
 13. The project's planning, design, and operation shall reflect principles of resource conservation, energy efficiency, and recycling or reuse.
 14. The Project shall emphasize the most efficient use of water, including the recycling, reuse, and conservation of water.
 15. The Project will not result in excess capacity in existing water or wastewater collection and treatment services or create duplicate services.
 16. The Project shall be necessary to meet community development and population demands in the areas to be served by the Project.
 17. The Project will not significantly degrade air quality.
 18. The Project will not significantly degrade existing visual quality.
 19. The Project will not significantly degrade surface water quality.
 20. The Project will not significantly degrade groundwater quality.

21. The Project will not significantly degrade wetlands, and riparian areas.
22. The Project will not significantly degrade terrestrial or aquatic animal life or its habitats.
23. The Project will not significantly deteriorate terrestrial plant life or plant habitat.
24. The Project will not significantly deteriorate soils and geologic conditions.
25. The Project will not cause a nuisance.
26. The Project will not significantly degrade areas of paleontological historic, or archaeological importance.
27. The Project will not result in unreasonable risk of releases of hazardous materials.
28. The Project will/will not cause or contribute to urban sprawl or “leapfrog or flagpole” development.
29. Promotes contiguity of development associated with the Project to existing growth centers.
30. The benefits accruing to the County and its citizens from the Project outweigh the losses of any natural, agricultural, recreational, grazing, commercial or industrial resources within the County, or the losses of opportunities to develop such resources.
31. Urban development, population densities, and site layout and design of stormwater and sanitation systems shall be accomplished in a manner that will prevent pollution of surface water and the pollution of aquifer recharge areas.

Pertinent factors relating to the appropriate land use pattern and support the WUSA Development Policy for the Region include:

- 1) Dispersed land uses necessitate a more extensive utility service network than concentrated patterns, incurring costs considerably higher than would be attributable to a concentrated pattern of development. The greater the dispersion, the greater the linear length of roadways required to connect residences with destination points (employment, shopping, entertainment, etc.). In addition, the effectiveness of public transportation systems depends on concentration of potential users. Lower concentrations and densities result in higher operating costs and generally lead to a greater reliance on the automobile to serve the needs of residents.
- 2) On a per capita basis, at first glance it would appear that the costs of providing public services (police and fire protection, health, and educational facilities,

etc.) would be constant for dispersed and concentrated land use patterns. However, the costs of providing services to a dispersed population can be considerably higher than the costs of providing equal services to a concentrated population. To maintain adequate levels of police and fire protection additional facilities must be built and maintained in the local areas thus increasing the capital operating and maintenance cost of providing such services over the costs that would be incurred in providing a similar level of service to a concentrated population from centralized facilities. For those services where the provision of additional facilities is not necessary to protect the health and welfare of the residents, the costs are still higher for providing services to a dispersed population versus a concentrated one. In these cases, the residents must incur transportation costs of getting to and from the service location, and the farther from the facility they live, the higher the transportation cost.

In addition, dispersed development may incur inequities in the financial support of public service systems. Those residing in outlying areas may use libraries, museums, parks, and other services in urban areas without appropriate compensation to the municipality providing the service. Hence, the resident of the municipality assumes the burden of costs for others' benefits.

- 3) As a general rule, the greater the dispersion of land uses, the greater the capital costs of providing utility service systems (water, sewer, energy, and communication). Collection and distribution systems would have to cover more distance to service a dispersed versus a concentrated population; therefore, the capital costs of providing such services would be higher. In addition, concentrated land use patterns provide for the construction of centralized water and sewage treatment plants which can realize the economics of scale and treat water or sewage at a lower per-gallon cost than smaller plants providing treatment for a dispersed population.
- 4) The economic viability of a recycling and maintenance program for older community areas is directly related to the intensification of use in the area. The outward shift of uses often accounts for the deterioration of the older areas. Recent shifts in residential and commercial activity along the Front Range have occurred at the expense of the downtown areas in these cities.
- 5) A decreasing supply of land available for development accompanied by a commensurate increase in the value of developable land. In general, the greater the scarcity of developable land, the higher the price such land will bring. If land uses are concentrated, land values for developable land on a per-acre basis would be higher than they would be for a dispersed pattern.
- 6) Air quality is directly correlated to the distance and number of daily automobile trips. Dispersed land use patterns encourage longer trips; hence, heightening air pollution, while concentrated patterns minimize total vehicle miles traveled thus lessening pollution.

- 7) Water consumption is directly related to the density of land uses. Per capita consumption ratios are lower in concentrated urban areas than in dispersed suburban communities. Suburban developments use more water than urban developments to irrigate extensive lawn and garden areas. The per capita consumption rate of apartment house dwellers is roughly half that of suburban dwellers [Milne 1976].
- 8) Noise levels are impacted by the pattern and density of land uses. In a dispersed pattern, the lengths of highways and local streets would be greater than in a concentrated pattern. Consequently, noise impacts would be spread over a larger area. A concentrated pattern would result in increased noise levels at centralized activity points and reduced levels in outlying areas. Therefore, exposure to noise varies significantly with the land use patterns. It should be noted, however, that actual noise exposure is a function of the specific siting of land uses (i.e., a concentration of residents in a high-noise area would expose a greater number of residents than a dispersed pattern). It is the greater opportunity for avoidance of high noise that can be attributed to a concentrated pattern.
- 9) A dispersed land use pattern will disrupt native vegetation and wildlife to a greater extent than a concentrated pattern. The degree of disruption will depend on the extent of fragmentation of the dispersed uses. The greater the dispersion, the greater the amounts of land that are utilized; consequently, the greater the potential for disruption.

Development in a concentrated urban pattern would be focused primarily in and around existing urban and suburban areas where vegetation and wildlife have already been disturbed. Species that are less sensitive have adapted to the presence of man. Those of greater sensitivity have migrated to locations away from existing communities or become locally extinct. Continued concentrations of urban uses would have a minimum impact on existing species, while a dispersed pattern would affect outlying areas where sensitive species have migrated, causing substantial disruption.

- 10) Consumption of natural gas and electricity is a function of housing type, distribution and orientation, and industrial demand. Apartment units consume less energy than single-family units. Consequently, the increasing densities of a concentrated pattern require less energy per unit than a dispersed pattern. Additionally, there is a correlation between the length of a transmission system and the loss of electrical energy. Because a dispersed pattern requires longer transmission systems than a concentrated pattern, it results in higher losses in energy during transmission.

Gasoline usage is a function of total vehicle miles traveled. In a dispersed land use pattern, vehicle miles traveled are higher than in a concentrated pattern. Therefore, dispersed

land-use patterns create higher gasoline consumption on a per capita basis than do concentrated patterns.

- 11) A dispersed land use pattern would tend to perpetuate fragmentation of public services. As population and land-uses grow and disperse, attempts to consolidate individual special districts and governmental units would be hindered.

Fragmentation of services often results in a low level of effectiveness and efficiency, and overlapping jurisdictions hinder a coordinated effort to provide for and guide growth. Agencies often compete for available funding, and tax dollars can be spent on capital improvements that contradict improvements made by other agencies. In some cases, improvements bear no relationship to either existing or potential concentrations of population.

A concentrated pattern of urban and suburban uses would tend to increase the consolidation of the public service districts and their boundaries. Consolidated districts reflecting concentrations of development, whether urban or rural, contribute to the efficiency and effectiveness of guiding growth.

All of the factors discussed above indicate advantages that could be gained by directing future development in the Region in a concentrated pattern and the disadvantages of allowing development to occur in a dispersed manner. Based on these factors, it is obvious that the Region would benefit through the development and adoption of a land-use strategy that resulted in a concentrated land use pattern promoting consolidation of wastewater collection and treatment based on concentrated urban patterns.

Throughout the Region are numerous communities located along the principal north-south and east-west highways and railroads. Most are located along U.S. Highway 287 (Laporte, Fort Collins, South Fort Collins Sanitation District, Loveland, and Berthoud), U.S. Highway 85 (Nunn, Pierce, Ault, Eaton, Greeley, Evans, LaSalle, Gilcrest, Platteville, Fort Lupton, and Metro Water Recovery), Colorado Highway 60 (Johnstown and Milliken), and U.S. Interstate 76 (Lochbuie, Hudson, Resource Colorado Metro District, and Keenesburg). Others along I-25 include Wellington, Boxelder Sanitation District, Timnath, South Fort Collins Sanitation District, Loveland, Johnstown, Berthoud, Mead, St. Vrain Sanitation District, Erie, and Broomfield. U.S. Highway 34 starting in Rocky Mountain National Park includes Estes Park Sanitation District, Upper Thompson Sanitation District, Loveland, Johnstown, and Greeley.

It is a recommendation of the Association that these agencies along major highways explore opportunities for collection and/or treatment consolidation as well as other opportunities to improve treatment processes with partnerships. Fort Lupton and Metro Water Recovery are trending towards consolidating treatment. Johnstown and Milliken along Colorado Highway 60 are located in close proximity to one another and are trending towards convergence. Others most recently to explore consolidations are Mead

and St. Vrain Sanitation District, and Resource Colorado Metro District, Hudson, and Keenesburg.

b) 208 AWQMP Consolidation Policy (2022)

In evaluating the suitability of a proposed site for a domestic wastewater treatment facility, the WQCD must consider any approved regional wastewater management plan for the designated area. State law encourages the consolidation of wastewater treatment facilities as part of the approval process. Do not go about consolidation alternatives alone, agencies must involve others and collaborate on alternative solutions and examine them thoroughly. At the request of a Designated Management and Operation Agency (DMOA) the Association will facilitate consolidation meetings. In agreement with Regulation No. 22 Implementation Policy, Consolidation analysis; if it is demonstrated to the satisfaction and the parties involved that any one of the following factors would make consolidation infeasible, no further investigation of consolidation is required.

The Association requires the following subjects be thoroughly examined and followed within the Utility Plan report considering regional (DMOA) partnerships or consolidation with the final decision and recommendations being approved by a public process:

1. WUSA Consolidation or subdivision

WUSA consolidation and partnership options must be thoroughly assessed considering long-range WUSAs and GMAs to optimize service areas. As adjacent WUSAs or GMAs boundaries encroach or meet, the economic feasibility of service area consolidation improves over more costly treatment facility capacity increases to serve the same local area population. Overloaded collection systems or treatment facilities should consider subdividing their WUSA with local DMOAs with suitable treatment capacity. DMOAs that can provide the same area sewered service by gravity should also be considered to eliminate current or future planned lift stations. Non-urban areas where collection systems are to be constructed should be constructed and sized considering long-term consolidation options. The Association prefers and encourages WUSA partnerships or consolidation for DMOAs within a 5-mile radius over creating additional WWTFs, and gravity sewers over lift stations. DMOAs have a duty and responsibility to evaluate the best regional solutions for collections systems under the CWA Section 208.

The Project shall be reasonably necessary to meet projected community development and population demands in the areas to be served by the Project, or to comply with regulatory or technological requirements. The determination of whether the Project is reasonably necessary may include but is not limited to the following considerations:

- a. Relationship to reasonable growth projections and local land use plans.
- b. Relationship to other water and wastewater provider's service area.
- c. Whether the Project is not in compliance with regulatory or technological requirements or will not be in compliance in the near future.

2. Treatment Consolidation or Partnership within a 5-mile radius of WWTFs

Larger wastewater treatment facilities can often provide service more effectively while providing a higher degree of treatment than can be achieved through smaller treatment facilities. Consolidation potentially offers significant capital and operational cost savings through economies of scale, reduced points of failure that can lead to SSOs, improve effluent water quality, and improved management and administration through shared resource availability. Based on rates, economics, cost-effectiveness, operations, water quality impacts, physical constraints (topography), and water rights. The Association prefers and encourages WUSA partnerships or consolidation for DMOAs within a 5-mile radius over creating additional WWTFs, and gravity sewers over lift stations. DMOAs have a duty and responsibility to evaluate the best regional solutions for treatment systems under the CWA Section 208.

The Project will not result in excess capacity in existing water or wastewater treatment services or create duplicate services. The determination of whether the Project will result in excess capacity or create duplicate services may include but is not limited to the following considerations:

- a. Whether the Project creates overlapping or competing service areas.
- b. Whether the Project differs significantly from the provider's facility plan.
- c. Whether the Project impacts other water and wastewater permits.

To the extent feasible, wastewater and water treatment facilities shall be consolidated with existing facilities within the area. The determination of whether consolidation is **feasible** shall include but is not limited to the following considerations:

- a. Whether there is an opportunity for consolidation.
- b. The environmental, financial and social feasibility of consolidation.

New domestic water and sewage treatment systems shall be constructed in areas which will result in the proper utilization of existing treatment plants and the orderly development of domestic water and sewage treatment systems of adjacent communities. The determination shall include but is not limited to the following considerations:

- a. Relationship to reasonable growth projections and local land use plans.
- b. Proximity to other water and wastewater provider's service area.

3. **Population Projections of DMOAs within a 5-mile radius**

Discuss consolidation opportunities within and beyond the 20-year horizon period as regional planning alternatives for WWTFs and modifications of WUSAs to be documented within the 208 AWQMP. As population projections demonstrate pinch points, overloaded collection systems or treatment facilities should consider subdividing their WUSA with local DMOAs with suitable treatment capacity. WUSA consolidation opportunities should examine the portion of the UPA boundary beyond the GMA or

WUSA currently anticipating consolidation opportunities beyond the 20-year planning horizon. Map and description of other municipal and industrial water projects in the vicinity of the Project, including their capacity and existing service levels, location of intake and discharge points, service fees and rates, debt structure and service plan boundaries and reasons for and against hooking on to those facilities.

- a. Description of existing domestic water and wastewater treatment facilities in the vicinity of the Project, including their capacity and existing service levels, location of intake and discharge points, service fees and rates, debt structure and service plan boundaries, and reasons for and against hooking on to those facilities.
- b. Description of how the Project will affect urban development, urban densities, and site layout and design of stormwater and sanitation systems.
- c. Description of other water and wastewater management agencies in the Project area and reasons for and against consolidation with those agencies.
- d. Description of how the Project may affect adjacent communities and users on wells.

4. **Assimilative Stream Segment Capacity Comparison of DMOAs within a 5-mile radius**

Within the 20-year planning period and beyond, partnerships and consolidation options should consider population projections and resulting stream segment assimilative capacity projections at 5, 10, 15, & 20-year intervals. Overloaded stream segments and WWTPs (85-95%) should consider partnerships and consolidation options above increasing treatment plant capacities. The Association prefers and encourages consolidation or partnerships above increasing treatment plant capacities within a 5-mile radius. DMOAs have a duty and responsibility to evaluate the best regional solutions to protect, maintain, or restore water quality under the CWA Section 208.

5. **Surface Water Quality**

Map and/or description of all surface waters to be affected by the Project, including:

- a. Description of provisions of the applicable regional water quality management plan that applies to the Project and assessment of whether the Project would comply with those provisions.
- b. Existing data monitoring sources.
- c. Descriptions of the immediate and long-term impact and net effects that the Project would have on the quantity and quality of surface water under both average and worst-case conditions.

The Project will not significantly degrade surface water quality. The determination of effects of the Project on surface water quality may include but is not limited to the following considerations:

- a. Changes to existing water quality, including patterns of water circulation, temperature, conditions of the substrate, extent and persistence of suspended particulates and clarity, odor, color or taste of water.
- b. Applicable narrative and numeric water quality standards.
- c. Changes in point and nonpoint source pollution loads.
- d. Increase in erosion.
- e. Changes in sediment loading to waterbodies.
- f. Changes in stream channel or shoreline stability.
- g. Changes in stormwater runoff flows.
- h. Changes in trophic status or in eutrophication rates in lakes and reservoirs.
- i. Changes in the capacity or functioning of streams, lakes or reservoirs.
- j. Changes in flushing flows.
- k. Changes in dilution rates of mine waste, agricultural runoff and other unregulated sources of pollutants.

6. Ground Water Quality

Map and/or description of all groundwater, including any aquifers. At a minimum, the description should include:

- a. Seasonal water levels in each subdivision of the aquifer affected by the Project.
- b. Artesian pressure in aquifers.
- c. Groundwater flow directions and levels.
- d. Existing aquifer recharge rates and methodology used to calculate recharge to the aquifer from any recharge sources.
- e. For aquifers to be used as part of a water storage system, methodology and results of tests used to determine the ability of aquifer to impound groundwater and aquifer storage capacity.
- f. Seepage losses expected at any subsurface dam and at stream-aquifer interfaces and methodology used to calculate seepage losses in the affected streams, including description and location of measuring devices.
- g. Existing groundwater quality and classification.
- h. Location of all water wells and their uses.
- i. Description of the impacts and net effect of the Project on groundwater.

The Project will not significantly degrade groundwater quality. The determination of effects of the Project on groundwater quality may include but is not limited to the following considerations:

- a. Changes in aquifer recharge rates, groundwater levels and aquifer capacity including seepage losses through aquifer boundaries and at aquifer-stream interfaces.
- b. Changes in capacity and function of wells within the impact area.
- c. Changes in quality of well water within the impact area.

7. Water Quantity

- a. Map and/or description of existing stream flows and reservoir levels.
- b. Map and/or description of existing Colorado Water Conservation Board held minimum stream flows.
- c. Descriptions of the impacts and net effect that the Project would have on water quantity.
- d. Statement of methods for efficient utilization of water.

8. Floodplains, Wetlands, and Riparian Areas

- a. Map and/or description of all floodplains, wetlands, and riparian areas to be affected by the Project, including a description of the types of wetlands, species composition, and biomass.
- b. Description of the source of water interacting with the surface systems to create each wetland (i.e., side slope runoff, over-bank flooding, groundwater seepage, etc.).
- c. Description of the impacts and net effect that the Project would have on the floodplains, wetlands and riparian areas.

The Project will not significantly degrade wetlands and riparian areas.

The determination of effects of the Project on wetlands and riparian areas may include but is not limited to the following considerations:

- a. Changes in the structure and function of wetlands and riparian areas.
- b. Changes to the filtering and pollutant uptake capacities of wetlands and riparian areas.
- c. Changes to aerial extent of wetlands and riparian areas.
- d. Changes in species' characteristics and diversity.
- e. Transition from wetland to upland species.
- f. Changes in function and aerial extent of floodplains.

9. Regional DMOA Credit Trading.

Partnerships and consolidation options may include water quality trading credits for water quality-based permitted limits, parameters of concern, and assimilative capacity. As population and loading projections demonstrate water quality-based limit pinch points, overloaded stream segments should consider credit trading with local DMOAs with suitable treatment or assimilative capacity.

10. CIP Economic Feasibility Studies of DMOAs within a 5-mile radius.

Within the 20-year planning period and beyond, DMOA CIP projects must provide economic feasibility studies compared to consolidation and partnership options for DMOAs within a 5-mile radius. DMOAs have a duty and responsibility to evaluate the best regional solutions to ensure that present and future wastewater needs are financially feasible for the general public as ratepayers under the CWA Section 208. Economic

Feasibility. The Term Economic Feasibility goes beyond the upfront capital cost of the project being considered. Economic Feasibility should include the long-term maintenance and operation costs of the project as well as the financial burden on ratepayers and residents. The Financial burden includes the existing tax burden and fee structure for government services including but not limited to assessed valuation, mill levy, rates for water and wastewater collection and treatment, and costs of water supply. Thus, the project's net effect is the residents' financial burdens and is to be considered part of the Economic Feasibility of projects. Beyond the financial burden of the ratepayers and residents the project should consider the impacts on the local economy. Description of the local economy including but not limited to revenues generated by the different economic sectors, and the value of productivity of different lands. Local economic impacts and net effects of the project on the local economy and opportunities for economic diversification can be illustrated by examining regional opportunities for consolidation.

11. User Rate Studies of DMOAs within a 5-mile radius.

Within the 20-year planning period and beyond, including the known ratepayer DMOA increases provided here within, provide ratepayer economic feasibility studies compared to consolidation and partnership options for DMOAs within a 5-mile radius. DMOAs have a duty and responsibility to evaluate the best regional solutions to ensure that present and future wastewater needs are financially feasible for the general public as ratepayers under the CWA Section 208.

12. Consolidation Record of Public Participation.

Provide a discussion of public meetings, dates, and public hearings, including a general review, comment, and approval component. If a public hearing was held to consider partnerships or consolidation, provide minutes of that meeting in the appropriate appendix as outlined within the checklist, including the economic feasibility options presented for consideration during the public hearing. Confirm regional consolidation decisions, including the reasons for or against, with meeting minutes by the involved agencies' decision-making authorities. Meeting minutes should identify legally responsible personnel with decision-making authority (i.e., mayor, president/chair of the council/board, town or city council/board, public works director, owner, corporate officer, other authorized officials, etc.) with the business, organization, or municipality. The Association and its member DMOAs aspire to be a highly respected regional leader resolving wastewater regional water quality planning issues. DMOAs are a source of reliable information and data utilizing the administrative public comment and decision process. This Association's vision cannot happen without public participation.

- a. In the event that multiple attempts have been made to engage DMOAs, provide documentation and timelines in which those DMOAs have declined to participate in consolidation discussions.

6) Plan Amendment Checklist.

208 AWQMP Plan Amendment Checklist

Plan Amendment Process

Entity:

Review Date:

1. Beginning January 1, 2008, all public wastewater treatment agencies submitting a plan amendment request (including a service area boundary change) must have a current utility plan (10-years or newer), which has been approved by NFRWQPA before the request. Other agencies not falling into this category must include utility plan information in conjunction with a plan amendment request.	Location in Report:	Comments:
2. The location of the proposed facility, the geographical area, intended to serve by the specific delineation of projected service area boundaries on a map, and the existing population of the proposed service area and the 5, 10, 15, and 20-year population projections.		
3. Design hydraulic and organic loading capacity of the proposed facility and the expected initial flows and loadings and the projected flows and loadings in 5, 10, 15, and 20-year projections.		
5. The names of existing sewer service entities within 5 miles of the proposed service area and facility, a map indicating their boundaries, and the direction of gravity flow from the proposed area.		
6. Estimated construction costs for the proposed facility and an estimate of the cost differential between building the proposed facility and the least costly alternative for connecting to an existing facility, including a map indicating construction required to accomplish and such connection.		
7. A letter from all existing sanitation districts or other sewer service entities within 5 miles stating the feasibility of providing service to the service area and the justification for not connecting to an existing facility where feasible.		
8. Identification of other permittees discharging to the same receiving water body and downstream discharges on main streams and any effect the proposed discharge would have on any of them and the river basin water quality (i.e., TMDL loading).		
9. Proximity to the nearest domestic drinking water source or diversion downgradient from the discharge. Identifying drinking water entities (i.e., providers & districts) entities within 5 miles of the proposed service area and facility, a map indicating their boundaries as well as wells, and direction of groundwater flow from the proposed area.		
10. Proposed permit or NOA effluent limits as developed by the Water Quality Control Division of the State Department of Health for any discharge.		
11. Analysis of treatment alternatives considered and a detailed justification for choosing the proposed alternative in terms of surface and/or groundwater quality and other environmental impacts and economic and institutional considerations.		
12. Institution arrangements such as contract and/or covenant terms for all users. Documentation must include Articles of		

<p>Incorporation and By-laws for homeowners' groups to include powers and authority to ensure proper operation and maintenance of the facility for its projected life.</p>		
<p>13. Management capabilities for controlling the wastewater throughout and maintaining treatment within the capacity limitations of the facility on a continuous long-term basis. Documentation would include user contracts, operating agreements, and pretreatment requirements.</p>		
<p>14. Potential for water reuse, including water rights limitation and any water augmentation plan. Including a management plan for receiving and treating all possible water rights scenarios within the defined service area or scope of the project.</p>		
<p>15. Provide the present population and flow commitments of existing facilities of the Management or Operation Agency, to demonstrate the adequate capacity for the development.</p>		
<p>16. An indication as to how this project relates to existing and envisioned facilities and the needs of a regional service area for the entire drainage basin.</p>		
<p>17. For new service areas or additions, a map delineating the additional area requested and a report on the reasons that this area would be best serviced by the entity requesting the expansion of their service area. The service agency requesting a 208 AWQMP amendment to its wastewater utility service area must provide adequate long-term planning information, including, at a minimum, the following factors over a 20-year planning period.</p>		

<ul style="list-style-type: none">● The identified service area.● Population datasets, forecasts, and land use status.● Collection system requirements● Treatment facility requirements.● Sequence and timing of capital projects.● Rates and fees necessary to finance improvements when needed.● The entity requesting the amendment must also submit, at a minimum, the following current information.● Population● Peak and average flow● Peak and average loading● Inflow / infiltration● Treatment capacity, hydraulic and<ul style="list-style-type: none">○ Organic.● NPDES permit requirements and<ul style="list-style-type: none">○ Constraints.○		
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