

**North Front Range Water
Quality Planning Association
Utility Plan Guidance**

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ABSTRACT

TITLE North Front Range Water Quality Planning Association Utility Plan Guidance

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ABSTRACT This guidance document provides necessary information and direction to utility departments, consultants, planners or wastewater managers that need to produce a wastewater utility plan.

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EXECUTIVE SUMMARY

This guidance document provides the necessary information and direction to develop wastewater utility plans. The document provides detailed technical information specifically targeting utility departments, consultants, planners or wastewater managers that need to produce wastewater utility plans. Utility plans should be consistent with the guidance contained herein.

The new wastewater utility plans will meet multiple wastewater management documentation needs as detailed in this guidance document. Utility plans are critical in determining how wastewater service will be provided to urbanized portions of the region and special case locations that have a permitted wastewater treatment facility. The long-term goal is to have a wastewater utility plan for permitted wastewater treatment systems in the North Front Range Water Quality Planning Association (NFRWQPA) region.

This guidance identifies two types of wastewater management service areas termed the 20 year Wastewater Utility Service Area (WUSA) and the Ultimate Planning Area (UPA). Those entities developing utility plans should use these service area concepts. Each wastewater utility plan should identify specific service areas and describe how these areas will be served in context with meeting all required water quality limits.

This technical guidance document details who needs to complete a utility plan, the role of the water quality management agency, timing schedules, and documentation requirements. A number of logical steps in this process are outlined that increase the effectiveness and efficiency of wastewater management planning within the NFRWQPA region.

Important definitions are provided early in the guidance document, since these definitions are critical in understanding the guidance recommendations. The definitions are consistent with definitions contained in the Colorado site approval process. The site approval regulation should be referenced for additional definitions.

Long-range wastewater service areas are called Ultimate Planning Areas. The portion of the UPA beyond the urban growth boundary is based on approved local comprehensive plans, comprehensive long-range utility plans or the area a wastewater provider intends to serve at ultimate development. UPAs can extend significantly beyond the 20 year planning horizon. NFRWQPA planning areas and wastewater utility service areas can be modified through flexibility provisions of the plan amendment process.

Utility plans will need to meet the requirements of the Colorado Department of Public Health and Environment site approval regulation number 22. The definitions used in the site application regulation define terms used in any utility plan. Utility plans that have been recognized or conditionally recognized by the NFRWQPA will be used in the site approval process. As part of the state Water Quality Act, site approvals are needed for construction or expansion of wastewater treatment works, lift stations, and major interceptor lines.

Utility plans document the wastewater management strategy for a wastewater treatment facility (greater than 2000 gallons per day capacity) and the associated planning area. All utility plans should contain a defined set of minimum information (location, sizing, staging, service area, process system, effluent quality and financial arrangements) outlined in Chapter V of this guidance document and respond to appropriate state or federal requirements. The checklist of recommended documentation needs for utility planning should be followed in the preparation a new utility plan.

The primary goal in establishing wastewater utility plans is to provide reasonable, feasible and economical wastewater service to areas designated for development within the NFRWQPA watersheds. Utility plans should consider the water quality impact the treatment system will have on receiving waters. The utility plan should include any strategy for meeting all applicable water quality standards and classifications, while quantifying the potential impact a discharger may have on other dischargers.

PREAMBLE

Wastewater Utility Plans are planning tools that can assist wastewater utilities in planning for wastewater collection system and treatment system changes. The North Front Range Water Quality Planning Association (NFRWQPA) has assembled this document to provide guidance to utilities in its region. Beginning January 1, 2008, the NFRWQPA will request that all public wastewater treatment agencies submitting a site application, plan amendment request (including service area boundary change), or district formation and designation, have in place a current utility plan which has been recognized or conditionally recognized by NFRWQPA prior to the request. Other agencies not falling into this category, will include utility plan information in conjunction with any of the above listed requests. These plans will simplify and ease the process by which utilities may seek Site Approvals from Colorado Department of Public Health and Environment's Water Quality Control Division and 208 plan amendments from NFRWQPA.

I. INTRODUCTION

PURPOSE OF GUIDANCE DOCUMENT

What are utility plans?

Wastewater Utility Plans are designed to replace 201 facility plans.

This guidance document provides the necessary information and direction to utility departments, consultants, planners or wastewater managers that need to produce a wastewater utility plan. Utility plans should be consistent with the guidance contained in this

document. Wastewater utility plans, as referenced in the *Areawide Water Quality Management Plan (208 Plan)*; replace the current 201 facility plans.

The new wastewater utility plans will meet multiple wastewater management documentation needs, including, but not limited to the following four basic functions:

1. Serve as the primary support document to amend the *Areawide Water Quality Management Plan*.
2. Serve as the primary support document for a site approval.
3. Provide necessary background and planning information needed by the Water Quality Control Division in the discharge permitting process.
4. Serve as a support document for a revolving loan application.

Utility plans are intended to be broader in scope than 201 facility plans, with the recognition that the amount of detail will vary between plans, depending on facility complexity and size. Some additional support documentation may be required by the Colorado Department of Public Health and Environment, Water Quality Control Division in the site approval, permitting and loan processes.

Utility plans are critical in determining how wastewater service will be provided to urbanized portions of the region. This includes small locales requiring centralized services or specialized sites requiring a wastewater treatment plant with a capacity > 2000 gallons/day (i.e., church camp, truck stop, and restaurant). The utility plan level of detail will be kept flexible to accommodate both major and minor wastewater providers.

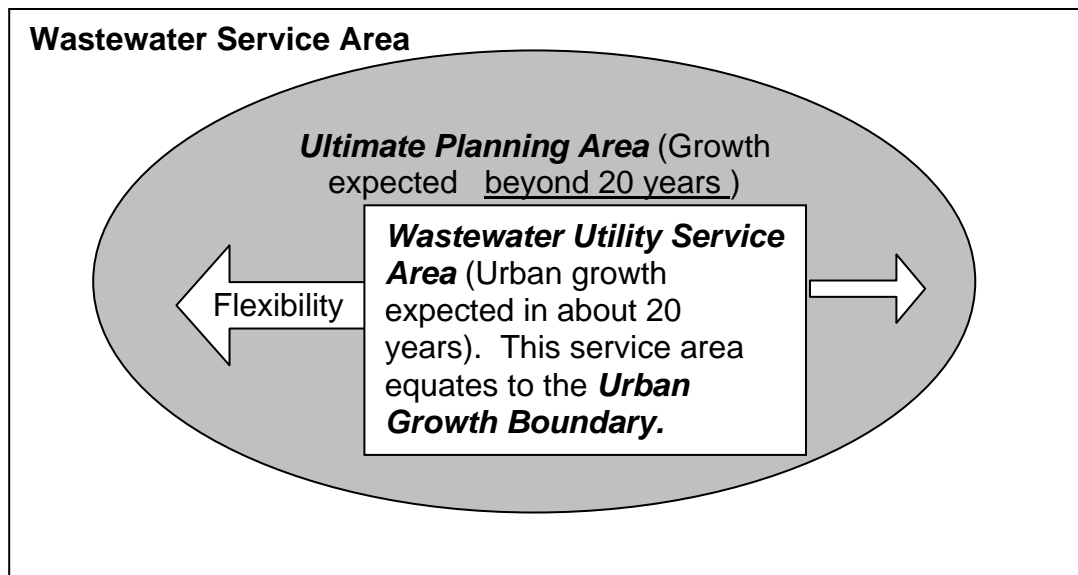
General review and recognition

The review and acceptance of wastewater utility plans, associated with designated service areas, that are prepared according to this guidance, is a responsibility of the NFRWQPA. Utility plans may be accepted by NFRWQPA at any regularly scheduled meeting.

The guidance directions included herein were developed in cooperation with the Water Quality Control Division. While the division intends to use utility plans as source information in its various processes, the acceptance by NFRWQPA does not preclude the division from requiring additional documentation. This guidance document contains the wastewater planning information needed in the development of utility plans to be incorporated by reference into the Areawide Water Quality Management Plan.

Geographic context

The 208 Plan processes define how wastewater service and water quality attainment can be achieved within specific geographies. While a wastewater service area may extend into adjacent watersheds, the basic geographic unit for wastewater utility planning will be the watershed. Additionally, regional water quality planning will be driven by the watershed approach.



The 208 Plan can identify and map two types of wastewater management service areas termed Wastewater Utility Service Areas (WUSAs) and Ultimate Planning Areas (UPAs) as this information is provided and utility plans are prepared and accepted. Entities developing utility plans as outlined in this guidance document, should use the service area concepts of Wastewater Utility Service Areas and Ultimate Planning Areas.

Each wastewater utility plan should identify a specific service area and describe how this area will be served in context with meeting all required water quality limits. Wastewater service areas should include the area requiring urban area services through the 20 year planning horizon.

Areas requiring urban area services beyond the planning horizon are identified as ultimate planning areas. These areas should be included in a locally approved comprehensive plan or similarly approved plan. As development patterns change, ultimate planning areas can be converted to 20 year planning areas when the needs have been identified. Modifying the urban growth boundary is a local planning responsibility.

Who needs to complete wastewater utility plans?

Wastewater treatment facilities or plants with a permitted discharge greater than 2000 gallons per day, as issued through the Colorado Discharge Permit System (CDPS), should complete a wastewater utility plan or set of plans, as appropriate, if their service area is growing.

What is the role of management agencies?

Management agencies, as historically designated in the NFRWQPA 208 Plan, are those entities with land control authority. The management agencies and associated operating agencies decide on the need for and specific characteristics of wastewater treatment processes and the details of implementation within specified parameters. Generally, wastewater treatment facility operating agencies will have primary responsibility for developing utility plans. Management agencies are responsible for review of utility plans developed by associated operating agencies. When the management agency and operating agency are the same, the utility plan will be considered as being developed by the management agency.

Management agencies are associated with all wastewater treatment facilities in the NFRWQPA region. Generally, counties are management agencies for most minor wastewater providers. Otherwise, municipalities or other general-purpose governments are management agencies.

Management agencies may be individual municipal governments, general-purpose governments holding National Pollutant Discharge Elimination System (NPDES) discharge permits or other special districts responsible for planning and approving permitted facilities. Management agencies are designated by the governor as recommended by the planning and regulatory

agencies. Management and operating agencies may have the following authorities related to utility planning:

- ❑ Carry out appropriate portions of the *Areawide 208 Plan*.
- ❑ Facilitate coordination between adjacent service entities as to which can best serve a new area.
- ❑ Directly, or by contract, plan for, design and construct new wastewater treatment works, including plant and collection system.
- ❑ Operate and maintain new and existing wastewater treatment works.
- ❑ Accept and utilize grants, loans and funds from other sources for wastewater treatment management purposes.
- ❑ Raise revenues, including the assessment of wastewater treatment charges.
- ❑ Facilitate implementation of the wastewater treatment management plan, with each participating community paying its proportionate share of treatment costs.
- ❑ Accept industrial wastewater for treatment and manage pretreatment programs.

When will wastewater utility plans be needed?

Wastewater utility plans meeting minimum recommendations outlined in the *Areawide 208 Plan* and detailed in this guidance document should be prepared for all major wastewater collection and/or treatment service providers (service providers). For existing major service providers, the development and review of utility plans should be completed as soon as possible and should be linked to the five-year permit renewal cycle as necessary. It is anticipated that some service providers will not complete a utility plan.

Additionally, some wastewater collection system providers may not complete a utility plan. If there is no reason to change the treatment plant capacity, modify the service area or upgrade the treatment works, a utility plan may not be necessary. However, any significant changes to the treatment works or service area for these systems will require a utility plan for review by NFRWQPA.

The utility planning process will remain flexible for minor wastewater providers. However, *sufficient planning information* must be shown so there *will not be negative water quality effects* caused by any proposed new facility, facility expansion or *change to service area*.

First steps in starting a utility plan

Recommended first steps in preparing a wastewater utility plan are outlined below.

- Determine the type and intended use of the utility plan:
 - 1) Existing wastewater treatment plant, interceptor or lift station - no upgrade anticipated within 5 years
 - 2) Existing wastewater treatment plant, interceptor or lift station – upgrade necessary within five years;
 - 3) Existing wastewater treatment plant, interceptor or lift station – site approval in progress; or
 - 4) New wastewater treatment works.

- Determine who needs to be involved in the development of a utility plan and the general level of involvement in the process: They may include but are not limited to the following
 - 1) NFRWQPA
 - 2) Management agency;
 - 3) Operating agency (mandatory);
 - 4) Local governments
 - 5) Special districts;
 - 6) Technical support group(s) (e.g., consultant company, technical experts);
 - 7) Citizen groups, homeowner associations and the general public;
 - 8) Industries (either through pretreatment program or direct within service area);
 - 9) Watershed association
 - 10) State agencies (e.g. Water Quality Control Division, State Engineer, Colorado Division of Wildlife); and
 - 11) Federal agencies (e.g. U.S. Army Corp of Engineers, Federal Fish and Wildlife Service)

- Collect all existing documentation and compare to outline to determine missing elements or areas requiring revision for new utility plan.

- Make preliminary contact with potential key informational contacts (Table 1) to;
 - 1) Obtain information needed in the utility planning process; and
 - 2) Determine issues or problems that need to be addressed during the utility planning process.

- Develop utility planning process schedule and begin.

Table 1 Key contacts

Level	Contacts	Types of Information
Planning Agency	Regional Planning Agency Staff	Guidance documents, maps of service areas, urban growth boundary, population and employment projections, wastewater flows, water quality assessments, wastewater management policies, monitoring information, committee contacts
Local government	Planning and zoning department; local health department	Urban growth boundary; comprehensive plans; zoning; development plans
Management/operating Agency	General-purpose government as a management agency or a watershed association as the management agency	Wastewater strategy; existing permits; watershed plans; TMDLs, facility plans; existing infrastructure plans
State Agencies	Water Quality Control Division staff including watershed coordinator, permit writer (existing permit), revolving loan staff (if potentially interested in state loan); State Engineer	Regulations (i.e., site approval); effluent limits; permits; wasteload allocations, water rights, loan requirements, air quality permit requirements, stormwater management plan requirements, biosolids
Federal Agencies	U.S. Army Corp of Engineers, Federal Fish and Wildlife Service, Environmental Protection Agency and potentially others	Wetlands, floodplains, biosolids application, endangered species, national environmental protection act (NEPA)

Wastewater treatment work planning

The utility plan or set of plans can be applied to one or more existing or proposed wastewater treatment works. In some cases, joint utility plans between wastewater providers may be appropriate, because of management requirements or to meet water quality goals. A wastewater utility plan document or set of documents provides basic planning information for wastewater treatment works to:

Utility plans will provide information for watershed planning efforts.

- ❑ Meet requirements of the site approval regulations as adopted by the Colorado Water Quality Control Commission (Regulation 22).

- ❑ Provide sufficient information to amend the regional 208 Plan related to water quality assessments, watershed management and wastewater management strategies.
- ❑ Provide wastewater treatment works or plant information, discharge data or other relevant documentation that are required in the preparation of total maximum daily loads, wasteload allocations and/or other watershed planning efforts.
- ❑ Provide wastewater treatment works or plant information to assist in preparing discharge permits or applying for loans.
- ❑ Assure that boundaries between adjacent 20-year and Ultimate planning areas, when identified by a wastewater provider, do not overlap, unless these overlap areas are incorporated into established memorandums of understanding.
- ❑ Assure that the management and operating responsibilities, as outlined in the *208 Plan*, can be met by both major and minor wastewater service providers.

Boundaries between adjacent wastewater utility service areas cannot overlap.

Wastewater utility plan documents

A wastewater utility plan can be a set of linked documents, provided all linked documents are filed in the reference library as the *final utility*

A wastewater utility plan may consist of one report (document) or a number of separate utility reports prepared by the same agency or a combination of agencies. Multiple documents can provide separate geographical detail and/or facility detail, or they separately meet the goals of the wastewater utility plan. Multiple documents must be submitted to NFRWQPA as a set, including all appropriate maps, when the utility plan is first submitted for acceptance. Thereafter, only those documents that are updated, amended or otherwise changed need be submitted for acceptance. The utility plan report or set of documents and all subsequent support documentation will be filed and maintained by NFRWQPA as the final utility plan for a specified treatment plant.

Final utility plans, accepted by NFRWQPA, should be updated every five to 10 years or amended from time-to-time. Additional update or amendment documents can be appended to the original utility plan, after acceptance, without re-issuing the final utility plan. A database will be maintained by NFRWQPA on final utility plans and any supplemental documents.

Documentation sign-off

Utility plans and any subsequent amendments will have an associated sign-off form. The site approval process identifies a list of agencies who are given an opportunity to make a recommendation on an application for construction of new, modified or

expanded domestic wastewater treatment plants. Those agencies identified in the site approval process should sign-off on all utility plans reviewed and accepted by NFRWQPA. These signature agencies will also have the opportunity to attach and file any comments with their signature. This sign-off form is titled *Local Agency Utility Plan Acceptance or Conditional Acceptance Form (Table 2)*. Original sign-off forms will be kept on file at NFRWQPA.

Table 2: Local Agency Utility Plan Acceptance or Conditional Acceptance Form

Date	Recommend Approval	Recommend Disapproval	Signature	Typed Name
1.	_____		_____	_____
	Management Agency _____			
	Comments: _____			
2.	_____		_____	_____
	Management Agency _____			
	Comments: _____			
3.	_____		_____	_____
	Management Agency _____			
	Comments: _____			
4.	_____		_____	_____
	Local Health Authority _____			
	Comments: _____			
5.	_____		_____	_____
	Other State or Federal Agencies _____			
	Comments: _____			
6.	_____		_____	_____
	North Front Range Water Quality Planning Association			
	Comments: _____			

II. IMPORTANT DEFINITIONS

Comprehensive Plan - A Comprehensive Plan is a document that guides the physical land use development of an area. It is comprehensive in that it considers and coordinates the many inter-related aspects of development such as land use, transportation, utilities and public facilities, parks and open spaces.

Design Capacity - The rated capacity (capability of a treatment plant to meet effluent limitations). This rated capacity shall be given in million gallons per day (MGD) and organic loading in pounds BOD₅ per day. This rated capacity is identified in the discharge permittee's permit; or for proposed facilities, it will be specified when the permit has been issued.

Major Wastewater Provider - Major wastewater providers serve over 200 residential equivalents and the permitted wastewater treatment facility has a design capacity greater than 50,000 gallons per day. The treatment plant does not qualify as a minor treatment facility.

Management Agency - Any public agency designated for wastewater management responsibilities in an area-wide Water Quality Management Plan prepared under Section 208 of the Federal Act and certified by the Governor. Such designation shall be considered final only upon the agency's acceptance of its responsibilities as outlined in the appropriate 208 Plan.

Minor Wastewater Provider - Minor wastewater providers generally serve less than 200 residential equivalents. The permitted wastewater treatment plant has a design capacity not exceeding 50,000 gallons per day and the facility does not plan to increase its capacity beyond 50,000 gallons per day within the 20 year planning horizon.

NEPA Requirements – The National Environmental Policy Act establishes requirements for Environmental Assessments and Environmental Impact Statements.

Non-discharging Wastewater Treatment Works – Some wastewater treatment works that do not discharge to surface or groundwater can be designated by the Water Quality Control Division as non-discharging and do not require a permit to operate.

Planning Agency – The NFRWQPA is the designated planning agency for Larimer and Weld Counties.

Ultimate Planning Areas – It is the intent of NFRWQPA that wastewater service areas identified in the Areawide Water Quality Management Plan (208 Plan) be based on the urban growth boundary and any additional potential service area identified by approved local comprehensive plans, comprehensive long-range utility plans or the area a wastewater provider intends to serve at ultimate development. Ultimate Planning Areas are either equal in total land area to wastewater utility service areas (WUSA) or larger.

Consequently, no Ultimate Planning Area can be smaller than a WUSA. The portion of the Ultimate Planning Area beyond the urban growth boundary is not expected to require urban services until after 20 years from the time a utility plan is completed. However, this portion of the Ultimate Planning Area can be converted into WUSA as needed through the plan amendment process.

Urban – Land developed in residential, employment, service and other uses in proximity to each other so as to afford convenience, access and community. Residential densities in excess of one dwelling unit per acre and served by either central water or sewer services, or both, are considered urban in nature. The exception occurs where dwellings are clustered to preserve open space in conjunction with an open space plan, or in accordance with an approved wastewater utility plan.

Urban area – The land area that has been developed at densities and in character with the definition of urban and which requires central water and sewer as well as other infrastructure and service needs.

Urban Growth Boundary – Defined through an MOU between a county and a municipality as the land area planned to urbanize within a specific timeframe. This land area is planned by local governments to need urban services and utilities before the year 2020 or other time horizon established by the MOU.

Utility Plan – Complete set of documents or single document that meets the minimum utility plan requirements and is accepted or conditionally accepted by NFRWQPA.

Wastewater Utility Service Area (WUSA) – A WUSA is defined as the portion of the Ultimate Planning Area defined by the Urban Growth Boundary. A WUSA requires urban services through the 20 year planning horizon. These service areas are mapped and approved as part of the Areawide Water Quality Management Plan. WUSAs can be modified through the flexibility provisions in the plan amendment process.

III. WASTEWATER SERVICE AREA CONCEPTS

Major service areas

Major wastewater utility service areas exceed 200 residential equivalents with a plant design capacity >50,000 gallons/day.

If a wastewater provider serves over 200 residential equivalents and the permitted wastewater treatment facility has a design capacity greater than 50,000 gallons per day, the associated WUSA will be classified as major. Utility plans for major wastewater providers serving major WUSAs are expected to provide all minimum information as recommended by this guidance document. The *208 Plan* will continue to establish the boundaries between WUSAs to

assure that there are no overlaps of service areas. Utility plans that contain overlapping service areas, can not be accepted by NFRWQPA unless an Intergovernmental Agreement or Memorandum of Understanding is in place between the entities establishing the process for service in the overlap area. Overlap issues must be resolved through local planning processes prior to being submitted to NFRWQPA for acceptance.

The shape or contiguity of a major wastewater utility service area is defined through local planning processes.

Minor service areas

Minor wastewater providers generally serve fewer than 200 residential equivalents with a maximum treatment plant capacity of 50,000 gallons/ day.

If a wastewater provider serves fewer than 200 residential equivalents and the permitted wastewater treatment facility has a maximum design capacity of 50,000 gallons per day, then the associated WUSA will be classified as minor.

If the minor wastewater provider plans to increase its plant capacity beyond 50,000 gallons per day within the 20 Year planning horizon, then a new and more detailed utility plan should be prepared before this expansion can occur.

The shape or contiguity of minor WUSAs not defined by the extent of urban development can be identified through the utility planning process. These systems may be isolated wastewater treatment facilities that are not contiguous with the extent of urban development. The accepted minor WUSA may or may not match the property owned by a minor wastewater provider. Utility plans for minor wastewater providers that serve minor WUSAs may not have to meet all guidance requirements. The minimum information requirements for minor utility plans will remain flexible in this guidance document. Minimum requirements will be determined by NFRWQPA on a case-by-case basis.

Wastewater service providers serving minor WUSAs should have active wastewater treatment facility discharge permits. Wastewater service providers with inactive wastewater facilities or permits will not be shown in the *208 Plan*, and they will not be required to complete utility plans. Service areas for inactive or non-discharging

wastewater treatment works will be dealt with on a case-by-case basis. However, any minor facility being re-issued a discharge permit by the Water Quality Control Division will be treated as a new facility and will be requested to complete a utility plan before being incorporated into the *208 Plan*.

For minor facilities or minor WUSAs, the facility capacity and service area is established based only on the area intended to be served and on the current facility sizing as approved in a site application or discharge permit. The minor WUSA and facility design capacities are assumed to remain less than 50,001 gallons per day capacity.

Service areas for some minor wastewater service areas may not be contained within the urban growth

Minor treatment facilities that expand capacity beyond 50,000 gallons/day will be classified as major treatment facilities.

If a management agency or operating agency expands its wastewater treatment facility above the maximum 50,000 gallons per day capacity, the treatment plant will be treated as a major facility. The minor WUSA and the UPA for the minor treatment facility will be assumed equal in area unless amended.

Ultimate Planning Areas

Long-range wastewater service areas are called Ultimate Planning Areas (UPA). No UPA can be smaller than a WUSA. The portion of the UPA beyond the urban growth boundary is based on approved local comprehensive plans, comprehensive long-range utility plans or the area a wastewater provider intends to serve at ultimate development. In some cases, the UPA may represent the total amount of urban area needed for a projected longer-term population or the ultimate build-out of a utility service area.

Ultimate Planning Areas are either equal to wastewater utility service areas (WUSA) or larger.

Since WUSAs and UPAs recognize different geographies, the growth density assumptions may also be different for the two areas. Wastewater providers are expected to provide their own density assumptions and flow projections consistent with local comprehensive plans for UPA's.

Ultimate Planning areas may represent the ultimate build-out of a service area.

Wastewater Utility Service Area

A planning area designation amendment must precede an expansion of a utility service area, if the proposed utility service area extends beyond the accepted planning area boundary.

The WUSA is defined as the portion of the Ultimate Planning Area requiring urban service through the 20 year planning horizon. This area can not be larger

that the identified UPA. The primary goal in establishing WUAs and wastewater plans is to provide reasonable, feasible and economical wastewater service to an area designated for urban development. Utility plans should consider the water quality impact the treatment and collection system will have on receiving water and provide a strategy for meeting all applicable water quality standards and classification, while minimizing the potential impact one may have on another.

A service area is usually defined by urbanized areas requiring services within a planning period of approximately 20 years. These areas are established with the intention of encouraging contiguous and orderly development of utility infrastructure. These areas may be the result of municipal boundaries, legal boundaries of sanitation districts or hydrologic boundaries. The boundaries should be consistent with the local comprehensive plans and the adopted extent of urban development. By including such areas within a WUSA, the entities assume the responsibility of providing service to that area within a reasonable time frame.

Basic principals relative to water quality need to be considered when establishing service boundaries. These principles include, but are not limited to, such factors as gravity systems preferred over lift stations, standard engineering practices, reasonable management and financial practices, and facility and collection system master planning.

The establishment of a WUSA must be based on adequate long term planning information. Wastewater utility plans must address, at a minimum, the following factors for the WUSA over a 20 year planning period.

- 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 required.
- 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 organic
 - ✓ NPDES permit requirement and constraints

WUSAs can be modified through the flexible provisions in the Plan Amendment Process. WUSA designations will be mapped and maintained as part of the Areawide Water Quality Management Plan.

Sometimes property is included within a provider's WUSA or UPA even though it has not yet been annexed or included in the provider's legal boundaries. Until that happens,

the provider does not have legal jurisdiction over the property. While property within a providers WUSA or UPA is expected to be served by that provider, if the property has not been annexed or included, other providers may be able to serve the property. Evaluation of options for service must include referral to the affected local land use entities and consistency with any applicable intergovernmental agreements or other arrangements between the responsible local governments and existing providers.

Wastewater Utility Service Area Conflicts: As stated earlier, overlapping service areas can not be accepted unless and agreement is in place to establish the process for service in the overlap area. When service area conflicts arise that can not be resolved the following process will be followed. The approved service area, prior to conflict, will not be changed until the entities have reasonably attempted to resolve the service area in dispute. A watershed association and NFRWQPA staff may provide appropriate technical assistance to help resolve planning area overlap issues through a utility technical support process. Technical support by NFRWQPA staff will only be provided on a request basis. If conflict resolution can not be achieved on a timely basis, then one or both entities having a conflict can take the issue directly to the Association for recommendation. In these instances, the following guideline will be observed:

- Each entity shall make a presentation, not to exceed 30 minutes, outlining the pros and cons for that entity to provide service. Following the presentation, there will be an opportunity for public comment (limited to 5 minutes each) followed by questions and discussion from the membership. The entities in conflict will not be allowed to participate in the questions and discussion period except to respond to specific questions from the membership.
- Each member entity, except those involved in the conflict, shall evaluate and recommend the entity that can best provide service based on, but not limited to, the following:
 - ✓ Available and current planned treatment systems
 - Current capacity
 - Planned capacity, sequence, staging
 - History of discharge (violations)
 - Potential impact of effluent discharge on receiving waters
 - Environmental impact
 - Location and site information
 - Type of process treatment
 - Flood plain
 - ✓ Available and planned collection systems
 - Gravity versus lift stations
 - Current capacity
 - Planned capacity, sequence, staging
 - Route location relative to water quality
 - ✓ Economic strength and reasonableness to provide service
 - How is service to the area funded?
 - How are improvements funded?
 - Will this deplete reserves?

- ✓ Long term impact on surrounding entities
- ✓ Requests for wastewater service
- ✓ Protection of water quality and groundwater
- ✓ Referrals from affected local land use entities
- ✓ Consistency with any applicable intergovernmental agreements or other arrangements between the responsible local governments and existing providers

The entity that is recommended by the majority of the membership shall be approved by NFRWQPA. All affected Utility Plans should then be amended to reflect the preferred service option including changes to the WUSA or UPA. These changes will be done through the review process established in this document.

Wastewater utility service to non-urban areas

Wastewater utility service areas (WUSA) can have land areas designated as non-urban wastewater planning areas.

Wastewater service to non-urban areas, which can include such uses as designated open space, permanent non-urban wastewater served developments, agricultural or special use, which may not be economically served by centralized service in the

near-term, will require other management solutions. Non-urban wastewater planning areas may be designated by the land use planning agency as permanent non-urbanized areas that are to be permanently served by individual sewage disposal systems or on-site systems with a design capacity of 2,000 gallons/day or less. Wastewater planning areas may also be designated by the land use planning agency as permanent non-service areas (open space, agricultural areas and low density non-urban with no more than one residence or structure per 35 acres).

Interim non-urban areas that do not require centralized services may be served by on-site systems in the interim period.

Interim non-urban areas can also be designated as being expected to eventually urbanize (after 2020) and require centralized services. Wastewater utility plans should address how these interim non-urban areas within the UPA planning area will be served. An estimate should be included in the report on when urban service requirements will be available or required.

Management agencies are required to identify a method to evaluate water quality effects related to on-site treatment and disposal systems located within designated UPA Planning Areas or wastewater utility service areas.

The nonpoint source management agency, watershed association or other responsible management agency that has assumed responsibility for non-urban wastewater planning should be identified. Unless otherwise specified, the county should be considered as the nonpoint source management agency. This management entity should be requested to provide an appropriate method or methods to evaluate water quality effects related to large lot developments served by individual sewage disposal

systems within *non-urban* wastewater service areas. The wastewater utility plan will need to map large lot developments located in service areas.

IV. RELATIONSHIP TO SITE APPROVAL PROCESS

The Colorado Department of Public Health and Environment regulation number 22 (Regulations for the Site Approval Process), as approved and amended from time to time, is used as a reference. Utility plans should meet the requirements of regulation 22. The definitions used in the site application regulation should be used to define terms used in any utility plan. Utility plans that have been accepted or conditionally accepted by NFRWQPA will be used in the site approval process by NFRWQPA

Site approvals are needed for construction or expansion of wastewater treatment works, lift stations, and major interceptor lines.

As part of the state Water Quality Act, site approvals are needed for construction or expansion of wastewater treatment works, lift stations, and major interceptor lines. Final action on site applications is a function of the Water Quality Control Division after a review by appropriate local entities. The state act lists three items for the division to evaluate:

1. the long-range comprehensive plan for the area as it affects water quality and any approved regional water quality management plan for the area;
2. management of the facility on the proposed site to minimize the potential adverse impact on water quality; and
3. consolidation of wastewater treatment facilities whenever feasible (Water Quality Control Division guidance).

The Colorado Water Quality Control Commission refined these criteria to ensure that:

- ❑ existing treatment works are not overloaded when connecting new lift stations or interceptors;
- ❑ proposed treatment works are planned and constructed in a timely manner as needed;
- ❑ proposed treatment works are developed considering the local long-range comprehensive plan for the area as it affects water quality and any approved regional water quality management plan for the area;
- ❑ proposed treatment works or interceptor protect water supplies;

Operating agencies must certify that the treatment works will not be overloaded by the addition of wastewater flow from new lift stations or interceptors.

- ❑ proposed treatment works or interceptor have been properly reviewed by all necessary local, state, and federal government agencies and planning agencies;
- ❑ proposed location will have no foreseeable adverse effects on the public health, welfare, and safety;
- ❑ applicants will provide for adequate operational management, including legal authority and financial capabilities;
- ❑ proposed treatment works be located so that they are not unnecessarily endangered by natural hazards; and
- ❑ objectives of other water quality regulations will not be adversely affected.

The site approval regulation allows:

In the interest of facilitating a more effective and timely review of proposed new and expanded domestic wastewater treatment works, each planning agency may establish and implement a coordinated review and comment process to carry out the provisions of this regulation in coordination with its water quality planning responsibilities. Where a planning agency wishes to establish such a coordinated process, the Division may enter into an agreement with the planning agency specifying the procedures for this coordinated process. The intent is to establish a single process 1) to meet these site approval requirements and 2) to meet the requirements for amendments to the water quality management plan. The process should be designed so that a new or expanded domestic wastewater treatment works which is approved as part of the water quality management plan may be concurrently deemed to also meet the requirements of these site approval regulations at the time of its inclusion in the plan. Under such a coordinated process, the Division retains final authority for approval or denial of each project which is regulated under these site approval regulations.

NFRWQPA intends to develop a memorandum of understanding with the Water Quality Control Division to coordinate the site approval process within the NFRWQPA planning region.

NFRWQPA has not, at this time, entered into an agreement with the Water Quality Control Division that specifies procedures for this type of coordinated process. However, the wastewater utility plans are designed to meet the requirements of a *208 Plan* amendment, the site application process, and to provide the planning information needed by the division in the permitting process and in the revolving loan program.

UPAs will be used in the review of site approvals where it is necessary to size facilities such as interceptors based on a planning horizon that extends beyond 20 years to provide cost-effective service. In general, treatment facilities and lift stations should be staged to provide for 10-year capacity increments, but may be staged for shorter (e.g. interim lift stations) or longer periods with appropriate economic justification. Consequently, interceptors and lift stations can be located within designated UPA. However, wastewater infrastructure designed to only serve UPAs will **not** be used in the site approval process or to meet other appropriate regulatory requirements.

Wastewater infrastructure designed to serve areas within the WUSA can be physically sited within UPAs, which are outside of the urban growth boundary. Since interceptors are often sized to last beyond 20 years, they may have excess capacity more appropriate to ultimate build-out of a designated area.

Interceptors may be staged for ultimate build-out with appropriate economic or right-of-way justification.

V. UTILITY PLANS FOR WASTEWATER WORKS OR FACILITIES

General requirements

Utility plans document the wastewater management strategy for a wastewater treatment facility (greater than 2000 gallons per day capacity) and the associated planning area. All utility plans will contain a defined set of minimum information (location, sizing, staging, service area, process system, effluent quality and financial arrangements) and respond to appropriate state or federal requirements.

Utility plans for minor facilities or minor WUSA may be approved even though they do not meet all of the recommended planning elements provided sufficient planning is completed to show that potential long-term adverse water quality effects from any proposed new facility or facility expansion will be minimized. Utility plans will provide planning documentation for both the designated utility service area and planning area, with the utility service area having the maximum level of information.

Utility plans define location, sizing, staging, service area, process system, effluent quality, financial arrangements and appropriate state or federal requirements.

The primary goals in establishing wastewater utility plans are to provide reasonable, feasible and economical wastewater service to an area designated for development within the NFRWQPA. Utility plans should consider the water quality impact the treatment system will have on receiving waters. The utility plan should include any strategy for meeting all applicable water quality standards and classifications while estimating the potential impact a discharger may have on other dischargers.

Information in a utility plan is used in the *208 Plan* process to document the best method of providing wastewater service while meeting water quality goals through the 20-year planning horizon. Wastewater utility plans can also function to define service beyond the 20-year planning horizon. Wastewater utility plans are not applied to water supply, nonpoint source or stormwater service areas.

The NFRWQPA will maintain a reference set of accepted utility plans developed by management agencies or operating agencies for all wastewater treatment facilities with an active discharge permit. The siting and expansion of direct industrial discharges will be identified in the *208 Plan* under special provisions. Direct industrial dischargers who also process domestic wastewater will be encouraged to develop wastewater utility plans. Any wasteload allocation or total maximum daily load analysis included in a utility plan will be based on population and employment forecasts and wastewater flow estimates developed through acceptable alternate projections.

The following four policies will be considered for adoption by the NFRWQPA as soon as it is practicable. These statements should be used as guides until the individual policies are approved.

Consolidation of facilities policy

The wastewater utility plan should identify opportunities for wastewater treatment system consolidation. Often, larger wastewater treatment facilities can provide service more effectively while providing a higher degree of treatment than can be achieved through smaller treatment facilities. While large facilities do not always provide better water quality treatment, consolidation of facilities can eliminate smaller treatment facilities, which may not be financially capable of operating properly and may be exceeding their discharge permits. The decision for facility consolidation is determined in the utility planning process and is based on economics, cost effectiveness, operations, water quality impacts, physical constraints and water rights. Refer to the Water Quality Control Division Policy Number 5 “Consolidation of Domestic Wastewater Treatment Works” for additional guidance.

Wastewater reuse policy

The utility plan should explore any opportunities for wastewater reuse for non-potable uses, future potable use, or as a method for additional pollutant removal, as appropriate. The utility plan should identify those situations where reuse can be used to fulfill water rights and augmentation plans. The utility plans should identify any reuse considerations as part of the alternative analysis. If reuse is not an option, this should be clearly stated in the utility plan documents.

Reuse is an efficient means of preserving water resources in areas where those resources need to be protected. Reuse of wastewater for water rights or augmentation purposes should be carefully reviewed in relation to downstream water supplies as related to potential health hazards and environmental risks. The quantity and quality of wastewater for reuse should be determined during the planning process.

Biosolids policy

Although there are other legal means of disposing of biosolids (such as incineration and land filling) neither method benefits Colorado as does recycling. Burning biosolids consumes huge amounts of energy and pollutes the air, while burying them takes up valuable space in local landfills. Recycling biosolids is clearly the preferred method for disposal.

NFRWQPA recognizes and supports the economic and environmental benefits of recycling biosolids, and appropriate policy documents will recognize the value of biosolids recycling. The biosolids positions are as follows:

1. Public health and environmental quality are protected under federal and state biosolids regulations. The NFRWQPA encourages member governments not to adopt local public health regulations for biosolids that are more stringent or restrictive than federal or state regulations.

2. The NFRWQPA encourages the practical and beneficial land application of biosolids in the region. Member governments with land use authority should regulate biosolids disposal through the zoning and platting process. Local regulations should focus on transportation, aesthetics and land use issues.
3. The NFRWQPA does not support any biosolids disposal practice that does not attempt to beneficially reuse this valuable resource.

The biosolids policy will be used by the NFRWQPA staff in the site approval process as defined in the *208 Plan*. The state revolving loan program point system should be modified to give bonus points for wastewater treatment facilities using or planning to use biosolids reuse. The NFRWQPA will work with the Water Quality Control Division of the Colorado Department of Public Health and Environment to change the state revolving loan program regulation.

A utility plan identifying a biosolids disposal practice that does not include beneficial reuse will not be acceptable to NFRWQPA.

Wetland policy

If the utility plans will have any effect on wetlands, then the NFRWQPA wetland policy should be considered in the planning process. Wetlands can have ecological and societal values, which make them an important regional resource. NFRWQPA supports the concept of wetlands protection and all NFRWQPA plans will recognize the value of wetlands as part of the planning process. In recognition of this regional concept, NFRWQPA adopted the following position.

The adopted regional wetland policy states ...no net loss of wetland functions within the NFRWQPA region.

The NFRWQPA wetland policy is: no net loss of wetland functions should occur within the region, and cost-effective use of wetlands in urban design should be encouraged. Development within a designated or delineated wetland should occur only when no other alternative exists. Wetland mitigation should consist of replacement wetlands of a similar type and quality, as determined by appropriate scientific analysis, which results in an equal (at the minimum) replacement of lost wetland functions. Wetland replacement within the same hydrologic watershed as defined in the *208 Plan* is the preferred compensatory mitigation measure.

Environmental components

Environmental (NEPA) information

If a wastewater provider intends to apply for a state revolving loan, the requirements of the National Environmental Protection Act (NEPA) apply to the planning and review process (40 CFR, Parts 1500-1517). Integrating the NEPA process early in the planning stages insures that decisions reflect environmental values, avoid potential delays later in the process and reduce conflicts. The NEPA process can result in the preparation of an Environmental Assessment or an Environmental Impact Statement. The utility plan should reference any NEPA processes that are or may be required to implement the wastewater management strategy.

Utility plan components

Service area designations

The utility plan can recognize two types of wastewater service areas: wastewater utility service areas (WUSAs) and ultimate planning areas (UPAs). WUSAs are defined as those areas within the region that require urban services through the 2020 planning horizon or any subsequent modification to the urban growth boundary or planning horizon. Ultimate planning areas are based on existing local comprehensive plans, comprehensive long-range utility plans or the area a wastewater provider intends to provide with service at ultimate development. UPAs are either equal to wastewater utility service areas or larger. Consequently, no UPA can be smaller than a WUSA.

Population datasets and forecasts

The foundation of water quality planning is the forecast of expected wastewater treatment needs, which is tied to future population levels. Forecasts define wastewater flow rates and the capacity needed to treat the projected volume of wastewater. Forecasts for utility service areas and planning areas are included in the *208 Plan*.

The areas for the population datasets are WUSAs. Associated wastewater flow projections will be generated from the datasets and they will be directly related to WUSAs, but not necessarily to UPAs.

The 208 Plan may use equivalency processes to convert population data sets to WUSAs for selected planning years (five year intervals) through the 20 year planning period for use with longer-term potential development within UPAs. Wastewater utility plans can show alternative projections and flows for WUSAs. A number of factors can cause differences in projections. The utility plan will need to list the appropriate factors and discuss how these factors alter projections.

Wastewater utility plans will need to provide their own projections and flows for UPAs or WUSAs beyond the year 20 year period. Forecasts for WUSAs will be used in the site approval process and to meet other appropriate regulatory requirements. As necessary for cost-effective utility service, UPA forecasts may be used to size a wastewater facility (e.g., the size of an interceptor, land area needed for a treatment facility or lift station site). These forecasts will be so referenced in the site approval or other appropriate regulatory processes.

Wastewater flow characterizations

Population projections through the 20 year planning horizon in the 208 Plan will be linked to each WUSA and to each area designated for interim or permanent non-urban wastewater service. The *208 Plan* will predict wastewater flows in five-year increments through 20 years for major and minor WUSAs and for non-urban service areas defined by management agencies at the watershed level. Wastewater flow projections maintained in the *208 Plan* will be adjusted for future years using available discharge monitoring reports (DMRs), when available.

Infiltration and Inflow analysis

An infiltration and inflow (I&I) analysis may be required by the Water Quality Control Division for some treatment works. The utility plan should contain any I&I study results, if appropriate for the facility.

Peaking factor

Generally, the average total flow will be based on the 30-day monthly average. Under site specific conditions, an annual average flow or other specified flow certified by the Water Quality Control Division can be used to determine peaking factor. Additionally, the utility plan may use a different peaking formula or factor, provided additional site specific justification is included in the utility plan. Local data documenting peaking factors can serve as justification for alternate peaking factors. The maximum peaking factor of 5.0 is generally applied to small treatment systems or special use sites (e.g., church camps, restaurants, day camps). No minimum peaking factor is recommended in this guidance, however a factor of 1.0 or less would not be acceptable. Otherwise, the peaking formula below should be used for planning purposes in utility plans.

$$\text{Peaking Factor} = 3.65 / (\text{Average Total Flow MGD})^{0.167}$$

(The maximum peaking factor value used in any assessment is 5.0)

Wastewater flow planning factors

Table 3 provides some planning factors used to estimate wastewater flows. These

numbers are provided for guidance and other factors can be used, provided they are identified within the utility plan. The *208 Plan* recommends using a residential wastewater flow factor of 85 gallons/person/day, which includes a 10 gallon/person/day inflow and infiltration component.

The *208 Plan* also recognizes a wastewater flow generated by employment with the regional average at 50 gallons/employee/day. Generally, this 85/50 wastewater flow factor calculation provides a good projection and the numbers have been verified using the daily and monthly reports submitted to the Water Quality Control Division. Lacking employment data, a factor of 100 gallons/person/day as a residential equivalent can provide, generally, comparable projections.

Table 3 Factors used in the *208 Plan* to estimate wastewater flow

Types of Use	Average Wastewater Flow
General Population	
Single or Multi-family Equivalence – Regional	85 gallons/day/person
General Employment	
General Employment – Regional	50 gallons/day/person
Household Equivalent (Residential development without employment)	
Households	250 gallons/household/day
Site Specific Planning Averages (gallons/day/person)	
Stores, Offices, Small Business – Employees	25
Stores, Offices, Small Business – Guests	8
Hotels/Motels – Employees	50
Hotels/Motels - Guests (24-hrs)	20
Cabins - Guests (24-hrs)	50
Dining Facilities (Per Meal)	10
Schools (no showers) - day use (8-hrs)	12
Schools (showers) - day use (8-hrs)	25
Tourist/Trailer Camps – Employees	50
Tourist/Trailer Camps - Guests (24-hrs)	85
Recreational Facilities – Employees	50
Recreational Facilities – Guests	20

Character of influent

The character or strength of wastewater influent can affect facility design and operation. The utility plan should identify any unusual characteristics of the wastewater or special connectors that could alter the influent quality. If default values for biological oxygen demand (BOD) and total suspended solids (TSS) are used in the design process, then these values should be listed in the utility plan.

Industrial pretreatment

Some industries discharging pollutants must pretreat their wastewater before discharging into municipal sewers.

The term *pretreatment* refers to the requirement that industries discharging pollutants treat their wastewater before discharge to municipal sewer systems. The three objectives of the *National Pretreatment Program* are:

1. protect municipal wastewater treatment systems from interference caused by industrial wastes;
2. protect the nation's waters from industrial pollutants which pass untreated through wastewater treatment systems; and
3. provide for the beneficial use of wastewater biosolid as soil conditioners and fertilizers, by preventing excessive contamination by industrial pollution.

The U.S. EPA administers the National Pretreatment Program under the General Pretreatment Regulations, first adopted in 1978. These regulations, amended in 1981 and again in 1988, establish specific requirements that both wastewater treatment facilities and industries must comply with to reduce industrial pollutant discharges. The *General Pretreatment Regulations* require that any wastewater treatment facility designed to treat over five million gallons a day of wastewater, or receives significant discharges from industrial sources, must develop a local pretreatment program conforming to EPA regulations. Management and operating agencies must meet specific requirements under the *General Pretreatment Regulations*. Utilities should indicate whether they have an EPA approved pretreatment program.

Treatment works characterization

Location and siting of treatment plant

Utility plans must locate existing and/or planned wastewater treatment works to serve areas defined within WUSAs or located in ultimate planning areas. The treatment plant footprint (shape and total acreage) must be described or mapped. The footprint needs to be able to accommodate all appropriate infrastructure identified for a 20-year planning period. Utility plans must locate existing and planned lift stations to serve areas defined within WUSAs or located in ultimate planning areas. Existing facilities and facilities to be built within two years should be shown at a specific location.

The utility plan must include location of treatment works (site footprint) and related infrastructure

New facilities planned beyond a two-year time horizon may be shown/mapped at a specific location or may be shown in a general area envelope, as long as water quality issues are essentially the same within that envelope.

Existing process system

The utility plan will include a summary of the major system processes and types of treatment for an existing treatment works including:

- ❑ level of treatment (i.e., secondary, advanced for phosphorus removal, etc.);
- ❑ analysis of existing system performance, deficiencies and positive attributes;
- ❑ sizes of system components; and
- ❑ biosolids processing system and method of beneficial reuse or disposal.

Summarize all major system processes including design capacity of major treatment processes.

Schematic of treatment works

The utility plan should contain a schematic drawing of the treatment works in sufficient detail to characterize the flow processes, capacities and operations.

Include current and projected future capacities for treatment plant, lift stations, and interceptors.

Infrastructure sizing and staging

Include current capacities and projected future capacities for all treatment plants, lift stations, and interceptors (including a construction schedule based on time or capacity milestones) that are needed to serve the wastewater utility service area. In addition, include those facilities needed to serve the ultimate planning area, if appropriate.

The maximum level of detail is required for capital improvements anticipated within a five-year period.

For facilities that need to be constructed within five years, the location, staging and capacity must be estimated with detailed flow projections. The implementation of the five-year capital improvement program should be outlined with critical dates listed. The level of detail and accuracy for projected infrastructure capacities decreases beyond the five- year period. The level of detail in the utility plan should be based on the following considerations:

- ❑ six to 15 years, planning for major infrastructure and projects with projections and capacities based on best professional judgment;
- ❑ 16-25 years, include only anticipated major expansions without projections; and
- ❑ >25 years, concepts only as related to local comprehensive plans or predicted ultimate development.

Sizing and staging of the wastewater treatment facility are tied to projections of population and flow. This size, or hydraulic capacity, is based upon two factors: the rate of flow (annual average daily) produced by the sewered customers and the staging of construction or expansion.

20-year planning capacity with a 20% design flow margin of safety identified for planning purposes.

It is recommended that wastewater treatment plants be designed for a 20-year period and to have a projected 20-year design capacity that is 20 percent greater than the projected flow at the end of the 20-year period. This 20 percent capacity can be identified for 30-day maximum month or annual average. Local population projections used to generate wastewater flow projections should be documented and differences between regional projections and local projections explained.

Odor control considerations

Odor control should be considered an important component of the system design and alternative selection process. The utility plan should include any odor control studies, strategies or abatement programs. Some wastewater treatment facilities are required to meet odor control regulations.

Air quality permitting requirements

Some wastewater treatment plants are identified as stationary sources. Consequently, wastewater treatment plants with a design capacity of 10 million gallons per day or greater may require an air quality permit. The Water Quality Control Division should be contacted for air quality permitting requirements. The utility plan should identify any air quality permitting requirements.

Stormwater management plan

Some wastewater treatment plants may be required to prepare a stormwater management plan as part of the stormwater permitting requirements. The Water Quality Control Division should be contacted for stormwater permitting requirements. The utility plan should include the approved stormwater management plan, if applicable.

Site characterization requirements

The site approval process for new wastewater treatment works and new lift stations requires evidence of the suitability of the site. The site must be characterized in relation to floodplains and other natural hazards. Specifically, the utility plan must identify flood hazard issues and geological suitability issues related to the proposed site (or site envelope) and the measures to be taken to mitigate any identified problems or risks. For all new sites, a soil testing report should be attached to the utility plan.

Collection system

Interceptor

The utility plan must list lines in the systems that qualify as interceptors. The definition of an interceptor in the *Regulations for the Site Application Process* (WQCC regulation #22) is:

. . . a sewer line will be considered as an interceptor sewer if it has an internal pipe diameter equal to or greater than 24 inches and it meets one or more of the following criteria: (a) it intercepts domestic wastewater from a final point in a collection system and conveys such waste directly to a treatment plant, the interceptor sewer may also collect wastes from a limited number (fewer than 5 connections per mile of sewer) of building services and sewer laterals along its route to the wastewater treatment plant; (b) it serves in place of a treatment plant and transports the collected domestic wastes to an adjoining collection system or interceptor sewer for treatment; (c) it transports the domestic wastes from one or more municipal collection systems to another municipality or to a regional treatment plant; (d) it intercepts an existing major discharge of raw or inadequately treated wastewater for transport to another interceptor or to a treatment plant.

Regulation No. 22 provides special procedures for review of interceptors. Ninety days prior to the construction of an interceptor line, the responsible entity will notify NFRWQPA and the WQCD. This notification will include a certification that the treatment facility has the capacity to treat the projected flow from the interceptor. NFRWQPA is required to certify within 30 days that the interceptor line has the capacity to carry the projected flow. If these certifications cannot be provided, the entity must apply for a site application.

The utility plan will contain maps of all qualifying interceptors, including location of existing and planned interceptors to serve WUSAs or ultimate planning area.

4. The *208 Plan* does not provide flow projections for interceptors. Projections for major lines are developed by the NFRWQPA and the applicant on a case-by-case basis for use in this certification process.

Major lift stations

The minimal recommended mapping of major lift stations should include those systems that have an average pumping capacity which is 1/5 or greater of the existing treatment works capacity (for example, a 100,000 gallon per day treatment facility will list all lift stations at or greater than 20,000 gallons per day) or any lift station over 0.5 million gallons per day. Wastewater providers are encouraged to look at all lift stations as part of the planning process.

While the utility plan needs to site all major lift stations on required planning maps, wastewater service providers are encouraged to site all lift stations.

The following are general considerations that should be given to all lift stations. These guidelines are intended to provide general criteria for the submittal of support information with the utility plan or site application for lift stations. Always contact the entity having jurisdiction for their specific requirements and specifications. The ultimate design should always be based on standard engineering practices. The support documentation should address the following criteria.

- Capacity typically showing calculations for average and peak flows for all phases of development.
- Identification of treatment entity including a certification of treatment and indication that the entity is not currently receiving waste in excess of its design capacity or in violation of any effluent limitations.
- A map identifying the site of the proposed facility, topography of the area, and neighboring land use.
- Emergency Storage / overflow prevention typically providing a minimum of 2 hours of firm holding capacity for average daily flows. However, consideration should also be given to emergency response time, proximity to waterways and containment areas when determining the appropriate storage time. Line storage may be considered if it will not overflow or cause flooding to customers.
- Backup power supply identification which will provide at least 50% of total power requirement.

- Telemetry provided for notification of alarm / emergency conditions.
- Site access availability year round including areas for large equipment turn around.
- Odor control if there will be long detention in the wet well and/or located within a developed area.

Water quality characterization

Water quality limited receiving water

Is the receiving water quality limited?

For all treatment facilities, the utility plan should identify whether the receiving waterbody (or any downstream waterbody affected by the discharge) is currently water quality limited. This applies to all constituents discharged or to be discharged by the facility.

Additionally, if there is a potential for water quality limited segment within a 10 year period, based on the current 305(b) report, modeling, or other water quality data, this should be included in the utility plan.

If the discharge quality is/will be controlled by a water quality limited waterbody, then an identification of the constituent(s) of concern and source identification of water quality limited designation (e.g., 303(d) list, 305(b) report or watershed association planning and implementation effort) needs to be included in the utility plan. The utility plan must identify any wasteload allocation (concentration, poundage and/or other alternatives) by constituent(s) as they apply to the treatment plant. Therefore, the utility plan should contain:

- For treatment plants that will not be built or expanded for 10 or more years, a general discussion of the constituents to be controlled and the availability of allocations for the waterbody are sufficient. Exact concentration or poundage estimates are not necessary unless there is a conflict with an existing total maximum daily load (TMDL) or wasteload allocation (WLA).
- For wastewater treatment plants to be built or expanded within the next 10 years, a recommended treatment technology and treatment plant configuration to meet the projected discharge permit limitations and a listing of alternative technologies for consideration. The utility plan must provide documentation that achieving the projected effluent limitations is technically and economically feasible.

Level of treatment for new and expanding facilities

The utility plan shall list the effluent discharge quality necessary to meet receiving water quality classifications and standards, including:

- a list of projected discharge permit limitations based on state effluent standards (copy of letter from Water Quality Control Division), receiving water classifications and established water quality standards;

If available, provide the recommended effluent discharge quality.

- discharge quality necessary to meet any total maximum daily loads or wasteload allocations as listed or recognized in the *208 Plan* for time horizon identified in the plan; and
- other effluent limits recommended in the *208 Plan* and/or necessary to meet state requirements.

TMDLs and wasteload allocations

Utility plans should document any approved or proposed total maximum daily load studies or wasteload allocations. The receiving waters need to be checked against the Water Quality Control Division's 303(d) List and the 305(b) Report. Wasteload allocation requirements can affect effluent limits and treatment options.

Watershed issues

Utility plans should document any watershed programs and implementation strategies. Since the watershed protection approach is advocated in the *208 Plan*, the utility plan will need to address how a wastewater management plan fits into the watershed program.

Minimum mapping requirements

Mapping requirements may differ between minor and major wastewater utility plans. Both electronic (Autocad) and hard copy maps will be acceptable for NFRWQPA review. They must be of a large enough scale and clear enough to adequately illustrate the necessary features. The minimum features to be included on maps include, but are not limited to, drainage basin and watershed, service area (WUSA and Ultimate planning areas), treatment plant or treatment works, lift stations, interceptors, water features (stream segments, lakes, reservoirs), discharge point, water well fields, sanitary sewer tributary areas (if available) and local comprehensive plan features. Mapped features should be consistent with the site approval regulations. U.S. Geological Survey topographic maps at the 1:24,000 scale may be used for mapping most features, if AutoCad is not available.

The wastewater utility service area map must show the WUSAs and, if desired, the Ultimate planning area (or more than one plant operated as a coordinated system, e.g. satellite plants). For WUSA and ultimate planning areas, the utility plan maps should identify areas to be served by gravity sewers and identify those areas served through one or more major lift stations. Adjacent WUSAs and UPAs should be mapped to insure that there are no overlapping areas.

Alternatives analysis

For proposed or new wastewater treatment works, the utility plan needs to provide alternatives analysis. The alternatives analysis should address the potential for consolidation with other existing treatment works. The utility plan needs to list the criteria used to select a preferred alternative. Additionally, the selection of a preferred alternative should have a public review and comment component. Any consolidation analysis must be consistent with the Water Quality Control Division policy on consolidation .

Management and financial plans

Management structure and agreements

The utility plan must identify management agency and applicable agreements.

The utility plan must identify the management agency, associated watershed association, if applicable, and operating agency(ies), along with applicable management agency agreements or other memorandums of understanding. Utility plans should include maps of collection and other associated special districts. Key contact(s) with the management agency will need to be listed in the utility plan. The utility plan should also reference special control regulations or other water quality regulations specific to utility service area or Ultimate planning area. The utility plan may need to list any special rules or regulations applicable to the service area, along with external service contracts and other operational or management agreements.

Financial considerations

Capital costs should be estimated for all new wastewater treatment plants, treatment plant expansions, new lift stations, lift stations expansions, and interceptors which will be built within the next 5 years. Changes in operating costs and total expenditures necessary to carry out the wastewater system improvements planned within the next 5 years should be estimated with a discussion of the sources of revenue necessary to meet those expenditures for:

- ❑ new wastewater treatment agencies;
- ❑ any wastewater treatment facility that is in repeated noncompliance with significant permit requirements; and
- ❑ treatment agencies expecting to increase the volume of wastewater treated by more than 100 percent in the following 10 years.

Estimate 5-year capital costs and summarize sources of revenue.

Wastewater treatment agencies need a financial management plan, which addresses, at the minimum, the following items:

- ❑ rate and charge structures;
- ❑ financial solvency should project growth not occur;
- ❑ institutional arrangements to guarantee payment of charges from large connectors (over 10 percent of the projected revenue) and from other governmental connectors;
- ❑ interest in applying for a state revolving loan to finance any infrastructure or improvements;
- ❑ significant industrial user(s) under pretreatment regulations, arrangements for meeting pretreatment responsibilities; and
- ❑ industrial or commercial sewer connections with the potential to overload the treatment plant hydraulically or with organic loading, a description of the methods for controlling rates of flow to the treatment facility.

Interest in revolving loan

The utility plan should identify any interest by the management agency in applying for a revolving loan with the Colorado Water and Power Authority. Those utility plans showing an interest in a loan will be recommended to the Water Quality Control Division for inclusion on the State's revolving loan eligibility list. Those utility plans showing an interest in a loan should include a user charge study. A financial plan is required if any type of payback system (loan, bonds, etc.) is utilized for existing or new customers. A developer may be required to provide financing information, evidence of ability to finance, or similar information.

VI. UTILITY PLAN FORMAT CHECKLIST

Suggested outline and checklist

Chapter	Includes
Executive Summary	
I Introduction	Background
	Facilities Plan Summary
	Implementation
	Summary of Utility Plan Structure
II General Planning	Feasibility of Consolidation of Facilities Reg.22 @ 22.8 (1) (b)
	Wastewater Reuse
	Environmental Components
	Environmental (NEPA) Information
III Wastewater Characterization	Service Area Designations
	Population Datasets & Forecasts
	Wastewater Flow Projections
	Infiltration & Inflow Analysis
	Character of Influent
	Industrial Pretreatment Program
	Treatment Works
	Process System
	Infrastructure Sizing And Staging
	Location & Siting
	Biosolids Handling
	Schematic of Treatment Works
	Odor Control Considerations
	Air Quality Permit
	Stormwater Management Plan
	Site Characterization Report
	Collection system
	Major Lift Stations
	Interceptors
	Maps
	Treatment Plant Site Envelope
Service Areas	
Collection system	
IV Water Quality Characterization	Water Quality of Receiving Water
	TMDLs and/or Wasteload Allocations
	Watershed Issues
	Level of Treatment (Existing Permit Limits or Projected)
	Maps
Watershed and Receiving Waters	

Chapter	Includes
	Impaired Waters
V. Alternative Analysis	Treatment Works
	Level of Treatment
	Public Participation in Selection Process
V. Management and Financial Plans	Management Structure And Agreements
	Wastewater Management Plan
	Financial Management Plan
	Revolving Loan Interest (Other application documents are required if a facility applies for loan, which do not need to be part of the utility plan)
	User Charge Summary
VI. References	Reports And Special Studies
VII. Technical Support Appendices	Legal Description and Evidence of Site Ownership
	Agency Contacts (Cover Letters)
	Special Surveys (e.g., Endangered Species)
	NEPA process
	Site Characterization Report
	Soil Test Results
	Preliminary Effluent Limits (New Treatment Works)
	Effluent Limits (Existing Wastewater Treatment Works)
	Planning and Zoning Information (e.g., Portion of Local Comprehensive Plan)
	Intergovernmental Agreements
	User Charge Study Analysis
	Air Quality Permit
	Odor Control Studies or Plans
	Stormwater Management Plan
	Summary of Public Hearings and Process
	Infiltration and Inflow Study

Distribution and number of copies

Copies of all final or interim utility plans, with associated maps, will be distributed to NFRWQPA and other review agencies by the submitting entity. The number of copies varies, depending on the utility plan area. Generally, the minimum distribution of copies will follow Table 4.

Table 4 Minimum distribution of copies

Agency	Number of Copies
NFRWQPA	2 hard copies (1 review and 1 permanent file copy) and 1 electronic copy
WQCD	Determined by WQCD
NFRWQPA Utility Plan Review Team	6
Other Sign-off Agencies	As determined by Table 2

VII. RECOMMENDED UTILITY PLAN ACCEPTANCE POLICY

General criteria

Only accepted and conditionally accepted utility plans will be referenced in the 208 Plan.

Accepted and conditionally accepted utility plans will be referenced in the *208 Plan* and these plans will represent the preferred wastewater management strategy for the wastewater utility service area and the Ultimate planning area. Accepted and conditionally accepted utility plans will be used in the site approval process, as *208 Plan* amendments, and to meet other appropriate regulatory requirements.

Utility plans or a set of utility plan documents can be submitted to NFRWQPA at any regular meeting after review by the appropriate management agency. Utility plans submitted to NFRWQPA should address any locally adopted watershed objectives and wastewater management strategies. Formal action by a management agency is required before submittal of a utility plan to NFRWQPA.

NFRWQPA will take formal action on presented documents following a completed review by the Utility Plan Review Committee. NFRWQPA can make one of the following three recommendations related to utility plan acceptance:

- ❑ accept;
- ❑ conditionally accept with the conditions listed; or
- ❑ refer back to the utility plan submitting agency and/ or the designated management agency for additional actions, analyses or information.

A NFRWQPA utility plan review team will be established from members and alternates. The review team will have a maximum of six participants per utility plan. Participation on the review team will be confirmed by NFRWQPA action. Review team membership can be altered as needed to facilitate reviews. The review team will have a rotating membership with service for two years. In alternate years, two or three new members will be appointed. The review team will check the utility plan or set of utility plans for consistency with adopted policy and minimum requirements. The review team will summarize findings for NFRWQPA at a regularly scheduled meeting. The submitting agency will distribute copies of the utility plan or set of utility plans to those jurisdictions who will be required to sign the wastewater utility plan acceptance form (Table 2) that will be kept on file at NFRWQPA. These signature entities will also be requested to comment, if appropriate, at the same NFRWQPA meeting that the review team summarizes their findings.

Renewal frequency

Maximum time between reviews is 10 years, while the preferred review interval is five-years.

The preferred review and acceptance frequency for wastewater utility plans is five years after the initial acceptance by NFRWQPA. Although this time frame corresponds to the permit renewal period, review does not necessarily need to coincide with permit renewal. The recommended maximum time between reviews by NFRWQPA is 10 years. A utility plan that has not been reviewed within 10 years will be flagged as such in the *208 Plan* and will not be used in the site approval

process.

Any significant revision and re-adoption of a local comprehensive plan or other local long-range wastewater management plan will also require a review and re-acceptance of the associated wastewater utility plan. Management agencies shall notify NFRWQPA of any re-adoption or significant update of their local comprehensive plan.

Acceptance procedure

The following procedure will apply to the NFRWQPA review and acceptance of utility plans.

- ❑ Utility plan delivered to NFRWQPA
- ❑ As appropriate NFRWQPA staff distributes review copies to team members and submitting agency distribute copies to other sign-off agencies.
- ❑ Meeting scheduled within 60 days of distribution to review interim or final utility plan with review team members, the submitter of the utility plan, and other interested agencies. Notice will be sent to the membership identifying the meeting schedule. Other interested agencies will be requested to identify any issues or concerns prior to this review meeting (generally a 30-day response time).
- ❑ At the review meeting, the review team will mark-off a checklist of minimum requirements, assure that there are no overlapping service areas, review assumptions and provide any appropriate comments.
- ❑ Based on the review team comments and comments from other interested agencies, NFRWQPA staff will prepare a written response and recommendation for inclusion in the following NFRWQPA meeting agenda.
- ❑ NFRWQPA and other appropriate agencies acknowledge acceptance, conditional acceptance or refer back the utility plan at the NFRWQPA meeting. Based on the action, the appropriate sign off forms will be filled out following the meeting.

VIII. REFERENCES

North Front Range Water Quality Planning Association - Areawide Water Quality Management Plan Updates

Larimer-Weld Regional Council of Governments - Areawide Water Quality Management Plan Update - 1985.

Colorado Department of Public Health and Environment, Water Quality Control Commission – Regulation No. 22 – Site Location and Design Approval Regulations for Domestic Wastewater Treatment Works

Colorado Water Quality Control Division – Policy No. 5 – Consolidation of Domestic Wastewater Treatment Works