

City of La Center



FINAL DRAFT General Sewer Plan

March 2013

WE #1203B



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City of La Center
General Sewer Plan

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GENERAL SEWER PLAN SECTION 1

EXECUTIVE SUMMARY

1.1 BACKGROUND

State law (WAC 173-240-050) requires all cities to have an adopted General Sewer Plan addressing all planned wastewater system upgrades or expansion, or an approved engineering report for each individual project proposed. The City of La Center adopted such a plan in 2001 [1], which was updated in 2006 by Wallis Engineering [2]. This document is an updated version of the 2006 general sewer plan, and includes information from the 2008 *City of La Center Wastewater Facility Plan* [3] as well as information from the 2011 *La Center Junction Sewer Study* [4].

1.2 STUDY AREA

The study area generally includes the area within and adjacent to the existing city limits, plus the future growth area extending west along La Center Road to the area around the junction of La Center Road and I-5. The growth area is shown in Figure 3.2 in Section 3.

1.3 EXISTING SEWERAGE SYSTEM

The existing sewer system consists of a network of gravity sewers along with a few pump stations. This network discharges to a wastewater treatment plant located on the north shore of the East Fork Lewis River floodplain.

1.4 PROPOSED SEWER PLAN

This General Sewer Plan was prepared primarily for the wastewater collection system. For details regarding the wastewater treatment plant see the *City of La Center Wastewater Facility Plan* dated July 2008.

Proposed collection system improvements include approximately 2.75 miles of gravity sewer ranging in size from 8-inch to 30-inch diameter, the upsizing of three existing pump stations, the construction of three new pump stations, approximately 1.5 miles of force main ranging in size from 6-inch to 10-inch diameter, and approximately 1 mile of sewer siphons ranging in size from 6-inch to 12-inch diameter.

1.5 CAPITAL IMPROVEMENT PLAN

The following capital improvement plan identifies the improvements proposed for the 20-year planning period. With each is a cost estimate based upon 2012 construction dollars. See Figure 7.1 for locations of recommended improvements.

Table 1.1
Capital Improvement Plan

Proposed Construction Year	Capital Improvement	Cost (\$)
<i>6-Year Capital Improvement Plan</i>		
2013 to 2015	LCR Sewer Phase 1	6,470,000
	Wastewater Treatment Plant Expansion Phase 1B	1,950,000
	Wastewater Treatment Plant Expansion Phase 2	3,930,000*
	Pump Station #6 – 1,100 gpm capacity	1,593,000
	Force Main #6 – 980' of 8-inch force main	357,000
	Sewer Main F – 2,160' of 27-inch gravity sewer	1,589,000
	Sewer Main E – 4,200' of 27-inch gravity sewer	2,964,000
	Pump Station #5 – 200 gpm capacity	531,000
	Force Main #5 – 2,900' of 6-inch force main	976,000
	Sewer Main G – 1,760' of 10-inch gravity sewer	534,000
2016 to 2018	Pump Station #1 Capacity Upgrade to 1,400 gpm	1,640,000
	Pump Station #2 Capacity Upgrade to 550 gpm	224,000
	Force Main #2 Capacity Upgrade – 750' of 6-inch force main	138,000
	Pump Station #3 Capacity Upgrade to 450 gpm	201,000
	Force Main #3 Capacity Upgrade – 1650' of 6-inch force main	304,000
<i>2019 to 2032 Improvements</i>		
2019 to 2032	LCR Sewer Phase 2	1,021,000
	Sewer Main C Capacity Upgrade – 600' of 15-inch gravity sewer	217,000
	Sewer Main D Capacity Upgrade – 500' of 15-inch gravity sewer	182,000
	LCR Sewer Phase 3	165,000
	Wastewater Treatment Plant Expansion Phase 3	9,711,000

* This price estimate has been updated since the completion of the 2008 Facility Plan.

SECTION 2

INTRODUCTION

2.1 BACKGROUND

After completion of the 2006 General Sewer Plan, two important documents related to La Center's sewer system were developed. In 2008, the *City of La Center Wastewater Facility Plan* was completed, providing the design basis for ongoing treatment plant expansions which are expected to be completed in 2018 and provide treatment capacity through 2027. In 2011, the *La Center Junction Sewer Study* was completed, providing sewerage options for future development west of the Lewis River. This 2012 General Sewer Plan updates the 2006 General Sewer Plan to include information provided in the aforementioned documents. Additionally, this 2012 General Sewer Plan includes changes related to an updated urban growth area (UGA) boundary.

For the purposes of this update, the prior planning horizon of 2024 has been extended to 2032. Due to a slower than expected growth since 2006 (3.3% per year compared to the expected 8.7% per year), this plan has assumed that the 2024 population of 9,827, shown in the *La Center Urban Area Comprehensive Plan* [5], will not be reached until the year 2032. It was also assumed that the 2024 UGA would remain unchanged through 2032. Since the design populations have not changed, the system modeling completed in 2006 was not re-calculated for this 2012 sewer plan.

2.2 AUTHORIZATION

In July of 2012, the City of La Center authorized Wallis Engineering to complete this General Sewer Plan update.

2.3 STUDY PURPOSE

The objective of this General Sewer Plan is to develop comprehensive long-range plans for the orderly development of adequate wastewater collection and treatment facilities for the City of La Center and its urban growth area. The Plan has been written to meet the requirements of the Washington Administrative Code (WAC) 173-240-050.

2.4 SCOPE

Included within the scope of the General Sewer Plan are the following objectives:

1. Evaluation and review of the existing sewer system and wastewater treatment plant.
2. Population determination and projections for the service area as defined by the La Center Urban Growth Area.

3. Forecast of future flows and wasteloads.
4. Establishment of planning criteria for sewer facilities and wastewater treatment plant, including water quality standards for receiving stream.
5. Determination of a general plan for sewer facilities required to satisfy existing and future needs of the service area.
6. Determination of cost effective treatment facilities to handle the proposed flows and wasteloads and meet required water quality standards.
7. Development of cost estimates for proposed sewer facilities identified in the General Sewer Plan.
8. Addressing the financial and administrative issues related to the General Sewer Plan and its implementation.
9. Providing general planning information to assist the City in finalizing growth management planning efforts.

SECTION 3

STUDY AREA CHARACTERISTICS

3.1 STUDY AREA

Figure 3.1 displays a vicinity map for the City of La Center. The primary study area includes the area within the incorporated city limits as well as the UGA designated by the Growth Management Act. The UGA was established by the City and represents the area in which growth is expected to occur through the planning period ending in year 2024 (2032 for this plan). A secondary study area was identified as the City's potential 50-year (2062) growth boundary for the purpose of identifying 50-year flows that would be conveyed into the primary study area. The secondary study area limits are shown in Figure A-1 of Appendix A.

3.2 ENVIRONMENTAL CONDITIONS

Topography

Topography of the study area is shown in Figure 3.2. The topography of the area is dominated by the East Fork Lewis River (the River), which essentially splits the study area into distinct north and south sections. The study area is well defined by drainageways flowing to the River. In general, the area north of the River is less fragmented by these drainageways, the most significant of which is Breeze Creek. The area on the south side of the River is extremely fragmented by McCormick Creek and its side drainageways.

Flood Plains

The existing treatment plant is located just above the 100-year floodplain of the River. The 100-year flood elevation for the River is at an elevation 30.0 feet above mean sea level.

Climate

La Center has the mild climate typical of the valleys between the Coast Range and Cascade Range in Oregon and Washington. Local weather is occasionally influenced by the effects of the Columbia River Gorge, bringing in extreme heat and cold from the East. Precipitation averages approximately 35 inches annually, most of which falls in the 6-month period between November through April.

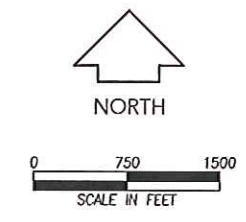
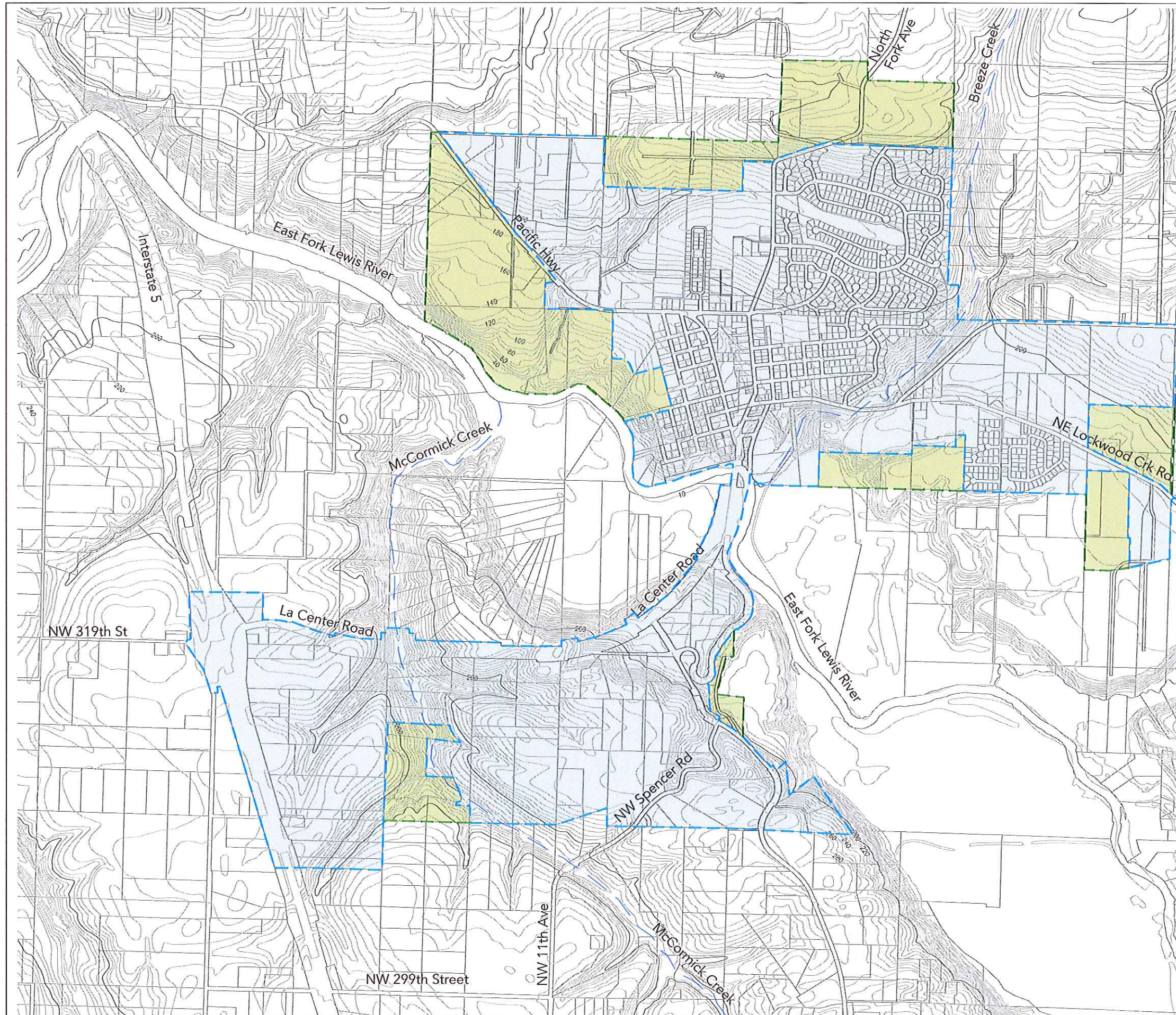


NORTH
NOT TO SCALE



Figure 3.1
Vicinity Map

City of La Center
General Sewer Plan
March 2013



Legend

- Existing City Limits
- UGA Boundary
- Existing Contours
- Creek

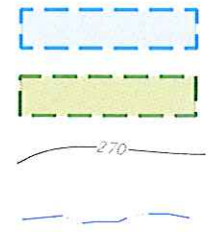


Figure 3.2
Topographic & Boundary Map

City of La Center
General Sewer Plan
March 2013

Soils

Alluvial deposits composed of sand and gravel have been identified in the Columbia and East Fork Lewis River floodplain and represent the majority of the soil conditions within the study area. The soils in the upland areas are predominantly silt.

Groundwater

Groundwater levels in the study area are very high. During wet weather, groundwater elevation is only a few feet below the ground surface. As a result, numerous springs discharge throughout the drainageways.

Surface Water

The City of La Center and its UGA are located in the East Fork Lewis River Drainage Basin. Two perennial streams flow through the study area. One of the creeks, Breeze Creek, is located on the north side of the River. The second, McCormick Creek, is located on the south side of the River.

The East Fork Lewis River and its tributaries are listed on the 303(d) list of impaired water bodies for high instream temperatures and fecal coliform bacteria problems.

3.3 LAND USE

Land use within the City boundaries is established by a zoning ordinance. The majority of the area is residential, with commercial activity concentrated in the downtown core area and industrial development concentrated along I-5.

Land use within the La Center UGA is addressed in the *La Center Urban Area Comprehensive Plan*. The Comprehensive Plan defines the types and distribution of land uses within the UGA. Land use conforms to the Washington State Growth Management Act. A land use map is shown in Figure 3.3.

Land use outside of La Center's UGA is currently governed by the City of Ridgefield's UGA to the south and the Clark County Comprehensive Plan to the north, east, and west.

3.4 PUBLIC WATER SYSTEM

La Center's water system is shown in Figure 3.4. Since 1992, Clark Public Utilities has owned and operated the City's water system. The water source for the system is groundwater obtained from well fields located outside of the City's UGA. Residents in the rural areas surrounding La Center also rely upon private wells for their water supply. No known incidences of groundwater or well contamination have been recorded at the time of this document.

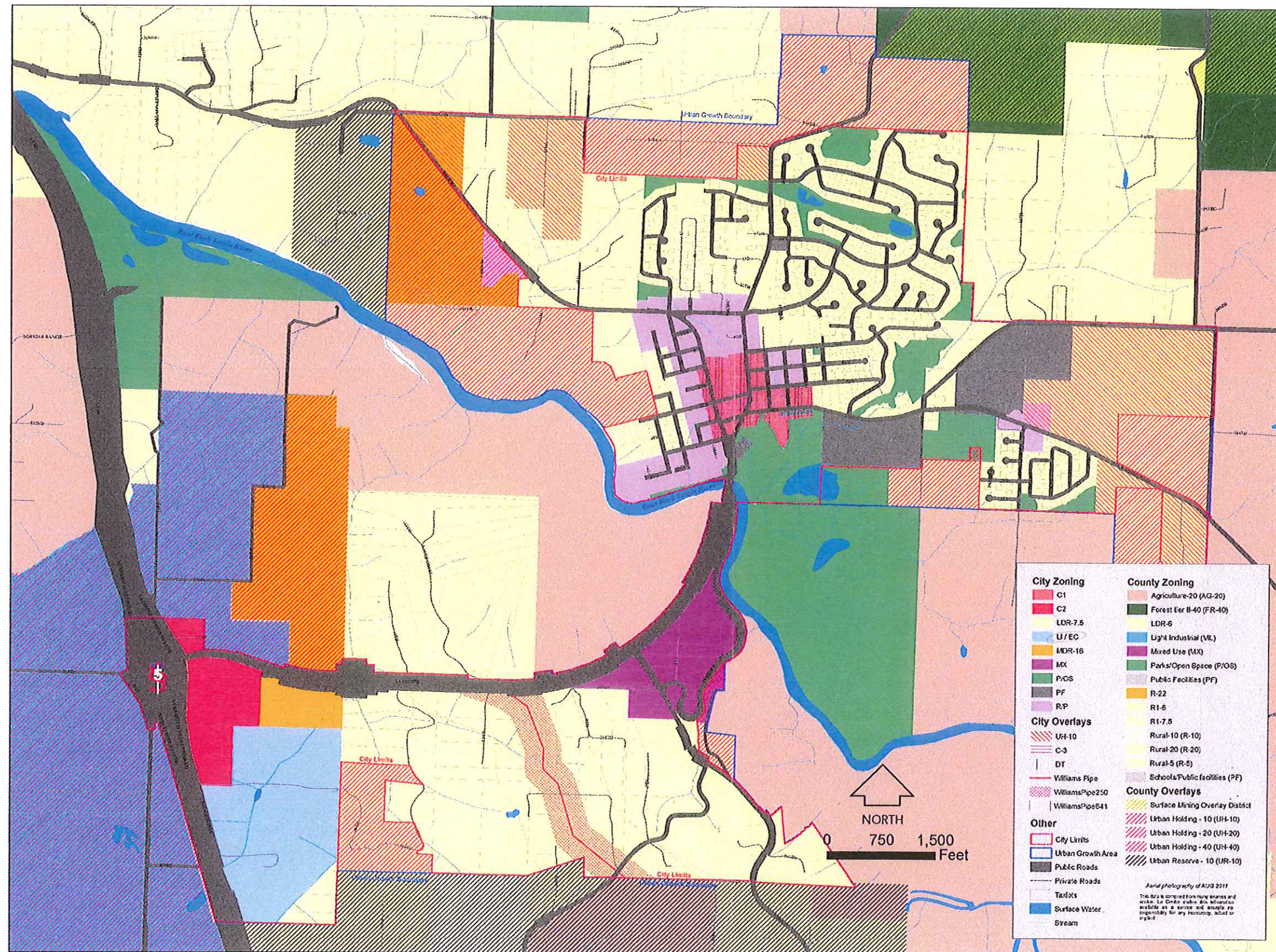
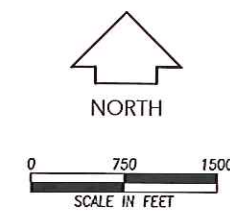
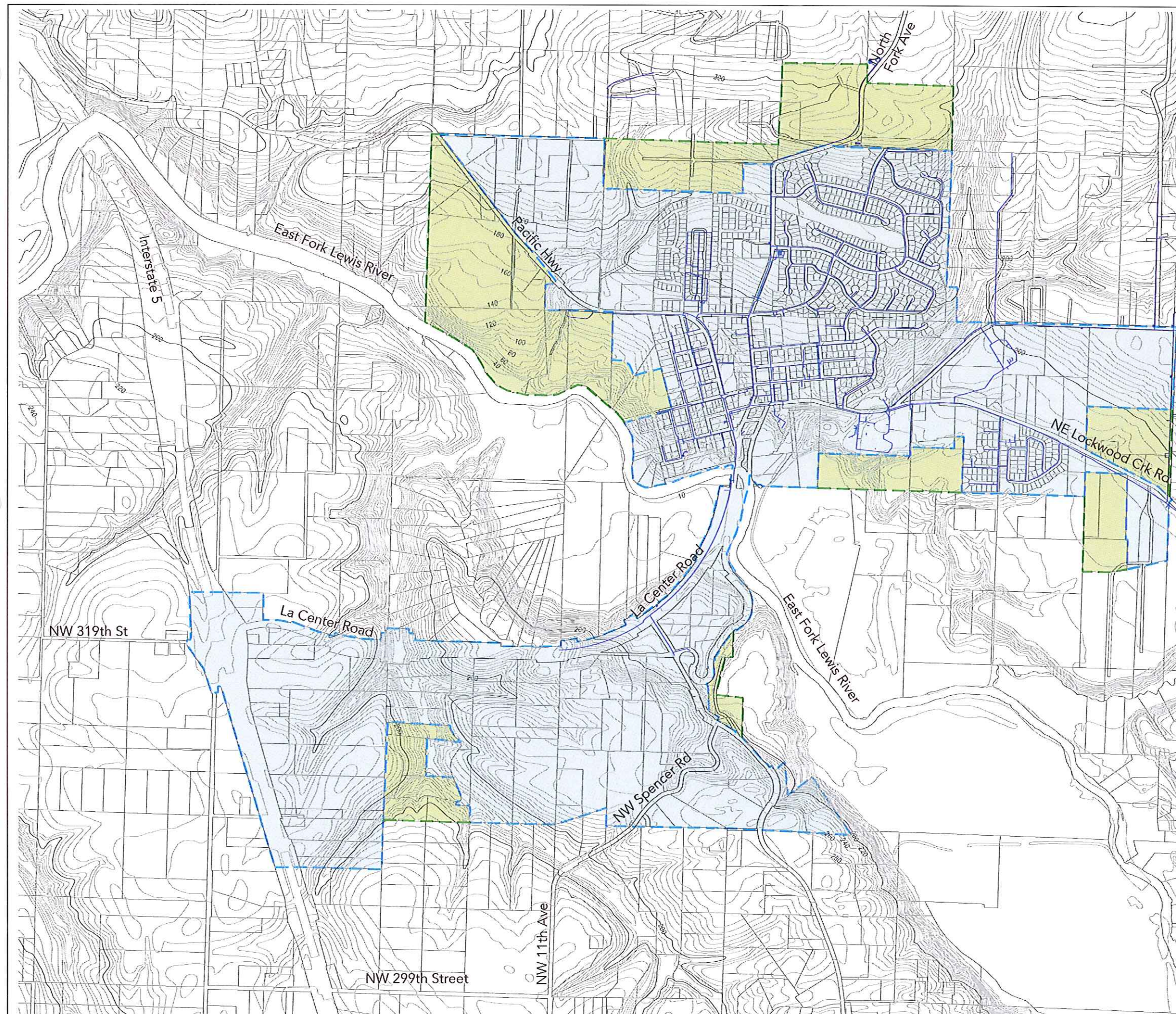


Figure 3.3
General Land Use Map

City of La Center
General Sewer Plan
August 2012



Legend

Existing City Limits



UGA Boundary



Existing Contours



Existing Water Lines



Figure 3.4
Water System Map

City of La Center
General Sewer Plan
March 2013

SECTION 4

EXISTING FACILITIES

4.1 HISTORY OF THE SEWERAGE SYSTEM

The existing collection system serving the oldest portion of the City, south of 10th Street, was constructed in the 1950's. During the 1990's, several major collection system expansions were made to serve subdivisions constructed north and east of the City.

4.2 CURRENT SERVICE AREA

The current service area comprises the La Center UGA, shown in Figure 3.1.

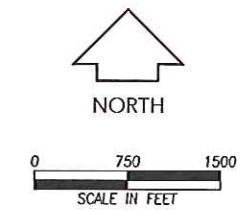
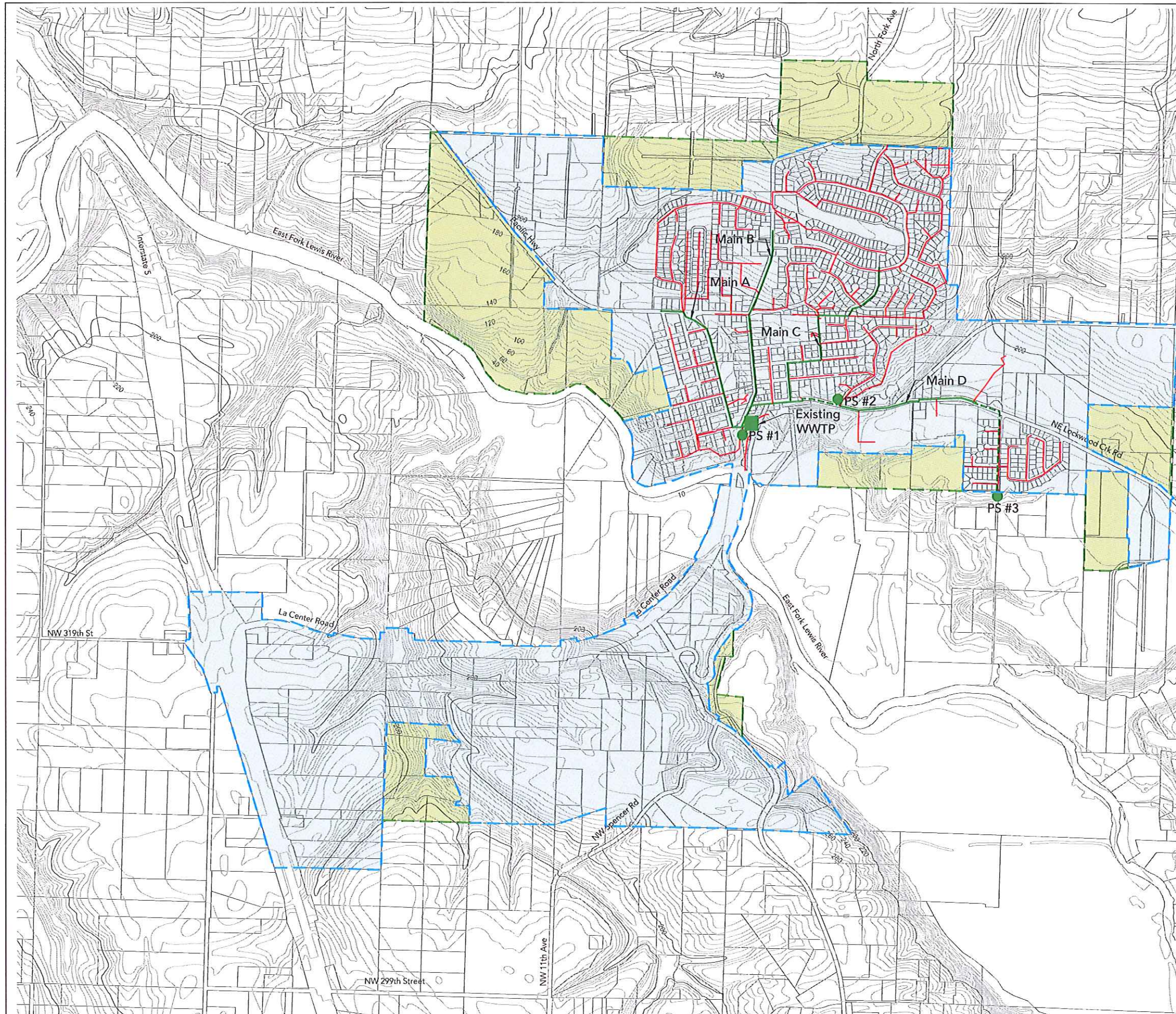
4.3 COLLECTION SYSTEM

The City of La Center operates and maintains approximately 5 miles of sanitary sewer collection lines and mains within the city limits. The majority of the collection system consists of 8-inch diameter pipe, though a few short sections of main are sized at 6-inch diameter. Figure 4.1 shows the existing collection system. A more detailed map is included in Appendix B.

The system utilizes gravity flow as much as possible, with the majority of lines sloping toward the treatment facility located on the north bank of the River. The collection system utilizes three sewage pump stations and approximately 2,000 feet of force mains. Table 4.1 summarizes the data for the three pump stations.

Table 4.1
Sewage Pump Station Data Summary

Pump Station No.	Location	Pumps	Approximate Capacity (each pump)
1	Treatment Plant	Two – 10 hp, Flygt	950 gpm
2	4 th Street and Stonecreek Drive	Two – 5 hp, Flygt	100 gpm
3	NE John Storm Avenue and E 1 st Circle	Two – 6.5 hp, Paco	100 gpm



Legend



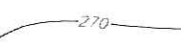





- Existing City Limits 
- UGA Boundary 
- Existing Contours 
- Existing Sewer Line 
- Existing Sewer Main 
- Existing Force Main 
- Existing Pump Station 
- Existing Wastewater Treatment Plant 



Figure 4.1
Existing Collection System

City of La Center
General Sewer Plan
March 2013

4.4 TREATMENT AND DISPOSAL FACILITIES

Description

The *City of La Center Wastewater Facility Plan* describes expected treatment plant upgrades, which are expected to take place during three phases of construction. Currently, a portion of Phase 1A has been constructed. Figure 4.2 shows the Phase 1 treatment plant site plan. Detailed treatment plant design information is included in Appendix C.

Administrative Building

The administrative building is located on the west side of the facility. This building contains the training/conference room, supervisory office, operators stations, controls and electrical equipment.

Laboratory Building

The laboratory building is located to the south of the administrative building. This building houses the lab, laundry, lunch area, showers, and restroom.

Headworks

Influent wastewater is conveyed by gravity sewers to the facility headworks where it passes through two rotary drum fine screen (3 mm) units. Wastewater then flows through a Parshall flume with an ultrasonic flow meter before reaching the membrane bioreactor (MBR) process basins.

Secondary Treatment

Biological treatment is provided by a membrane bioreactor sludge process. The system includes two anoxic and two aerobic process basins and two MBR membrane basins. The anoxic process basins provide denitrification, and the downstream aerobic process basins provide BOD removal and nitrification.

Disinfection

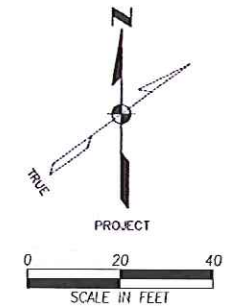
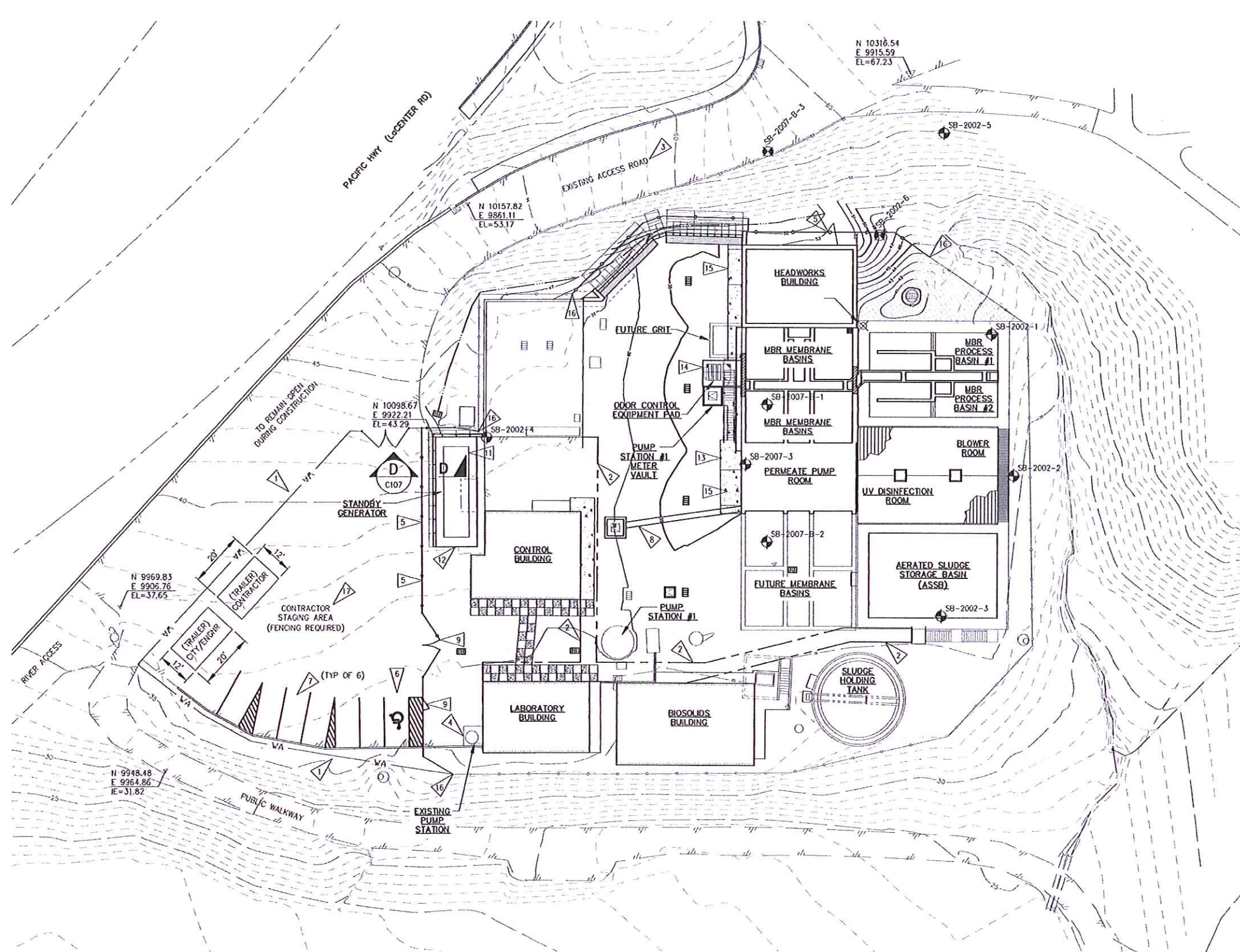
Effluent from the plant undergoes ultraviolet radiation disinfection prior to discharge. Ultraviolet radiation has proven to be an effective bactericide and virucide for wastewater, without contributing to the formation of toxic disinfection byproducts.

Outfall

Disinfected secondary effluent is discharged from the facility via a 10-inch outfall and multiport diffuser into the East Fork Lewis River. The end of the outfall diffuser is about 15 feet into the river. The diffuser is a rectangular box with 28 ~ 6-inch by 2-inch ports with 14 of the ports facing upstream, and 14 of the ports facing downstream.

Solids Treatment

Treatment of waste solids is accomplished by a sludge rotary fan press and sludge dryer. An aerated sludge holding tank receives waste sludge from the MBR so that the rotary fan press and sludge dryer can be operated intermittently.



FLAG NOTES:

- 1 CONTRACTOR TO PROVIDE TEMPORARY FENCING AND ACCESS GATE AROUND STAGING AREAS. LOCATE OWNER/ENGINEER AND CONTRACTOR CONSTRUCTION TRAILERS IN STAGING AREA AND PROVIDE KEYS FOR ACCESS TO OWNER.
- 2 CONTRACTOR TO PROVIDE TEMPORARY FENCING AND PROTECTION FOR WWTP STAFF TO ACCESS ALL EXISTING PLANT AREAS THROUGHOUT CONSTRUCTION.
- 3 CONTRACTOR TO SAWCUT, REMOVE, REPLACE AND SEAL ALL EXISTING ASPHALT AREAS DAMAGED DURING CONSTRUCTION. SEE DETAIL 6/C001.
- 4 SEE DETAIL 1/D002 FOR EXISTING PUMP STATION MODIFICATIONS.
- 5 CONSTRUCT NEW CHAIN LINK FENCE. SEE DETAIL 1/C003.
- 6 9'x18' HANDICAP PARKING SPACE (1 TOTAL).
- 7 STANDARD 9'x18' STRIPED PARKING STALL (6 TOTAL).
- 8 ELECTRICAL CONDUIT TRENCH. SEE SHEET E101.
- 9 RELOCATE AND REUSE EXISTING GATE. INSTALLATION PER DETAIL 1/C003.
- 10 NOT USED
- 11 CONTRACTOR TO PROVIDE MINIMUM 3' CLEARANCE AROUND ALL SIDES OF GENERATOR.
- 12 NEW 15'x40' CONCRETE PAD FOR NEW STANDBY GENERATOR. SEE SHEET S621.
- 13 NEW STAIRWAY LANDING, SIMILAR TO DETAIL 8/C001.
- 14 9'-6"x14" ODOR CONTROL EQUIPMENT PAD. SEE SHEET S502.
- 15 REINFORCED CONCRETE SIDEWALK IN FRONT OF UTILITY ACCESS PER DETAIL 8/C001.
- 16 CONNECT TO EXISTING FENCE AT EXISTING END OR CORNER POST OR INSTALL NEW INTERMEDIATE POST.
- 17 ADDITIONAL STAGING AREA LOCATED AT 525 E BIRCH AVENUE, LA CENTER, WA. REFER TO SPECIFICATION 01010 FOR REQUIREMENTS.

LEGEND

- SB-YEAR-# SOIL BORING LOCATIONS
- △ SURVEY CONTROL POINT (PK NAIL)
- NE CORNER AREA TO BE SURFACED WITH 6" OF 1" UNIFORM GRADED ROUND ROCK, 6" DEPTH. EXCAVATE AND GRADE AS NECESSARY.
- ⊗ VERTICAL CONTROL POINT

SURVEY NOTES:

- HORIZONTAL CONTROL: ASSUMED COORDINATE SYSTEM (N10,000 & E10,000)
- VERTICAL DATUM: NONE, ELEVATIONS BASED ON AS-BUILT PLANS - NW CORNER EXISTING SBR TANK AT EL. 50.00.



Figure 4.2
Existing WWTP Site Plan

City of La Center
General Sewer Plan
March 2013

NOTE:
THIS DRAWING PREPARED BY
KENNEDY/JENKS CONSULTANTS

Reliability Classification

The La Center Wastewater Treatment Facility meets the criteria for a reliability classification of Class III. Ecology's criteria for Class III reliability are as follows:

"These are works not otherwise classified as Reliability Class I or Class II"

This facility qualifies for Class III reliability because it must achieve ammonia limits meeting "tertiary" treatment requirements. Tertiary treatment works with design flows less than 5 MGD are classified as Class III facilities according to WAC 173-230-140. In general, Class III reliability requirements stipulate that there shall be at least two sedimentation basins, and at least two blowers providing aeration to maintain sufficient DO to maintain the biota. In addition to the Class III process requirements, Ecology requires this treatment plant to maintain Class II back-up power. Reliability Class II requires the facility to maintain sufficient back-up power to operate critical lighting, ventilation, and all vital components at sufficient levels to maintain the biota during peak wastewater flow conditions. The facility has a 1 megawatt diesel generator for back-up power supply.

NPDES Permit

General

La Center's wastewater NPDES permit was issued May 26, 2004 and officially expired June 30, 2009; however, the City continues to operate under this expired permit until the Washington State Department of Ecology approves the most recent permit application. The 2004 NPDES and the draft NPDES design criteria and effluent limitations are described in Tables 4.2 and 4.3. Copies of the 2004 NPDES permit and the most recent draft NPDES permit are included in Appendix D.

The draft permit has two separate sets of requirements corresponding to two phases of wastewater treatment plant construction. The phases are designated as Phase 1A and Phase 1B. Currently, Phase 1A has been constructed with Phase 1B to be completed as flows require. Phase 1B will include outfitting two empty membrane basins with membranes and updating several of the aeration blowers.

Section 4 – Existing Facilities

NPDES Design Criteria

Shown in Table 4.2 are the 2004 and draft NPDES permit design criteria.

Table 4.2
NPDES Permit - Design Criteria

Parameter	2004 Permitted Value	Draft Permitted Value (Phase 1A)	Draft Permitted Value (Phase 1B)
Maximum Monthly Average Wet Weather Flow	0.56 mgd	0.69	1.04
Instantaneous Peak Flow	1.0 mgd	1.29	1.94
BOD ₅ Influent Loading for Maximum Month	841 lbs/day	1,297	1,804
TSS Influent Loading for Maximum Month	902 lbs/day	1,070	1,581

Section 4 – Existing Facilities

Effluent Limitations

Table 4.3 details the current and tentative effluent limitations as outlined in the 2004 and draft NPDES permits.

Table 4.3
NPDES Permit - Effluent Limitations

	Parameter	Monthly Average	Weekly Average
2004 NPDES Permit	Biochemical Oxygen Demand (5 day)	30 mg/L, 173 lbs/day	45 mg/L, 260 lbs/day
	Total Suspended Solids	30 mg/L, 161 lbs/day	45 mg/L, 242 lbs/day
	Fecal Coliform Bacteria	100/100 mL	200/100 mL
	Chlorine Residual	0.15 mg/L	0.23 mg/L
	Ammonia (NH ₃ -N)	3.6 mg/L (June – Oct.)	8.1* mg/L (June – Oct.)
	PH	Shall not be outside the range of 6.0 - 9.0	
Draft NPDES Permit (Phase 1A)	Biochemical Oxygen Demand (5 day)	30 mg/L, 173 lbs/day	45 mg/L, 260 lbs/day
	Total Suspended Solids	30 mg/L, 161 lbs/day	45 mg/L, 242 lbs/day
	Fecal Coliform Bacteria	100/100 mL	200/100 mL
	Ammonia (NH ₃ -N)	3.6 mg/L (June – Oct.)	8.1* mg/L (June – Oct.)
	PH	Shall not be outside the range of 6.0 - 9.0	
Draft NPDES Permit (Phase 1B)	Biochemical Oxygen Demand (5 day)	30 mg/L, 260 lbs/day	45 mg/L, 390 lbs/day
	Total Suspended Solids	30 mg/L, 237 lbs/day	45 mg/L, 356 lbs/day
	Fecal Coliform Bacteria	100/100 mL	200/100 mL
	Ammonia (NH ₃ -N)	3.0 mg/L (June – Oct.)	6.8* mg/L (June – Oct.)
	PH	Shall not be outside the range of 6.0 - 9.0	

* The ammonia limit is not average weekly, but maximum daily.

Monitoring Schedule

The monitoring schedules are included in the NPDES permits, included in Appendix D. Most parameters are tested twice weekly.

4.5 TREATMENT FACILITIES IN NEARBY CITIES

There are currently six other municipal wastewater treatment plants (WWTPs) within a 20-mile radius of La Center: the City of Kalama WWTP, the City of St. Helens WWTP, the City of Ridgefield WWTP, the Clark County Salmon Creek WWTP, the City of Vancouver WWTP and the City of Portland WWTP. None of these treatment facilities are located near the City of La Center's likely ultimate growth area.

SECTION 5

PLANNING CRITERIA AND SEWERAGE SYSTEM REGULATIONS

5.1 PLANNING PERIOD

For the purpose of this plan, the collection system planning period ends in the year 2032, while the treatment facility planning period ends in the year 2027. As discussed in subsection 2.1, the 2006 General Sewer Plan collection system planning period was selected to correspond with the comprehensive planning process, which utilized a 2024 UGA. Due to a slower than expected growth rate since 2006, this General Sewer Plan utilizes the 2024 UGA and population projection as the 2032 sewer planning area and population estimate.

5.2 SERVICE AREA

The City of La Center's sewer system currently serves the majority of the City's residents. The service area addressed in this plan is the current UGA shown in Figure 3.2.

5.3 COLLECTION SYSTEM DESIGN CRITERIA

DOE Design Standards

Standard textbook design criteria were used in the conceptual design of the collection facilities presented in the plan along with guidelines presented in the Washington State Department of Ecology's (DOE) *Criteria for Sewage Works Design* [6].

Gravity Sewer Service Policy

The City of La Center has an informal policy of requiring new growth areas to be served by gravity sewers (as opposed to pump stations) whenever possible. Pump stations are discouraged due to their high cost of operation and maintenance. As discussed in Section 10, it is recommended that this policy issue be formalized.

Design Period

This plan addresses collection system improvements to serve the current UGA. While capacity has been assessed for a 20-year period, proposed trunk sewers and permanent pump station wetwells are sized to accommodate either build-out or 50-year flow estimates. In other words, the planning period is 20 years, while the design period is 50 years.

Sewer System Sizing

Gravity Sewer Sizing. All sewers were sized assuming minimum slope to provide a velocity of 2 feet per second. A Manning's Roughness Coefficient of $n = 0.013$ was used in the calculations of pipe capacities. Proposed trunk sewers were designed with capacity to accommodate either build-out (if their basin does not extend beyond the UGA) or 50-year flow estimates.

Sizing Proposed Pump Stations. Because pump stations can be upgraded by increasing pump capacity and the normal life cycle of a pump is 10 to 15 years, it is not necessary to size pump stations for flows beyond the 20-year projections. For the purpose of this Plan, pump station mechanical equipment and pipes were sized to accommodate the 20-year flow conditions. The primary consideration for pump station and force main design is that they should provide a velocity of flow in the force main between 2 and 7 feet per second, based on a Hazen-Williams Coefficient of 130. The pump station wetwells were sized for either basin build-out, or 50-year growth in those basins that can be extended beyond the 20-year growth boundary. In all cases, they were sized large enough to provide adequate cycle time for the pumps.

Peaking Factors. The value of the peaking factor was based on the area served, and determined by the following equation:

$$\text{Peaking Factor} = 14 / (4 + P) + 1 \quad (P = \text{population in thousands})$$

Peaking factors varied from 4.0 to 3.1, depending on the service area. In general, the larger the service area, the smaller the peaking factor.

Trunk Sewer and Pump Station Siting

Collection system improvements are sited to limit the use of pump stations. The fact that so much of the study area is fragmented by steep ravines and environmentally sensitive lands will require that the City exercise strict control over the location of both trunk sewers and pump stations. This will likely be very challenging in light of the fact that most trunk sewers are designed and constructed by developers who do not have the resources or time to site trunk sewers and pump stations to serve regional needs. Failure by the City to exercise strict control over siting of these facilities will result in a large number of pump stations and force mains, with the end result a burden upon the ratepayers. See Section 10 for recommended actions by the City in regards to the siting of these facilities.

5.4 TREATMENT CRITERIA

Receiving Water Quality

The treatment plant currently discharges to an outfall in the East Fork Lewis River. As part of the planning effort prior to the 2004 wastewater treatment plant expansion, a mixing zone study

was completed in 2002 by Gibbs and Olson to address receiving water quality issues. That mixing zone study is summarized in the 2004 NPDES permit in Appendix D.

Effluent Limitations

The following table lists the expected future effluent limitations used as a basis for the design of the long term treatment facilities.

Table 5.1
Effluent Limitations
for Long Term Treatment Facilities

Parameter	Monthly Average	Weekly Average
Total BOD ₅ (mg/L)	10	15
Total Suspended Solids (mg/L)	10	15
Total Ammonia-N (June – October) (mg/L)	2.0	3.9*
Total Ammonia-N (November – May) (mg/L)	6.2	12.3*
Fecal Coliform (organisms/ml)	100/100	200/200
pH	Between 6 - 9	

* These ammonia limits are not weekly, but maximum daily.

Federal Biosolids Regulations

In selecting the appropriate methods of solids processing, consideration must be given to the appropriate regulations. The treatment and reuse of biosolids requires the adherence to federal 40 CFR Part 503 requirements and State Chapter 173-308 requirements.

Federal 40 CFR PART 503 Requirements

In the United States, regulations (40 CFR Part 503) were implemented in 1993 by the U.S. Environmental Protection Agency, which established pollutant limits and management practices for the reuse and disposal of solids generated from the processing of municipal wastewater and septage. These regulations were designed to protect public health and the environment from any reasonably anticipated adverse effects of pollutants contained in the biosolids.

The regulations addressed by 40 CFR Part 503 cover specifically: 1) land application of biosolids; 2) surface disposal of biosolids; 3) pathogen and vector reduction in treated biosolids; and 4) incineration.

1. Land Application

Land application relates to biosolids reuse and includes all forms of applying bulk or bagged biosolids to land for beneficial use at agronomic rates (rates designed to provide the amount of nitrogen needed by crop or vegetation while minimizing the amount that passes below the root zone). The regulations establish two levels of biosolids quality with respect to heavy metals, two levels of quality with respect to pathogen densities and two types of approaches for meeting vector attraction.

2. Surface Disposal

The surface disposal part of the Part 503 regulations applies to: 1) dedicated surface disposal sites; 2) monofills, i.e. solids-only landfills; 3) piles or mounds; and 4) impoundments or lagoons. Disposal sites and solids placed on those sites for final disposal are addressed in the surface disposal rules. Surface disposal does not include placement of solids for storage or treatment purposes. Where surface disposal sites do not have a liner or leachate collection system, limits are established for pollutants such as arsenic and nickel, and vary based on the distance of the active surface disposal site boundary from the property line.

3. Pathogen and Vector Attraction Reduction

The 40 CFR Part 503 regulations divide the quality of biosolids into two categories, referred to as Class A and Class B. Class A biosolids must meet specific criteria to ensure they are safe to be used by the general public and for nurseries, gardens, and golf courses. Class B biosolids have lesser treatment requirements than Class A, and typically are used for application to agricultural land or disposed of in a landfill.

Class B pathogen requirements are the minimum level of pathogen reduction for land application and surface disposal. The only exception to achieving at least Class B level occurs when the solids are placed in a surface disposal facility that is covered daily. Biosolids that do not qualify as Class B cannot be land applied. To meet Class B requirements, biosolids must be treated by a process that reduces but does not eliminate pathogens, or that must be tested to meet fecal coliform limits.

To meet pathogen and vector reduction requirements, two levels of preapplication treatment are required, and have been defined by the EPA as Processes to Further Reduce Pathogens (PFRP) and Processes to Significantly Reduce Pathogens (PSRP). Because PFRPs reduce but do not eliminate pathogens, PFRPs still have the potential to transmit disease. Because PSRPs reduce pathogens below detectable levels, there are no pathogen

related restrictions for land application. Minimum frequency of monitoring, record-keeping, and reporting requirements are required to be met, however.

4. *Incineration*

The Part 503 regulations establish requirements for wastewater biosolids-only incinerators. The regulations cover incinerator feed solids, the furnace itself, operation of the furnace, and exhaust gases from the stack. The rule indirectly limits emissions of heavy metals and directly limits total hydrocarbon emissions from incinerator stacks. Pollutant limits for wastewater solids fired in an incinerator are established for beryllium, mercury, lead, arsenic, cadmium, chromium, and nickel. Incinerators must also meet a monthly average limit for total hydrocarbons. Monitoring and reporting are also required.

State Biosolids Regulations (WAC-173-308)

EPA allows states the ability to enforce their own version of biosolids regulations. Under 40 CFR 503, these state biosolids regulations must be at least as stringent as the federal 503 regulations. The State of Washington has adopted the 503 requirements in its own regulations governing the use or disposal of biosolids, as WAC 173-308. These regulations became effective in March 1998 and are enforced by the Department of Ecology. The requirements in WAC 173-308 pertaining to pollutant limits, vector attraction reduction, pathogen reduction, operational standards and management practices are very similar to the requirements of the federal 503 regulations.

Compliance with the State Environmental Policy Act

Treatment works treating domestic sewage must also comply with requirements of the State Environmental Policy Act (SEPA). Generally, compliance involves completing an environmental checklist to be reviewed by the lead SEPA agency, which makes a threshold determination of environmental impacts and carries out a public notice of the determination. Potential outcomes are a Determination of Nonsignificance, Mitigated Determination of Nonsignificance, or Determination of Significance. The latter leads to preparation of an Environmental Impact Statement.

It is expected that most biosolids related proposals will not result in significant adverse environmental impacts, and in most cases a Determination of Nonsignificance will likely be issued. Mitigation may be appropriate in some cases, but alternatively can probably be addressed as a condition of permit coverage or approval of a general or site specific land application plan.

DOE is promulgating new federal regulations for the treatment and disposal of wastewater sludge through a manual entitled the *Biosolids Management Guidelines for Washington State* [7]. The primary purpose of these guidelines is to assist biosolids managers in developing proper requirements for biosolids management programs, and to assist regulatory officials in developing

proper requirements for biosolids permits. These regulations will be followed by the City during the expansion of their biosolids management program.

5.5 CAPACITY, MANAGEMENT, OPERATIONS, AND MAINTENANCE (CMOM) REGULATIONS

CMOM stands for "Capacity, Management, Operations, and Maintenance". These regulations were created by the EPA in order to reduce the occurrence of Sanitary Sewer Overflows (SSOs) nationwide. It was created as a framework for municipalities to identify and incorporate widely accepted wastewater industry practices in order to:

- Better manage, operate, and maintain collection systems
- Investigate capacity constrained areas of the collection system
- Respond to sanitary sewer overflow (SSO) events

In CMOM planning, the utility selects performance goal targets, and designs CMOM activities to meet the goals. Information collection and management practices are used to track how well each CMOM activity is meeting the performance goals, and whether overall system efficiency is improving.

Status of CMOM Regulations

The CMOM regulations are currently waiting for finalization and publication, which was initially expected in mid-2004. The EPA continues to develop guidance and information to encourage the implementation of the Combined Sewer Overflow (CSO) policy. State and federal NPDES permitting authorities are working with permittees to incorporate CSO conditions into NPDES permits and other enforceable mechanisms, such as administrative and judicial orders.

CMOM Requirements and Program Elements

There are four major documentation requirements of the CMOM permit. These requirements vary based on the size and complexity of the municipal wastewater collection system and include a written summary of the CMOM Program; an Overflow Emergency Response Plan; a Program Audit Report; and a System Evaluation and Capacity Assurance Plan.

For municipalities to meet CMOM requirements, the following legal, administrative, and management elements will be required:

Legal Authority. Adopt a sewer use ordinance that requires proper design installation, testing and inspection (including service lines) and includes pretreatment standards for fats, oils, and greases.

Information Management. Maintain up-to-date mapping of the collection system and establish a process to update maps with new development; maintain a database on pipes including size,

material and date constructed; maintain overflow data, three years of work order history, complaint records, performance and implementation measures, and a list of system components with inadequate capacity.

Overflow Response Plan. Develop and implement an SSO response plan to stop and mitigate impacts as soon as possible. The plan must outline staff training in SSO response procedures, a process for plan review and updating, a public notification program, and steps for immediate notification of health officials and the National Pollutant Discharge Elimination System (NPDES) authority.

Condition Assessments. Conduct periodic video pipe inspections and smoke testing to identify structural deficiencies and illicit connections. Update information management systems as needed based on the condition assessment.

Capacity Assurance. Identify deficient components of the system for both existing and future conditions through system modeling. Develop a master plan that includes a capital improvement plan to address deficiencies. Budget for capital improvements.

Construction Standards. Adopt and enforce defined design criteria that include evaluation of downstream impacts for new development, capital improvements, and rehabilitation. Require proper review of construction drawings as well as acceptance tests and inspection, including laterals.

Staff Training. Provide a training program for operation and administrative personnel that includes all elements of the CMOM program. Develop a mandatory certification program.

Compliance Audits. Assign responsible staff to complete the CMOM program audit report based on interviews with staff, observations of crews, SSO data records, and work order records. The audit review report is to identify apparent deficiencies, steps taken to address problems, and additional measures needed.

Implications for the City of La Center

The City of La Center already has many elements of the CMOM program currently in place or in the process of being developed. The adoption of this General Sewer Plan will meet many of the requirements of these regulations. It is recommended that the City assign staff to monitor the EPA's final adoption of CMOM regulations, and eventually oversee the City's compliance.

SECTION 6

EXISTING AND PROJECTED SEWER FLOWS

6.1 LAND USE PROJECTIONS

In response to the requirements of the State of Washington Growth Management Act, the City of La Center updated its Comprehensive Plan in 2008. The Comprehensive Plan establishes the UGA, the area in which growth is expected to occur to the year 2024. The 2024 UGA is utilized as the 20 year (2032) sewer planning area for this plan. The objective of the UGA is to encourage growth in areas where public services can be effectively and efficiently provided and in a manner that is compatible with the needs of the community.

Residential population and equivalent residential unit (ERU) projections were made using information available from the Comprehensive Plan [5]. Historically residential population growth has varied between 0.5% and 10% per year. The Comprehensive Plan establishes the projected population at 2024 based on the historical growth rate.

6.2 POPULATION PROJECTIONS

20-Year Population and ERU Projections

Wastewater flows are contributed by both residential land uses, and non-residential land uses, which include industrial and commercial uses. For purposes of sewer planning, flow and wasteload projections are based upon ERUs. An ERU represents the equivalent flow and wasteload from a single family household. ERU values were calculated based upon the following assumptions:

1. Average household size is 2.7 persons per unit (1 ERU = 2.7 people), the target value from the Comprehensive Plan.
2. Nonresidential ERU values were estimated by evaluating water meter billing records.

These assumptions and the population projections in the Comprehensive Plan were used to create Table 6.1, which represents projected growth within the 20-year UGA planning area. Due to lower than expected growth over the past several years, population at the end of the 20-year sewer planning period (2032) was assumed to equal the 20-year UGA population projection (2024).

Table 6.1
Population and ERU Projections

Year	Population*	ERUs					Population Equivalent
		Residential	Downtown Comm.	Junction Comm./ Industrial	Public	Total	
2012	3,101	1,153	308	0	44	1,504	4,047
2013	3,392	1,261	317	5	48	1,631	4,387
2014	3,710	1,379	326	23	57	1,786	4,803
2015	4,058	1,509	336	41	62	1,948	5,240
2016	4,439	1,650	346	59	67	2,123	5,709
2017	4,856	1,805	357	77	73	2,312	6,218
2018	5,311	1,974	367	95	80	2,517	6,770
2019	5,809	2,160	378	113	86	2,737	7,363
2020	6,354	2,362	390	131	93	2,976	8,005
2021	6,951	2,584	401	149	102	3,236	8,706
2022	7,603	2,826	413	167	110	3,517	9,460
2023	8,316	3,092	426	185	120	3,823	10,282
2024	9,827	3,653	439	203	123	4,418	11,883
2032**	9,827	3,653	439	203	123	4,418	11,882

* Populations in this table derived by assuming a constant growth rate between 2010 (Census population of 2,800) and 2024 (Comprehensive Plan population projection of 9,827).

** 2032 sewer planning population estimate is assumed to equal the 2024 population projection, as discussed in subsection 5.1.

*** The vast majority of downtown commercial wastewater discharge is from the four cardrooms. Downtown commercial ERU growth projections assumed that growth in cardroom wastewater would parallel the average Clark County growth rate of the past 20 years, which has been approximately 3%.

**** Junction commercial/industrial ERU estimates were estimated by taking projected employment data from the comprehensive planning process, and estimating ERU's based upon an assumed 35 gallons per-job flow estimate.

50-Year ERU Projections

A 50-year ERU projection was made by assuming that the 2062 ERU population would equal 300% of the ERU growth from year 2006 to 2032. This equates to an annual growth rate of just less than 4% for the period between 2032 and 2062. With this assumption, the year 2062 ERU projection is 12,672.

6.3 EXISTING FLOW AND WASTELOADS

Population, wastewater flows, and wastewater loadings were provided by the City. Table 6.2 summarizes this data for the period of 2007 to 2011. It includes influent flows and loadings for wastewater entering the treatment plant.

**Table 6.2
Summary of Influent Wastewater Characteristics**

Parameter	2007	2008	2009	2010	2011
Actual Population	2440	2510	2545	2800	2835
Population Equivalent	3190	3272	3347	3074*	2939*
Population Equivalent less Cardrooms	2676	2744	2820	2601	2454
Total Annual Average Daily Flow (mgd)	0.27	0.25	0.25	0.27	0.30
Unit Average Daily Flow (gpcd)	109	100	100	96	105
Total Average Wet Weather Flow (mgd)	0.32	0.29	0.28	0.28	0.35
Unit Wet Weather Flow (gpcd)	131	116	108	99	125
Total Average Dry Weather Flow (mgd)	0.21	0.21	0.22	0.22	0.25
Unit Dry Weather Flow (gpcd)	87	85	87	79	87
Total Peak Monthly flow (mgd)	0.37	0.34	0.35	0.39	0.41
Unit Peak Monthly Flow (gpcd)	152	134	136	138	145
Total Peak Daily Flow (mgd)	0.64	0.49	0.72	0.49	0.62
Unit Peak Daily flow (gpcd)	262	194	284	175	220
Total Annual Average BOD (lb/dy)	639	654	668	615	605
Cardrooms Annual Average Daily BOD (lb/dy)*	103	106	105	95	97
Annual Average Daily BOD less Cardrooms	536	548	563	520	508
Unit Annual Average BOD (lb/capita/dy)	0.22	0.22	0.22	0.19	0.18
Maximum Month BOD (lb/dy)	722	696	718	739	739
Max Month BOD less Cardrooms (lb/dy)	619	590	613	644	642
Unit Max Month BOD (lb/capita/dy)	0.25	0.24	0.24	0.23	0.23
Total Annual Average TSS (lb/dy)	442	432	452	446	444
Cardrooms Annual Average Daily TSS (lb/dy)*	38	39	39	35	36
Annual Average Daily TSS less Cardrooms (lb/dy)	404	393	413	411	408
Unit Annual Average TSS (lb/capita/dy)	0.17	0.16	0.16	0.15	0.14
Maximum Month TSS (lb/dy)	497	476	514	599	525
Max Month TSS less Cardrooms (lb/dy)	459	437	475	564	489
Unit Max Month TSS (lb/capita/dy)	0.19	0.17	0.19	0.20	0.17

* Cardroom BOD and TSS was estimated assuming typical concentrations from gambling casinos.

6.4 COMMERCIAL AND INDUSTRIAL WASTEWATER

Currently, there are no industries discharging wastewater to the City. There are however, four cardroom casinos that discharge particularly high BOD/TSS loadings.

The City has calculated wastewater loadings from these establishments based on average water use and assumed loading data. The Orange Book assumes restaurants open 16 hours will contribute a flow of 50 gpd per seat, and 0.2 lbs./day of BOD and TSS per seat. Assuming the cardrooms are open for 24 hours per day, restaurant loading values were extrapolated to a flow of 50 gpd per seat, and 0.3 lbs./day of BOD and TSS per seat. These assumed values fit well with the population equivalent loadings received at the plant.

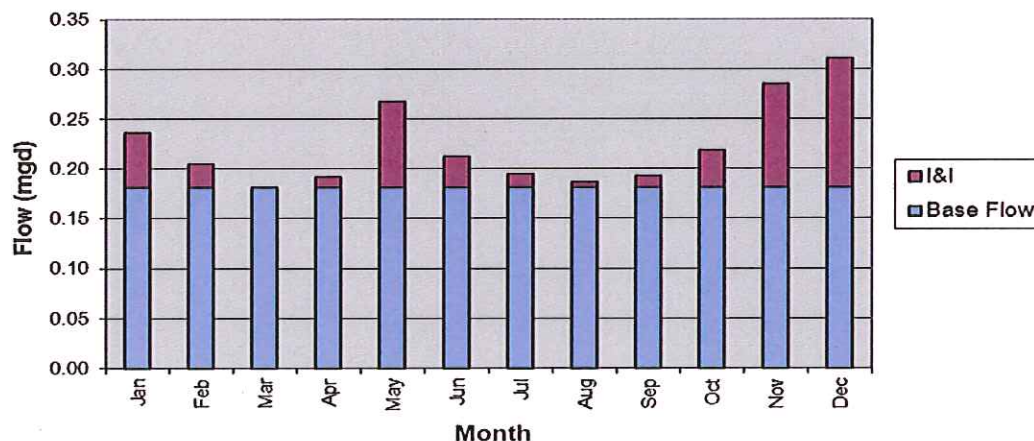
6.5 INFILTRATION AND INFLOW (I/I)

Infiltration is defined as subsurface water which enters the wastewater collection system through cracks, joints, or other deficiencies in the collection system. It is directly influenced by the local groundwater table and the structural integrity of the collection system. All collection systems experience some degree of infiltration. Each system must plan and allow for additional capacity to accommodate this flow contribution.

Inflow is the component of I/I that is attributed to surface water, mainly stormwater runoff, entering the system through roof drains, storm drains, manhole covers, and other direct conduits to the sewer system. Inflow is directly influenced by storm events and usually occurs over a short period, during and after a storm event. Inflow is usually preventable by eliminating non-sewerage connections to the system. With older systems, however, identifying illegal sewer connections can be difficult.

The majority of the wastewater collection system was constructed in 1968. Because it was mostly constructed with concrete sewer pipe, it is prone to infiltration. In recent years, the City has replaced 160 feet and slip-lined 25 percent of the concrete sewer pipe. The City also adopted high quality standards for new sewer main construction, and has been diligent in their inspection services. The impact of I/I on La Center sewage flows is illustrated in the following Figure 6.1.

Figure 6.1
2005 Average Daily Influent Composition



The following Table 6.3 summarizes the infiltration and inflow related values for the wet months of each year from 2007-2011.

Table 6.3
Infiltration and Inflow Reduction
2007-2011 (Wet Weather Months)

Year	Wet Month Influent Flows (mgd)			Total Rainfall (in)
	Daily Average	Peak Month	Peak Day	
2007	0.32	0.37	0.64	49.94
2008	0.29	0.34	0.49	32.62
2009	0.28	0.35	0.72	35.30
2010	0.28	0.39	0.49	41.87
2011	0.35	0.41	0.62	35.89

Infiltration

EPA guidelines define 120 gallons per capita per day (GPCD) as the threshold of excessive infiltration, based on influent flow of a 7 to 14 day low rainfall period during the season of high ground water. Two periods of no rainfall during the wet season during the period of 2001 through April 2004 were identified to evaluate the La Center collection system. No data after April of 2004 was evaluated due to a lack of rainfall data caused by the removal of the rain gauge at the La Center WWTP.

One fourteen day rainy period in March-April 2002 was evaluated using a 2002 population equivalent of 1,898; the average influent flow was calculated to be 95 gpcd. A second thirteen

day rainy period in March-April 2004 was evaluated using a 2004 population equivalent of 2,210; the average influent flow for this period was calculated to be 75 gpcd. Both of these weeks followed at least a month of wet weather which would have increased the groundwater levels. Because the average GPCD flows are below the EPA limit no further infiltration studies are required.

Inflow

EPA guidelines define 275 GPCD as the threshold of excessive inflow, based on influent flow during storm events that create surface runoff. For the purposes of this analysis a rainfall of 0.5 inches per day or greater was used. There were several storm events with a rainfall large enough to cause runoff during the period of 2001 through April 2004. No data after April of 2004 was evaluated due to a lack of rainfall data caused by the removal of the rain gauge at the La Center WWTP.

The maximum 24-hour flow in the study period was 263 GPCD in January 2003. This value is below the EPA guidance for assessing excessive flow, therefore no further inflow studies are required.

6.6 FLOWS AND WASTELOAD FORECAST

Flow Projections

Future per capita waste contributions were estimated based on existing per capita waste contribution and the DOE guidelines. Table 6.4 contains the per capita average contribution from 2000-2005, DOE recommended design values for new wastewater treatment facilities [6], and the value used for future population loading. DOE guidelines base loadings on direct population, which assumes a higher per capita flow contribution as compared to population equivalents. The per capita values in Table 6.4 are based upon population equivalents as opposed to direct populations, using lower flow contribution values.

Table 6.4
Population Equivalent Per Capita Wastewater Loadings

Parameter		Historical* Values	DOE Guideline	Future (2032)
Flow (gal/day)	Average Annual	102	100	110
	Dry Average	85	n/a	90
	Wet Average	116	n/a	120
	Max Month	152	n/a	175
	Peak Day	284	n/a	300
BOD** (lb/d)	Average Annual	0.24	0.20	0.20
	Maximum Month	0.28	n/a	0.32
	Peak Day	0.36	n/a	0.45
Total Suspended Solids** (lb/d)	Average Annual	0.17	0.20	0.17
	Maximum Month	0.22	n/a	0.29
	Peak Day	0.35	n/a	0.40

* The information in this table is based on average, maximum, and minimum values taken from data gathered between 2007-2011.

** Historical per capita BOD and TSS loadings shown would be slightly increased if the assumed loadings from the four cardrooms were included.

Population projections contained in Table 6.1 and future loading rates contained in Table 6.4 were used to develop projected wastewater loadings shown in Table 6.5. The future loading values presented in Table 6.5 were developed by calculating a direct projection of population equivalent times the “future” unit values from Table 6.4.

It is important to note that a major gambling casino is currently being considered for siting within the study area. Estimates for BOD and suspended solids loadings from that facility are very high compared to the projected loadings under current zoning. If that casino is approved and elects to discharge to the City’s wastewater system, the BOD and TSS projections listed above will likely be too low. On the other hand, if the facility sites and elects to build its own treatment plant (which has been discussed as an option) it could reduce the loadings from the cardrooms in town. In light of these issues, the BOD and suspended solids loadings should be carefully evaluated during the predesign efforts for any wastewater treatment plant expansions.

Table 6.5
Projected Wastewater Loadings

Year:			2006	2016	2032
Population Equivalent:			2,526	5,709	11,882
Flow (mgd)	<i>Average Annual</i>	110*	0.28	0.63	1.31
	<i>Dry Average</i>	90*	0.23	0.51	1.07
	<i>Wet Average</i>	120*	0.30	0.69	1.43
	<i>Max Month</i>	175*	0.44	1.00	2.08
	<i>Peak Day</i>	300*	0.76	1.71	3.56
BOD (lb/d)	<i>Average Annual</i>	0.20**	505	1,142	2,376
	<i>Maximum Month</i>	0.32**	808	1,827	3,802
	<i>Peak Day</i>	0.45**	1,137	2,569	5,347
Total Suspended Solids (lb/d)	<i>Average Annual</i>	0.17**	429	971	2,020
	<i>Maximum Month</i>	0.29**	733	1,656	3,446
	<i>Peak Day</i>	0.40**	1,010	2,284	4,753

* Units of gallons per capita per day.

** Units of pound per capita per day.

SECTION 7

COLLECTION SYSTEM EVALUATION

7.1 OVERVIEW OF EVALUATION PROCESS

The collection system evaluation was completed by a seven-step process as follows:

1. Three conditions of analysis were established: 1) existing, 2) 20-year, and 3) 50-year. ERU projections for each condition were calculated.
2. A preliminary layout of trunk sewers was established to serve the 20-year and 50-year sewer planning areas.
3. Drainage basins were developed for each trunk sewer.
4. ERUs were allocated to each basin for the three conditions of analysis (existing, 20-year, and 50-year).
5. Existing sewers were evaluated for their capacity to accommodate existing and 20-year flows.
6. For those components of the existing system that were found to be under-capacity within the 20-year sewer planning period, bypass or upsizing improvement options were evaluated and a preferred option selected.
7. The improvements identified in step #6 above, along with the improvements necessary to serve the drainage basins within the future growth area of the 20-year sewer planning area, were sized for 50-year (or build-out) flow conditions.

7.2 LAYOUT OF PROPOSED COLLECTION SYSTEM IMPROVEMENTS

Locations of proposed trunk sewers, pump stations, and force mains for the future growth areas were established with two goals: 1) to limit the number of pump stations; and 2) to minimize the length of force mains in order to reduce the potential for sulfide generation.

Ideally, gravity sewers would be extended through the low points of the drainageways. For most of the major drainage basins, the extension of gravity sewers through the low areas of the drainageway was not practical due to severe sideslopes and environmental constraints. For these basins, trunk sewers were assumed to extend along the top of the drainageways. Doing so requires more sewers (one on each side of the drainageway); however, it allows gravity sewer service to most of the service areas.

7.3 BASIN ERU ALLOCATION OF YEAR 2032 FLOWS

ERUs for the year 2032 sewer planning period were projected as discussed in Section 6. The allocation of these ERUs was based upon a number of factors, including the existing ERU count

per basin (from aerial photographs), build-out capacity of the basin, platted undeveloped lots in the basin, zoning, topography, and sensitive land area.

As mentioned previously, this plan identifies only those collection system improvements necessary to serve the 20-year sewer planning area; however, the gravity sewers that are proposed are sized for build-out, or for 50 years if the basins served could be extended beyond the currently proposed UGA.

7.4 BASIN ERU ALLOCATION OF 50-YEAR FLOWS

The 50-year ERU allocation was made as follows:

1. Total 50-year ERU estimates were obtained by assuming that the 2062 ERU population would equal 300% of the ERU growth from year 2006 to 2032.
2. Build-out ERU estimates for the basins within the UGA were estimated assuming the basins would increase in density by 10% over the year 2032 projections.
3. The 50-year ERU estimate, less that allocated to the 20-year sewer planning area, was allocated to areas outside the 20-year sewer planning area on an average arial basis.
4. The 50-year UGA was estimated by first assuming that the 50-year UGA would be approximately 200% larger than the 2024 UGA expansion area. The boundary for the 50-year UGA was estimated by assuming the City would grow primarily west and north.

Estimates of ERUs for each of the basins for existing, 20-year, and 50-year design periods are summarized by basin in Table A-2 of Appendix A. The basin locations are shown in Figure A-1 of Appendix A.

7.5 EXISTING SEWER SYSTEM EVALUATION UNDER EXISTING CONDITIONS

The existing sewer system was evaluated at existing conditions as follows:

1. Existing sewer mains to be modeled were selected as those whose contributory (upstream) service area produced flows in excess of the flows that could be accommodated by an 8-inch diameter sewer at minimum slope.
2. For those existing mains, drainage basins were established for each sewer main to be evaluated.
3. Existing ERUs were allocated to each basin based on the 2006 population (939 ERUs). These were utilized to project flows to each basin.
4. Capacity of each sewer main was evaluated against the estimated flows.

7.6 MODELING ASSUMPTIONS

The sewer system was modeled for existing, 20-year, and 50-year flow conditions. These models have been included as Tables A3, A4, and A5 of Appendix A.

Existing conditions were assumed to be equal to 2006 conditions, due to little growth between 2006 and 2012. For existing conditions, sewer mains selected for modeling were those whose upstream capacity at 20-year design flow conditions exceeded the capacity of an 8-inch main at minimum slope.

For the 20-year and 50-year flow conditions, sewer main extensions and pump stations were located to fit topographic conditions. Upon final selection of the preferred siting option, proposed sewers were modeled using flow projections from Section 6, design assumptions from Section 5, proposed sewer and pump station siting and basin allocations as outlined above.

7.7 EXISTING COLLECTION SYSTEM OVERVIEW

The existing facilities were evaluated by estimating existing and 20-year flow conditions within the existing service area and comparing those flows to the capacity of existing mains. Appendix A contains information regarding system capacities for the existing mains and projected flows in 20 years. 50-year flow projections have been included as a basis for sizing 20-year improvements. The scope of this evaluation only addressed the main sewer lines in the existing service area, as represented in Figure 4.1.

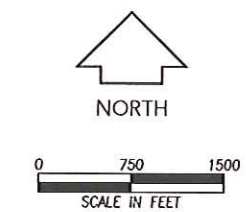
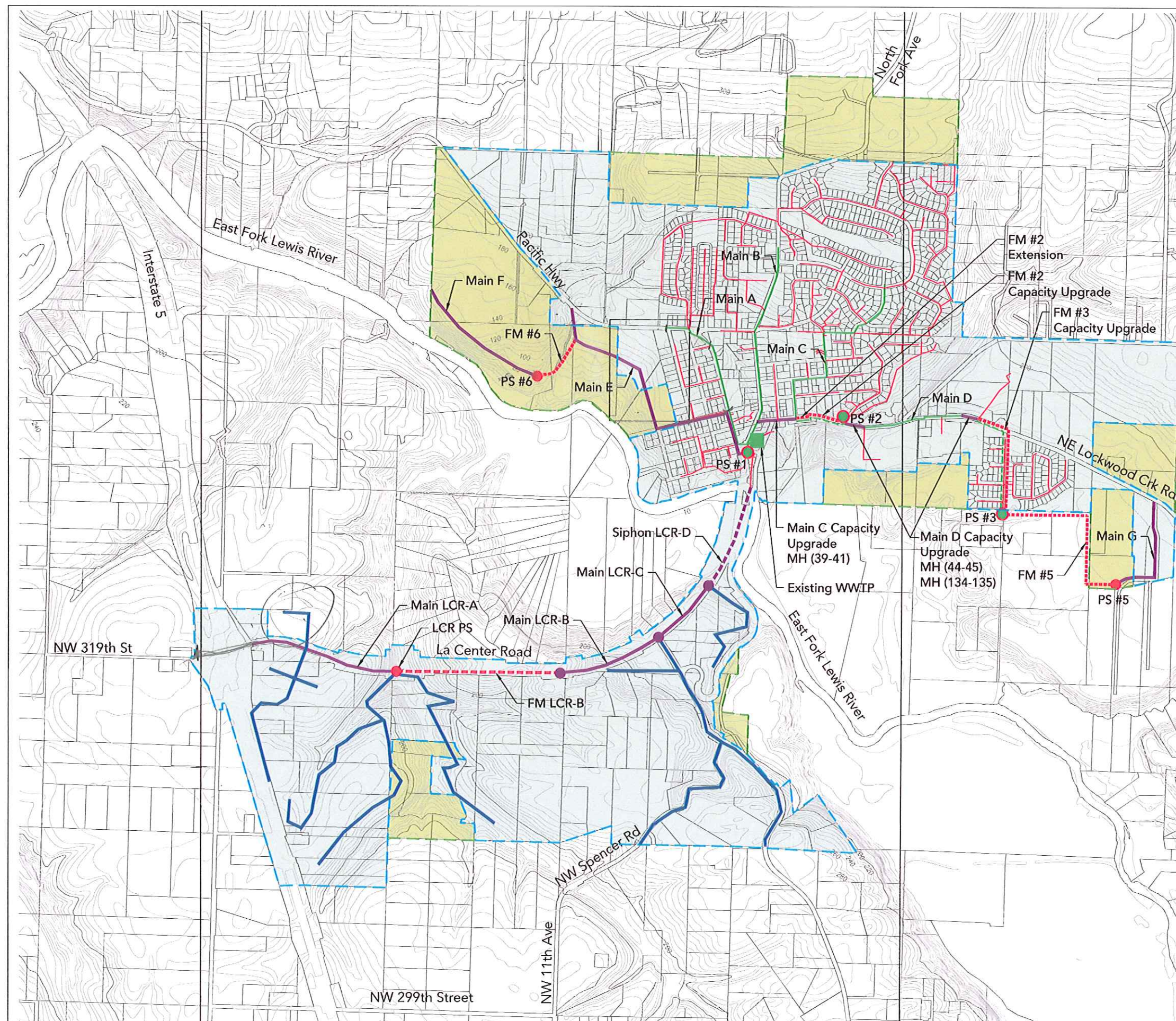
7.8 EXISTING COLLECTION SYSTEM EVALUATION

The collection system is generally adequate to meet current conditions. Although the majority of the existing collection system has the capacity to accommodate the anticipated 20-year flow conditions, portions will require upsizing.

7.9 PROPOSED COLLECTION SYSTEM IMPROVEMENTS

As a result of the evaluations of the collection system outlined above, several improvements to the collection system are proposed. These are listed as follows, and are shown in Figure 7.1. A more detailed description of the proposed collection system improvements is included in Section 9.

- Pump Station #1 Upgrade
- Pump Station #2 Upgrade and Force Main #2 Capacity Upgrade
- Pump Station #3 Upgrade and Force Main #3 Capacity Upgrade
- Pump Station #5 and Force Main #5
- Pump Station #6 and Force Main #6
- Sewer Main C Capacity Upgrade
- Sewer Main D Capacity Upgrade
- Sewer Main E
- Sewer Main F
- Sewer Main G
- LCR Sewer Phase 1:
 - Force Main LCR-A
 - Sewer Main LCR-A
 - Force Main LCR-B
 - Sewer Main LCR-B
 - Sewer Main LCR-C
 - Siphon LCR-D
 - LCR Pump Station
- LCR Sewer Phase 2:
 - Siphon LCR-D Capacity Upgrade
- LCR Sewer Phase 3:
 - LCR Pump Station Capacity Upgrade



Legend

Existing City Limits	
UGA Boundary	
Existing Contours	
Existing Sewer Line	
Existing Trunk Sewer Line	
Existing Force Main	
Existing Pump Station	
Existing Wastewater Treatment Plant	
Proposed Force Main	
Proposed Pump Station	
Proposed Upgrade of Existing Pump Station	
Proposed Gravity Sewer	
Sewer Main Segment Node	
Proposed Sewer Siphon	
Proposed Gravity Mains to be Completed By Developers	



Figure 7.1
Proposed Collection System Improvements

City of La Center
General Sewer Plan
August 2012

SECTION 8

TREATMENT PLANT EVALUATION

8.1 BACKGROUND

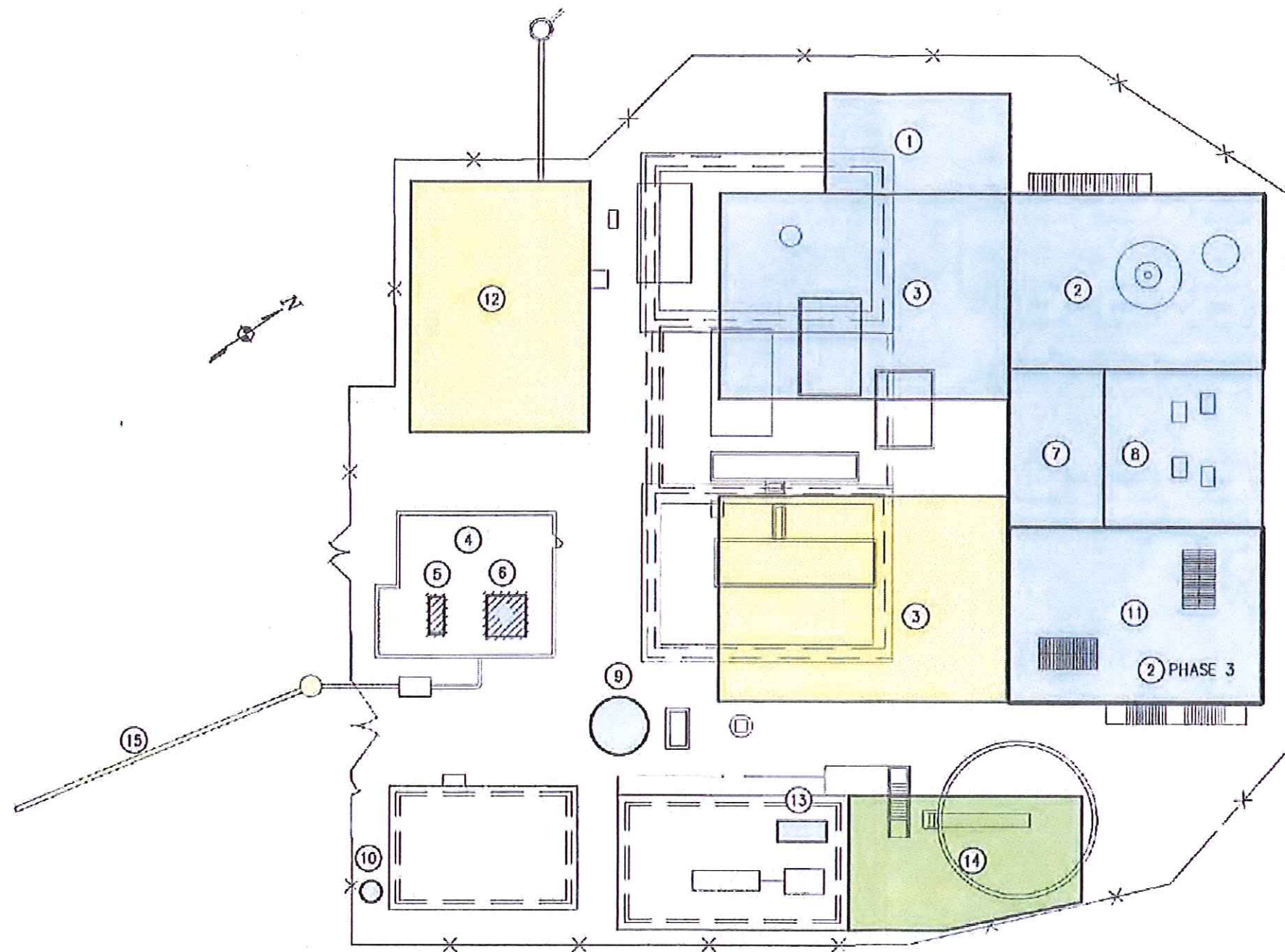
Originally constructed in 1965, the wastewater treatment plant underwent upgrades in 1994, 1995 and 1998. In 2004, the plant was completely rebuilt and included two sequencing batch reactors. Due to rapid growth, the plant was updated in 2011. The 2011 plant update was part of a three phase plant expansion process outlined in the 2008 *City of La Center Wastewater Facility Plan*. The Facility Plan recommends an ultimate plant capacity of 2.25 MGD maximum monthly wet-weather flow, 4.20 MGD peak daily flow, and 6.22 MGD peak hourly flow.

8.2 TREATMENT PLANT EXPANSION

The Facility Plan divided treatment plant upgrades into three phases. Subsequently, the first phase was divided into Phase 1A and Phase 1B. Currently, Phase 1A has been completed.

The Phase 1A expansion, completed in 2011, converted the plant from a sequence batch reactor system to a membrane bioreactor system. Currently the plant is capable of handling maximum monthly flow of 0.69 MGD and a peak day flow of 1.29 MGD. Phase 1B will upgrade the blower system and add membrane units, increasing capacity to 1.04 MGD maximum monthly flow and 1.94 MGD peak day flow.

Phase 2, which will increase sludge flow capacity, is planned for completion by 2017. Phase 3, which will increase liquid stream flow to meet capacity through 2027, is expected to be completed by 2018. Figure 8.1 shows the expected construction phasing. For more details associated with the design and phasing of the treatment plant, see the 2008 *City of La Center Wastewater Facility Plan*.



LEGEND

- ① NEW HEADWORKS
- ② NEW ANOXIC/PRE-AERATION BASIN
- ③ NEW MEMBRANE BIOREACTORS
- ④ NEW PLANT CONTROL BUILDING
- ⑤ RELOCATE ULTRAVIOLET DISINFECTION
- ⑥ DECOMMISSION DISK FILTER
- ⑦ RELOCATED AND EXPANDED ULTRAVIOLET DISINFECTION
- ⑧ NEW NON-POTABLE WATER SYSTEM STORAGE BASIN
- ⑨ NEW LIFT STATION NO. 1
- ⑩ LIFT STATION NO. 1 CONVERT TO MANHOLE
- ⑪ NEW AEROBIC SLUDGE STORAGE BASIN (CONVERTED TO ANOXIC/PRE-AERATION BASIN IN PHASE 3)
- ⑫ NEW AEROBIC SLUDGE STORAGE BASIN
- ⑬ NEW DEWATERING EQUIPMENT
- ⑭ SOLIDS THICKENING/DEWATERING EXPANSION
- ⑮ EXPANDED OUTFALL CAPACITY

- PHASE 1
- PHASE 2
- PHASE 3



Figure 8.1
WWTP Improvements Plan

City of La Center
General Sewer Plan
March 2013

NOTE:
THIS DRAWING PREPARED BY
KENNEDY/JENKS CONSULTANTS

SECTION 9

RECOMMENDED PLAN

9.1 PLAN SUMMARY

A number of collection and wastewater treatment facility improvements are proposed to meet the sewer needs of the City for the 20 year planning period. The schedule for the proposed collection system improvements will depend upon growth within the individual basins. The treatment plant has already undergone a portion of the first phase of a three phase expansion process as described in the Facility Plan.

Proposed collection system improvements include approximately 2.75 miles of gravity sewer ranging in size from 8-inch to 30-inch diameter, the up-sizing of three existing pump stations, the construction of three new pump stations, approximately 1.5 miles of force main ranging in size from 6-inch to 10-inch diameter, and approximately 1 mile of sewer siphons ranging in size from 6-inch to 12-inch diameter.

9.2 PROPOSED COLLECTION SYSTEM IMPROVEMENTS

The recommended collection system improvements are presented in Figure 7.1. Proposed collection system improvements include:

- Pump Station #1 Upgrade
- Pump Station #2 Upgrade and Force Main #2 Capacity Upgrade
- Pump Station #3 Upgrade and Force Main #3 Capacity Upgrade
- Pump Station #5 and Force Main #5
- Pump Station #6 and Force Main #6
- Sewer Main C Capacity Upgrade
- Sewer Main D Capacity Upgrade
- Sewer Main E
- Sewer Main F
- Sewer Main G
- LCR Sewer Phase 1:
 - Force Main LCR-A
 - Sewer Main LCR-A
 - Force Main LCR-B
 - Sewer Main LCR-B
 - Sewer Main LCR-C
 - Siphon LCR-D
 - LCR Pump Station
- LCR Sewer Phase 2:
 - Siphon LCR-D Capacity Upgrade

LCR Sewer Phase 3: LCR Pump Station Capacity Upgrade

This plan incorporates the improvements recommended in the *La Center Junction Sewer Study*, which includes the majority of the lines included in LCR Sewer Phase 1, 2, and 3. However, this plan recommends the addition of force main LCR-A in order to provide service to the west side of Interstate 5. Force main LCR-A is sized to convey the buildout flow from the Cowlitz Development shown in Appendix A of the *La Center Junction Sewer Study*.

9.3 PROPOSED TREATMENT SYSTEM IMPROVEMENTS

See the 2008 *City of La Center Wastewater Facility Plan* for a detailed list of proposed improvements.

9.4 COLLECTION SYSTEM AND WASTEWATER TREATMENT PLANT IMPROVEMENTS COST ESTIMATE

Collection system costs summarized in Table 9.1 are in 2012 dollars, and include a 40% markup for engineering, tax, and contingencies. La Center Road sewer improvement cost estimates were performed in 2011 by OTAK in the *La Center Junction Sewer Study*, and were updated to 2012 dollars. However, this plan adds the cost for force main LCR-A to the La Center Road Phase 1 cost estimate included in the *La Center Junction Sewer Study*.

Wastewater treatment plant cost estimates shown in Table 9.2 were performed by Kennedy Jenks for the 2008 Wastewater Facility Plan, and were updated to 2012 dollars.

Table 9.1
Proposed Collection System Improvements Cost Estimates

Item	Cost (\$)
1. Pump Station #1 Capacity Upgrade to 1,400 gpm	1,640,000
2. Pump Station #2 Capacity Upgrade to 550 gpm	224,000
3. Force Main #2 Capacity Upgrade – 750' of 6-inch force main	138,000
4. Pump Station #3 Capacity Upgrade to 450 gpm	201,000
5. Force Main #3 Capacity Upgrade – 1650' of 6-inch force main	304,000
6. Pump Station #5 – 200 gpm capacity	531,000
7. Force Main #5 – 2,900' of 6-inch force main	976,000
8. Pump Station #6 – 1,100 gpm capacity	1,593,000
9. Force Main #6 – 980' of 8-inch force main	357,000
10. Sewer Main C Capacity Upgrade – 600' of 15-inch gravity sewer	217,000
11. Sewer Main D Capacity Upgrade – 500' of 15-inch gravity sewer	182,000
12. Sewer Main E – 4,200' of 27-inch gravity sewer	2,964,000
13. Sewer Main F – 2,160' of 27-inch gravity sewer	1,589,000
14. Sewer Main G – 1,760' of 10-inch gravity sewer	534,000
15. LCR Sewer Phase 1 Force Main LCR-A – 950' of 10-inch force main Sewer Main LCR-A – 2,293' of 10-inch gravity sewer Force Main LCR-B – 2,065' of 12-inch force main Sewer Main LCR-B – 2,000' of 12-inch gravity sewer Sewer Main LCR-C – 1,200' of 12-inch gravity sewer Siphon LCR-D – 1,947' of 6-inch siphon sewer and 1,477' of 8-inch siphon sewer LCR Pump Station – 1,278 gpm capacity	6,850,000
16. LCR Sewer Phase 2 Siphon LCR-D – 2,100' of 12-inch siphon sewer	1,021,000
17. LCR Sewer Phase 3 LCR Pump Station Capacity Upgrade to 2,103 gpm	165,000
Collection System Improvements Total	19,486,000

Table 9.2
Proposed Wastewater Treatment Plant Improvements Cost Estimates

Item	Cost (\$)
1. Wastewater Treatment Plant Expansion Phase 1B	1,950,000
2. Wastewater Treatment Plant Expansion Phase 2	3,930,000*
3. Wastewater Treatment Plant Expansion Phase 3	8,700,000
Wastewater Facilities Phases 2, and 3 Total	14,580,000

* This price estimate has been updated since the completion of the 2008 Facility Plan.

SECTION 10

IMPLEMENTATION AND FINANCING

10.1 GENERAL

The implementation of the General Sewer Plan is necessary to accommodate projected growth. In making the necessary expansions, financing will be a critical issue. Because of that, detailed financial planning is necessary. This section provides an overview of financing issues, but is not meant to be a substitute for the financial planning that will be necessary to implement the plan.

10.2 INSTITUTIONAL RESPONSIBILITY

The City of La Center currently owns the wastewater collection and treatment systems serving the area within the City. The system was transferred to Clark Public Utilities ownership by agreement on October 30, 1992, and back to City ownership by agreement on August 1, 2006. The City now has sole responsibility for the operation, maintenance and improvement activities associated with the system. It is logical to assume that the City will continue to own and be responsible for the sewer system and its growth throughout the planning period. Monthly sewer service charges and sewer connection fees were established by the City when ownership transfer was completed.

10.3 IMPLEMENTATION SCHEDULE

The following Table 10.1 presents a tentative schedule for proposed improvements. The schedule was based on a constant growth rate through the sewer planning period. The schedule was estimated by comparing the capacity of the proposed improvements with the estimated growth in their respective basins. Most of the proposed collection system improvements are needed to serve residential growth in areas with large subdivisions under construction. Due to uncertainties regarding the time it will take for homes to be constructed and connected, close monitoring of the growth in the various basins is recommended. As mentioned previously, close monitoring of the growth rate is also recommended for the proposed treatment plant expansion.

Section 10 – Implementation and Financing

Table 10.1
Proposed Project Implementation Schedule

Proposed Construction Year	Capital Improvement	Cost (\$)
<i>6-Year Capital Improvement Plan</i>		
2013 to 2015	LCR Sewer Phase 1	6,850,000
	Wastewater Treatment Plant Expansion Phase 1B	1,950,000
	Wastewater Treatment Plant Expansion Phase 2	3,930,000*
	Pump Station #6 – 1,100 gpm capacity	1,593,000
	Force Main #6 – 980' of 8-inch force main	357,000
	Sewer Main F – 2,160' of 27-inch gravity sewer	1,589,000
	Sewer Main E – 4,200' of 27-inch gravity sewer	2,964,000
	Pump Station #5 – 200 gpm capacity	531,000
	Force Main #5 – 2,900' of 6-inch force main	976,000
	Sewer Main G – 1,760' of 10-inch gravity sewer	534,000
2016 to 2018	Pump Station #1 Capacity Upgrade to 1,400 gpm	1,640,000
	Pump Station #2 Capacity Upgrade to 550 gpm	224,000
	Force Main #2 Capacity Upgrade – 750' of 6-inch force main	138,000
	Pump Station #3 Capacity Upgrade to 450 gpm	201,000
	Force Main #3 Capacity Upgrade – 1650' of 6-inch force main	304,000
<i>2019 to 2032 Improvements</i>		
2019 to 2032	LCR Sewer Phase 2	1,021,000
	Sewer Main C Capacity Upgrade – 600' of 15-inch gravity sewer	217,000
	Sewer Main D Capacity Upgrade – 500' of 15-inch gravity sewer	182,000
	LCR Sewer Phase 3	165,000
	Wastewater Treatment Plant Expansion Phase 3	9,711,000

* This price estimate has been updated since the completion of the 2008 Facility Plan.

10.4 FUNDING OPTIONS FOR CAPITAL IMPROVEMENTS

Funding issues regarding the City's sewerage facilities have historically been addressed in an independent rate study. Connection fees have been utilized to fund new capital improvements that increase system capacity, while monthly rate revenues have been utilized to fund operation and maintenance costs. While this funding structure will likely continue, additional funding options are summarized in the following paragraphs.

Local Improvement District (LID)

For wastewater collection system expansions, a local improvement district (LID) can be formed for the area to be served. In the LID method of financing, a benefit area is established, and those parcels of property within that area share the cost of improvements constructed to serve the area. Revenue bonds finance the improvements, and property owners within the LID benefit area share in the cost of bond retirement.

Bonds

Wastewater facilities typically require a large one-time expenditure, such as a wastewater treatment plant expansion. These improvements can be financed by a general obligation or revenue bond that is repaid during the life of the new facility. The bond is normally repaid from revenues derived from monthly service charges. Normally, all customers share in the bond repayment. If bond payments are made from monthly utility charges, the existing citizens effectively finance a proportionate share of the growth. If bond payments are made from future impact fees, then growth pays for itself. Where system development charges are used to retire the bond, these charges should be set sufficiently high to also pay for other system capacity upgrades that will be needed to restore the capacity lost as a result of that development.

Connection Charges

Revenues have historically been generated for utility system improvements through the collection of connection charges. As connections to the system are made, a connection fee is charged. Although some of the connection fee may be used to recover costs associated with making the service connection, most of the fee is used to finance capacity upgrades. The rationale behind these fees is that the existing system has a limited amount of excess capacity and that new demands upon the system should pay the cost of providing new capacity. In La Center, connection fees are classified as System Development Charges (SDCs). When charging SDCs, it is important that they be used exclusively for capacity expansions, as opposed to maintenance upgrades.

Revolving Loan Fund Program

The State of Washington has a program whereby the City can obtain low interest loans to finance utility system improvements. The loan could be paid back with a funding program similar to that used to retire bonds.

Developer Financing

Utility distribution, collection, or even treatment facility improvements could be developer financed. Currently, eligible utility projects by developers may be reimbursed via latecomer agreements, as outlined in Chapter 13 LCMC.

State and Federal Funding Programs

There are a number of State and Federal funding programs available to finance sewerage facility expansions. The nature of these programs varies with the political climate. The recent trend has been for the availability of funds from these programs to decrease. Another recent trend has been for the funds to be limited to current needs and environmental improvement projects, rather than to finance expansions for future growth.

10.5 POLICY ISSUES ASSOCIATED WITH FINANCING

Policy Issue #1 – Paying the Cost of Growth

This Plan recommends that elected officials, through a public process, formally adopt a policy in regards to the cost of growth – how the cost of growth should be proportioned between existing taxpayers (ratepayers in the case of sewerage facilities) and new development.

Historically, federal and state funds have been utilized to finance major sewer system expansions. The recent trend has been towards a decreasing availability of federal and state funds. When federal and state grants were utilized for sewer system expansions, the end result was that existing residents helped to finance growth. Often, given the nature of the tax structure, people were unaware that they were financing growth. In many cases, the issue was viewed as one of "water quality" rather than "paying for growth." Now that state and federal funds are limited, there is sensitivity to the question of who pays for growth. It is becoming very important to address sewer funding issues so that the public can distinguish between those expenditures which benefit all citizens equally, and those expenditures that exclusively serve new growth.

Operation and maintenance costs clearly benefit all ratepayers, as do capital expenditures for repairs and maintenance-related replacement of existing facilities. The benefit of capital expenditures for capacity upgrades of existing facilities, and collection system expansions into new service areas, is clearly limited to the new ratepayers being served by those expansions. The issue of who pays for growth is clearly a "policy" issue. Although policies vary from one community to next, the most common one is to have growth pay for itself. In such cases, revenue from monthly sewer bills is used to pay for operation and maintenance costs, and utility extensions are funded by either LID, or developer financed with over-sizing for regional needs reimbursed by latecomer agreements.

As stated previously, for sewer planning purposes, implementation of the proposed facilities will be dependent upon financing. The method of financing selected by the City largely depends upon two fundamental policy issues associated with the City's role in financing growth: 1) how much, if any, should existing ratepayers pay for the cost of growth; and 2) if a policy of growth paying for itself is adopted by the City, how much risk are existing ratepayers willing to take regarding debt financing?

If elected officials adopt the policy of having growth pay for itself, the issues are simplified. If elected officials adopt a policy of having existing ratepayers finance growth, the issue becomes more complicated when considering the question of the share existing ratepayers should pay.

The method by which existing ratepayers pay for the cost of growth is quite simple – through monthly service charges. Capital improvements are either funded directly through accumulated revenue from service charges, or debt financed with debt retirement from monthly service charges.

Funding programs meeting the requirements of a policy of having growth pay for itself are much more complicated, particularly for collection system improvements. The simplest method of having growth pay for itself is to calculate the improvements necessary to accommodate growth, to calculate the growth in terms of equivalent residential units, and to set a system development fee equal to the cost divided by the ERUs. If other methods of financing such as LID or developer financing are utilized, the developer can be credited the proportional amount of system development charge.

Where a policy of growth paying for itself using system development charges is adopted, and a community is faced with a very rapid rate of growth, the issue of “debt” risk becomes important. High growth rates often mean that major expenditures must be made for capital improvements, which results in significant debt. Commonly, the intent is to have that debt retired from revenue generated by future system development fees. If growth and SDC revenue slows, the debt payments must be paid through monthly service charges. Faced with raising monthly sewer fees to help with debt payments, elected officials tend to take action to encourage growth. In such cases, it is often difficult for a community to impose strict development standards. This is why the issue of risk is an important policy issue. If a community adopts a policy of having growth pay for itself, said policy should also address the debt load a community is willing to accept.

Policy Issue #2 – Temporary Pump Stations

This Plan recommends that elected officials, through a public process, formally adopt a policy in regards to the use of temporary pump stations to serve new growth areas.

Wastewater can be either conveyed by gravity sewer, or pump station and force main. Conveyance by gravity sewer is highly preferred, due to the fact that it avoids the high cost of operating and maintaining a pump station and its force main. Considering the cost of operation, maintenance, and equipment replacement, a small pump station costs the City about \$20,000 per

year. If the force main is long, which requires sulfide control, the cost can approach \$50,000 per year. Larger pump stations cost even more.

In some cases, pump stations cannot be avoided. This Plan identifies those pump stations that cannot be reasonably replaced by gravity sewers. It also identifies the location of force mains. The City will almost certainly be faced with developers wanting to serve their developments with temporary pump stations. Given the topography of the area, and the fact that so much of the growth area is currently developed in 5 to 10 acre large lots, allowing temporary pump stations could very easily result in a situation where the City must maintain up to 30 temporary pump stations at an annual cost in excess of \$500,000. Therefore, one option is to allow temporary pump stations to facilitate development at the expense of ratepayers. The other option is not to allow temporary pump stations at the expense of landowners wanting to develop their property.

10.6 FUNDING CAPITAL FACILITIES

La Center has recently established a plan to finance capital improvements associated with capacity expansion with SDC revenue. The current SDC for the collection system is \$7,800 per ERU.

10.7 FINANCING SYSTEM OPERATION AND MAINTENANCE

La Center has recently completed a rate study to determine monthly rates. The current monthly sewer charge for residential connections is \$51 per month. This rate is currently being subsidized by the City general fund by approximately \$25 per ERU per month.

SECTION 11

ENVIRONMENTAL ASSESSMENT

11.1 GENERAL

The environmental impacts associated with this Plan will primarily be those related to construction of the proposed collection system. Environmental impacts associated with treatment plant improvements are discussed in the Facility Plan.

11.2 SEPA REQUIREMENTS

The requirements of the State Environmental Policy Act (SEPA) have been fulfilled. An environmental checklist has been prepared along with related figures and sent to the proper governmental agencies. A copy of the SEPA information is included in Appendix E.

APPENDICES

APPENDIX A

Collection System Evaluation



Table A1
Key to Collection System Modeling Tables
(Tables A3, A4)

No.	Abbreviation	Description
1	n	Mannings resistance coefficient
2	MANHOLE NUMBERING	Designation given to the upstream and downstream manhole, as designated on the 44" x 34" Existing System Map (in Appendix E)
3	BASINS CONTRIBUTING FLOW	Basins, as shown on Figure A1 - Basin Map, that contribute flow to each line. The percentage shown is the percentage of that basin contributing flow to the line.
4	EXISTING FLOW INC. W/O PEAK (MGD)	Basin flow entering the manhole
5	FLOW SUM W/O PEAK (MGD)s the	Incremental flow entering the line added to the sum of the flows in the main
6	PEAKING FACTOR	Factor multiplied by the flow sum to create a peak flow in the system. The peaking factor is based on population, and decreases with increasing population.
7	PS FLOW INC (MGD)	Incremental pump station flow entering the system at the respective manhole.
8	PS FLOW (MGD)	Sum of the pump station flow in the line
9	PEAK FLOW (MGD) is the multiplied on.	flow sum plus the pump station flow, multiplied by the peaking factor
10	LENGTH (FT)	Length of the main between manholes
11	SIZE (IN)	Sewer Line Diameter
12	IE UP (FT)	Upstream invert elevation of the manhole
13	IE DOWN (FT)	Downstream invert elevation of the manhole
14	SLOPE (FT/FT)	Slope of the main segment between the two manholes
15	CAPACITY (MGD)	Capacity of the main segment, using Mannings Equation, between the two manholes
16	CAPACITY REMAINING (CAPACITY – PEAK FLOW) (MGD)	Capacity calculated in column 15 minus the Peak flow calculated in column 12
17	CAPACITY UTILIZED	Capacity remaining divided by the capacity, in percentage format

Table A2
ERU Allocation by Basin

Area Designation	Existing ERUs	Additional ERUs into Existing Sewers (2032)	Additional ERUs into Proposed Sewers (2032)	Total ERUs into Existing System (2032)	Total ERUs (2032)	Additional 50-yr ERUs	Total 50-yr ERUs (2062)
A1	0	0	95	0	95	10	105
A2	0	0	165	0	165	17	182
A3	0	0	30	0	30	3	33
A4	0	0	250	0	250	25	275
A5	0	0	0	0	0	1200	1200
A7	0	0	0	0	0	1100	1100
B1	62	55	20	117	137	14	151
B2	105	27	0	132	132	13	145
B3	0	0	100	0	100	10	110
B4	0	60	0	60	60	6	66
B5	0	81	45	81	126	13	139
B6	138	115	80	253	333	33	366
B8	0	0	0	0	0	600	600
C1	204	40	0	244	244	24	268
C2	115	110	0	225	225	23	248
D1	78	83	0	161	161	16	177
D2	72	275	0	347	347	35	382
D3	0	200	0	200	200	20	220
D4 & Upper D5	0	0	0	0	0	400	400
D5	0	0	0	0	0	700	700
D6	0	0	0	0	0	900	900
E1	0	0	105	0	105	11	116
E2	0	0	38	0	38	4	42
E3	0	0	50	0	50	5	55
F1	0	0	0	0	0	300	300
G1	0	0	350	0	350	35	385
G2	0	0	0	0	0	200	200
H	0	0	34	0	34	66	100
I1	0	0	0	0	178	118	296
I2	0	0	260	0	260	26	286
J1	0	0	215	0	215	22	237
J2	0	0	168	0	168	17	185
J3	0	0	225	0	225	23	248
J4	0	0	0	0	0	400	400
J5	0	0	0	0	0	1800	1800
J6	0	0	0	0	0	50	50
K	165	25	0	190	190	19	209
L	0	0	0	0	0	0	0
Total	939	1071	2230	2010	4418	8254	12672

Table A-3
Collection System Existing Flows & Capacities

n	SEWER MAIN	DOWNSTREAM MANHOLE	UPSTREAM MANHOLE	Basin Contributing Flow	Existing Flow INC. w/o peak	Flow SUM w/o peak	PEAK FACTOR	PS Flow INC.	PS Flow (MGD)	PEAK FLOW (MGD)	LENGTH (ft.)	SIZE (in.)	IE Up	IE Down	SLOPE (ft/ft)	CAPACITY (MGD)	CAPACITY REMAINING (CAPACITY - PEAK FLOW) (MGD)	CAPACITY UTILIZED %
MAIN A																		
0.013		83	226	Basins: B2 & K	0.0039	0.0039	4.34	0.00	0.00	0.017	335.00	8	164	161.97	0.006	0.61	0.59	2.78%
0.013		38	83	Basin B2/8	0.0039	0.0078	4.28	0.00	0.00	0.033	90.00	8	161.97	159.06	0.032	1.41	1.37	2.37%
0.013		37	38	Basin B2/8	0.0039	0.0117	4.20	0.00	0.00	0.050	184.84	8	159.06	152.48	0.016	0.98	0.93	5.08%
0.013		36	37	Basin B2/8	0.0039	0.0156	4.20	0.00	0.00	0.065	205.47	8	156.18	152.48	0.018	1.05	0.98	6.24%
0.013		32	36	Basin B2/8	0.0039	0.0195	4.17	0.00	0.00	0.081	201.48	8	152.48	143.45	0.045	1.66	1.57	4.91%
0.013		31	32	Basin B2/8	0.0039	0.0234	4.14	0.00	0.00	0.097	339.36	8	143.45	120	0.069	2.06	1.96	4.71%
0.013		26	31	Basin B2/8	0.0039	0.0273	4.11	0.00	0.00	0.112	262.02	8	120	103.94	0.061	1.94	1.82	5.80%
0.013		25	26	Basin B2/8	0.0039	0.0312	4.09	0.00	0.00	0.128	224.16	8	103.94	90.49	0.060	1.92	1.79	6.66%
0.013		18	25	Basin K0.4/3	0.0085	0.0377	4.05	0.00	0.00	0.153	276.88	8	90.49	71.66	0.068	2.04	1.89	7.50%
0.013		16	18	Basin K0.4/3	0.0085	0.0443	4.02	0.00	0.00	0.178	239.23	8	71.66	59.18	0.052	1.79	1.61	9.96%
0.013		17	16	Basin K0.4/3	0.0085	0.0508	3.99	0.00	0.00	0.203	169.00	8	59.18	55.49	0.022	1.16	0.95	17.55%
Pump Station NO.4 Force Main - PS #4																		
				Basin B6	0.041	0.041	4.04			0.165			200 gpm Pump			0.29	0.12	57.45%
													4-inch Force Main			0.45	0.28	36.67%
MAIN B																		
0.013		173	174	Basin B1/12	0.0015	0.0015	4.03	0.041	0.041	0.171	300.00	8	277	267.8	0.031	1.37	1.20	12.51%
0.013		172	173	Basin B1/12	0.0015	0.0031	4.02	0.00	0.041	0.177	180.00	8	267.8	260.5	0.041	1.57	1.40	11.25%
0.013		171	172	Basin B1/12	0.0015	0.0046	4.01	0.00	0.041	0.183	300.00	8	260.5	234.8	0.086	2.29	2.11	8.00%
0.013		170	171	Basin B1/12	0.0015	0.0061	4.01	0.00	0.041	0.189	300.00	8	234.8	188	0.156	3.09	2.90	6.12%
0.013		169	170	Basin B1/12	0.0015	0.0077	4.00	0.00	0.041	0.195	185.00	8	188	169	0.103	2.51	2.31	7.77%
0.013		80	169	Basin B1/12	0.0015	0.0092	3.99	0.00	0.041	0.200	90.00	8	169	157.49	0.128	2.80	2.60	7.17%
0.013		79	80	Basin B1/12	0.0015	0.0107	3.98	0.00	0.041	0.206	250.00	8	157.49	143	0.058	1.88	1.68	10.96%
0.013		78	79	Basin B1/12	0.0015	0.0123	3.98	0.00	0.041	0.212	93.00	8	143	132	0.118	2.69	2.48	7.89%
0.013		68	78	Basin B1/12	0.0015	0.0138	3.98	0.00	0.041	0.218	397.02	8	132	106.59	0.064	1.98	1.76	11.01%
0.013		49	68	Basin B1/12	0.0015	0.0153	3.97	0.00	0.041	0.224	421.34	8	106.59	93.11	0.032	1.40	1.18	15.99%
0.013		39	49	Basin B1/12	0.0015	0.0169	3.96	0.00	0.041	0.229	234.47	8	93.11	83.26	0.042	1.60	1.37	14.31%
0.013		17	39	Basin B1/12 + MAIN C	0.0015	0.1577	3.62	0.00	0.041	0.719	295.57	8	83.26	55.49	0.094	2.40	1.68	30.01%
MAIN C																		
0.013		130	115	Basin C1/16	0.0038	0.0038	4.34	0.00	0.00	0.016	240.00	8	252.72	241.98	0.045	1.65	1.64	0.99%
0.013		129	130	Basin C1/16	0.0038	0.0076	4.28	0.00	0.00	0.032	138.00	8	241.98	223.84	0.131	2.83	2.80	1.14%
0.013		105	129	Basin C1/16	0.0038	0.0114	4.24	0.00	0.00	0.048	268.00	8	223.84	193.87	0.112	2.61	2.57	1.84%
0.013		104	105	Basin C1/16	0.0038	0.0151	4.20	0.00	0.00	0.064	146.00	8	193.87	184.85	0.062	1.94	1.88	3.26%
0.013		88	104	Basin C1/16	0.0038	0.0189	4.17	0.00	0.00	0.079	117.00	8	184.85	166.68	0.155	3.08	3.00	2.56%
0.013		87	88	Basin C1/16-Basin C2	0.0039	0.0379	3.97	0.00	0.00	0.226	147.50	8	166.68	165.84	0.006	0.59	0.36	38.23%
0.013		86	87	Basin C1/16	0.0038	0.0607	3.95	0.00	0.00	0.240	301.30	8	165.84	164.49	0.004	0.52	0.28	45.80%
0.013		131	86	Basin C1/16	0.0038	0.0644	3.94	0.00	0.00	0.254	77.50	8	164.42	154.1	0.004	0.50	0.25	50.51%
0.013		70	131	Basin C1/16	0.0038	0.0682	3.92	0.00	0.00	0.268	370.00	8	154.1	158.5	0.015	0.96	0.69	27.84%
0.013		64	70	Basin C1/16	0.0038	0.0720	3.91	0.00	0.00	0.282	250.00	8	158.5	150	0.034	1.44	1.16	19.54%
0.013		65	64	Basin C1/16	0.0038	0.0758	3.90	0.00	0.00	0.296	275.00	8	150	129.49	0.075	2.14	1.84	13.84%
0.013		66	65	Basin C1/16	0.0038	0.0796	3.89	0.00	0.00	0.309	288.00	8	129.49	120.28	0.032	1.40	1.09	22.12%
0.013		51	66	Basin C1/16	0.0038	0.0834	3.87	0.00	0.00	0.323	267.00	8	120.28	107.98	0.046	1.68	1.36	19.25%
0.013		41	51	Basin C1/16	0.0038	0.0872	3.86	0.00	0.00	0.337	317.67	8	107.98	91.85	0.051	1.76	1.43	19.11%
0.013		40	41	Basin C1/16 + MAIN D	0.0483	0.1355	3.74	0.00	0.00	0.507	291.51	8	91.85	89.52	0.008	0.70	0.19	72.49%
0.013		39	40	Basin C1/16	0.0038	0.1393	3.73	0.00	0.00	0.520	320.00	8	89.52	83.26	0.020	1.09	0.57	47.53%
Pump Station NO.3 Force Main - PS #3																		
				Basin D2	0.0214	0.0214	4.15			0.089			200 gpm Pump			0.29	0.20	30.83%
													4-inch Force Main			0.45	0.36	19.68%
MAIN D																		
0.013		134	135	25% Basin D1	0.0058	0.0058	4.11	0.0214	0.0214	0.112	200.00	8	144	143	0.005	0.55	0.44	20.22%
0.013		141	134	5% Basin D1	0.0012	0.0069	4.11	0.00	0.0214	0.116	370.00	8	143	136	0.019	1.08	0.96	10.82%
0.013		133	141	25% Basin D1	0.0058	0.0127	4.07	0.00	0.0214	0.139	260.00	8	136	126	0.038	1.53	1.39	9.06%
0.013		132	133	5% Basin D1	0.0012	0.0139	4.07	0.00	0.0214	0.143	250.00	8	126	124	0.080	2.21	2.07	6.49%
0.013		48	132	5% Basin D1	0.0012	0.0151	4.06	0.00	0.0214	0.148	90.77	8	124	122.17	0.020	1.11	0.96	13.33%
0.013		47	48	5% Basin D1	0.0012	0.0162	4.05	0.00	0.0214	0.152	388.94	8	122.17	105.06	0.044	1.64	1.49	9.29%
0.013		45	47	5% Basin D1	0.0012	0.0174	4.05	0.00	0.0214	0.157	389.81	8	105.06	80.9	0.062	1.95	1.79	8.06%
0.013		44	45	25% Basin D1	0.0058	0.0232	4.02	0.00	0.0214	0.179	276.32	8	80.9	79.8	0.004	0.49	0.31	36.30%
Pump Station NO.2 Force Main - PS #2																		
					0.0232	0.0232	4.02			0.179			200 gpm Pump			0.29	0.11	62.18%
													4-inch Force Main			0.45	0.27	39.69%
0.013		41	42	PS #2 Flow	0.0000	0.0000	4.02	0.0446	0.0446	0.179	185.00	8	93.68	91.85	0.010	0.78	0.60	23.03%
MAIN D Continued																		

MAIN D Continued

Table A-4

n	SEWER MAIN	DOWNSTREAM MANHOLE	UPSTREAM MANHOLE	Basin Contributing Flow	Existing FLOW INC.	FLOW SUM w/o peak	PEAK FACTOR	PS Flow INC.	PS FLOW (MGD)	PEAK FLOW (MGD)	LENGTH (ft.)	SIZE (in.)	IE Up	IE Down	SLOPE (ft/ft)	CAPACITY (MGD)	CAPACITY REMAINING (CAPACITY - PEAK FLOW) (MGD)	CAPACITY UTILIZED %	
Basins: B2, B5, B6, B3 & K																			
0.013	Main A		226	Basin B2/8	0.0049	0.0049	4.32	0.00	0.00	0.021	335.00	8	164	161.97	0.0061	0.61	0.59	3.48%	
0.013		83	38	Basin B2/8 + B6 + B5 + B3+0.5	0.1189	0.1238	3.77	0.00	0.00	0.466	90.00	8	161.97	159.06	0.0323	1.41	0.94	33.17%	
0.013		37	38	Basin B2/8	0.0049	0.1287	3.75	0.00	0.00	0.483	184.84	8	159.06	156.18	0.0156	0.98	0.49	49.53%	
0.013		36	37	Basin B2/8	0.0049	0.1337	3.74	0.00	0.00	0.500	205.47	8	156.18	152.48	0.0180	1.05	0.55	47.69%	
0.013		32	36	Basin B2/8	0.0049	0.1386	3.73	0.00	0.00	0.517	201.48	8	152.48	143.45	0.0448	1.66	1.14	31.25%	
0.013		31	32	Basin B2/8	0.0049	0.1435	3.72	0.00	0.00	0.534	339.36	8	143.45	120	0.0691	2.06	1.52	28.98%	
0.013		26	31	Basin B2/8	0.0049	0.1484	3.71	0.00	0.00	0.551	282.02	8	120	103.94	0.0613	1.94	1.39	28.45%	
0.013		25	26	Basin B2/8	0.0049	0.1533	3.70	0.00	0.00	0.567	224.16	8	103.94	90.49	0.0600	1.92	1.35	29.62%	
0.013		18	25	Basin K+0.4/3	0.0075	0.1608	3.69	0.00	0.00	0.593	276.88	8	90.49	71.66	0.0680	2.04	1.45	29.08%	
0.013		16	18	Basin K+0.4/3	0.0075	0.1683	3.67	0.00	0.00	0.618	239.23	8	71.66	59.18	0.0522	1.79	1.17	34.62%	
0.013		17	16	Basin K+0.4/3	0.0075	0.1758	3.66	0.00	0.00	0.643	169.00	8	59.18	55.49	0.0218	1.16	0.51	55.69%	
Basin B1, B4 & MAIN C																			
0.013	Main B	173	174	Basin B1/12+B4/5	0.0065	0.0065	4.30	0.00	0.00	0.028	300.00	8	277	267.8	0.0307	1.37	1.34	2.03%	
0.013		172	173	Basin B1/12+B4/5	0.0065	0.0129	4.22	0.00	0.00	0.055	180.00	8	267.8	260.5	0.0406	1.57	1.52	3.47%	
0.013		171	172	Basin B1/12+B4/5	0.0065	0.0194	4.17	0.00	0.00	0.081	300.00	8	260.5	234.8	0.0857	2.29	2.21	3.53%	
0.013		170	171	Basin B1/12+B4/5	0.0065	0.0258	4.12	0.00	0.00	0.107	300.00	8	234.8	188	0.1560	3.09	2.98	3.45%	
0.013		169	170	Basin B1/12+B4/5	0.0065	0.0323	4.08	0.00	0.00	0.132	185.00	8	188	169	0.1027	2.51	2.37	5.26%	
0.013		80	169	Basin B1/12	0.0029	0.0352	4.07	0.00	0.00	0.143	90.00	8	169	157.49	0.1279	2.80	2.65	5.12%	
0.013		7	80	Basin B1/12	0.0029	0.0381	4.05	0.00	0.00	0.154	250.00	8	157.49	143	0.0580	1.88	1.73	8.20%	
0.013		79	7	Basin B1/12	0.0029	0.0410	4.04	0.00	0.00	0.165	93.00	8	143	132	0.1183	2.69	2.52	6.15%	
0.013		68	79	Basin B1/12	0.0029	0.0439	4.02	0.00	0.00	0.177	397.02	8	132	106.59	0.0640	1.98	1.80	8.92%	
0.013		49	68	Basin B1/12	0.0029	0.0468	4.01	0.00	0.00	0.188	421.34	8	106.59	93.11	0.0320	1.40	1.21	13.41%	
0.013	39	49	Basin B1/12	0.0029	0.0497	4.00	0.00	0.00	0.199	234.47	8	93.11	83.26	0.0420	1.60	1.40	12.39%		
0.013		17	39	Basin B1/12 + MAIN C	0.3525	0.4021	3.37	0.00	0.000	1.354	295.57	8	83.26	55.49	0.0940	2.40	1.04	56.51%	
Basin C1, C2 & MAIN D																			
0.013	Main C	130	115	Basin C1/16	0.0045	0.0045	4.33	0.00	0.00	0.020	240.00	8	252.72	241.38	0.0448	1.65	1.63	1.19%	
0.013		129	130	Basin C1/16	0.0045	0.0091	4.27	0.00	0.00	0.039	138.00	8	241.38	223.84	0.1314	2.83	2.80	1.36%	
0.013		105	129	Basin C1/16	0.0045	0.0136	4.22	0.00	0.00	0.057	268.00	8	223.84	193.87	0.1118	2.61	2.56	2.19%	
0.013		104	105	Basin C1/16	0.0045	0.0181	4.18	0.00	0.00	0.076	146.00	8	193.87	184.85	0.0618	1.94	1.87	3.89%	
0.013		87	104	Basin C1/16	0.0045	0.0226	4.14	0.00	0.00	0.094	117.00	8	184.85	165.68	0.1553	3.08	2.99	3.05%	
0.013		86	87	Basin C1/16+Basin C2	0.0714	0.0940	3.84	0.00	0.00	0.361	147.50	8	166.68	165.68	0.0057	0.59	0.23	61.22%	
0.013		86	86	Basin C1/16	0.0045	0.0985	3.83	0.00	0.00	0.377	301.00	8	165.84	164.49	0.0045	0.52	0.11	78.31%	
0.013		131	86	Basin C1/16	0.0045	0.1031	3.82	0.00	0.00	0.393	77.50	8	164.42	164.1	0.0041	0.55	0.15	82.57%	
0.013		70	131	Basin C1/16	0.0045	0.1076	3.81	0.00	0.00	0.410	370.00	8	164.1	158.5	0.0151	0.96	0.55	42.57%	
0.013		64	70	Basin C1/16	0.0045	0.1121	3.79	0.00	0.00	0.425	250.00	8	158.5	150	0.0340	1.44	1.02	29.51%	
0.013	65	64	Basin C1/16	0.0045	0.1166	3.78	0.00	0.00	0.441	275.00	8	150	129.49	0.0746	2.14	1.69	20.67%		
0.013	66	65	Basin C1/16	0.0045	0.1212	3.77	0.00	0.00	0.457	288.00	8	129.49	120.28	0.0320	1.40	0.94	32.69%		
0.013	51	66	Basin C1/16	0.0045	0.1257	3.76	0.00	0.00	0.473	267.00	8	120.28	107.98	0.0461	1.68	1.21	28.18%		
0.013	41	51	Basin C1/16	0.0045	0.1302	3.75	0.00	0.00	0.489	317.67	8	107.98	91.85	0.0508	1.76	1.27	27.73%		
0.013	40	41	Basin C1/16 + MAIN D	0.2148	0.3450	3.42	0.00	0.00	1.182	291.51	8	91.85	89.52	0.0080	0.70	(0.49)	169.09%		
0.013		39	40	Basin C1/16	0.0045	0.3496	3.43	0.00	0.00	1.196	320.00	8	89.52	83.26	0.0196	1.09	(0.10)	109.35%	
Proposed Pump Station NO.5																			
Force Main - PS #6																			
Pump Station NO.3																			
Force Main - PS #3																			
Basin D3																			
Basin D2 & PS #5																			
Force Main - PS #3																			
Basin D1																			
Basin D1																			
0.013	Main D	134	135	25% Basin D1	0.0120	0.0120	3.66	0.162	0.162	0.639	200.00	8	144	143	0.0050	0.55	(0.69)	115.52%	
0.013		141	134	5% Basin D1	0.0024	0.0143	3.66	0.00	0.162	0.647	370.00	8	143	136	0.0189	1.08	0.43	60.13%	
0.013		133	141	25% Basin D1	0.0120	0.0263	3.64	0.00	0.162	0.686	260.00	8	136	126	0.0385	1.53	0.85	44.76%	
0.013		132	133	5% Basin D1	0.0024	0.0287	3.63	0.00	0.162	0.694	25.00	8	126	124	0.0800	2.21	1.91	63.25%	
0.013		48	132	5% Basin D1	0.0024	0.0311	3.63	0.00	0.162	0.702	90.77	8	124	122.17	0.0202	1.11	0.41	51.39%	
0.013		47	48	5% Basin D1	0.0024	0.0335	3.62	0.00	0.162	0.710	388.94	8	122.17	105.06	0.0440	1.64	0.93	43.30%	
0.013		45	47	5% Basin D1	0.0024	0.0359	3.62	0.00	0.162	0.718	389.81	8	105.06	89.52	0.0620	1.95	1.23	36.88%	
0.013			44	45	25% Basin D1	0.0120	0.0478	3.60	0.00	0.162	0.757	276.32	8	89.9	79.8	0.0040	0.49	(0.26)	153.48%
Pump Station NO.2																			
Force Main - PS #2 - extend to MH 41																			
Force Main - PS #2																			
4-inch Force Main																			
200 gpm Pump																			
6-inch Force Main																			
200 gpm Pump																			
4-inch Force Main																			
200 gpm Pump																			
81.61%																			
23.15%																			
187.83%																			
132.67%																			
137.84%																			

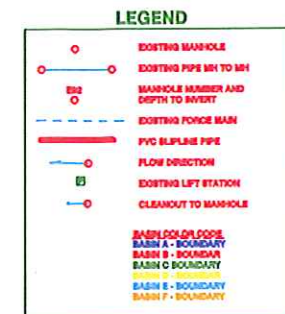
Table A-5

n	SEWER MAIN	DOWNSTREAM MANHOLE	UPSTREAM MANHOLE	Basin Contributing Flow	Existing Flow INC.	SUM Flow w/o peak	PEAK FACTOR	PS Flow INC.	PS FLOW (MGD)	PEAK FLOW (MGD)	LENGTH (ft.)	SIZE (in.)	IE Up	IE Down	SLOPE (mft)	CAPACITY (MGD)	CAPACITY REMAINING (CAPACITY - PEAK FLOW) (MGD)	CAPACITY UTILIZED %
MAIN A																		
0.013		63	226	Basins B2, B5, B6, B3 & K	0.0054	0.0054	4.32	0.00	0.00	0.023	335.00	8	164	161.97	0.0061	0.61	0.59	3.67%
0.013		37	83	Basin B2/8	0.1771	0.1771	3.66	0.00	0.00	0.648	100.00	8	161.97	159.06	0.0123	1.41	0.76	46.6%
0.013		38	38	Basin B2/8	0.0054	0.1825	3.65	0.00	0.00	0.648	184.84	8	159.06	156.18	0.0123	0.98	0.31	46.1%
0.013		36	37	Basin B2/8	0.0054	0.1879	3.64	0.00	0.00	0.701	205.47	8	156.18	152.48	0.0180	1.05	0.37	58.19%
0.013		32	36	Basin B2/8	0.0054	0.1932	3.63	0.00	0.00	0.701	201.48	8	152.48	143.45	0.0448	1.66	0.95	62.36%
0.013		31	32	Basin B2/8	0.0054	0.1986	3.62	0.00	0.00	0.719	339.36	8	143.45	120	0.0691	2.06	1.34	34.98%
0.013		26	31	Basin B2/8	0.0054	0.2040	3.61	0.00	0.00	0.737	262.02	8	120	103.94	0.0613	1.94	1.20	38.06%
0.013		26	26	Basin B2/8	0.0054	0.2094	3.60	0.00	0.00	0.754	224.16	8	103.94	90.49	0.0600	1.92	1.16	39.39%
0.013		18	25	Basin K'0.4/3	0.0083	0.2177	3.59	0.00	0.00	0.781	276.88	8	90.49	71.66	0.0680	2.04	1.26	38.32%
0.013		16	18	Basin K'0.4/3	0.0083	0.2260	3.58	0.00	0.00	0.808	239.23	8	71.66	59.18	0.0522	1.79	0.98	45.25%
0.013		17	16	Basin K'0.4/3	0.0083	0.2342	3.56	0.00	0.00	0.808	169.00	8	59.18	55.49	0.0218	1.16	0.32	72.26%
MAIN B																		
0.013		173	174	Basin B1, B4, B5 & MAIN C														
0.013		173		Basin B1/12 - Basin B8	0.1859	0.1859	3.64	0.00	0.00	0.677	300.00	8	277	267.8	0.0307	1.37	0.69	49.43%
0.013		172		Basin B4/5 - Basin B8	0.0077	0.1935	3.63	0.00	0.00	0.702	180.00	8	267.8	260.5	0.0406	1.57	0.87	44.59%
0.013		171	172	Basin B1/12 - Basin B4/5	0.0077	0.2012	3.62	0.00	0.00	0.727	300.00	8	280.5	234.8	0.0857	2.29	1.56	31.76%
0.013		170	171	Basin B1/12 - Basin B4/5	0.0077	0.2068	3.60	0.00	0.00	0.752	300.00	8	234.8	188	0.1560	3.09	2.34	24.36%
0.013		169	170	Basin B1/12 - Basin B4/5	0.0077	0.2165	3.59	0.00	0.00	0.777	185.00	8	188	169	0.1027	2.51	1.73	31.02%
0.013		80	169	Basin B1/12	0.0037	0.2202	3.59	0.00	0.00	0.789	90.00	8	169	157.49	0.1279	2.80	2.01	28.23%
0.013		7	80	Basin B1/12	0.0037	0.2239	3.58	0.00	0.00	0.802	250.00	8	157.49	143	0.0580	1.88	1.08	42.56%
0.013		79	7	Basin B1/12	0.0037	0.2276	3.57	0.00	0.00	0.814	93.00	8	143	132	0.1183	2.69	1.88	30.26%
0.013		68	79	Basin B1/12	0.0037	0.2314	3.57	0.00	0.00	0.826	397.02	8	132	106.59	0.0640	1.98	1.15	41.74%
0.013		48	68	Basin B1/12	0.0037	0.2351	3.56	0.00	0.00	0.838	421.34	8	106.59	93.11	0.0320	1.40	0.56	59.90%
0.013		39	48	Basin B1/12	0.0037	0.2388	3.56	0.00	0.00	0.850	234.47	8	93.11	83.26	0.0420	1.60	0.75	53.02%
0.013		17	39	Basin B1/12 + MAIN C	0.9623	1.2211	2.91	0.00	0.00	3.553	295.57	8	83.26	55.49	0.0940	2.40	(1.16)	148.23%
MAIN C																		
0.013		130	115	Basin C1, C2 & MAIN D														
0.013		130		Basin C1/16	0.0950	0.0950	4.32	0.00	0.00	0.022	240.00	8	252.72	241.98	0.0448	1.65	1.63	1.30%
0.013		129	130	Basin C1/16	0.0050	0.0100	4.26	0.00	0.00	0.042	138.00	8	241.98	223.84	0.1114	2.83	2.79	1.50%
0.013		105	129	Basin C1/16	0.0950	0.1199	4.16	0.00	0.00	0.063	268.00	8	223.84	193.87	0.1314	2.61	2.55	2.40%
0.013		104	105	Basin C1/16	0.0950	0.0249	4.13	0.00	0.00	0.083	146.00	8	193.87	184.85	0.0618	1.94	1.86	4.27%
0.013		87	88	Basin C1/16 - Basin C2	0.0785	0.1034	3.82	0.00	0.00	0.103	117.00	8	184.85	166.68	0.1553	3.08	2.98	3.34%
0.013		86	87	Basin C1/16	0.0950	0.1084	3.80	0.00	0.00	0.395	147.30	8	166.68	163.94	0.0057	0.59	0.20	66.89%
0.013		131	86	Basin C1/16	0.0950	0.1134	3.79	0.00	0.00	0.420	301.30	8	163.94	164.49	0.0041	0.52	0.11	78.77%
0.013		70	131	Basin C1/16	0.0950	0.1183	3.78	0.00	0.00	0.447	370.00	8	164.42	164.1	0.0041	0.50	0.07	85.55%
0.013		64	70	Basin C1/16	0.0950	0.1233	3.77	0.00	0.00	0.465	250.00	8	164.1	158.5	0.0151	0.96	0.51	46.49%
0.013		64	64	Basin C1/16	0.0950	0.1283	3.76	0.00	0.00	0.482	275.00	8	158.5	150.28	0.0746	1.44	0.98	32.23%
0.013		66	65	Basin C1/16	0.0950	0.1333	3.74	0.00	0.00	0.499	298.00	8	129.49	120.78	0.0320	1.40	0.90	32.77%
0.013		66	66	Basin C1/16	0.0950	0.1383	3.73	0.00	0.00	0.516	267.00	8	120.78	107.88	0.0561	1.68	1.16	30.76%
0.013		51	66	Basin C1/16	0.0950	0.1433	3.72	0.00	0.00	0.533	317.67	8	107.88	91.85	0.0561	1.76	1.23	30.27%
0.013		40	41	Basin C1/16 + MAIN D	0.8303	0.9735	3.01	0.00	0.00	2.928	291.51	15	91.85	89.52	0.0090	3.74	0.81	76.32%
0.013		39	40	Basin C1/16	0.0950	0.9785	3.00	0.00	0.00	2.940	320.00	15	89.52	83.26	0.0196	3.05	2.91	50.28%
Proposed Pump Station NO.5																		
Force Main - PS #5				Basins D3 + D4 + D5		0.3920	3.38		0.00	1.324			150 gpm	Pump		0.22	(1.11)	613.07%
Pump Station NO.3				Basin D2 + PS NO.5		0.1134	3.28		0.382	1.657			6-inch Force Main			1.02	(0.13)	130.44%
Force Main - PS #6													200 gpm	Pump		0.29	(1.37)	575.39%
													4-inch Force Main			0.45	(1.23)	367.29%
MAIN D																		
0.013		134	135	Basin D1, D6, PS #3														
0.013		141		25% Basin D1	0.0131	0.0131	3.27	0.505	0.505	1.695	200.00	8	144	143	0.0050	0.55	(1.14)	306.55%
0.013		133	141	5% Basin D1	0.0026	0.0158	3.27	0.00	0.505	1.702	370.00	8	143	136	0.0189	1.08	(0.63)	158.29%
0.013		141		25% Basin D1	0.0131	0.0289	3.26	0.00	0.505	1.740	280.00	8	136	126	0.0385	1.53	(0.21)	113.47%
0.013		132	133	5% Basin D1	0.0026	0.0316	3.25	0.00	0.505	1.748	250.00	8	126	124	0.0600	2.21	0.46	79.02%
0.013		132		5% Basin D1	0.0026	0.0342	3.25	0.00	0.505	1.755	90.77	8	124	122.17	0.0202	1.11	(0.64)	158.08%
0.013		47	48	5% Basin D1	0.0026	0.0368	3.25	0.00	0.505	1.763	338.94	8	122.17	105.06	0.0440	1.64	(0.12)	107.47%
0.013		45	47	5% Basin D1 + Basin D6	0.2699	0.3067	3.08	0.00	0.505	2.505	389.81	8	105.06	80.9	0.0620	1.95	(0.56)	128.67%
0.013		44	45	25% Basin D1	0.0131	0.3199	3.08	0.00	0.505	2.540	276.32	8	80.9	79.8	0.0040	0.49	(2.05)	514.80%
Pump Station NO.2																		
Force Main - PS #2 - extended to MH 41						0.3199	3.08		0.505	2.540			200 gpm	Pump		0.29	(2.26)	881.89%
													4-inch Force Main			0.45	(2.00)	582.92%

APPENDIX B

Existing Collection System Map

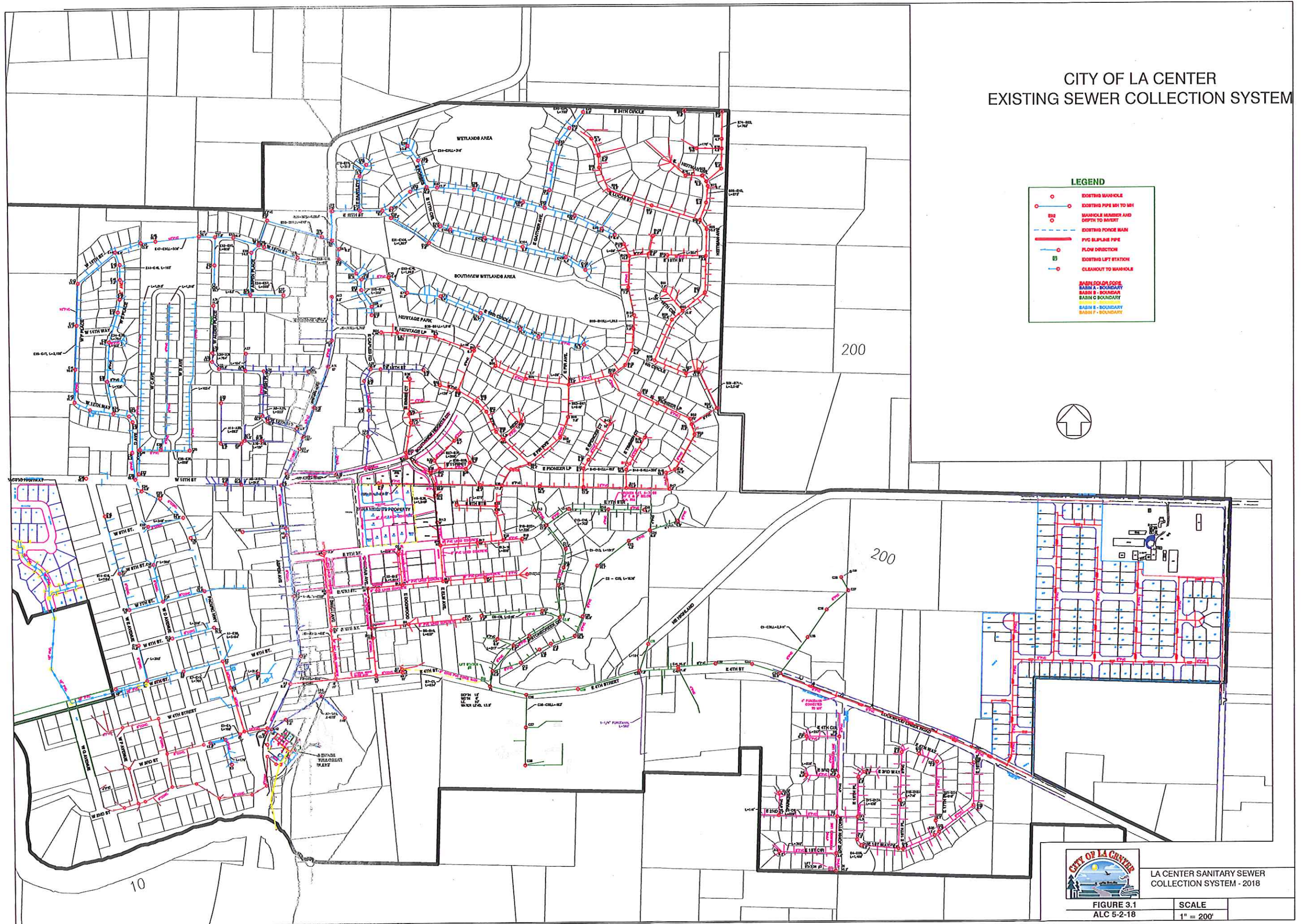
CITY OF LA CENTER EXISTING SEWER COLLECTION SYSTEM

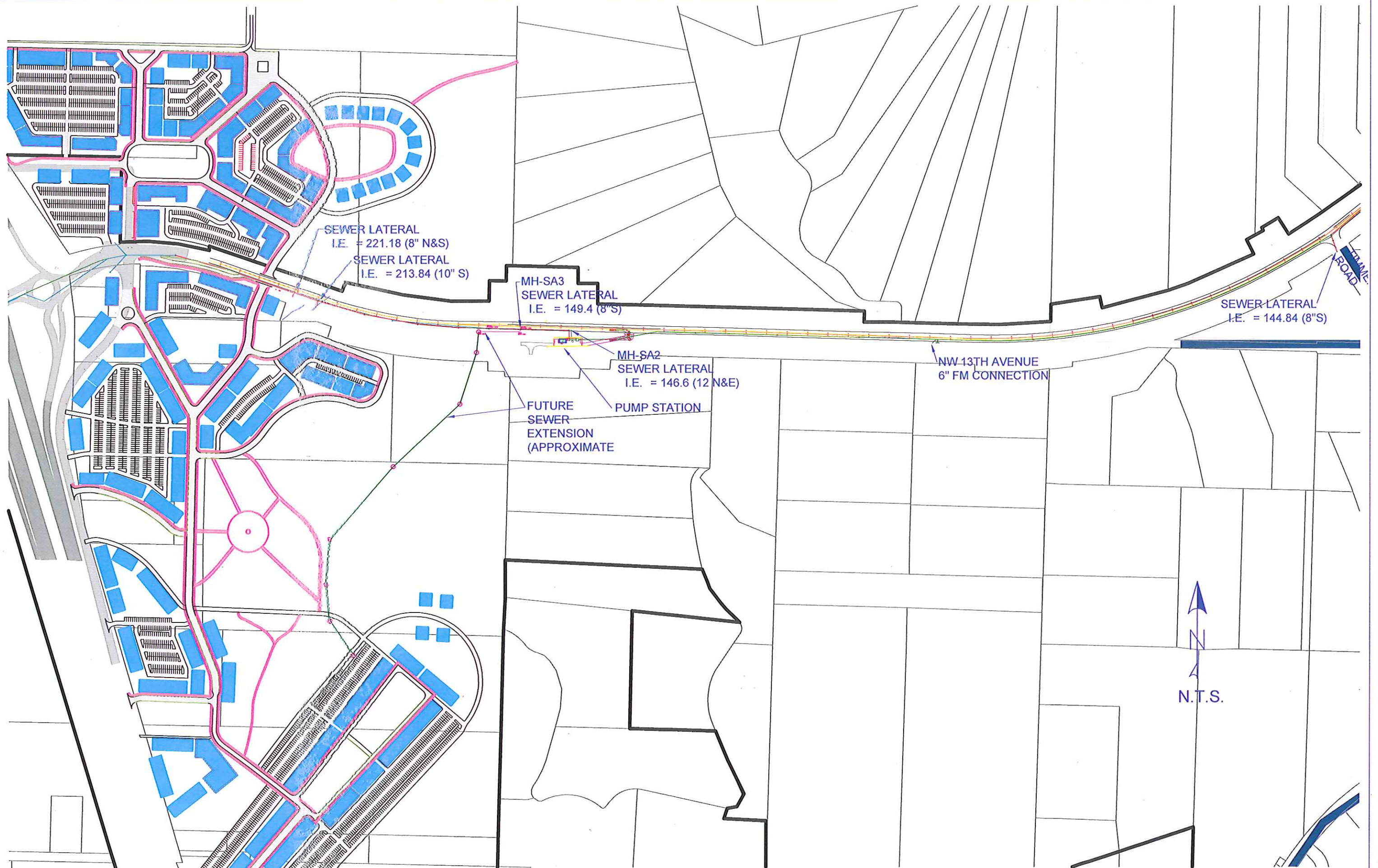


LA CENTER SANITARY SEWER
COLLECTION SYSTEM - 2018

FIGURE 3.1
ALC 5-2-18

SCALE
1" = 200'

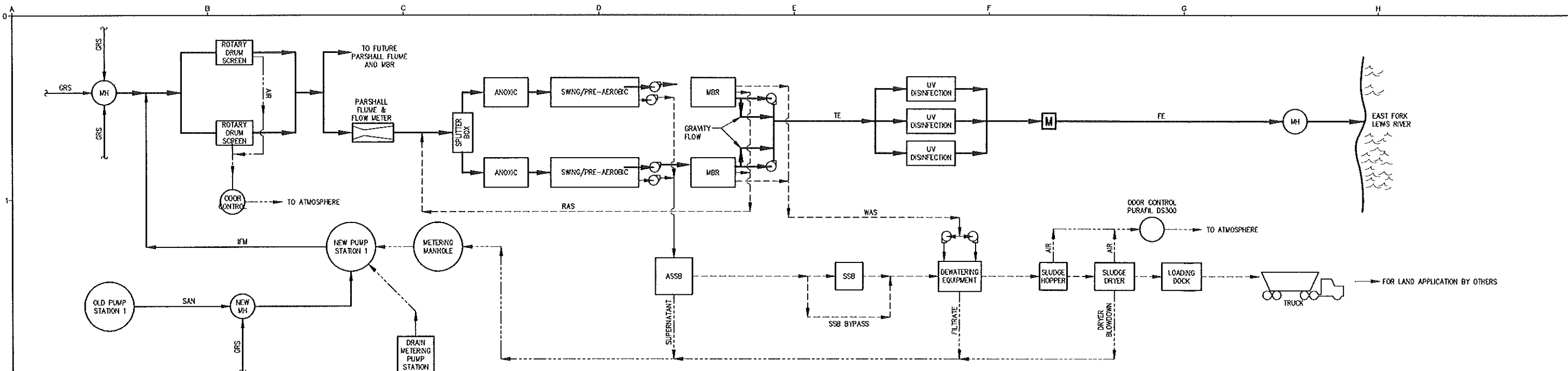




SCALE 1" = 60'

APPENDIX C

Unit Process Design Summary



PLANT PROCESS SCHEMATIC

DESIGN CRITERIA

ITEM DESCRIPTION	VALUE	VALUE	VALUE
POPULATION EQUIVALENT	4,620	6,941	15,006
INFLUENT FLOWS			
ANNUAL AVERAGE FLOW	0.51 MGD	0.76 MGD	1.65 MGD
AVERAGE DRY WEATHER FLOW	0.42 MGD	0.62 MGD	1.35 MGD
AVERAGE WET WEATHER FLOW	0.55 MGD	0.83 MGD	1.80 MGD
MAX MONTH WET WEATHER FLOW	0.69 MGD	1.04 MGD	2.25 MGD
PEAK DAILY FLOW	1.29 MGD	1.94 MGD	4.20 MGD
PEAK HOURLY FLOW	1.91 MGD	2.88 MGD	6.22 MGD
INFLUENT LOADS			
BOD			
ANNUAL AVERAGE	1,013 LB/DAY	1,498 LB/DAY	3,001 LB/DAY
MAX MONTH DRY	1,276 LB/DAY	1,775 LB/DAY	3,781 LB/DAY
MAX MONTH WET	1,297 LB/DAY	1,804 LB/DAY	3,841 LB/DAY
TSS			
ANNUAL AVERAGE	817 LB/DAY	1,207 LB/DAY	2,638 LB/DAY
MAX MONTH DRY	964 LB/DAY	1,424 LB/DAY	3,113 LB/DAY
MAX MONTH WET	1,070 LB/DAY	1,581 LB/DAY	3,456 LB/DAY
NUTRIENTS			
ANNUAL AVERAGE	148 LB/DAY	223 LB/DAY	482 LB/DAY
MAX MONTH DRY	175 LB/DAY	263 LB/DAY	569 LB/DAY
MAX MONTH WET	194 LB/DAY	292 LB/DAY	631 LB/DAY
PUMP STATION 1			
NUMBER OF PUMPS		2	
PUMP TYPE		SUBMERSIBLE, CENTRIFUGAL	
DESIGN FLOW PER PUMP		950 GPM	
FIRM CAPACITY		1.4 MGD	
TOTAL CAPACITY		2.7 MGD	
DESIGN TDH		38.6 FT	
HEADWORKS			
GENERAL			
CHANNEL WIDTH		2 FEET	
CHANNEL VELOCITY @ AAF		0.81 FT/SEC	
CHANNEL VELOCITY @ WWMF		1.03 FT/SEC	
CHANNEL VELOCITY @ PHF		2.01 FT/SEC	
MAXIMUM HEADLOSS THROUGH HEADWORKS		1.78 FEET	
CHANNEL SOLIDS RESUSPENSION REQUIRED		YES	

DESIGN CRITERIA CONTINUED

ITEM DESCRIPTION	2017 VALUE
HEADWORKS	
FINE SCREENS	
TYPE	ROTARY DRUM
NUMBER	2
OPENING	3 MM
CAPACITY (EACH)	2027 PHF
HEADLOSS (EACH) @ PHF	1.00 FEET
SCREENING WASHING AND COMPACTION	Integral to Screening Units
WATER DEMAND (NPW) (EACH)	16.4 GPM
GRIFF REMOVAL (FUTURE)	
TYPE	VORTEX
NUMBER	1
CAPACITY	6.22 MGD
HEADLOSS	0.33 FEET
INFLUENT FLOW METER	
TYPE	Parshall Flume
NUMBER	1
THROAT WIDTH	9 INCH
MAXIMUM FLOW FLOW	8.0 MGD
FLOW DEPTH @ AAF	6.4 INCH
FLOW DEPTH @ WWMF	7.9 INCH
ODOR CONTROL	
TYPE	ENGINEERED CARBON
NUMBER	1
FAN CAPACITY	4200 CFM
FAN SPEED	TWO SPEED
MBR PROCESS BASIN	
NUMBER OF BASINS	2
NUMBER OF TRAYS/BASIN	1
BASIN VOLUME	205,340 GAL
SIDEWATER DEPTH	18.0 FT
SRT	22 DAYS
MLSS	8,000-12,000 MG/L
WAS	13,100 GAL/DAY
NUMBER OF ANOXIC ZONES	2
ANOXIC ZONE VOLUME, EACH	53,690 GAL
NUMBER OF SWING ZONES	2
SWING ZONE VOLUME, EACH	24,490 GAL
NUMBER OF AEROBIC ZONES	2
AEROBIC ZONE VOLUME, EACH	24,490 GAL

DESIGN CRITERIA CONTINUED

ITEM DESCRIPTION	2012 VALUE	2017 VALUE
MBR MEMBRANE BASINS		
NUMBER OF BASINS	2	4
SUBMERGED MEMBRANE UNITS PER BASIN	5 Dbl Stacked	5 Dbl Stacked
AVERAGE FLUX	10 GFD	10 GFD
PEAK FLUX	27.6 GFD	27.6 GFD
AVERAGE FLOW PER BASIN (13' C)	0.375 MGD	0.375 MGD
TOTAL AVERAGE FLOW (13' C)	0.75 MGD	1.5 MGD
TOTAL PEAK FLOW (13' C)	1.5 MGD	3.0 MGD
AERATION EQUIPMENT		
PROCESS BLOWERS		
NUMBER*	2 (1+1 COMMON SPARE)	2 (1+1 COMMON SPARE)
CAPACITY, EACH*	720 SCFM	1,600 SCFM
HORSEPOWER, EACH	60 HP	100 HP
MBR SCOUR BLOWERS		
NUMBER	2	3
CAPACITY, EACH	720 SCFM	720 SCFM
HORSEPOWER, EACH	60 HP	60 HP
MBR PROCESS BASIN DIFFUSERS		
TYPE	FINE BUBBLE	MEMBRANE
CAPACITY		1600 SCFM
MBR MEMBRANE BASIN DIFFUSERS		
TYPE	COARSE BUBBLE	
CAPACITY	2,100 SCFM	
PERMEATE PUMPS		
NUMBER OF TYPE	SELF PRIMING CENTRIFUGAL	
PUMP TYPE	4.50 MGD	
CAPACITY PER PUMP	6.00 MGD	
FIRM CAPACITY	31.0	
TOTAL CAPACITY	YES	
TOTAL DYNAMIC HEAD		
ADJUSTABLE FREQUENCY DRIVE	3 (2+1 SHELF SPARE)	
RAS/FEED FORWARD PUMPS		
NUMBER	3.64 MGD	
PUMP TYPE	7.28 MGD	
CAPACITY PER PUMP	7.28 MGD	
FIRM CAPACITY	8.2 FEET	
TOTAL CAPACITY	YES	
TOTAL DYNAMIC HEAD		
ADJUSTABLE FREQUENCY DRIVE		

DESIGN CRITERIA CONTINUED

ITEM DESCRIPTION	2017 VALUE
WAS/EQUALIZATION PUMPS	
NUMBER	3 (2+1 SHELF SPARE)
PUMP TYPE	SUBMERSIBLE
CAPACITY PER PUMP	331 GPM
FIRM CAPACITY	662 GPM
TOTAL CAPACITY	662 GPM
TOTAL DYNAMIC HEAD	12.2 FEET
ADJUSTABLE FREQUENCY DRIVE	NO
ULTRAVIOLET DISINFECTION UNITS	
NUMBER OF UNITS	3 (2 EXISTING, 1 NEW)
TYPE	IN-LINE, CLOSED CHANNEL, HIGH INTENSITY, MEDIUM PRESSURE
DESIGN FLOW PER UNIT	2 @ 1.75 MGD
FIRM CAPACITY	1 @ 3.10 MGD
TOTAL CAPACITY	3.5 MGD
NUMBER OF LAMPS PER UNIT	6
DESIGN TRANSMITTANCE	70 %
FECAL COLIFORM STANDARDS	100 ORGANISMS/100 ML MONTHLY AVERAGE
	200 ORGANISMS/100 ML WEEKLY AVERAGE
AERATED SLUDGE STORAGE BASIN	
VOLUME	287,000 gal
INFLUENT WAS % SOLIDS	0.8-1.2 %
INFLUENT BOD	3,840 LB/DAY
AERATION PROVIDED	FINE BUBBLE
DIFFUSER GRID	2
EXIST DIFFUSER GRID CAPACITY	400 SCFM
OXYGEN AIRFLOW DEMAND	600 SCFM
MINIMUM MIXING AIRFLOW DEMAND	720 SCFM
MINIMUM SRT	9.4 DAYS
NUMBER OF BLOWERS	1
BLOWER SIZE	40 HP
EXIST BLOWER CAPACITY (EACH)	490 SCFM
SLUDGE STORAGE BASIN	
NUMBER OF BASINS	1
VOLUME	53,000 GAL

DESIGN CRITERIA CONTINUED

ITEM DESCRIPTION	2017 VALUE
SLUDGE DEWATERING	
NUMBER OF UNITS	1
TYPE OF UNITS	PRESS
SLUDGE FEED % SOLIDS	0.75%
POLYMER DOSAGE	7 TO 10 LB/DAY
CAKE % SOLIDS	18 %
SLUDGE DRYER	
NUMBER OF UNITS	1
TYPE OF UNIT	FENTON RX-36
METHOD OF OPERATION	BATCH
CAPACITY	33 CF/BATCH
PRODUCTION	1 TO 3 BATCHES/DAY
INPUT % SOLIDS	18 %
ORED % SOLIDS	90 %
UTILITY WATER SYSTEM	
CHLORINATION	
NUMBER OF UNITS	1
CAPACITY	260 GPM
CHLORINE RESIDUAL	0.5 MG/L
STORAGE VOLUME	54,000 GALLONS
PACKAGE BOOSTER SYSTEM	
NUMBER OF PUMPS	3
PUMP DESIGN POINT	1 @ 50 GPM @ 290 FEET TDH
	2 @ 130 GPM @ 250 FEET TDH
FIRM CAPACITY	180 GPM
ADJUSTABLE FREQUENCY DRIVE	THREE
NUMBER OF BLADDER TANK	1
BLADDER TANK VOLUME	200 GALLON
DESIGN PRESSURE	150 PSI

RECORD DRAWINGS
 THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON INFORMATION PROVIDED BY THE CONTRACTOR AND OTHERS. KENNEDY/JENKS CONSULTANTS HAS NOT VERIFIED THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED TO THEM AND DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THESE RECORD DRAWINGS. USERS OF THESE RECORD DRAWINGS ASSUME ALL RISK OF LOSS RESULTING FROM THEIR USE. USERS OF THESE DOCUMENTS IN ELECTRONIC FORM ARE CAUTIONED AGAINST USE WITHOUT FIRST DETERMINING WHETHER CHANGES MAY HAVE BEEN MADE TO THESE DOCUMENTS SUBSEQUENT TO THEIR PREPARATION BY KENNEDY/JENKS CONSULTANTS. ORIGINALS OF SIGNED AND SEALED HARD COPIES OF THESE DOCUMENTS ARE THE ONLY TRUE RECORD OF THE CONTRACT DOCUMENTS PREPARED BY KENNEDY/JENKS CONSULTANTS.

* NUMBERS PRESENTED FOR PHASE 1B DESIGN. PHASE 1A INCLUDES 2 PROCESS BLOWERS, EACH 720 SCFM @ 60 HP.

USE OF DOCUMENTS

THIS DOCUMENT, INCLUDING THE INCORPORATED DESIGNS, IS AN INSTRUMENT OF SERVICE FOR THIS PROJECT AND SHALL NOT BE USED FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF KENNEDY/JENKS CONSULTANTS.

DESIGNED
SEL

DRAWN
SEL

CHECKED
JEC

CITY OF LA CENTER
LA CENTER WASHINGTON
WASTEWATER TREATMENT PLANT
PHASE 1 IMPROVEMENTS PROJECT

Kennedy/Jenks Consultants
 200 SW MARKET STREET, SUITE 500, PORTLAND, OREGON

WWTP PROCESS SCHEMATIC AND
DESIGN CRITERIA

FILE NAME
0691023-0005

JOB NO.
0691023.00

DATE
MARCH 2011

SHEET OF
G005 144

NO. **REVISION** **DATE** **BY**

1	RECORD DRAWING	MAR 2011	TJA
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SCALES

0" = 1"

0" = 25mm

IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

APPENDIX D

NPDES Permit

APPENDIX D
NPDES Permit



Issuance Date: May 26, 2004
Effective Date: July 1, 2004
Expiration Date: June 30, 2009
Modification Date: September 22, 2006

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
WASTE DISCHARGE PERMIT NO. WA0023230

State of Washington
DEPARTMENT OF ECOLOGY
Olympia, Washington 98504-7600

In compliance with the provisions of
The State of Washington Water Pollution Control Law
Chapter 90.48 Revised Code of Washington
and
The Federal Water Pollution Control Act
(The Clean Water Act)
Title 33 United States Code, Section 1251 et seq.

LaCenter Sewage Treatment Plant

City of LaCenter

214 East 4th Street

LaCenter, WA 98629

<u>Plant Location:</u> 150 West 4 th Street, LaCenter, WA	<u>Receiving Water:</u> East Fork Lewis River
---	---

<u>Water Body I.D. No.:</u> Old No. WA-27-2020 New No. 1225781459549	<u>Discharge Location:</u> Latitude: 45° 51' 34" N Longitude: 122° 40' 13" W
---	--

<u>Plant Type:</u> Sequencing Batch Reactor using activated sludge and capable of extended aeration

is authorized to discharge in accordance with the special and general conditions that follow.

Kelly Susewind, P.E., P.G.
Southwest Regional Manager
Water Quality Program
Washington State Department of Ecology

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SUMMARY OF PERMIT REPORT SUBMITTALS

Refer to the Special and General Conditions of this permit for additional submittal requirements.

Permit Section	Submittal	Frequency	First Submittal Date
S3.	Discharge Monitoring Report	Monthly	Reserved for issue date
S3.E	Noncompliance Notification	As necessary	
S4.B.	Plans for Maintaining Adequate Capacity	As necessary	
S4.C.	Notification of New or Altered Sources	As necessary	
S4.E.	Infiltration and Inflow Evaluation	Annually	July 15, 2005
S4.F.	Waste Load Assessment	Annually	March 15, 2005
S5.G.	Operations and Maintenance Manual	1/permit cycle	October 15, 2004
S7.	Residual Solids Management Plan	1/permit cycle	December 15, 2005
S8.	Receiving Water Sampling and Quality Assurance Plan	1/permit cycle	September 15, 2004
S8.	Receiving Water Study--Temperature and Metals Report	Annually	December 15, 2005
S9.A.	Acute Toxicity WET Testing Data	1/permit	August 15, 2005
S9.A.	Acute Toxicity WET Testing Summary Report	1/permit cycle	December 15, 2005
S9.D	Acute Toxicity: "Causes and Preventative Measures for Transient Events."	As necessary	
S9.D	Acute Toxicity TI/TRE Plan	As necessary	
S10.A	Chronic Toxicity WET Testing Data		August 15, 2005
S10.A	Chronic Toxicity WET Testing Summary Report	1/permit cycle	December 15, 2005
S10.D	Chronic Toxicity: "Causes and Preventative Measures for Transient Events."	As necessary	
S10.D	Chronic Toxicity TI/TRE Plan	As necessary	
S11.	Outfall Evaluation	1/permit cycle	September 15, 2007
G1.	Notice of Change in Authorization	As necessary	
G4.	Reporting Planned Changes	As necessary	
G5.	Engineering Report for Construction or Modification Activities	As necessary	
G7.	Application for Permit Renewal	1/permit cycle	November 15, 2008
G21	Reporting Anticipated Non-compliance	As necessary	
G22	Reporting Other Information	As necessary	

SPECIAL CONDITIONS

S1. DISCHARGE LIMITATIONS

A. Effluent Limitations

All discharges and activities authorized by this permit shall be consistent with the terms and conditions of this permit. The discharge of any of the following pollutants more frequently than, or at a level in excess of, that identified and authorized by this permit shall constitute a violation of the terms and conditions of this permit.

Beginning on the effective date of this permit and lasting through the expiration date the Permittee is authorized to discharge municipal wastewater at the permitted location subject to complying with the following limitations:

EFFLUENT LIMITATIONS^a: OUTFALL # 001		
Parameter	Average Monthly	Average Weekly
Biochemical Oxygen Demand (5 day)	30 mg/L, 126 lbs/day 85% removal of influent BOD	45 mg/L, 189 lbs/day
Total Suspended Solids	30 mg/L, 135 lbs/day 85% removal of influent TSS	45 mg/L, 203 lbs/day
Fecal Coliform Bacteria	100 org/100 ml	200 org/100 ml
pH	Daily minimum is equal to or greater than 6 and the daily maximum is less than or equal to 9.	
Parameter	Average Monthly	Maximum Daily^b
Total Ammonia (as NH ₃ -N)	4.5 mg/L (June through Oct.)	9 mg/L (June through Oct.)
^a The average monthly and weekly effluent limitations are based on the arithmetic mean of the samples taken with the exception of fecal coliform, which is based on the geometric mean.		
^b The maximum daily effluent limitation is defined as the highest allowable daily discharge. The daily discharge means the discharge of a pollutant measured during a calendar day. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day.		

B. Mixing Zone Descriptions

The maximum boundaries of the mixing zones are defined as follows:

The Chronic mixing zone boundary shall not extend upstream greater than 100 feet from the discharge ports, not extend downstream greater than 300 feet, and not occupy greater than 25 percent of the stream width, which is 21 feet at the 7Q10 low flow of 60.7 cfs. The acute mixing zone boundaries are 10 percent of the chronic boundaries. Therefore the acute boundaries are 10 feet upstream, 30 feet downstream, and 2.1 feet wide.

S2. MONITORING REQUIREMENTS

A. Monitoring Schedule

The Permittee shall monitor in accordance with the following schedule:

Category	Parameter	Units	Sample Point	Minimum Sampling Frequency	Sample Type
Wastewater Influent	BOD ₅	mg/L, lbs/day	Headworks sampling station	2/week	24-hr composite
Wastewater Influent	TSS	mg/L, lbs/day	Headworks sampling station	2/week	24-hr composite
Wastewater Influent	Flow	mgd	Headworks Parshall flume	Continuous ^a	Recording (Ultra-sonic)
Wastewater Effluent	Flow	MGD	After UV disinfection	Continuous ^a	Recording
Wastewater Effluent	BOD ₅	mg/L	After UV disinfection	2/week	24-hr composite
		lbs/day	After UV disinfection	2/week	24-hr composite
		% removal	After UV disinfection	2/week	calculation
Wastewater Effluent	TSS	mg/L	After UV disinfection	2/week	24-hr composite
		lbs/day	After UV disinfection	2/week	24-hr composite
		% removal	After UV disinfection	2/week	calculation
Wastewater Effluent	Fecal coliform	Org./100ml	After UV disinfection	2/week	Grab
Wastewater Effluent	pH	Standard Units	After UV disinfection	Daily	Grab
Wastewater Effluent	Ammonia as N	mg/L	After UV disinfection	1/week (June through October)	Grab

Category	Parameter	Units	Sample Point	Minimum Sampling Frequency	Sample Type
Receiving Water and Effluent sampling ^b	Temperature ^c	°C (± 0.1 degree)	Influent, after disinfection, and ambient upstream	Continuous during June through October	Micro-recording thermograph (preferable)
Receiving Water and Effluent sampling ^b	Copper	µg/L	Effluent and ambient upstream	2/year (1 summer, 1 winter)	Grab
Receiving Water and Effluent sampling ^b	Zinc	µg/L	Effluent and ambient upstream	2/year (1 summer, 1 winter)	Grab
Receiving Water and Effluent sampling ^b	Lead	µg/L	Effluent and ambient upstream	2/year (1 summer, 1 winter)	Grab
Acute Toxicity Testing			Final effluent	As specified in section S9	
Chronic Toxicity Testing			Final effluent	As specified in section S10	

^a Continuous means uninterrupted except for brief lengths of time for calibration, for power failure, or for unanticipated equipment repair or maintenance. Sampling shall be taken four times daily when continuous monitoring is not possible due to repair or maintenance.

^bReceiving water sampling shall occur at the same time as effluent sampling in order to match the samples. Clean sampling techniques shall be used for metals with EPA Method 1669.

^c Temperature should be reported as daily maximum, the seven-day running average of the daily maximum, and the monthly maximum of the seven-day running average of the daily maximum. When continuous recording is not available, temperature should be monitored during the mid-afternoon.

B. Sampling and Analytical Procedures

Samples and measurements taken to meet the requirements of this permit shall be representative of the volume and nature of the monitored parameters, including representative sampling of any unusual discharge or discharge condition, including bypasses, upsets and maintenance-related conditions affecting effluent quality.

Sampling and analytical methods used to meet the monitoring requirements specified in this permit shall conform to the latest revision of the *Guidelines Establishing Test Procedures for the Analysis of Pollutants* contained in 40 CFR Part 136 or to the latest revision of *Standard Methods for the Examination of Water and Wastewater* (APHA), unless otherwise specified in this permit or approved in writing by the Department.

C. Flow Measurement

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the quantity of monitored flows. The devices shall be installed, calibrated, and maintained to ensure that the accuracy of the measurements are consistent with the accepted industry standard for that type of device. Frequency of calibration shall be in conformance with manufacturer's recommendations and at a minimum frequency of at least one calibration per year. Calibration records shall be maintained for at least three years.

D. Laboratory Accreditation

All monitoring data required by the Department shall be prepared by a laboratory registered or accredited under the provisions of, *Accreditation of Environmental Laboratories*, Chapter 173-50 Washington Administrative Code (WAC). Flow, temperature, settleable solids, conductivity, pH, and internal process control parameters are exempt from this requirement. Conductivity and pH shall be accredited if the laboratory must otherwise be registered or accredited. The Department exempts crops, soils, and hazardous waste data from this requirement pending accreditation of laboratories for analysis of these media.

S3. REPORTING AND RECORDKEEPING REQUIREMENTS

The Permittee shall monitor and report in accordance with the following conditions. The falsification of information submitted to the Department shall constitute a violation of the terms and conditions of this permit.

A. Reporting

The first monitoring period begins on the effective date of the permit. Monitoring results shall be submitted monthly. Monitoring data obtained during each monitoring period shall be summarized, reported, and submitted on a Discharge Monitoring Report (DMR) form provided, or otherwise approved, by the Department. DMR forms shall be received by the Department no later than the 15th day of the month following the completed monitoring period, unless otherwise specified in this permit. Priority pollutant analysis data shall be submitted no later than 45 days following the monitoring period. Unless otherwise specified, all toxicity test data shall be submitted within 60 days after the sample date. The report(s) shall be sent to the Department of Ecology, Southwest Regional Office, P.O. Box 47775, Olympia, Washington 98504-7775.

All laboratory reports providing data for organic and metal parameters shall include the following information: sampling date, sample location, date of analysis, parameter name,

CAS number, analytical method/ number, method detection limit (MDL), laboratory practical quantitation limit (PQL), reporting units, and concentration detected.

Discharge Monitoring Report forms must be submitted monthly whether or not the facility was discharging. If there was no discharge during a given monitoring period, submit the form as required with the words "no discharge" entered in place of the monitoring results.

B. Records Retention

The Permittee shall retain records of all monitoring information for a minimum of three years. Such information shall include all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by the Department.

C. Recording of Results

For each measurement or sample taken, the Permittee shall record the following information: (1) the date, exact place, method, and time of sampling or measurement; (2) the individual who performed the sampling or measurement; (3) the dates the analyses were performed; (4) the individual who performed the analyses; (5) the analytical techniques or methods used; and (6) the results of all analyses.

D. Additional Monitoring by the Permittee

If the Permittee monitors any pollutant more frequently than required by this permit using test procedures specified by Condition S2 of this permit, then the results of such monitoring shall be included in the calculation and reporting of the data submitted in the Permittee's DMR.

E. Noncompliance Notification

In the event the Permittee is unable to comply with any of the terms and conditions of this permit due to any cause, the Permittee shall:

1. Immediately take action to stop, contain, and cleanup unauthorized discharges or otherwise stop the noncompliance, correct the problem and, if applicable, repeat sampling and analysis of any noncompliance immediately and submit the results to the Department within 30 days after becoming aware of the violation.
2. Immediately notify the Department of the failure to comply.

3. Submit a detailed written report to the Department within 30 days (five days for upsets and bypasses), unless requested earlier by the Department. The report shall contain a description of the noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply.

F. Maintaining a Copy of This Permit

A copy of this permit must be kept at the treatment plant and be made available upon request to the public or the Department inspectors.

S4. FACILITY LOADING

A. Design Criteria

Flows or waste loadings of the following design criteria for the permitted treatment facility shall not be exceeded:

Average flow for the maximum month:	0.56 mgd
Instantaneous peak (day) flow:	1.0 mgd
BOD ₅ loading for maximum month:	841 lbs/day
TSS loading for maximum month:	902 lbs/day
Design Population equivalent:	3000 people

B. Plans for Maintaining Adequate Capacity

The Permittee shall submit to the Department a plan and a schedule for continuing to maintain capacity when:

1. The actual flow or waste load reaches 85 percent of any one of the design criteria in S4.A for three consecutive months; or
2. When the projected increase would reach design capacity within five years, whichever occurs first. If such a plan is required, it shall contain a plan and schedule for continuing to maintain capacity. The capacity as outlined in this plan must be sufficient to achieve the effluent limitations and other conditions of this permit. This plan shall address any of the following actions or any others necessary to meet the objective of maintaining capacity.

3. Analysis of the present design including the introduction of any process modifications that would establish the ability of the existing facility to achieve the effluent limits and other requirements of this permit at specific levels in excess of the existing design criteria specified in paragraph A above.
4. Reduction or elimination of excessive infiltration and inflow of uncontaminated ground and surface water into the sewer system.
5. Limitation on future sewer extensions or connections or additional waste loads.
6. Modification or expansion of facilities necessary to accommodate increased flow or waste load.
7. Reduction of industrial or commercial flows or waste loads to allow for increasing sanitary flow or waste load.

Engineering documents associated with the plan must meet the requirements of WAC 173-240-060, "Engineering Report," and be approved by the Department prior to any construction. The plan shall specify any contracts, ordinances, methods for financing, or other arrangements necessary to achieve this objective.

C. Duty to Mitigate

The Permittee is required to take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment

D. Notification of New or Altered Sources

The Permittee shall submit written notice to the Department whenever any new discharge or a substantial change in volume or character of an existing discharge into the Publicly Owned Treatment Works (POTW) is proposed which: (1) would interfere with the operation of, or exceed the design capacity of, any portion of the POTW; (2) is not part of an approved general sewer plan or approved plans and specifications; or (3) would be subject to pretreatment standards under 40 CFR Part 403 and Section 307(b) of the Clean Water Act. This notice shall include an evaluation of the POTW's ability to adequately transport and treat the added flow and/or waste load, the quality and volume of effluent to be discharged to the POTW, and the anticipated impact on the Permittee's effluent [40 CFR 122.42(b)].

E. Infiltration and Inflow Evaluation

1. The Permittee shall conduct an infiltration and inflow evaluation. Refer to the U.S. EPA publication, *I/I Analysis and Project Certification*, available as Publication No. 97-03 at: Publications Office, Department of Ecology, P.O. Box 47600, Olympia, Washington 98504-7600. Plant monitoring records may be used to assess measurable infiltration and inflow.

2. A report shall be prepared which summarizes any measurable infiltration and inflow. If infiltration and inflow have increased by more than 15 percent from that found in the first report based on equivalent rainfall, the report shall contain a plan and a schedule for: (1) locating the sources of infiltration and inflow; and (2) correcting the problem.
3. The report shall be submitted by **July 15, 2005**, and **annually** thereafter.

F. Waste load Assessment

The Permittee shall conduct an **annual** assessment of their flow and waste load and submit a report to the Department by **March 15, 2005**, and annually thereafter. The report shall contain the following: an indication of compliance or noncompliance with the permit effluent limitations; a comparison between the existing and design monthly average dry weather and wet weather flows, peak flows, BOD, and total suspended solids loadings; and (except for the first report) the percentage increase in these parameters since the last annual report. The report shall also state the present and design population or population equivalent, projected population growth rate, and the estimated date upon which the design capacity is projected to be reached, according to the most restrictive of the parameters above. The interval for review and reporting may be modified if the Department determines that a different frequency is sufficient.

S5. OPERATION AND MAINTENANCE

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, which are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of this permit.

A. Certified Operator

An operator certified for at least a Class II plant by the state of Washington shall be in responsible charge of the day-to-day operation of the wastewater treatment plant. An operator certified for at least a Class I plant shall be in charge during all regularly scheduled shifts.

B. O & M Program

The Permittee shall institute an adequate operation and maintenance program for the entire sewage system. Maintenance records shall be maintained on all major electrical and mechanical components of the treatment plant, as well as the sewage system and pumping stations. Such records shall clearly specify the frequency and type of maintenance recommended by the manufacturer and shall show the frequency and type of maintenance performed. These maintenance records shall be available for inspection at all times.

C. Short-term Reduction

If a Permittee contemplates a reduction in the level of treatment that would cause a violation of permit discharge limitations on a short-term basis for any reason, and such reduction cannot be avoided, the Permittee shall give written notification to the Department, if possible, 30 days prior to such activities, detailing the reasons for, length of time of, and the potential effects of the reduced level of treatment. This notification does not relieve the Permittee of its obligations under this permit.

D. Electrical Power Failure

The Permittee is responsible for maintaining adequate safeguards to prevent the discharge of untreated wastes or wastes not treated in accordance with the requirements of this permit during electrical power failure at the treatment plant and/or sewage lift stations either by means of alternate power sources, standby generator, or retention of inadequately treated wastes.

The Permittee shall maintain Reliability Class II (EPA 430-99-74-001) at the wastewater treatment plant, which requires a backup power source sufficient to operate all vital components and critical lighting and ventilation during peak wastewater flow conditions

E. Prevent Connection of Inflow

The Permittee shall work within the City of LaCenter to not allow the connection of inflow (roof drains, foundation drains, etc.) to the sanitary sewer system.

F. Bypass Procedures

Bypass, which is the intentional diversion of waste streams from any portion of a treatment facility, is prohibited, and the Department may take enforcement action against a Permittee for bypass unless one of the following circumstances (1, 2, or 3) is applicable.

1. Bypass for essential maintenance without the potential to cause violation of permit limits or conditions.

Bypass is authorized if it is for essential maintenance and does not have the potential to cause violations of limitations or other conditions of this permit, or adversely impact public health as determined by the Department prior to the bypass. The Permittee shall submit prior notice, if possible at least 10 days before the date of the bypass.

2. Bypass which is unavoidable, unanticipated and results in noncompliance of this permit.

This bypass is permitted only if:

- a. Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of

natural resources which can reasonably be expected to occur in the absence of a bypass.

- b. There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment downtime (but not if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance), or transport of untreated wastes to another treatment facility.
 - c. The Department is properly notified of the bypass as required in Condition S3E of this permit.
3. Bypass which is anticipated and has the potential to result in noncompliance of this permit

The Permittee shall notify the Department at least 30 days before the planned date of bypass. The notice shall contain: (1) a description of the bypass and its cause; (2) an analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing; (3) a cost-effectiveness analysis of alternatives including comparative resource damage assessment; (4) the minimum and maximum duration of bypass under each alternative; (5) a recommendation as to the preferred alternative for conducting the bypass; (6) the projected date of bypass initiation; (7) a statement of compliance with State Environmental Policy Act (SEPA); (8) a request for modification of water quality standards as provided for in WAC 173-201A-110, if an exceedance of any water quality standard is anticipated; and (9) steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.

For probable construction bypasses, the need to bypass is to be identified as early in the planning process as possible. The analysis required above shall be considered during preparation of the engineering report or facilities plan and plans and specifications and shall be included to the extent practical. In cases where the probable need to bypass is determined early, continued analysis is necessary up to and including the construction period in an effort to minimize or eliminate the bypass.

The Department will consider the following prior to issuing an administrative order for this type bypass:

- a. If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.
- b. If there are feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.

- c. If the bypass is planned and scheduled to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, the Department will approve or deny the request. The public shall be notified and given an opportunity to comment on bypass incidents of significant duration, to the extent feasible. Approval of a request to bypass will be by administrative order issued by the Department under Revised Code of Washington (RCW) 90.48.120.

G. Operations and Maintenance Manual

The approved Operations and Maintenance Manual shall be kept available at the treatment plant and all operators shall follow the instructions and procedures of this manual.

An Operations and Maintenance (O&M) Manual shall be prepared by the Permittee in accordance with WAC 173-240-080 and be submitted to the Department for approval by **October 15, 2004**. In addition to requirements of WAC 173-240-080 (1) through (5) the O&M Manual shall include:

1. Emergency procedures for plant shutdown and cleanup in event of wastewater system upset or failure.
2. Wastewater system maintenance procedures that contribute to the generation of process wastewater
3. Any directions to maintenance staff when cleaning, or maintaining other equipment or performing other tasks which are necessary to protect the operation of the wastewater system (e.g. defining maximum allowable discharge rate for draining a tank, blocking all floor drains before beginning the overhaul of a stationary engine.)
4. The treatment plant process control monitoring schedule.

The O&M Manual shall be reviewed by the Permittee at least annually and the Permittee shall confirm this review by letter to the Department. Substantial changes or updates to the O&M Manual shall be submitted to the Department whenever they are incorporated into the manual.

S6. PRETREATMENT

A. General Requirements

The Permittee shall work with the Department to ensure that all commercial and industrial users of the publicly owned treatment works (POTW) are in compliance with the pretreatment regulations promulgated in 40 CFR Part 403 and any additional regulations that may be promulgated under Section 307(b) (pretreatment) and 308 (reporting) of the Federal Clean Water Act.

B. Wastewater Discharge Permit Required

The Permittee shall not allow significant industrial users (SIUs) to discharge wastewater to the Permittee's sewerage system until such user has received a wastewater discharge permit from the Department in accordance with Chapter 90.48 RCW and Chapter 173-216 WAC, as amended.

C. Identification and Reporting of Existing, New, and Proposed Industrial Users

1. The Permittee shall take continuous, routine measures to identify all existing, new, and proposed SIUs and potential significant industrial users (PSIUs) discharging or proposing to discharge to the Permittee's sewerage system (see Appendix B of Fact Sheet for definitions).
2. Within 30 days of becoming aware of an unpermitted existing, new, or proposed industrial user who may be an SIU, the Permittee shall notify such user by registered mail that, if classified as an SIU, they shall be required to apply to the Department and obtain a State Waste Discharge Permit. A copy of this notification letter shall also be sent to the Department within this same 30-day period.
3. The Permittee shall also notify all PSIUs, as they are identified, that if their classification should change to an SIU, they shall be required to apply to the Department for a State Waste Discharge Permit within 30 days of such change.

D. Duty to Enforce Discharge Prohibitions

1. In accordance with 40 CFR 403.5(a), the Permittee shall not authorize or knowingly allow the discharge of any pollutants into its POTW which cause pass through or interference, or which otherwise violates general or specific discharge prohibitions contained in 40 CFR Part 403.5 or WAC-173-216-060.
2. The Permittee shall not authorize or knowingly allow the introduction of any of the following into their treatment works:
 - a. Pollutants which create a fire or explosion hazard in the POTW (including, but not limited to waste streams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in 40 CFR 261.21).
 - b. Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0, or greater than 11.0 standard units, unless the works are specifically designed to accommodate such discharges.
 - c. Solid or viscous pollutants in amounts that could cause obstruction to the flow in sewers or otherwise interfere with the operation of the POTW.

- d. Any pollutant, including oxygen demanding pollutants, (BOD, etc.) released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the POTW.
 - e. Petroleum oil, nonbiodegradable cutting oil, or products of mineral origin in amounts that will cause interference or pass through.
 - f. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity which may cause acute worker health and safety problems.
 - g. Heat in amounts that will inhibit biological activity in the POTW resulting in interference but in no case heat in such quantities such that the temperature at the POTW headworks exceeds 40°C (104°F) unless the Department, upon request of the Permittee, approves, in writing, alternate temperature limits.
 - h. Any trucked or hauled pollutants, except at discharge points designated by the Permittee.
 - i. Wastewaters prohibited to be discharged to the POTW by the Dangerous Waste Regulations (Chapter 173-303 WAC), unless authorized under the Domestic Sewage Exclusion (WAC 173-303-071).
3. All of the following are prohibited from discharge to the POTW unless approved in writing by the Department under extraordinary circumstances (such as a lack of direct discharge alternatives due to combined sewer service or the need to augment sewage flows due to septic conditions):
- a. Noncontact cooling water in significant volumes.
 - b. Stormwater, and other direct inflow sources.
 - c. Wastewaters significantly affecting system hydraulic loading, which do not require treatment, or would not be afforded a significant degree of treatment by the system.
4. The Permittee shall notify the Department if any industrial user violates the prohibitions listed in this section.

S7. RESIDUAL SOLIDS

Residual solids include screenings, grit, scum, primary sludge, waste activated sludge, and other solid waste. The Permittee shall store and handle all residual solids in such a manner so as to prevent their entry into state ground or surface waters. The Permittee shall not discharge leachate from residual solids to state surface or ground waters. The Permittee shall comply with WAC 173-308 and any associated order for handling biosolids.

A residual solid management plan is due once during the permit cycle by **December 15, 2005**.

S8. RECEIVING WATER AND EFFLUENT STUDY

The Permittee shall collect effluent and receiving water temperature and metals necessary to determine if the effluent has a reasonable potential to cause a violation of the water quality standards. If reasonable potential exists the Department will use this information to calculate effluent limits. All sampling and analysis shall be conducted in accordance with the guidelines given in *Guidelines and Specifications for Preparing Quality Assurance Project Plans*, Ecology Publication 91-16. The Permittee shall submit a sampling and quality assurance plan for Department review and approval by **September 15, 2004**.

The Permittee shall sample and analyze the receiving water for total suspended solids, hardness, temperature, pH, and alkalinity. The temperature shall be sampled using micro-recording thermographs commonly known as "TIDBITS." The TIDBITS may be installed prior to the beginning of the summer sampling season of June 1 and retrieved after October 31. The following items shall be reported to catalogue temperature: daily maximums, the 7-day running average of the daily maximums, and the monthly maximum of the 7-day running average of the daily maximum. When continuous recording is not available, temperature should be monitored during the mid-afternoon. A temperature and metals report with the information required by this section shall be due **annually**, with the first submittal due by **December 15, 2005**.

The following metals shall be analyzed for both total recoverable and dissolved: zinc, copper, and lead. The time of sampling shall be as close as possible to the summer critical season. The Permittee shall follow the clean sampling techniques (*Method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels*, EPA Publication No. 821-R-95-034, April 1995). The sampling station accuracy requirements are ± 20 meters. The receiving water sampling location should be upstream outside the zone of influence of the effluent. The Department considers ten receiving water samples to be the optimal data set and four to be the minimum, for determining reasonable potential to cause a violation of the water quality standards. However, as noted in the fact sheet, more samples may help reduce the statistical multiplier used in the reasonable potential analysis. All chemical analysis shall be conducted according to methods given in 40 CFR 136 and shall have the following detection levels:

POLLUTANT PARAMETER	DETECTION LIMIT REQUIRED
Copper	1.0 µg/L
Lead	1.0 µg/L
Zinc	2.0 µg/L

Any subsequent sampling and analysis shall also meet these requirements. The Permittee shall submit the results of each study **annually** to the Department by December 15th of each year with the first submittal due by **December 15, 2004**.

A. Effluent Analysis

The Permittee shall also analyze the wastewater discharge for total suspended solids, copper, lead, and zinc as specified in S2.A, coinciding with the ambient samples taken above. All analysis for metals must use the methods given in 40 CFR Part 136 and be reported as total recoverable. The detection levels used for the analysis must be:

POLLUTANT PARAMETER	DETECTION LIMIT REQUIRED
Copper	1.0 µg/L
Lead	1.0 µg/L
Zinc	2.0 µg/L

The Permittee should use the clean sampling guidance for collection of metals samples. Effluent samples shall be collected as 24-hour composite samples.

S9. ACUTE TOXICITY

A. Effluent Acute WET Testing

The Permittee shall conduct acute toxicity testing on the final effluent to determine the presence and amount of acute (lethal) toxicity. The two acute toxicity tests listed below shall be conducted on each sample taken from the effluent.

Effluent testing for acute toxicity shall be conducted **biannually for one year**. Acute toxicity testing shall follow protocols, monitoring requirements, and quality assurance/quality control procedures specified in this section. A dilution series consisting of a minimum of five concentrations and a control shall be used to estimate the concentration lethal to 50 percent of the organisms (LC₅₀). The percent survival in 100 percent effluent shall also be reported.

Testing shall begin within 60 days of the permit effective date. A written report shall be submitted to the Department within 60 days after the sample date. The acute toxicity data is due by **August 15, 2005**, and a summary report is due **December 15, 2005**. Acute toxicity tests shall be conducted with the following species and protocols:

1. Fathead minnow, *Pimephales promelas* (96 hour static-renewal test, method: EPA/600/4-90/027F).
2. Daphnid, *Ceriodaphnia dubia*, *Daphnia pulex*, or *Daphnia magna* (48 hour static test, method: EPA/600/4-90/027F). The Permittee shall choose one of the three species and use it consistently throughout effluent testing.

The Acute Critical Effluent Concentration (ACEC) means the maximum concentration of effluent during critical conditions at the boundary of the zone of acute criteria exceedance assigned pursuant to WAC 173-201A-100. The zone of acute criteria exceedance is authorized in Section S1 of this permit. The ACEC equals 50 percent effluent.

The Permittee may be required to conduct further testing if any acute toxicity test determines a statistically significant difference in survival between the control and the ACEC using hypothesis testing at the 0.05 level of significance (Appendix H, EPA/600/4-89/001). If the difference in survival between the control and the ACEC is

less than 10 percent, the hypothesis test shall be conducted at the 0.01 level of significance.

If toxicity occurs in samples with greater than 50 percent effluent during the monitoring, the Permittee shall submit a Toxicity Identification/Reduction Evaluation (TI/RE) plan to the Department. The TI/RE plan submittal shall be within 60 days after the final sample date. The TI/RE plan shall be based on WAC 173-205-100(2) and shall be implemented in accordance with WAC 173-205-100(3).

B. Sampling and Reporting Requirements

1. All reports for effluent WET testing or compliance monitoring shall be submitted in accordance with the most recent version of Department of Ecology Publication #WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* in regards to format and content. Reports shall contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data on floppy disk for electronic entry into the Department's database, then the Permittee shall send the disk to the Department along with the test report, bench sheets, and reference toxicant results.
2. Testing shall be conducted on 24-hour composite effluent samples. Composite samples taken for toxicity testing shall be cooled to 4 degrees Celsius while being collected and shall be sent to the lab immediately upon completion. Grab samples must be shipped on ice to the lab immediately upon collection. If a grab sample is received at the testing lab within one hour after collection, it must have a temperature below 20°C at receipt. If a grab sample is received at the testing lab within 4 hours after collection, it must be below 12°C at receipt. All other samples must be below 8°C at receipt. The lab shall begin the toxicity testing as soon as possible but no later than 36 hours after sampling was ended. The lab shall store all samples at 4°C in the dark from receipt until completion of the test.
3. All samples and test solutions for toxicity testing shall have water quality measurements as specified in Ecology Publication #WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* or most recent version thereof.
4. All toxicity tests shall meet quality assurance criteria and test conditions in the most recent versions of the EPA manual listed in subsection A and Ecology Publication #WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. If test results are determined to be invalid or anomalous by the Department, testing shall be repeated with freshly collected effluent.
5. Control water and dilution water shall be laboratory water meeting the requirements of the EPA manual listed in subsection A or pristine natural water of sufficient quality for good control performance.
6. The whole effluent toxicity tests shall be run on an unmodified sample of final effluent.

7. The Permittee may choose to conduct a full dilution series test during compliance monitoring in order to determine dose response. In this case, the series must have a minimum of five effluent concentrations and a control. The series of concentrations must include the ACEC.
8. All whole effluent toxicity tests, effluent screening tests, and rapid screening tests that involve hypothesis testing, and do not comply with the acute statistical power standard of 29 percent as defined in WAC 173-205-020, must be repeated on a fresh sample with an increased number of replicates to increase the power.

S10. CHRONIC TOXICITY

A. Effluent Chronic WET Testing

The Permittee shall conduct chronic toxicity testing on the final effluent. The two chronic toxicity tests listed below shall be conducted on each sample taken for effluent characterization.

Testing shall begin within 60 days of the permit effective date. The chronic toxicity characterization data is due by **August 15, 2005** and a summary report is due by **December 15, 2005**.

Effluent testing for chronic toxicity shall be conducted biannually for one year. The Permittee shall conduct chronic toxicity testing during effluent characterization on a series of at least five concentrations of effluent in order to determine appropriate point estimates. This series of dilutions shall include the ACEC. The Permittee shall compare the ACEC to the control using hypothesis testing at the 0.05 level of significance as described in Appendix H, EPA/600/4-89/001.

Freshwater Chronic Toxicity Test Species		Method
Fathead minnow	<i>Pimephales promelas</i>	EPA/600/4-91/002
Water flea	<i>Ceriodaphnia dubia</i>	EPA/600/4-91/002

- B. The Chronic Critical Effluent Concentration (CCEC) means the maximum concentration of effluent allowable at the boundary of the mixing zone assigned in Section S1 pursuant to WAC 173-201A-100. The CCEC equals 9.3 percent effluent.

Compliance with the effluent limit for chronic toxicity means no statistically significant difference in response between the control and the test concentration representing the Chronic Critical Effluent Concentration (CCEC). The Permittee may be required to conduct more testing if any chronic toxicity test conducted for compliance monitoring determines a statistically significant difference in response between the control and the CCEC using hypothesis testing at the 0.05 level of significance (Appendix H, EPA/600/4-89/001). If the difference in response between the control and the CCEC is less than 20%, the hypothesis test shall be conducted at the 0.01 level of significance.

In order to establish whether the chronic toxicity limit is eligible for removal from future permits, the Permittee shall also conduct this same hypothesis test (Appendix H,

EPA/600/4-89/001) to determine if a statistically significant difference in response exists between the CCEC and the control.

If toxicity occurs in samples with greater than 9.3 percent effluent (the CCEC) during the additional compliance monitoring, the Permittee shall submit a Toxicity Identification/Reduction Evaluation (TI/RE) plan to the Department. The TI/RE plan submittal shall be within 60 days after the final sample date. TI/RE plan shall be based on WAC 173-205-100(2) and shall be implemented in accordance with WAC 173-205-100(3).

C. Sampling and Reporting Requirements

1. All reports for effluent chronic WET testing or compliance monitoring shall be submitted in accordance with the most recent version of Ecology Publication #WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* in regards to format and content. Reports shall contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data on floppy disk for electronic entry into the Department's database, then the Permittee shall send the disk to the Department along with the test report, bench sheets, and reference toxicant results.
2. Testing shall be conducted on 24-hour composite effluent samples. Composite samples taken for toxicity testing shall be cooled to 4 degrees Celsius while being collected and shall be sent to the lab immediately upon completion. Grab samples must be shipped on ice to the lab immediately upon collection. If a grab sample is received at the testing lab within one hour after collection, it must have a temperature below 20°C at receipt. If a grab sample is received at the testing lab within 4 hours after collection, it must be below 12°C at receipt. All other samples must be below 8°C at receipt. The lab shall begin the toxicity testing as soon as possible but no later than 36 hours after sampling was ended. The lab shall store all samples at 4°C in the dark from receipt until completion of the test.
3. All samples and test solutions for toxicity testing shall have water quality measurements as specified in Ecology Publication #WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* or most recent version thereof.
4. All toxicity tests shall meet quality assurance criteria and test conditions in the most recent versions of the EPA manual listed in subsection A and Ecology Publication #WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. If test results are determined to be invalid or anomalous by the Department, testing shall be repeated with freshly collected effluent.
5. Control water and dilution water shall be laboratory water meeting the requirements of the EPA manual listed in subsection A or pristine natural water of sufficient quality for good control performance.
6. The whole effluent toxicity tests shall be run on an unmodified sample of final effluent.

7. The Permittee may choose to conduct a full dilution series test during compliance monitoring in order to determine dose response. In this case, the series must have a minimum of five effluent concentrations and a control. The series of concentrations must include the ACEC and the CCEC.
8. All whole effluent toxicity tests, effluent screening tests, and rapid screening tests that involve hypothesis testing, and do not comply with the chronic statistical power standard of 39 percent as defined in WAC 173-205-020, must be repeated on a fresh sample with an increased number of replicates to increase the power.

S11. OUTFALL EVALUATION

The Permittee shall inspect and report on the submerged portion of the outfall line and diffuser once during the permit cycle to document its integrity and continued function. If conditions allow for a photographic verification, it shall be included in the report. An inspection report shall be submitted to the Department by **September 15, 2007**.

GENERAL CONDITIONS

G1. SIGNATORY REQUIREMENTS

All applications, reports, or information submitted to the Department shall be signed and certified.

- A. All permit applications shall be signed by either a principal executive officer or a ranking elected official.
- B. All reports required by this permit and other information requested by the Department shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - 1. The authorization is made in writing by a person described above and submitted to the Department.
 - 2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
- C. Changes to authorization. If an authorization under paragraph B.2 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph B.2 above must be submitted to the Department prior to or together with any reports, information, or applications to be signed by an authorized representative.
- D. Certification. Any person signing a document under this section shall make the following certification:

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

G2. RIGHT OF INSPECTION AND ENTRY

The Permittee shall allow an authorized representative of the Department, upon the presentation of credentials and such other documents as may be required by law:

- A. To enter upon the premises where a discharge is located or where any records must be kept under the terms and conditions of this permit.
- B. To have access to and copy - at reasonable times and at reasonable cost - any records required to be kept under the terms and conditions of this permit.
- C. To inspect - at reasonable times - any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.
- D. To sample or monitor - at reasonable times - any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act.

G3. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated either at the request of any interested person (including the Permittee) or upon the Department's initiative. However, the permit may only be modified, revoked and reissued, or terminated for the reasons specified in 40 CFR 122.62, 122.64 or WAC 173-220-150 according to the procedures of 40 CFR 124.5.

- A. The following are causes for terminating this permit during its term, or for denying a permit renewal application:
 - 1. Violation of any permit term or condition.
 - 2. Obtaining a permit by misrepresentation or failure to disclose all relevant facts.
 - 3. A material change in quantity or type of waste disposal.
 - 4. A determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations and can only be regulated to acceptable levels by permit modification or termination [40 CFR Part 122.64(3)].
 - 5. A change in any condition that requires either a temporary or permanent reduction, or elimination of any discharge or sludge use or disposal practice controlled by the permit [40 CFR Part 122.64(4)].
 - 6. Nonpayment of fees assessed pursuant to RCW 90.48.465.
 - 7. Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090.
- B. The following are causes for modification but not revocation and reissuance except when the Permittee requests or agrees:
 - 1. A material change in the condition of the waters of the state.
 - 2. New information not available at the time of permit issuance that would have justified the application of different permit conditions.

3. Material and substantial alterations or additions to the permitted facility or activities which occurred after this permit issuance.
4. Promulgation of new or amended standards or regulations having a direct bearing upon permit conditions, or requiring permit revision.
5. The Permittee has requested a modification based on other rationale meeting the criteria of 40 CFR Part 122.62.
6. The Department has determined that good cause exists for modification of a compliance schedule, and the modification will not violate statutory deadlines.
7. Incorporation of an approved local pretreatment program into a municipality's permit.

C. The following are causes for modification or alternatively revocation and reissuance:

1. Cause exists for termination for reasons listed in A1 through A7 of this section, and the Department determines that modification or revocation and reissuance is appropriate.
2. The Department has received notification of a proposed transfer of the permit. A permit may also be modified to reflect a transfer after the effective date of an automatic transfer (General Condition G8) but will not be revoked and reissued after the effective date of the transfer except upon the request of the new Permittee.

G4. REPORTING PLANNED CHANGES

The Permittee shall, as soon as possible, but no later than 60 days prior to the proposed changes, give notice to the Department of planned physical alterations or additions to the permitted facility, production increases, or process modification which will result in: 1) the permitted facility being determined to be a new source pursuant to 40 CFR 122.29(b); 2) a significant change in the nature or an increase in quantity of pollutants discharged; or 3) a significant change in the Permittee's sludge use or disposal practices. Following such notice, and the submittal of a new application or supplement to the existing application, along with required engineering plans and reports, this permit may be modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any pollutants not previously limited. Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by this permit constitutes a violation of the terms and conditions of this permit.

G5. PLAN REVIEW REQUIRED

Prior to constructing or modifying any wastewater control facilities, an engineering report and detailed plans and specifications shall be submitted to the Department for approval in accordance with Chapter 173-240 WAC. Engineering reports, plans, and specifications shall be submitted at least 180 days prior to the planned start of construction unless a shorter time is approved by the Department. Facilities shall be constructed and operated in accordance with the approved plans.

G6. COMPLIANCE WITH OTHER LAWS AND STATUTES

Nothing in this permit shall be construed as excusing the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

G7. DUTY TO REAPPLY

The Permittee shall apply for permit renewal by **November 15, 2008**.

G8. TRANSFER OF THIS PERMIT

In the event of any change in control or ownership of facilities from which the authorized discharge emanate, the Permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the Department.

A. Transfers by Modification

Except as provided in paragraph (B) below, this permit may be transferred by the Permittee to a new owner or operator only if this permit has been modified or revoked and reissued under 40 CFR 122.62(b)(2), or a minor modification made under 40 CFR 122.63(d), to identify the new Permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

B. Automatic Transfers

This permit may be automatically transferred to a new Permittee if:

1. The Permittee notifies the Department at least 30 days in advance of the proposed transfer date.
2. The notice includes a written agreement between the existing and new Permittees containing a specific date transfer of permit responsibility, coverage, and liability between them.
3. The Department does not notify the existing Permittee and the proposed new Permittee of its intent to modify or revoke and reissue this permit. A modification under this subparagraph may also be minor modification under 40 CFR 122.63. If this notice is not received, the transfer is effective on the date specified in the written agreement.

G9. REDUCED PRODUCTION FOR COMPLIANCE

The Permittee, in order to maintain compliance with its permit, shall control production and/or all discharges upon reduction, loss, failure, or bypass of the treatment facility until the facility is restored or an alternative method of treatment is provided. This requirement applies in the situation where, among other things, the primary source of power of the treatment facility is reduced, lost, or fails.

G10. REMOVED SUBSTANCES

Collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall not be resuspended or reintroduced to the final effluent stream for discharge to state waters.

G11. DUTY TO PROVIDE INFORMATION

The Permittee shall submit to the Department, within a reasonable time, all information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee shall also submit to the Department upon request, copies of records required to be kept by this permit.

G12. OTHER REQUIREMENTS OF 40 CFR

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

G13. ADDITIONAL MONITORING

The Department may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

G14. PAYMENT OF FEES

The Permittee shall submit payment of fees associated with this permit as assessed by the Department.

G15. PENALTIES FOR VIOLATING PERMIT CONDITIONS

Any person who is found guilty of willfully violating the terms and conditions of this permit shall be deemed guilty of a crime, and upon conviction thereof shall be punished by a fine of up to \$10,000 and costs of prosecution, or by imprisonment in the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of a waste discharge permit shall incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to \$10,000 for every such violation. Each and every such violation shall be a separate and distinct offense, and in case of a continuing violation, every day's continuance shall be deemed to be a separate and distinct violation.

G16. UPSET

Definition – "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that: 1) an upset occurred and that the Permittee can identify the cause(s) of the upset; 2) the permitted facility was being properly operated at the time of the upset; 3) the Permittee submitted notice of the upset as required in Condition S3.E; and 4) the Permittee complied with any remedial measures required under S4.C of this permit.

In any enforcement proceeding the Permittee seeking to establish the occurrence of an upset has the burden of proof.

G17. PROPERTY RIGHTS

This permit does not convey any property rights of any sort, or any exclusive privilege.

G18. DUTY TO COMPLY

The Permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

G19. TOXIC POLLUTANTS

The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

G20. PENALTIES FOR TAMPERING

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this Condition, punishment shall be a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four years, or by both.

G21. REPORTING ANTICIPATED NON-COMPLIANCE

The Permittee shall give advance notice to the Department by submission of a new application or supplement thereto at least 180 days prior to commencement of such discharges, of any facility expansions, production increases, or other planned changes, such as process modifications, in the permitted facility or activity which may result in noncompliance with permit limits or conditions. Any maintenance of facilities, which might necessitate unavoidable interruption of operation and degradation of effluent quality, shall be scheduled during noncritical water quality periods and carried out in a manner approved by the Department.

G22. REPORTING OTHER INFORMATION

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to the Department, it shall promptly submit such facts or information.

G23. COMPLIANCE SCHEDULES

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

DRAFT

Page 1 of 50
Permit No. WA0023230



Issuance Date: _____
Effective Date: _____
Expiration Date: _____

**National Pollutant Discharge Elimination System
Waste Discharge Permit No. WA0023230**

State of Washington
DEPARTMENT OF ECOLOGY
Olympia, Washington 98504-7775
Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775

In compliance with the provisions of
The State of Washington Water Pollution Control Law
Chapter 90.48 Revised Code of Washington
and
The Federal Water Pollution Control Act
(The Clean Water Act)
Title 33 United States Code, Section 1342 et seq.

**City of La Center
214 East 4th Street
La Center, Washington 98629**

is authorized to discharge in accordance with the Special and General Conditions that follow.

Plant Location:
La Center Sewage Treatment Plant
101 Aspen Avenue,
La Center, Washington 98629

Receiving Water: East Fork Lewis River

Water Body ID: 1225781459549

Treatment Type: Membrane Bioreactor with UV disinfection.

Robert W. Bergquist, LEED® AP
Southwest Region Manager
Water Quality Program
Washington State Department of Ecology

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Summary of Permit Report Submittals

Refer to the Special and General Conditions of this permit for additional submittal requirements.

Permit Section	Submittal	Frequency	First Submittal Date
S3.A	Discharge Monitoring Report	Monthly	<i>Reserved for Issuance</i>
S3.E	Reporting Permit Violations	As necessary	
S3.E	Reporting Permit Violations – Immediate Reporting	As necessary	
S3.E	Reporting Permit Violations – 24-Hour Reporting	As necessary	
S3.E	Reporting Permit Violations – Report within Five Days	As necessary	
S3.E	Reporting Permit Violations – All Other Reporting	Monthly as necessary	
S3.F	Other Reporting	As necessary	
S4.A	Declaration of Completion of Phase 1b	As necessary	
S4.B	Plans for Maintaining Adequate Capacity	As necessary	
S4.D	Notification of New or Altered Sources	As necessary	
S4.E	Infiltration and Inflow Evaluation	Annually	July 15, 2012
S4.F	Wasteload Assessment	Annually	March 15, 2012
S5.F	Bypass Notification	As necessary	
S5.G	Operations and Maintenance Manual Submittal	Once	January 1, 2012
S5.G	Operations and Maintenance Manual Update or Review Confirmation Letter	Annually	January 15, 2012
S6.E	Annual List of Industrial Users	Annually	March 15, 2012
S8	Application for Permit Renewal	1/permit cycle	<i>Reserved for Issuance</i>
S9	Stormwater Permit Evaluation	1/permit cycle	60 days after Phase 1b
S10	Outfall Evaluation	1/permit cycle	September 1, 2015
S11.A	Acute Toxicity Characterization Data	2/permit cycle	August 15, 2012
S11.D	Acute Toxicity Compliance Monitoring Reports	As necessary	May 15, 2013
S11.E	Acute Toxicity: “Causes and Preventative Measures for Transient Events”	As necessary	
S11.E	Acute Toxicity TI/TRE Plan	As necessary	

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Permit Section	Submittal	Frequency	First Submittal Date
S11.E	Acute Toxicity Effluent Test Results with Permit Renewal Application	Submit 2 test results	<i>Reserved for Issuance</i>
S12.A	Chronic Toxicity Effluent Test Results with Permit Renewal Application	Submit 2 test results	<i>Reserved for Issuance</i>
G1	Notice of Change in Authorization	As necessary	
G4	Reporting Planned Changes	As necessary	
G5	Engineering Report for Construction or Modification Activities	As necessary	
G7	Notice of Permit Transfer	As necessary	
G10	Duty to Provide Information	As necessary	
G13	Payment of Fees	As assessed	
G20	Compliance Schedules	As necessary	
G21	Contract Submittal	As necessary	

SPECIAL CONDITIONS**S1. DISCHARGE LIMITS****A. Effluent Limits**

All discharges and activities authorized by this permit must comply with the terms and conditions of this permit. The discharge of any of the following pollutants more frequently than, or at a level in excess of, that identified and authorized by this permit violates the terms and conditions of this permit.

Beginning on the effective date of this permit and lasting through the expiration date, the Permittee may discharge municipal wastewater to the East Fork of the Lewis River at the permitted location subject to compliance with the following limits:

Effluent Limits: Outfall # 001		
Latitude: 45.85944 Longitude: -122.67146		
Parameter	Average Monthly ^a	Average Weekly ^b
Biochemical Oxygen Demand (5-day) (BOD ₅)	30 mg/L 173 lbs/day (phase 1A) 260 lbs/day (phase 1B) ^c 85% removal of influent BOD ₅	45 mg/L 260 lbs/day (phase 1A) 390 lbs/day (phase 1B) ^c
Total Suspended Solids (TSS)	30 mg/L 161 lbs/day (phase 1A) 237 lbs/day (phase 1B) ^c 85% removal of influent TSS	45 mg/L 242 lbs/day (phase 1A) 356 lbs/day (phase 1B) ^c
Parameter	Daily Minimum	Daily Maximum
pH	6.0 Standard Units	9.0 Standard Units
Parameter	Monthly Geometric Mean	7-Day Geometric Mean
Fecal Coliform Bacteria ^d	100/100 milliliter (mL)	200/100 mL
Phase 1A Limits	Average Monthly	Maximum Daily ^e
Total Ammonia (as NH ₃ -N)	3.6 mg/L (June - October) 13.9 mg/L (November - May)	8.1 mg/L (June - October) 31.3 mg/L (November - May)
Phase 1B Limits ^c	Average Monthly	Maximum Daily ^e
Total Ammonia (as NH ₃ -N)	3.0 mg/L (June - October) 10.9 mg/L (November - May)	6.8 mg/L (June - October) 24.7 mg/L (November - May)
<p>a Average monthly effluent limit means the highest allowable average of daily discharges over a calendar month. To calculate the discharge value to compare to the limit, you add the value of each daily discharge measured during a calendar month and divide this sum by the total number of daily discharges measured. See footnote c for fecal coliform calculations.</p>		
<p>b Average weekly discharge limitation means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week. See footnote c for fecal coliform calculations.</p>		

Effluent Limits: Outfall # 001	
Latitude: 45.85944 Longitude: -122.67146	
c	Phase 1B limits are applicable beginning on the first day of the month following the receipt and acceptance by the Department of Ecology (Ecology) of a Declaration of Construction of Water Pollution Control Facilities [per Chapter 173-240 Washington Administrative Code (WAC)] by the Permittee for the Phase 1B facilities described in approved plans.
d	Ecology provides directions to calculate the monthly and the seven-day geometric mean in publication No. 04-10-020, Information Manual for Treatment Plant Operators available at: http://www.ecy.wa.gov/pubs/0410020.pdf
e	Maximum daily effluent limit is the highest allowable daily discharge. The daily discharge is the average discharge of a pollutant measured during a calendar day. For pollutants with limits expressed in units of mass, calculate the daily discharge as the total mass of the pollutant discharged over the day. This does not apply to pH or temperature.

B. Mixing Zone Authorization**Mixing Zone for Outfall No.001**

The following paragraphs define the maximum boundaries or flow-volume restriction of the mixing zones:

Chronic Mixing Zone

The width of the chronic mixing zone is limited to a distance of $\frac{1}{4}$ of the width of the river at the outfall location (mixing zone width = 21 feet). The length of the chronic mixing zone extends 100 feet upstream and 300 feet downstream of the outfall. The mixing zone extends from the discharge structure to the top of the water surface. The concentration of pollutants at the edge of the chronic zone must meet chronic aquatic life criteria and human health criteria. The chronic mixing zone is also limited to mixing with $\frac{1}{4}$ of the 7Q10 flows. Seasonally, the 7Q10 for the "summer" (defined as May-Nov inclusively) is 60.7 cfs (39.2 MGD), and for the "winter" (defined as Dec-Apr inclusively) is 189.2 cfs (120.5 MGD). For Phase 1A, the mixing at the chronic boundary based on volumetric flow limits is 15.2:1 in the summer, and 44.6:1 in the winter. For Phase 1B, the maximum allowable chronic mixing ratio is 10.4:1 in the summer, and 29.9:1 in the winter.

Acute Mixing Zone

The width of the acute mixing zone is also limited to $\frac{1}{4}$ of the river width (21 feet). The length of the authorized acute mixing zone extends 10 feet upstream and 30 feet downstream of the outfall. The mixing zone extends from the discharge structure to the top of the water surface. The concentration of pollutants at the edge of the acute zone must meet acute aquatic life criteria. For Phase 1A, the mixing at the acute boundary based on volumetric flow limits is 1.8:1 in the "summer", and 3.3:1 in the "winter". For Phase 1B, the maximum

allowable chronic mixing ratio is 1.5:1 in the "summer", and 2.6:1 in the "winter."

Available Dilution (dilution factor:1) – Phase 1A		Phase 1B
Criteria	Summer/Winter	Summer/Winter
Acute Aquatic Life Criteria	1.8 / 3.3	1.5 / 2.6
Chronic Aquatic Life Criteria	15.2 / 44.6	10.4 / 29.9
Human Health Criteria - Carcinogen	15.2 / 44.6	10.4 / 29.9
Human Health Criteria - Non-carcinogen	15.2 / 44.6	10.4 / 29.9

S2. MONITORING REQUIREMENTS

A. Monitoring Schedule

The Permittee must monitor in accordance with the following schedule and the requirements specified in Appendix A.

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
(1) Wastewater Influent			
Wastewater Influent means the raw sewage flow from the collection system into the treatment facility. Sample the wastewater entering the headworks of the treatment plant excluding any side-stream returns from inside the plant.			
BOD ₅	mg/L	2/week ⁸	24-hour Composite
	lbs/day	2/week ⁸	Calculation ⁹
TSS	mg/L	2/week ⁸	24-hour Composite
	lbs/day	2/week ⁸	Calculation ⁹
(2) Final Wastewater Effluent			
Final Wastewater Effluent means wastewater exiting the last treatment process or operation which means sampling after the UV disinfection process for this Permittee.			
Flow	MGD	Continuous ¹	Recording
BOD ₅	mg/L	2/week ⁸	24-hour Composite ²
	lbs/day	2/week ⁸	Calculation ⁹
	% removal ³	2/week ⁸	Calculation
TSS	mg/L	2/week ⁸	24-hour Composite ²
	lbs/day	2/week ⁸	Calculation ⁹
	% removal	2/week ⁸	Calculation ³

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
Fecal Coliform	#Organisms /100 ml or MPN/100 ml ⁵	2/week ⁸	Grab ⁷
pH ⁴	Standard Units	Continuous ^{1,11}	Measurement
Total Ammonia (as NH3-N)	mg/L	2/week ⁸	24-hour Composite ²
Temperature	Degrees centigrade (°C)	Continuous ^{1,12}	Measurement
7-DAD Max Temperature ^x	°C	Daily ¹³	Calculated
(3) Whole Effluent Toxicity Testing – Final Wastewater Effluent			
Acute Toxicity Testing	Survival	Annually	As per S11
Chronic Toxicity Testing	Survival	Annually	As per S12
Additional requirements specified in Permit Condition S11 and S12 apply or may apply if triggered by the results of the WET testing.			
(4) Effluent Characterization – Final Wastewater Effluent			
Total Phosphorus	mg/L as P	Quarterly ¹⁰ 2012 & 2013	24-hour Composite ²
Ortho-Phosphorus (PO4)	mg/L as P	Quarterly ¹⁰ 2012 & 2013	24-hour Composite ²
Nitrate-Nitrite Nitrogen	mg/L as N	Quarterly ¹⁰ 2012 & 2013	24-hour Composite ²
Total Kjeldahl Nitrogen (TKN)	mg/L as N	Quarterly ¹⁰ 2012 & 2013	24-hour Composite ²
(5) Permit Renewal Application Requirements – Final Wastewater Effluent			
The Permittee must record and report the wastewater treatment plant flow discharged on the day it collects the sample for priority pollutant testing with the discharge monitoring report.			
Total Residual Chlorine ⁶	mg/L	Annually	Grab ⁷
Dissolved Oxygen	mg/L	Annually	Grab ⁷
Total Kjeldahl Nitrogen	mg/L as N	Annually	24-hour composite ²
Nitrate plus Nitrite	mg/L as N	Annually	24-hour composite ²
Oil and Grease	mg/L	Annually	Grab ⁷
Phosphorus (Total)	mg/L as P	Annually	24-hour composite ²
Total Dissolved Solids	mg/L	Annually	24-hour composite ²
Total Hardness	mg/L	Annually	24-hour composite ²

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
The Permittee must sample annually for the following pollutants upon providing declaration of completion of phase 1B, but must also have four samples of each for an acceptable permit reapplication if Phase 1B is complete before this permit expires:			
Cyanide	µg/L ¹⁴	Annually ¹⁵	Grab ⁷
Total Phenolic Compounds ¹⁴	µg/L ¹⁴	Annually ¹⁵	Grab ⁷
Priority Pollutants (PP) – Total Metals ¹⁴	µg/L ¹⁴ ; ng/L for mercury ¹⁴	Annually ¹⁵	24-Hour composite ² Grab for mercury
PP – Volatile Organic Compounds ¹⁴	µg/L ¹⁴	Annually ¹⁵	Grab ⁷
PP – Acid-extractable Compounds ¹⁴	µg/L ¹⁴	Annually ¹⁵	24-Hour composite ²
PP – Base-neutral Compounds ¹⁴	µg/L ¹⁴	Annually ¹⁵	24-Hour composite ²

FOOTNOTES

- Continuous means uninterrupted except for brief lengths of time for calibration, for power failure, or for unanticipated equipment repair or maintenance. The Permittee must take a grab sample or instantaneous measurement (as appropriate to the analyte) every six hours when continuous monitoring is not possible.
- Twenty-four (24)-hour composite means a series of individual samples collected over a 24-hour period into a single container, and analyzed as one sample. If the sampler can take composite samples, the sample should be flow paced.
- $$\% \text{ removal} = \frac{(\text{Influent concentration (mg/L)} - \text{Effluent concentration (mg/L)}) \times 100}{\text{Influent BOD}_5 \text{ (mg/L)}}$$

Calculate the percent (%) removal of BOD₅ and TSS using the above equation.
- The Permittee must report the instantaneous maximum and minimum pH daily. Do not average pH values.
- Report a numerical value for fecal coliforms following the procedures in Ecology's *Information Manual for Wastewater Treatment Plant Operators*, Publication Number 04-10-020 available at: <http://www.ecy.wa.gov/programs/wq/permits/guidance.html>. Do not report a result as Too Numerous To Count (TNTC).
- Monitor total chlorine residual when using normal chlorine levels for process control purposes.
- Grab means an individual sample collected over a 15 minute, or less, period. Where significant variability is suspected, take measures to provide data representative of a 24-hour period (multiple grab samples analyzed separately or composited as allowed by the method) to avoid unrepresentative data since it will be used to establish permit conditions and/or compliance.

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
8	2/week means two (2) times during each calendar week and on a rotational basis throughout the days of the week.		
9	Calculation means figured concurrently with the respective sample, using the following formula: Concentration (in mg/L) X Flow (in MGD) X Conversion Factor (8.34) = lbs/day		
10	Quarterly sampling periods are January through March, April through June, July through September, and October through December.		
11	Report the daily minimum and maximum pH.		
12	When measuring temperature continuously, the Permittee must determine and report a daily maximum from half-hour measurements in a 24-hour period. Continuous monitoring instruments must achieve an accuracy of 0.2 degrees C and the Permittee must verify accuracy annually. Temperature grab sampling (when continuous monitoring fails) must occur when the effluent is at or near its daily maximum temperature, which usually occurs in the late afternoon.		
13	Calculate a seven day average of daily maximum temperatures (7-DADM) for each day by averaging each day's maximum temperature value with the values from the six preceding days.		
14	<ul style="list-style-type: none"> • See Appendix A for the required detection (DL) or quantitation (QL) levels. • Report single analytical values below detection as "less than (detection level)" where (detection level) is the numeric value specified in attachment A. • Report single analytical values between the agency-required detection and quantitation levels with qualifier code of j following the value. • To calculate the average value (monthly average): <ul style="list-style-type: none"> • Use the reported numeric value for all parameters measured between the agency-required detection value and the agency-required quantitation value. • For values reported below detection, use one-half the detection value if the lab detected the parameter in another sample for the reporting period. • For values reported below detection, use zero if the lab did not detect the parameter in another sample for the reporting period. <p>If the Permittee is unable to obtain the required DL and QL in its effluent due to matrix effects, the Permittee must submit a matrix-specific detection limit (MDL) and a quantitation limit (QL) to Ecology with appropriate laboratory documentation.</p>		
15	Annually is defined January through December.		

B. Sampling and Analytical Procedures

Samples and measurements taken to meet the requirements of this permit must represent the volume and nature of the monitored parameters. The Permittee must conduct representative sampling of any unusual discharge or discharge condition, including bypasses, upsets, and maintenance-related conditions that may affect effluent quality.

Sampling and analytical methods used to meet the monitoring requirements specified in this permit must conform to the latest revision of the *Guidelines Establishing Test Procedures for the Analysis of Pollutants* contained in 40 Code of Federal Regulations (CFR) Part 136.

C. Flow Measurement, Field Measurement and Continuous Monitoring Devices

The Permittee must:

1. Select and use appropriate flow measurement, field measurement, and continuous monitoring devices and methods consistent with accepted scientific practices.
2. Install, calibrate, and maintain these devices to ensure the accuracy of the measurements is consistent with the accepted industry standard and the manufacturer's recommendation for that type of device.
3. Calibrate continuous monitoring instruments (except for flow) weekly or demonstrate through monitoring records that a longer period is sufficient. The Permittee:
 - a. May calibrate apparatus for continuous monitoring of dissolved oxygen by air calibration.
 - b. Must calibrate continuous pH measurement instruments using a grab sample analyzed in the lab with a pH meter calibrated with standard buffers and analyzed within 15 minutes of sampling.
4. Calibrate micro-recording temperature devices, known as thermistors, if used, using protocols from Ecology's Quality Assurance Project Plan Development Tool (Continuous Temperature Sampling Protocols for the Environmental Monitoring and Trends). This document is available online at: <http://www.ecy.wa.gov/programs/eap/qa/docs/QAPPtool/Mod6%20Ecology%20SOPs/Protocols/ContinuousTemperatureSampling.pdf>
Calibration as specified in this document is not required if the Permittee uses recording devices certified by the manufacturer.
5. Use field measurement devices as directed by the manufacturer and do not use reagents beyond their expiration dates.
6. Calibrate flow monitoring devices at a minimum frequency of at least one calibration per year.
7. Maintain calibration records for at least three years.

D. Laboratory Accreditation

The Permittee must ensure that all monitoring data required by Ecology is prepared by a laboratory registered or accredited under the provisions of chapter 173-50 WAC, Accreditation of Environmental Laboratories. Flow, temperature, settleable solids, and internal process control parameters are exempt from this requirement.

S3. REPORTING AND RECORDING REQUIREMENTS

The Permittee must monitor and report in accordance with the following conditions. Falsification of information submitted to Ecology is a violation of the terms and conditions of this permit.

A. Reporting

The first monitoring period begins on the effective date of the permit. The Permittee must:

1. Summarize, report, and submit monitoring data obtained during each monitoring period on a Discharge Monitoring Report (DMR) form provided, or otherwise approved, by Ecology. Include a summary listing daily results for the parameters tabulated in Special Condition S2, including MDLs and QLs (when applicable). If submitting DMRs electronically, report a value for each day sampling occurred and for the summary values (when applicable) included on the form.
2. Submit the form as required with the words "no discharge" entered in place of the monitoring results, if the facility did not discharge during a given monitoring period. If submitting DMRs electronically, you must enter "no discharge" for an entire DMR, for a specific monitoring point, or for a specific parameter as appropriate.
3. Report the test method, the DL, and the QL on the discharge monitoring report or in the required report, if the Permittee used an alternative method not specified in the permit and as allowed in Appendix A.
4. Include the following information (for priority pollutant organic and metal parameters lab reports): sampling date, sample location, date of analysis, parameter name, CAS number, analytical method/number, method detection limit (MDL), laboratory practical quantitation limit (PQL), reporting units, and concentration detected. The Permittee must submit a copy of the contract laboratory report to provide this information. Analytical results from samples sent to a contract laboratory must also include information on the chain of custody, QA/QC results, and documentation of accreditation for the parameter. If the Permittee submits electronic DMRs, then it must attach an electronic file of the lab report to the electronic DMR.
5. Ensure that DMR forms are postmarked or received by Ecology no later than the dates specified below, unless otherwise specified in this permit. If submitting DMRs electronically, submit the DMR no later than the dates specified below, unless otherwise specified in this permit.
6. Submit DMRs for parameters with the monitoring frequencies specified in S2 (monthly, quarterly, annual, etc.) at the reporting schedule identified below. The Permittee must:
 - a. Submit **monthly** DMRs which include monitoring results for all analyses and measurements required by section S2 at a monthly or more frequent schedule by the 15th day of the following month.
 - b. Submit **quarterly DMRs**, unless otherwise specified in this permit, by the 15th day of the month following the monitoring period. Quarterly sampling periods are January through March, April through June, July through September, and October through December.

- c. Submit **annual DMRs**, unless otherwise specified in the permit, by January 15 for the previous calendar year. The annual sampling period is the calendar year.
7. Submit reports to Ecology online using Ecology's electronic DMR submittal forms or send reports to Ecology at:

Water Quality Permit Coordinator
Department of Ecology
Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775

B. Records Retention

Retain records of all monitoring information for a minimum of three years. Maintain all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit. Extend this period of retention during the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by Ecology.

C. Recording of Results

For each measurement or sample taken, record the following information:

1. The date, exact place, method, and time of sampling or measurement
2. The individual who performed the sampling or measurement
3. The dates the analyses were performed
4. The individual who performed the analyses
5. The analytical techniques or methods used
6. The results of all analyses

D. Additional Monitoring by the Permittee

If the Permittee monitors any pollutant more frequently than required by Condition S2 of this permit, then the Permittee must include the results of such monitoring in the calculation and reporting of the data submitted in the Permittee's DMR.

E. Reporting Permit Violations

The Permittee must take the following actions when it violates or is unable to comply with any permit condition:

1. Immediately take action to stop, contain, and cleanup unauthorized discharges or otherwise stop the noncompliance and correct the problem.

2. If applicable, immediately repeat sampling and analysis. Submit the results of any repeat sampling to Ecology within thirty (30) days of sampling.

a. Immediate Reporting

The Permittee must immediately report to Ecology and the Local Health Jurisdiction (at the numbers listed below), all:

- Failures of the disinfection system.
- Collection system overflows.
- Plant bypasses discharging to surface waters.
- Any other failures of the sewage system (pipe breaks, etc.)

Southwest Regional Office (360)-407-6300
Clark County Health Department (360) 397-8083

b. Twenty-Four Hour Reporting

The Permittee must report the following occurrences of noncompliance by telephone, to Ecology at 360-407-6300, within 24 hours from the time the Permittee becomes aware of any of the following circumstances:

- 1) Any noncompliance that may endanger health or the environment, unless previously reported under immediate reporting requirements.
- 2) Any unanticipated bypass that causes an exceedance of an effluent limit in the permit (See Part S5.F, "Bypass Procedures").
- 3) Any upset that causes an exceedance of an effluent limit in the permit (See G.15, "Upset").
- 4) Any violation of a maximum daily or instantaneous maximum discharge limit for any of the pollutants in Section S1.A of this permit.
- 5) Any overflow prior to the treatment works, whether or not such overflow endangers health or the environment or exceeds any effluent limit in the permit.

c. Report Within Five Days

The Permittee must also provide a written submission within five days of the time that the Permittee becomes aware of any reportable event under subparts a or b, above. The written submission must contain:

- 1) A description of the noncompliance and its cause.

- 2) The period of noncompliance, including exact dates and times.
- 3) The estimated time the Permittee expects the noncompliance to continue if not yet corrected.
- 4) Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
- 5) If the noncompliance involves an overflow prior to the treatment works, an estimate of the quantity (in gallons) of untreated overflow.

d. Waiver of Written Reports

Ecology may waive the written report required in subpart c, above, on a case-by-case basis upon request if the Permittee has submitted a timely oral report.

e. All other Permit Violation Reporting

The Permittee must report all permit violations, which do not require immediate or within 24 hours reporting, when it submits monitoring reports for S3.A ("Reporting"). The reports must contain the information listed in subpart c, above. Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply.

f. Report Submittal

The Permittee must submit reports to the address listed in S3.A.

F. Other Reporting

The Permittee must report a spill of oil or hazardous materials in accordance with the requirements of Revised Code of Washington (RCW) 90.56.280 and chapter 173-303-145. You can obtain further instructions at the following website: <http://www.ecy.wa.gov/programs/spills/other/reportaspill.htm>.

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to Ecology, it must submit such facts or information promptly.

G. Maintaining a Copy of This Permit

The Permittee must keep a copy of this permit at the facility and make it available upon request to Ecology inspectors.

S4. FACILITY LOADING**A. Design Criteria**

The flows or waste loads for the permitted facility must not exceed the following design criteria. Phase 1a flows and loadings apply upon the effective date of this permit. Phase 1b flows and loadings apply beginning the first day of the month following receipt by Ecology of a declaration of construction of water pollution control facilities which attests to the construction of the phase 1b facility in accordance with approved plans and specifications for that project:

Parameter	Phase 1a	Phase 1b
Maximum Monthly Flow	0.69 MGD	1.04 MGD
Peak Day Flow	1.29 MGD	1.94 MGD
BOD ₅ Influent Loading for Maximum Month	1,297 lbs/day	1,804 lbs/day
TSS Influent Loading for Maximum Month	1,070 lbs/day	1,581 lbs/day
Ammonia (total as Nitrogen)	194 lbs/day	292 lbs/day

B. Plans for maintaining adequate capacity**1. Conditions triggering plan submittal**

The Permittee must submit a plan and a schedule for continuing to maintain capacity to Ecology when:

- a. The actual flow or waste load reaches 85 percent of any one of the design criteria in S4.A for three consecutive months.
- b. The projected plant flow or loading would reach design capacity within five years.

2. Plan and Schedule Content

The plan and schedule must identify the actions necessary to maintain adequate capacity for the expected population growth and to meet the limits and requirements of the permit. The Permittee must consider the following topics and actions in its plan.

- a. Analysis of the present design and proposed process modifications
- b. Reduction or elimination of excessive infiltration and inflow of uncontaminated ground and surface water into the sewer system
- c. Limits on future sewer extensions or connections or additional waste loads
- d. Modification or expansion of facilities

- e. Reduction of industrial or commercial flows or waste loads

Engineering documents associated with the plan must meet the requirements of WAC 173-240-060, "Engineering Report," and be approved by Ecology prior to any construction.

If the Permittee intends to apply for state or federal funding for the design or construction of a facility project, the plan may also need to meet the environmental review requirements as described in 40 CFR 35.3040 and 40 CFR 35.3045, and it may also need to demonstrate cost effectiveness as required by WAC 173-95-730. The plan must specify any contracts, ordinances, methods for financing, or other arrangements necessary to achieve this objective.

C. Duty to Mitigate

The Permittee must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

D. Notification of New or Altered Sources

1. The Permittee must submit written notice to Ecology whenever any new discharge or a substantial change in volume or character of an existing discharge into the wastewater treatment plant is proposed which:
 - a. Would interfere with the operation of, or exceed the design capacity of, any portion of the wastewater treatment plant.
 - b. Is not part of an approved general sewer plan or approved plans and specifications.
 - c. Is subject to pretreatment standards under 40 CFR Part 403 and Section 307(b) of the Clean Water Act.
2. This notice must include an evaluation of the wastewater treatment plant's ability to adequately transport and treat the added flow and/or waste load, the quality and volume of effluent to be discharged to the treatment plant, and the anticipated impact on the Permittee's effluent [40 CFR 122.42(b)].

E. Infiltration and Inflow Evaluation

1. The Permittee must conduct an annual infiltration and inflow evaluation for the annual period **June 1 through May 30th annually**. Refer to the U.S. EPA publication, I/I Analysis and Project Certification, available as Publication No. 97-03 at: <http://www.ecy.wa.gov/programs/wq/permits/guidance.html>
2. The Permittee may use monitoring records to assess measurable infiltration and inflow.
3. The Permittee must prepare a report summarizing any measurable infiltration and inflow. If infiltration and inflow have increased by more than 15 percent from

that found in the previous report based on equivalent rainfall, the report must contain a plan and a schedule to locate the sources of infiltration and inflow and to correct the problem.

4. The Permittee must submit a report summarizing the results of the evaluation and any recommendations for corrective actions by **July 15, 2012**, and **annually** thereafter.

F. Wasteload Assessment

The Permittee must conduct an annual assessment of its influent flow and waste load for each calendar year and submit a report to Ecology by **March 15, 2012**, and **annually** thereafter.

The report must contain:

1. A description of compliance or noncompliance with the permit effluent limits.
2. A comparison between the existing and design:
 - a. Average flows for each month.
 - b. Peak daily flow for each month.
 - c. Average BOD₅ loadings for each month, season, and year.
 - d. Average total suspended solids loadings for each month.
3. The percent change in the above parameters since the previous report (except for the first report).
4. The present and design population or population equivalent.
5. The projected population growth rate.
6. The estimated date upon which the Permittee expects the wastewater treatment plant to reach design capacity (as recognized in S4.A), according to the most restrictive of the parameters above.

Ecology may modify the interval for review and reporting if it determines that a different frequency is sufficient.

S5. OPERATION AND MAINTENANCE

The Permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances), which are installed to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes keeping a daily operation logbook (paper or electronic), adequate laboratory controls, and appropriate quality assurance procedures. This provision of the permit requires the Permittee to operate backup or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of this permit.

A. Certified Operator

This permitted facility must achieve ammonia limits consistent with a "tertiary" treatment facility. As such, and in accordance with WAC 173-230-140, it is a Class III POTW, and must be operated by an operator certified by the state of Washington for at least a Class III plant. This operator must be in responsible charge of the day-to-day operation of the wastewater treatment plant. An operator certified for at least a Class II plant must be in charge during all regularly scheduled shifts.

B. Operation and Maintenance Program

The Permittee must:

1. Institute an adequate operation and maintenance program for the entire sewage system.
2. Keep maintenance records on all major electrical and mechanical components of the treatment plant, as well as the sewage system and pumping stations. Such records must clearly specify the frequency and type of maintenance recommended by the manufacturer and must show the frequency and type of maintenance performed.
3. Make maintenance records available for inspection at all times.

C. Short-term Reduction

The Permittee must schedule any facility maintenance, which might require interruption of wastewater treatment and degrade effluent quality, during non-critical water quality periods and carry this maintenance out in a manner approved by Ecology.

If a Permittee contemplates a reduction in the level of treatment that would cause a violation of permit discharge limits on a short-term basis for any reason, and such reduction cannot be avoided, the Permittee must:

1. Give written notification to Ecology, if possible, 30 days prior to such activities.
2. Detail the reasons for, length of time of, and the potential effects of the reduced level of treatment.

This notification does not relieve the Permittee of its obligations under this permit.

D. Electrical Power Failure

The Permittee must ensure that adequate safeguards prevent the discharge of untreated wastes or wastes not treated in accordance with the requirements of this permit during electrical power failure at the treatment plant and/or sewage lift stations. Adequate safeguards include, but are not limited to, alternate power sources, standby generator(s), or retention of inadequately treated wastes.

The Permittee must maintain Reliability Class II (EPA 430/9-74-001) at the wastewater treatment plant. Reliability Class II requires a backup power source sufficient to operate

all vital components and critical lighting and ventilation during peak wastewater flow conditions. Vital components used to support the secondary processes (i.e., mechanical aerators or aeration basin air compressors) need not be operable to full levels of treatment, but must be sufficient to maintain the biota.

E. Prevent Connection of Inflow

The Permittee must strictly enforce its sewer ordinances and not allow the connection of inflow (roof drains, foundation drains, etc.) to the sanitary sewer system.

F. Bypass Procedures

This permit prohibits a bypass, which is the intentional diversion of waste streams from any portion of a treatment facility. Ecology may take enforcement action against a Permittee for a bypass unless one of the following circumstances (1, 2, or 3) applies.

1. Bypass for essential maintenance without the potential to cause violation of permit limits or conditions.

This permit authorizes a bypass if it allows for essential maintenance and does not have the potential to cause violations of limits or other conditions of this permit, or adversely impact public health as determined by Ecology prior to the bypass. The Permittee must submit prior notice, if possible, at least 10 days before the date of the bypass.

2. Bypass which is unavoidable, unanticipated, and results in noncompliance of this permit.

This permit authorizes such a bypass only if:

- a. Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass.
- b. No feasible alternatives to the bypass exist, such as:
 - The use of auxiliary treatment facilities.
 - Retention of untreated wastes.
 - Maintenance during normal periods of equipment downtime, but not if the Permittee should have installed adequate backup equipment in the exercise of reasonable engineering judgment to prevent a bypass.
 - Transport of untreated wastes to another treatment facility or preventative maintenance), or transport of untreated wastes to another treatment facility.

- c. Ecology is properly notified of the bypass as required in Condition S3.E of this permit.
3. If bypass is anticipated and has the potential to result in noncompliance of this permit.
 - a. The Permittee must notify Ecology at least 30 days before the planned date of bypass. The notice must contain:
 - A description of the bypass and its cause.
 - An analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing.
 - A cost-effectiveness analysis of alternatives including comparative resource damage assessment.
 - The minimum and maximum duration of bypass under each alternative.
 - A recommendation as to the preferred alternative for conducting the bypass.
 - The projected date of bypass initiation.
 - A statement of compliance with State Environmental Policy Act (SEPA).
 - A request for modification of water quality standards as provided for in WAC 173-201A-410, if an exceedance of any water quality standard is anticipated.
 - Details of the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.
 - b. For probable construction bypasses, the Permittee must notify Ecology of the need to bypass as early in the planning process as possible. The Permittee must consider the analysis required above during preparation of the engineering report or facilities plan and plans and specifications and must include these to the extent practical. In cases where the Permittee determines the probable need to bypass early, the Permittee must continue to analyze conditions up to and including the construction period in an effort to minimize or eliminate the bypass.
 - c. Ecology will consider the following prior to issuing an administrative order for this type of bypass:
 - If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.

- If feasible alternatives to bypass exist, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.
- If the Permittee planned and scheduled the bypass to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, Ecology will approve or deny the request. Ecology will give the public an opportunity to comment on bypass incidents of significant duration, to the extent feasible. Ecology will approve a request to bypass by issuing an administrative order under RCW 90.48.120.

G. Operations and Maintenance (O&M) Manual

1. O&M Manual Submittal and Requirements

The Permittee must:

- a. Submit an O&M Manual that includes the content required by 173-240-150 WAC and addresses all Phase 1a components, process control monitoring, and the Publicly Owned Treatment Works (POTW) maintenance management system to Ecology for approval by **January 1, 2012**. Update this manual to include Phase 1b components not later than **60 days after submitting** to Ecology the **Declaration of Construction of the Phase 1b** facility.
- b. Review the O&M Manual at least **annually** and confirm this review by letter to Ecology by **January 15th** of each year starting 2012.
- c. Submit to Ecology for review and approval substantial changes or updates to the O&M Manual whenever it incorporates them into the manual.
- d. Keep the approved O&M Manual at the permitted facility.
- e. Follow the instructions and procedures of this manual.

2. O&M Manual Components

In addition to the requirements of WAC 173-240-080 (1) through (5), the O&M Manual must include:

- a. Emergency procedures for cleanup in the event of wastewater system upset or failure.
- b. Wastewater system maintenance procedures that contribute to the generation of process wastewater.

- c. Reporting protocols for submitting reports to Ecology to comply with the reporting requirements in the discharge permit.
- d. Any directions to maintenance staff when cleaning or maintaining other equipment or performing other tasks which are necessary to protect the operation of the wastewater system (for example, defining maximum allowable discharge rate for draining a tank, blocking all floor drains before beginning the overhaul of a stationary engine).
- e. The treatment plant process control monitoring schedule.
- f. Minimum staffing adequate to operate and maintain the treatment processes and carry out compliance monitoring required by the permit.
- g. Specify other items on case-by-case basis such as O&M for collection systems pump stations, lagoon liners, etc.

S6. PRETREATMENT**A. General Requirements**

The Permittee must work with Ecology to ensure that all commercial and industrial users of the POTW comply with the pretreatment regulations in 40 CFR Part 403 and any additional regulations that the Environmental Protection Agency (U.S. EPA) may promulgate under Section 307(b) (pretreatment) and 308 (reporting) of the Federal Clean Water Act.

B. Duty to Enforce Discharge Prohibitions

- 1. Under federal regulations [40 CFR 403.5(a) and (b)], the Permittee must not authorize or knowingly allow the discharge of any pollutants into its POTW which may be reasonably expected to cause pass through or interference, or which otherwise violate general or specific discharge prohibitions contained in 40 CFR Part 403.5 or WAC-173-216-060.
- 2. The Permittee must not authorize or knowingly allow the introduction of any of the following into their treatment works:
 - a. Pollutants which create a fire or explosion hazard in the POTW (including, but not limited to waste streams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in 40 CFR 261.21).
 - b. Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0, or greater than 11.0 standard units, unless the works are specifically designed to accommodate such discharges.
 - c. Solid or viscous pollutants in amounts that could cause obstruction to the flow in sewers or otherwise interfere with the operation of the POTW.

- d. Any pollutant, including oxygen-demanding pollutants, (BOD₅, etc.) released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the POTW.
 - e. Petroleum oil, non-biodegradable cutting oil, or products of mineral origin in amounts that will cause interference or pass through.
 - f. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity which may cause acute worker health and safety problems.
 - g. Heat in amounts that will inhibit biological activity in the POTW resulting in interference but in no case heat in such quantities such that the temperature at the POTW headworks exceeds 40 degrees Centigrade (104 degrees Fahrenheit) unless Ecology, upon request of the Permittee, approves, in writing, alternate temperature limits.
 - h. Any trucked or hauled pollutants, except at discharge points designated by the Permittee.
 - i. Wastewaters prohibited to be discharged to the POTW by the Dangerous Waste Regulations (chapter 173-303 WAC), unless authorized under the Domestic Sewage Exclusion (WAC 173-303-071).
3. The Permittee must also not allow the following discharges to the POTW unless approved in writing by Ecology:
- a. Noncontact cooling water in significant volumes.
 - b. Stormwater and other direct inflow sources.
 - c. Wastewaters significantly affecting system hydraulic loading, which do not require treatment, or would not be afforded a significant degree of treatment by the system.
4. The Permittee must notify Ecology if any industrial user violates the prohibitions listed in this section (S6.B), and initiate enforcement action to promptly curtail any such discharge.

C. Wastewater Discharge Permit Required

The Permittee must

- 1. Establish a process for authorizing non-domestic wastewater discharges that ensures all SIUs in all tributary areas meet the applicable State Waste Discharge Permit (SWDP) requirements in accordance with chapter 90.48 RCW and chapter 173-216 WAC.
- 2. Immediately notify Ecology of any proposed discharge of wastewater from a source, which may be a significant industrial user (SIU) [see fact sheet definitions or refer to 40 CFR 403.3(t)(i)(ii)].

3. Require all SIUs to obtain a SWDP from Ecology prior to accepting their non-domestic wastewater, or require proof that Ecology has determined they do not require a permit.
4. Require the documentation as described in S6.C.3 at the earliest practicable date as a condition of continuing to accept non-domestic wastewater discharges from a previously undiscovered, currently discharging and unpermitted SIU.
5. Require sources of non-domestic wastewater, which do not qualify as SIUs but merit a degree of oversight, to apply for a SWDP and provide it a copy of the application and any Ecology responses.
6. Keep all records documenting that its users have met the requirements of S6.C.

D. Identification and Reporting of Existing, New, and Proposed Industrial Users

1. The Permittee must take continuous, routine measures to identify all existing, new, and proposed SIUs and potential significant industrial users (PSIUs) discharging or proposing to discharge to the Permittee's sewer system (see Appendix B of the fact sheet for definitions).
2. Within 30 days of becoming aware of an unpermitted existing, new, or proposed industrial user who may be a significant industrial user (SIU), the Permittee must notify such user by registered mail that, if classified as an SIU, they must apply to Ecology and obtain a State Waste Discharge Permit. The Permittee must send a copy of this notification letter to Ecology within this same 30-day period.
3. The Permittee must also notify all Potential SIUs (PSIUs), as they are identified, that if their classification should change to an SIU, they must apply to Ecology for a State Waste Discharge Permit within 30 days of such change.

E. Annual Submittal of List of Industrial Users

The Permittee must annually submit to Ecology a list summarizing all existing and proposed SIUs and PSIUs. The Permittee must submit this list to Ecology by **March 15, 2012**, and **annually** thereafter.

S7. SOLID WASTES

A. Solid Waste Handling

The Permittee must handle and dispose of all solid waste material in such a manner as to prevent its entry into state ground or surface water.

B. Leachate

The Permittee must not allow leachate from its solid waste material to enter state waters without providing all known, available, and reasonable methods of treatment, nor allow such leachate to cause violations of the State Surface Water Quality Standards, Chapter 173-201A WAC, or the State Ground Water Quality Standards, Chapter 173-200 WAC.

The Permittee must apply for a permit or permit modification as may be required for such discharges to state ground or surface waters.

S8. APPLICATION FOR PERMIT RENEWAL OR MODIFICATION FOR FACILITY CHANGES

The Permittee must submit an application for renewal of this permit by _____.

The Permittee must also submit a new application or supplement at least 180 days prior to commencement of discharges, resulting from the activities listed below, which may result in permit violations. These activities include any facility expansions, production increases, or other planned changes, such as process modifications, in the permitted facility.

S9. STORMWATER PERMIT

A. Stormwater General Permit Evaluation

The Permittee must evaluate, within **60 days after submitting the Declaration of Construction of Phase 1b** facilities, whether the facility, then exceeding the threshold for coverage, is subject to coverage under the industrial stormwater general permit. In such case, the Permittee shall promptly apply for coverage or under that permit or provide a no exposure certification (if the applicable criteria for doing so are met).

S10. OUTFALL EVALUATION

The Permittee must inspect the submerged portion of the outfall line and diffuser to document its integrity and continued function. If conditions allow for a photographic verification, the Permittee must include such verification in the report. The Permittee must submit the inspection report to Ecology by **September 1, 2015**.

S11. ACUTE TOXICITY

A. Effluent Characterization

The Permittee must:

1. Conduct semi-annual acute toxicity testing on the final effluent for one year. Testing must begin by **June 30, 2012** (for first half 2012). Semi-annual means January through June, and July through December.
2. Submit a semi-annual written report to Ecology for one year within 45 days of sampling and starting no later than **August 15, 2012**. Further instructions on testing conditions and test report content are in Section G below.
3. Use a dilution series consisting of a minimum of five concentrations and a control. The five concentrations should include the ACEC of 67 percent effluent (phase 1b).
4. Conduct the following two acute toxicity tests on each sample:

Acute Toxicity Tests	Species	Method
Fathead minnow 96-hour static-renewal test	<i>Pimephales promelas</i>	EPA-821-R-02-012
Daphnid 48-hour static test	<i>Ceriodaphnia dubia</i> , <i>Daphnia pulex</i> , or <i>Daphnia magna</i>	EPA-821-R-02-012

5. The effluent limit for acute toxicity listed in Section B below applies if after one year of effluent characterization:

- The median survival of any species in 100 percent effluent is below 80 percent.
- Any one test of any species exhibits less than 65 percent survival in 100 percent effluent.

If the limit applies, then the Permittee must immediately follow the instructions in Sections B, C, D, E, and G. **If the limit does not apply**, then the Permittee is not required to do the monitoring of section D, but must follow the instructions in Sections F and G.

B. Effluent Limit for Acute Toxicity

The effluent limit for acute toxicity is:

No acute toxicity detected in a test concentration representing the acute critical effluent concentration (ACEC).

The ACEC means the maximum concentration of effluent during critical conditions at the boundary of the acute mixing zone, defined in Section S1.B of this permit. The ACEC equals 67 percent effluent.

C. Compliance with the Effluent Limit for Acute Toxicity

Compliance with the effluent limit for acute toxicity means the results of the testing specified in Section D show no statistically significant difference in survival between the control and the ACEC.

If the test results show a statistically significant difference in survival between the control and the ACEC, the test does not comply with the effluent limit for acute toxicity. The Permittee must then immediately conduct the additional testing described in Section E. The Permittee will comply with the requirements of this section by meeting the requirements of Section E.

The Permittee must determine the statistical significance by conducting a hypothesis test at the 0.05 level of significance (Appendix H, EPA/600/4-89/001). If the difference in survival between the control and the ACEC is less than 10 percent, the Permittee must conduct the hypothesis test at the 0.01 level of significance.

D. Compliance Testing for Acute Toxicity

The Permittee may skip this section if the results of monitoring required under S11.A are below the thresholds described in S11.A.5 (see two bulleted items there). Otherwise, the Permittee must:

1. Perform the acute toxicity tests with 100% effluent, the ACEC, and a control, or with a full dilution series.
2. Conduct quarterly acute testing on the final effluent if characterization determines that the effluent limit for acute toxicity is applicable. Testing must begin by **March 30 2013**, in such event. Quarters means January through March, April through June, July through September, and October through December.
3. Submit a quarterly written report to Ecology for one year within 45 days after sampling starting no later than **May 15, 2013**. Further instructions on testing conditions and test report content are in Section G below.
4. The Permittee must perform compliance tests using each of the species and protocols listed below on a rotating basis:

Acute Toxicity Tests	Species	Method
Fathead minnow 96-hour static-renewal test	<i>Pimephales promelas</i>	EPA-821-R-02-012
Daphnid 48-hour static test	<i>Ceriodaphnia dubia</i> , <i>Daphnia pulex</i> , or <i>Daphnia magna</i>	EPA-821-R-02-012

E. Response to Noncompliance with the Effluent Limit for Acute Toxicity

If a toxicity test conducted under Section D determines a statistically significant difference in response between the ACEC and the control, using the statistical test described in Section C, the Permittee must begin additional testing within one week from the time of receiving the test results. The Permittee must:

1. Conduct one additional test each week for four consecutive weeks, using the same test and species as the failed compliance test. Test the next four discharge events using the same test and species as the failed compliance test (Use for intermittent discharges).
2. Test at least five effluent concentrations and a control to determine appropriate point estimates. One of these effluent concentrations must equal the ACEC. The results of the test at the ACEC will determine compliance with the effluent limit for acute toxicity as described in Section C.
3. Return to the original monitoring frequency in Section D after completion of the additional compliance monitoring.

Anomalous test results: If a toxicity test conducted under Section D indicates noncompliance with the acute toxicity limit and the Permittee believes that the test result

is anomalous, the Permittee may notify Ecology that the compliance test result may be anomalous. The Permittee may take one additional sample for toxicity testing and wait for notification from Ecology before completing the additional testing. The Permittee must submit the notification with the report of the compliance test result and identify the reason for considering the compliance test result to be anomalous.

If Ecology determines that the test result was not anomalous, the Permittee must complete all of the additional monitoring required in this section. Or

If the one additional sample fails to comply with the effluent limit for acute toxicity, then the Permittee must complete all of the additional monitoring required in this section. Or

If Ecology determines that the test result was anomalous, the one additional test result will replace the anomalous test result.

If all of the additional testing in this section complies with the permit limit, the Permittee must submit a report to Ecology on possible causes and preventive measures for the transient toxicity event, which triggered the additional compliance monitoring. This report must include a search of all pertinent and recent facility records, including:

- Operating records
- Monitoring results
- Inspection records
- Spill reports
- Weather records
- Production records
- Raw material purchases
- Pretreatment records, etc.

If the additional testing in this section shows another violation of the acute toxicity limit, the Permittee must submit a Toxicity Identification/Reduction Evaluation (TI/RE) plan to Ecology within 60 days after the sample date [WAC 173-205-100(2)].

F. Testing When There is No Permit Limit for Acute Toxicity

The Permittee must:

1. Conduct acute toxicity testing on final effluent during July-September 2015 and December 2015 - February 2016 (once in the last summer and once in the last winter prior to submission of the application for permit renewal).
2. Submit the results to Ecology with the permit renewal application.

3. Conduct acute toxicity testing on a series of at least five concentrations of effluent, including 100 percent effluent and a control.
4. Use each of the following species and protocols for each acute toxicity test:

Acute Toxicity Tests	Species	Method
Fathead minnow 96-hour static-renewal test	<i>Pimephales promelas</i>	EPA-821-R-02-012
Daphnid 48-hour static test	<i>Ceriodaphnia dubia</i> , <i>Daphnia pulex</i> , or <i>Daphnia magna</i>	EPA-821-R-02-012

G. Sampling and Reporting Requirements

1. The Permittee must submit all reports for toxicity testing in accordance with the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. Reports must contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data in electronic format for entry into Ecology's database, then the Permittee must send the data to Ecology along with the test report, bench sheets, and reference toxicant results.
2. The Permittee must collect 24-hour composite effluent samples or grab samples for toxicity testing. The Permittee must cool the samples to 0 - 6 degrees Celsius during collection and send them to the lab immediately upon completion. The lab must begin the toxicity testing as soon as possible but no later than 36 hours after sampling was completed.
3. The laboratory must conduct water quality measurements on all samples and test solutions for toxicity testing, as specified in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*.
4. All toxicity tests must meet quality assurance criteria and test conditions specified in the most recent versions of the EPA methods listed in Subsection C and the Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. If Ecology determines any test results to be invalid or anomalous, the Permittee must repeat the testing with freshly collected effluent.
5. The laboratory must use control water and dilution water meeting the requirements of the EPA methods listed in Section A or pristine natural water of sufficient quality for good control performance.
6. The Permittee must conduct whole effluent toxicity tests on an unmodified sample of final effluent.
 - a. The Permittee may choose to conduct a full dilution series test during compliance testing in order to determine dose response. In this case, the series must have a minimum of five effluent concentrations and a

control. The series of concentrations must include the acute critical effluent concentration (ACEC).

- b. All whole effluent toxicity tests, effluent screening tests, and rapid screening tests that involve hypothesis testing must comply with the acute statistical power standard of 29 percent as defined in WAC 173-205-020. If the test does not meet the power standard, the Permittee must repeat the test on a fresh sample with an increased number of replicates to increase the power.

S12. CHRONIC TOXICITY

A. Testing When There is No Permit Limit for Chronic Toxicity

The Permittee must:

1. Conduct chronic toxicity testing on final effluent once in the last summer and once in the last winter prior to submission of the application for permit renewal.
2. Submit the results to Ecology with the permit renewal application.
3. Conduct chronic toxicity testing on a series of at least five concentrations of effluent and a control. This series of dilutions must include the acute critical effluent concentration (ACEC). The ACEC equals 67 percent effluent. The series of dilutions should also contain the CCEC of 9.6 percent effluent.
4. Compare the ACEC to the control using hypothesis testing at the 0.05 level of significance as described in Appendix H, EPA/600/4-89/001.
5. Perform chronic toxicity tests with all of the following species and the most recent version of the following protocols:

Freshwater Chronic Test	Species	Method
Fathead minnow survival and growth	<i>Pimephales promelas</i>	EPA-821-R-02-013
Water flea survival and reproduction	<i>Ceriodaphnia dubia</i>	EPA-821-R-02-013
Alga	<i>Pseudokirchneriella subcapitata</i> (formerly <i>Selenastrum capricornutum</i>)	EPA-821-R-02-013

B. Sampling and Reporting Requirements

1. The Permittee must submit all reports for toxicity testing in accordance with the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. Reports must contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data in electronic format for entry into Ecology's

database, then the Permittee must send the data to Ecology along with the test report, bench sheets, and reference toxicant results.

2. The Permittee may collect either a 24-hour composite effluent sample or a grab sample for toxicity testing. The Permittee must cool the samples to 0 - 6 degrees Celsius during collection and send them to the lab immediately upon completion. The lab must begin the toxicity testing as soon as possible but no later than 36 hours after sampling was completed.
3. The laboratory must conduct water quality measurements on all samples and test solutions for toxicity testing, as specified in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*.
4. All toxicity tests must meet quality assurance criteria and test conditions specified in the most recent versions of the EPA methods listed in Section C. and the Ecology Publication no. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. If Ecology determines any test results to be invalid or anomalous, the Permittee must repeat the testing with freshly collected effluent.
5. The laboratory must use control water and dilution water meeting the requirements of the EPA methods listed in Subsection C. or pristine natural water of sufficient quality for good control performance.
6. The Permittee must conduct whole effluent toxicity tests on an unmodified sample of final effluent.
7. The Permittee may choose to conduct a full dilution series test during compliance testing in order to determine dose response. In this case, the series must have a minimum of five effluent concentrations and a control. The series of concentrations must include the CCEC and the ACEC. The CCEC and the ACEC may either substitute for the effluent concentrations that are closest to them in the dilution series or be extra effluent concentrations. The CCEC equals 9.6 percent effluent. The ACEC equals 67 percent effluent.
8. All whole effluent toxicity tests that involve hypothesis testing must comply with the chronic statistical power standard of 39 percent as defined in WAC 173-205-020. If the test does not meet the power standard, the Permittee must repeat the test on a fresh sample with an increased number of replicates to increase the power.

GENERAL CONDITIONS

G1. SIGNATORY REQUIREMENTS

- A. All applications, reports, or information submitted to Ecology must be signed and certified.
- 1) In the case of corporations, by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
- A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or
 - The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
 - In the case of a partnership, by a general partner.
 - In the case of sole proprietorship, by the proprietor.
 - In the case of a municipal, state, or other public facility, by either a principal executive officer or ranking elected official.

Applications for permits for domestic wastewater facilities that are either owned or operated by, or under contract to, a public entity shall be submitted by the public entity.

- B. All reports required by this permit and other information requested by Ecology must be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
- 1) The authorization is made in writing by a person described above and submitted to Ecology.
- 2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

- C. Changes to authorization. If an authorization under paragraph B.2, above, is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph B.2, above, must be submitted to Ecology prior to or together with any reports, information, or applications to be signed by an authorized representative.
- D. Certification. Any person signing a document under this section must make the following certification:

“I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

G2. RIGHT OF INSPECTION AND ENTRY

The Permittee must allow an authorized representative of Ecology, upon the presentation of credentials and such other documents as may be required by law:

- A. To enter upon the premises where a discharge is located or where any records must be kept under the terms and conditions of this permit.
- B. To have access to and copy, at reasonable times and at reasonable cost, any records required to be kept under the terms and conditions of this permit.
- C. To inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.
- D. To sample or monitor, at reasonable times, any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act.

G3. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated either at the request of any interested person (including the Permittee) or upon Ecology's initiative. However, the permit may only be modified, revoked and reissued, or terminated for the reasons specified in 40 CFR 122.62, 40 CFR 122.64 or WAC 173-220-150 according to the procedures of 40 CFR 124.5.

- A. The following are causes for terminating this permit during its term, or for denying a permit renewal application:
 - 1) Violation of any permit term or condition.
 - 2) Obtaining a permit by misrepresentation or failure to disclose all relevant facts.

- 3) A material change in quantity or type of waste disposal.
- 4) A determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations and can only be regulated to acceptable levels by permit modification or termination.
- 5) A change in any condition that requires either a temporary or permanent reduction, or elimination of any discharge or sludge use or disposal practice controlled by the permit.
- 6) Nonpayment of fees assessed pursuant to RCW 90.48.465.
- 7) Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090.

B. The following are causes for modification but not revocation and reissuance except when the Permittee requests or agrees:

- 1) A material change in the condition of the waters of the state.
- 2) New information not available at the time of permit issuance that would have justified the application of different permit conditions.
- 3) Material and substantial alterations or additions to the permitted facility or activities which occurred after this permit issuance.
- 4) Promulgation of new or amended standards or regulations having a direct bearing upon permit conditions, or requiring permit revision.
- 5) The Permittee has requested a modification based on other rationale meeting the criteria of 40 CFR Part 122.62.
- 6) Ecology has determined that good cause exists for modification of a compliance schedule, and the modification will not violate statutory deadlines.
- 7) Incorporation of an approved local pretreatment program into a municipality's permit.

C. The following are causes for modification or alternatively revocation and reissuance:

- 1) When cause exists for termination for reasons listed in A1 through A7 of this section, and Ecology determines that modification or revocation and reissuance is appropriate.
- 2) When Ecology has received notification of a proposed transfer of the permit. A permit may also be modified to reflect a transfer after the effective date of an automatic transfer (General Condition G7) but will not be revoked and reissued after the effective date of the transfer except upon the request of the new Permittee.

G4. REPORTING PLANNED CHANGES

The Permittee must, as soon as possible, but no later than 60 days prior to the proposed changes, give notice to Ecology of planned physical alterations or additions to the permitted facility, production increases, or process modification which will result in:

- A. The permitted facility being determined to be a new source pursuant to 40 CFR 122.29(b)
- B. A significant change in the nature or an increase in quantity of pollutants discharged.
- C. A significant change in the Permittee's sludge use or disposal practices. Following such notice, and the submittal of a new application or supplement to the existing application, along with required engineering plans and reports, this permit may be modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any pollutants not previously limited. Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by this permit constitutes a violation.

G5. PLAN REVIEW REQUIRED

Prior to constructing or modifying any wastewater control facilities, an engineering report and detailed plans and specifications must be submitted to Ecology for approval in accordance with chapter 173-240 WAC. Engineering reports, plans, and specifications must be submitted at least 180 days prior to the planned start of construction unless a shorter time is approved by Ecology. Facilities must be constructed and operated in accordance with the approved plans.

G6. COMPLIANCE WITH OTHER LAWS AND STATUTES

Nothing in this permit excuses the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

G7. TRANSFER OF THIS PERMIT

In the event of any change in control or ownership of facilities from which the authorized discharge emanate, the Permittee must notify the succeeding owner or controller of the existence of this permit by letter, a copy of which must be forwarded to Ecology.

- A. Transfers by Modification

Except as provided in paragraph (B) below, this permit may be transferred by the Permittee to a new owner or operator only if this permit has been modified or revoked and reissued under 40 CFR 122.62(b)(2), or a minor modification made under 40 CFR 122.63(d), to identify the new Permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

- B. Automatic Transfers

This permit may be automatically transferred to a new Permittee if:

- 1) The Permittee notifies Ecology at least 30 days in advance of the proposed transfer date.

- 2) The notice includes a written agreement between the existing and new Permittees containing a specific date transfer of permit responsibility, coverage, and liability between them.
- 3) Ecology does not notify the existing Permittee and the proposed new Permittee of its intent to modify or revoke and reissue this permit. A modification under this subparagraph may also be minor modification under 40 CFR 122.63. If this notice is not received, the transfer is effective on the date specified in the written agreement.

G8. REDUCED PRODUCTION FOR COMPLIANCE

The Permittee, in order to maintain compliance with its permit, must control production and/or all discharges upon reduction, loss, failure, or bypass of the treatment facility until the facility is restored or an alternative method of treatment is provided. This requirement applies in the situation where, among other things, the primary source of power of the treatment facility is reduced, lost, or fails.

G9. REMOVED SUBSTANCES

Collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must not be resuspended or reintroduced to the final effluent stream for discharge to state waters.

G10. DUTY TO PROVIDE INFORMATION

The Permittee must submit to Ecology, within a reasonable time, all information which Ecology may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee must also submit to Ecology upon request, copies of records required to be kept by this permit.

G11. OTHER REQUIREMENTS OF 40 CFR

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

G12. ADDITIONAL MONITORING

Ecology may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

G13. PAYMENT OF FEES

The Permittee must submit payment of fees associated with this permit as assessed by Ecology.

G14. PENALTIES FOR VIOLATING PERMIT CONDITIONS

Any person who is found guilty of willfully violating the terms and conditions of this permit is deemed guilty of a crime, and upon conviction thereof must be punished by a fine of up to \$10,000 and costs of prosecution, or by imprisonment in the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of a waste discharge permit may incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to \$10,000 for every such violation. Each and every such violation is a separate and distinct offense, and in case of a continuing violation, every day's continuance is deemed to be a separate and distinct violation.

G15. UPSET

Definition – "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limits because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limits if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

- A. An upset occurred and that the Permittee can identify the cause(s) of the upset.
- B. The permitted facility was being properly operated at the time of the upset.
- C. The Permittee submitted notice of the upset as required in Condition S3.E.
- D. The Permittee complied with any remedial measures required under S4.C of this permit.

In any enforcement action the Permittee seeking to establish the occurrence of an upset has the burden of proof.

G16. PROPERTY RIGHTS

This permit does not convey any property rights of any sort, or any exclusive privilege.

G17. DUTY TO COMPLY

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

G18. TOXIC POLLUTANTS

The Permittee must comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

G19. PENALTIES FOR TAMPERING

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit must, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this condition, punishment must be a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four years, or by both.

G20. COMPLIANCE SCHEDULES

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date.

G21. CONTRACT REVIEW

The Permittee must submit to Ecology any proposed contract for the operation of any wastewater treatment facility covered by this permit. The review is to ensure consistency with chapters 90.46 and 90.48 RCW. In the event that Ecology does not comment within a 30-day period, the Permittee may assume consistency and proceed with the contract.

APPENDIX A

LIST OF POLLUTANTS WITH ANALYTICAL METHODS, DETECTION LIMITS AND QUANTITATION LEVELS

The Permittee must use the specified analytical methods, detection limits (DLs) and quantitation levels (QLs) in the following table for permit and application required monitoring unless:

- Another permit condition specifies other methods, detection levels, or quantitation levels.
- The method used produces measurable results in the sample and EPA has listed it as an EPA-approved method in 40 CFR Part 136.

If the Permittee uses an alternative method, not specified in the permit and as allowed above, it must report the test method, DL, and QL on the discharge monitoring report or in the required report.

When the permit requires the Permittee to measure the base neutral compounds in the list of priority pollutants, it must measure all of the base neutral pollutants listed in the table below. The list includes EPA required base neutral priority pollutants and several additional polynuclear aromatic hydrocarbons (PAHs). The Water Quality Program added several PAHs to the list of base neutrals below from Ecology's Persistent Bioaccumulative Toxics (PBT) List. It only added those PBT parameters of interest to Appendix A that did not increase the overall cost of analysis unreasonably.

Ecology added this appendix to the permit in order to reduce the number of analytical "non-detects" in permit-required monitoring and to measure effluent concentrations near or below criteria values where possible at a reasonable cost.

CONVENTIONAL PARAMETERS

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
Biochemical Oxygen Demand	SM5210-B		2 mg/L
Chemical Oxygen Demand	SM5220-D		10 mg/L
Total Organic Carbon	SM5310-B/C/D		1 mg/L
Total Suspended Solids	SM2540-D		5 mg/L
Total Ammonia (as N)	SM4500-NH3-GH		0.3 mg/L
Flow	Calibrated device		
Dissolved oxygen	SM4500-OC/OG		0.2 mg/L

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
Temperature (max. 7-day avg.)	Analog recorder or Use micro-recording devices known as thermistors		0.2° C
pH	SM4500-H ⁺ B	N/A	N/A

NONCONVENTIONAL PARAMETERS

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
Total Alkalinity	SM2320-B		5 mg/L as CaCO ₃
Chlorine, Total Residual	SM4500 Cl G		50.0
Color	SM2120 B/C/E		10 color units
Fecal Coliform	SM 9221D/E, 9222	N/A	N/A
Fluoride (16984-48-8)	SM4500-F E	25	100
Nitrate-Nitrite (as N)	SM4500-NO ₃ -E/F/H		100
Nitrogen, Total Kjeldahl (as N)	SM4500-NH ₃ -C/E/FG		300
Ortho-Phosphate (PO ₄ as P)	SM4500- PE/PF	3	10
Phosphorus, Total (as P)	SM4500-PE/PF	3	10
Oil and Grease (HEM)	1664A	1,400	5,000
Salinity	SM2520-B		3 PSS
Settleable Solids	SM2540 -F		100
Sulfate (as mg/L SO ₄)	SM4110-B		200
Sulfide (as mg/L S)	SM4500-S ² F/D/E/G		200
Sulfite (as mg/L SO ₃)	SM4500-SO ₃ B		2000

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
Total Coliform	SM 9221B, 9222B, 9223B	N/A	N/A
Total dissolved solids	SM2540 C		20 mg/L
Total Hardness	SM2340B		200 as CaCO ₃
Aluminum, Total (7429-90-5)	200.8	2.0	10
Barium Total (7440-39-3)	200.8	0.5	2.0
BTEX (benzene +toluene + ethylbenzene + m,o,p xylenes)	EPA SW 846 8021/8260	1	2
Boron Total (7440-42-8)	200.8	2.0	10.0
Cobalt, Total (7440-48-4)	200.8	0.05	0.25
Iron, Total (7439-89-6)	200.7	12.5	50
Magnesium, Total (7439-95-4)	200.7	10	50
Molybdenum, Total (7439-98-7)	200.8	0.1	0.5
Manganese, Total (7439-96-5)	200.8	0.1	0.5
NWTPH Dx	Ecology NWTPH Dx	250	250
NWTPH Gx	Ecology NWTPH Gx	250	250
Tin, Total (7440-31-5)	200.8	0.3	1.5
Titanium, Total (7440-32-6)	200.8	0.5	2.5

PRIORITY POLLUTANTS

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
METALS, CYANIDE & TOTAL PHENOLS			
Antimony, Total (7440-36-0)	200.8	0.3	1.0
Arsenic, Total (7440-38-2)	200.8	0.1	0.5
Beryllium, Total (7440-41-7)	200.8	0.1	0.5

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
METALS, CYANIDE & TOTAL PHENOLS			
Cadmium, Total (7440-43-9)	200.8	0.05	0.25
Chromium (hex) dissolved (18540-29-9)	SM3500-Cr EC	0.3	1.2
Chromium, Total (7440-47-3)	200.8	0.2	1.0
Copper, Total (7440-50-8)	200.8	0.4	2.0
Lead, Total (7439-92-1)	200.8	0.1	0.5
Mercury, Total (7439-97-6)	1631E	0.0002	0.0005
Nickel, Total (7440-02-0)	200.8	0.1	0.5
Selenium, Total (7782-49-2)	200.8	1.0	1.0
Silver, Total (7440-22-4)	200.8	0.04	0.2
Thallium, Total (7440-28-0)	200.8	0.09	0.36
Zinc, Total (7440-66-6)	200.8	0.5	2.5
Cyanide, Total (57-12-5)	335.4	5	10
Cyanide, Weak Acid Dissociable	SM4500-CN I	5	10
Phenols, Total	EPA 420.1		50
ACID COMPOUNDS			
2-Chlorophenol (95-57-8)	625	1.0	2.0
2,4-Dichlorophenol (120-83-2)	625	0.5	1.0
2,4-Dimethylphenol (105-67-9)	625	0.5	1.0
4,6-dinitro-o-cresol (534-52-1) (2-methyl-4,6,-dinitrophenol)	625/1625B	1.0	2.0
2,4 dinitrophenol (51-28-5)	625	1.0	2.0
2-Nitrophenol (88-75-5)	625	0.5	1.0
4-nitrophenol (100-02-7)	625	0.5	1.0
Parachlorometa cresol (59-50-7) (4-chloro-3-methylphenol)	625	1.0	2.0
Pentachlorophenol (87-86-5)	625	0.5	1.0
Phenol (108-95-2)	625	2.0	4.0
2,4,6-Trichlorophenol (88-06-2)	625	2.0	4.0

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
VOLATILE COMPOUNDS			
Acrolein (107-02-8)	624	5	10
Acrylonitrile (107-13-1)	624	1.0	2.0
Benzene (71-43-2)	624	1.0	2.0
Bromoform (75-25-2)	624	1.0	2.0
Carbon tetrachloride (56-23-5)	624/601 or SM6230B	1.0	2.0
Chlorobenzene (108-90-7)	624	1.0	2.0
Chloroethane (75-00-3)	624/601	1.0	2.0
2-Chloroethylvinyl Ether (110-75-8)	624	1.0	2.0
Chloroform (67-66-3)	624 or SM6210B	1.0	2.0
Dibromochloromethane (124-48-1)	624	1.0	2.0
1,2-Dichlorobenzene (95-50-1)	624	1.9	7.6
1,3-Dichlorobenzene (541-73-1)	624	1.9	7.6
1,4-Dichlorobenzene (106-46-7)	624	4.4	17.6
Dichlorobromomethane (75-27-4)	624	1.0	2.0
1,1-Dichloroethane (75-34-3)	624	1.0	2.0
1,2-Dichloroethane (107-06-2)	624	1.0	2.0
1,1-Dichloroethylene (75-35-4)	624	1.0	2.0
1,2-Dichloropropane (78-87-5)	624	1.0	2.0
1,3-dichloropropene (mixed isomers) (1,2-dichloropropylene) (542-75-6) ³	624	1.0	2.0
Ethylbenzene (100-41-4)	624	1.0	2.0
Methyl bromide (74-83-9) (Bromomethane)	624/601	5.0	10.0
Methyl chloride (74-87-3)	624	1.0	2.0

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
METALS, CYANIDE & TOTAL PHENOLS			
(Chloromethane)			
Methylene chloride (75-09-2)	624	5.0	10.0
1,1,2,2-Tetrachloroethane (79-34-5)	624	1.9	2.0
Tetrachloroethylene (127-18-4)	624	1.0	2.0
Toluene (108-88-3)	624	1.0	2.0
1,2-Trans-Dichloroethylene (156-60-5) (Ethylene dichloride)	624	1.0	2.0
1,1,1-Trichloroethane (71-55-6)	624	1.0	2.0
1,1,2-Trichloroethane (79-00-5)	624	1.0	2.0
Trichloroethylene (79-01-6)	624	1.0	2.0
Vinyl chloride (75-01-4)	624/SM6200B	1.0	2.0
BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
Acenaphthene (83-32-9)	625	0.2	0.4
Acenaphthylene (208-96-8)	625	0.3	0.6
Anthracene (120-12-7)	625	0.3	0.6
Benzidine (92-87-5)	625	12	24
Benzyl butyl phthalate (85-68-7)	625	0.3	0.6
Benzo(a)anthracene (56-55-3)	625	0.3	0.6
Benzo(b)fluoranthene (3,4-benzofluoranthene) (205-99-2) ⁴	610/625	0.8	1.6
Benzo(j)fluoranthene (205-82-3) ⁴	625	0.5	1.0
Benzo(k)fluoranthene (11,12-benzofluoranthene) (207-08-9) ⁴	610/625	0.8	1.6
Benzo(r,s,t)pentaphene (189-55-9)	625	0.5	1.0

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)¹ µg/L unless specified	Quantitation Level (QL)² µg/L unless specified
METALS, CYANIDE & TOTAL PHENOLS			
Benzo(a)pyrene (50-32-8)	610/625	0.5	1.0
Benzo(ghi)Perylene (191-24-2)	610/625	0.5	1.0
Bis(2-chloroethoxy)methane (111-91-1)	625	5.3	21.2
Bis(2-chloroethyl)ether (111-44-4)	611/625	0.3	1.0
Bis(2-chloroisopropyl)ether (39638-32-9)	625	0.3	0.6
Bis(2-ethylhexyl)phthalate (117-81-7)	625	0.1	0.5
4-Bromophenyl phenyl ether (101-55-3)	625	0.2	0.4
2-Chloronaphthalene (91-58-7)	625	0.3	0.6
4-Chlorophenyl phenyl ether (7005-72-3)	625	0.3	0.5
Chrysene (218-01-9)	610/625	0.3	0.6
Dibenzo (a,j)acridine (224-42-0)	610M/625M	2.5	10.0
Dibenzo (a,h)acridine (226-36-8)	610M/625M	2.5	10.0
Dibenzo(a-h)anthracene (53-70-3)(1,2,5,6-dibenzanthracene)	625	0.8	1.6
Dibenzo(a,e)pyrene (192-65-4)	610M/625M	2.5	10.0
Dibenzo(a,h)pyrene (189-64-0)	625M	2.5	10.0
3,3-Dichlorobenzidine (91-94-1)	605/625	0.5	1.0
Diethyl phthalate (84-66-2)	625	1.9	7.6
Dimethyl phthalate (131-11-3)	625	1.6	6.4
Di-n-butyl phthalate (84-74-2)	625	0.5	1.0
2,4-dinitrotoluene (121-14-2)	609/625	0.2	0.4
2,6-dinitrotoluene (606-20-2)	609/625	0.2	0.4

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) ¹ µg/L unless specified	Quantitation Level (QL) ² µg/L unless specified
BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
Di-n-octyl phthalate (117-84-0)	625	0.3	0.6
1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)	1625B	5.0	20
Fluoranthene (206-44-0)	625	0.3	0.6
Fluorene (86-73-7)	625	0.3	0.6
Hexachlorobenzene (118-74-1)	612/625	0.3	0.6
Hexachlorobutadiene (87-68-3)	625	0.5	1.0
Hexachlorocyclopentadiene (77-47-4)	1625B/625	0.5	1.0
Hexachloroethane (67-72-1)	625	0.5	1.0
Indeno(1,2,3-cd)Pyrene (193-39-5)	610/625	0.5	1.0
Isophorone (78-59-1)	625	0.5	1.0
3-Methyl cholanthrene (56-49-5)	625	2.0	8.0
Naphthalene (91-20-3)	625	0.3	0.6
Nitrobenzene (98-95-3)	625	0.5	1.0
N-Nitrosodimethylamine (62-75-9)	607/625	2.0	4.0
N-Nitrosodi-n-propylamine (621-64-7)	607/625	0.5	1.0
N-Nitrosodiphenylamine (86-30-6)	625	0.5	1.0
Perylene (198-55-0)	625	1.9	7.6
Phenanthrene (85-01-8)	625	0.3	0.6
Pyrene (129-00-0)	625	0.3	0.6
1,2,4-Trichlorobenzene (120-82-1)	625	0.3	0.6
DIOXIN			
2,3,7,8-Tetra-Chlorodibenzo-P-Dioxin (176-40-16)	1613B	1.3 pg/L	5 pg/L

PESTICIDES/PCBs			
Aldrin (309-00-2)	608	0.025	0.05
alpha-BHC (319-84-6)	608	0.025	0.05
beta-BHC (319-85-7)	608	0.025	0.05
gamma-BHC (58-89-9)	608	0.025	0.05
delta-BHC (319-86-8)	608	0.025	0.05
Chlordane (57-74-9) ⁵	608	0.025	0.05
4,4'-DDT (50-29-3)	608	0.025	0.05
4,4'-DDE (72-55-9)	608	0.025	0.05 ¹⁰
4,4' DDD (72-54-8)	608	0.025	0.05
Dieldrin (60-57-1)	608	0.025	0.05
alpha-Endosulfan (959-98-8)	608	0.025	0.05
beta-Endosulfan (33213-65-9)	608	0.025	0.05
Endosulfan Sulfate (1031-07-8)	608	0.025	0.05
Endrin (72-20-8)	608	0.025	0.05
Endrin Aldehyde (7421-93-4)	608	0.025	0.05
Heptachlor (76-44-8)	608	0.025	0.05
Heptachlor Epoxide (1024-57-3)	608	0.025	0.05
PCB-1242 (53469-21-9) ⁶	608	0.25	0.5
PCB-1254 (11097-69-1)	608	0.25	0.5
PCB-1221 (11104-28-2)	608	0.25	0.5
PCB-1232 (11141-16-5)	608	0.25	0.5
PCB-1248 (12672-29-6)	608	0.25	0.5
PCB-1260 (11096-82-5)	608	0.13	0.5
PCB-1016 (12674-11-2) ⁶	608	0.13	0.5
Toxaphene (8001-35-2)	608	0.24	0.5

1. Detection level (DL) or detection limit means the minimum concentration of an analyte (substance) that can be measured and reported with a 99percent confidence that the analyte concentration is greater than zero as determined by the procedure given in 40 CFR part 136, Appendix B.
2. Quantitation Level (QL) also known as Minimum Level of Quantitation (ML) – The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the

lowest calibration standard, assuming that the lab has used all method-specified sample weights, volumes, and cleanup procedures. The QL is calculated by multiplying the MDL by 3.18 and rounding the result to the number nearest to $(1, 2, \text{ or } 5) \times 10^n$, where n is an integer. (64 FR 30417).

ALSO GIVEN AS: The smallest detectable concentration of analyte greater than the Detection Limit (DL) where the accuracy (precision & bias) achieves the objectives of the intended purpose. (Report of the Federal Advisory Committee on Detection and Quantitation Approaches and Uses in Clean Water Act Programs Submitted to the US Environmental Protection Agency December 2007).

3. 1, 3-dichloropropylene (mixed isomers) You may report this parameter as two separate parameters: cis-1, 3-dichloropropene (10061-01-5) and trans-1, 3-dichloropropene (10061-02-6).
4. Total Benzo(a)fluoranthenes - Because Benzo(b)fluoranthene, Benzo(j)fluoranthene and Benzo(k)fluoranthene co-elute you may report these three isomers as total benzo(a)fluoranthenes.
5. Chlordane - You may report alpha-chlordane (5103-71-9) and gamma-chlordane (5103-74-2) in place of chlordane (57-74-9). If you report alpha and gamma-chlordane, the DL/PQLs that apply are 0.025/0.050.
6. PCB 1016 & PCB 1242 - You may report these two PCB compounds as one parameter called PCB 1016/1242.

APPENDIX E

SEPA Checklist

**DETERMINATION OF NONSIGNIFICANCE
AND ADOPTION OF EXISTING
ENVIRONMENTAL DOCUMENT**

Description of current proposal General Sewer Plan

Proponent City of La Center, Washington

Location of current proposal La Center, Washington

Title of document being adopted Final Environmental Impact Statement, La Center
Comprehensive Plan Amendment

Date adopted document was prepared DEIS published May 2006, FEIS expected to be
published August 2006

Description of document (or portion) being adopted Environmental Impact Statement; proposed
adopted date end of 2006, by the Board of Clark County Commissioners

If the document being adopted has been challenged (WAC 197-11-630), please describe:

N/A

The document is available to be read at (place/time) City of La Center City Hall, 419 E. Cedar
Avenue, La Center, Washington, Monday through Friday, 8:00 am - 5:00 pm

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

☐ There is no comment period for this DNS.

☒ This DNS is issued under WAC 197-11-340(2); the lead agency will not act on the proposal for 14 days from the date below. Comments must be submitted by _____

We have identified and adopted this document as being appropriate for this proposal after independent review. The document meets our environmental review needs for the current proposal and will accompany the proposal to the decision maker.

Name of agency adopting document City of La Center

Contact person, if other than responsible official Dale Miller

Phone (360) 263-7665

Responsible official James T. Irish

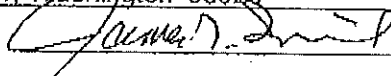
Position/title Mayor, City of La Center

Phone (360) 263-2782

Address 419 E. Cedar Avenue, La Center, Washington 98629

Date 8/18/06

Signature



APPENDIX F
References

APPENDIX F

REFERENCES

- [1] *Clark Public Utilities La Center Water Reclamation Plant Sewer Plan Update*, Gibbs & Olson, Inc., August 2001.
- [2] *City of La Center General Sewer Plan*, Wallis Engineering, July 2006.
- [3] *City of La Center Wastewater Facility Plan*, Kennedy/Jenks Consultants, July 2008.
- [4] *La Center Junction Sewer Study*, Otak, May 2011.
- [5] *La Center Urban Area Comprehensive Plan*, Adopted 2008.
- [6] *Criteria for Sewage Works Design*, State of Washington, Department of Ecology, Revised October 1985.
- [7] *Biosolids Management Guidelines for Washington State, Publication #93-80*, State of Washington, Department of Ecology, Revised July 2000.