

City of Bainbridge Island General Sewer Plan Update Advisory Committee Meeting #1

July 9, 2013

Agenda

- Introductions
- General Sewer Plan Overview
- Wastewater Collection and Treatment Facilities
- City Planning Issues
- General Sewer Plan Considerations
- Role and Responsibilities of GSP Advisory Committee

INTRODUCTIONS

GSP Advisory Committee

3 Existing Citizen Advisory Committees/ Commissions

- Planning Commission
- Utility Advisory Committee
- Environmental Technical Advisory Committee

Introductions

Planning Commission:

Mike Lewars, Chair

Maradel Gale

Kate Kelly

Jon Quitsland

Scott Hicks

J. Mack Pearl

City Council liaison:

Steve Bonkowski

Introductions

UAC:

Arlene Buetow, Chair

Doug Dow

Jeff Kanter

Andy Maron

Eric Turloff

City Council liaison:

Sarah Blossom

Introductions

ETAC:

Marc Boule

Jim Brennan

Mark Bryant

Gary Nakamura

Kathleen Peters

Deborah Rudnick

David Sale

Chris Waldbillig

City Council liaison:

Dave Ward

Introductions

Why bring these groups together?

- Each brings a particular area of emphasis to the sewer plan issues
- Allows for a coordinated discussion of complex, interrelated issues
- Facilitates City Council consideration by incorporating feedback early in process

Introductions

City Staff:

- John Cunningham – *Interim Director, Public Works*
- Chris Munter – *Engineer*
- Kathy Cook – *Director, Planning & Community Development*
- Jennifer Sutton – *Special Projects Planner*

Introductions

Carollo Engineers Staff:

- Lara Kammereck – *Project Manager*
- Bob Eimstad – *Policies and Criteria Facilitation*
- Anh Quach – *Collection System Modeling and Analysis*

GENERAL SEWER PLAN OVERVIEW

The Department of Ecology's requirements for GSPs are included in WAC 173-240-050

173-240-050

General sewer plan.

(1) All general sewer plans required of any governmental agency before providing sewer service are "plans" within the requirements of RCW 90.48.110. Three copies of the proposed general sewer plan and each amendment to it must be submitted to and approved by the department before implementing the plan.

(2) The general sewer plan must be sufficiently complete so that engineering reports can be developed from it without substantial alterations of concept and basic considerations.

(3) The general sewer plan shall include the following information together with any other relevant data as requested by the department. To satisfy the requirements of the local government jurisdiction, additional information may be necessary.

(a) The purpose and need for the proposed plan.

(b) A discussion of who will own, operate, and maintain the systems.

(c) The existing and proposed service boundaries.

(d) Layout map including the following:

(i) Boundaries. The boundary lines of the municipality or special district to be sewered, including a vicinity map;

(ii) Existing sewers. The location, size, slope, capacity, direction of flow of all existing trunk sewers, and the boundaries of the areas served by each;

(iii) Proposed sewers. The location, size, slope, capacity, direction of flow of all proposed trunk sewers, and the boundaries of the areas to be served by each;

(iv) Existing and proposed pump stations and force mains. The location of all existing and proposed pumping stations and force mains, designated to distinguish between those existing and proposed;

(v) Topography and elevations. Topography showing pertinent ground elevations and surface drainage must be included, as well as proposed and existing streets;

(vi) Streams, lakes, and other bodies of water. The location and direction of flow of major streams, the high and low elevations of water surfaces at sewer outlets, and controlled overflows, if any. All existing and potential discharge locations should be

(vii) Water systems. The location of wells or other sources of water supply, water storage reservoirs and treatment plants, and water transmission facilities.

(e) The population trend as indicated by available records, and the estimated future population for the stated design period. Briefly describe the method used to determine future population trends and the concurrence of any applicable local or regional planning agencies.

(f) Any existing domestic or industrial wastewater facilities within twenty miles of the general plan area and within the same topographical drainage basin containing the general plan area.

(g) A discussion of any infiltration and inflow problems and a discussion of actions that will alleviate these problems in the future.

(h) A statement regarding provisions for treatment and discussion of the adequacy of the treatment.

(i) List of all establishments producing industrial wastewater, the quantity of wastewater and periods of production, and the character of the industrial wastewater insofar as it may affect the sewer system or treatment plant. Consideration must be given to future industrial expansion.

(j) Discussion of the location of all existing private and public wells, or other sources of water supply, and distribution structures as they are related to both existing and proposed domestic wastewater treatment facilities.

(k) Discussion of the various alternatives evaluated, and a determination of the alternative chosen, if applicable.

(l) A discussion, including a table, that shows the cost per service in terms of both debt service and operation and maintenance costs, of all facilities (existing and proposed) during the planning period.

(m) A statement regarding compliance with any adopted water quality management plan under the Federal Water Pollution Control Act as amended.

(n) A statement regarding compliance with the State Environmental Policy Act (SEPA) and the National Environmental Policy Act (NEPA), if applicable.

[Statutory Authority: RCW 90.48.110, 00-15-021 (Order 00-09), § 173-240-050, filed 7/11/00, effective 8/11/00. Statutory Authority: Chapters 43.21A and 90.48 RCW. 83-23-

City's NPDES permit for wastewater discharge to Puget Sound from the treatment plant dictates that GSP must be submitted by June 30, 2014

Page 24 of 35
Permit No. WA0020907

S10. General sewer plan

The Permittee must prepare and submit an electronic copy (preferably as a PDF) of a general sewer plan in accordance with chapter 173-240 WAC to Ecology for review and approval by June 30, 2014.

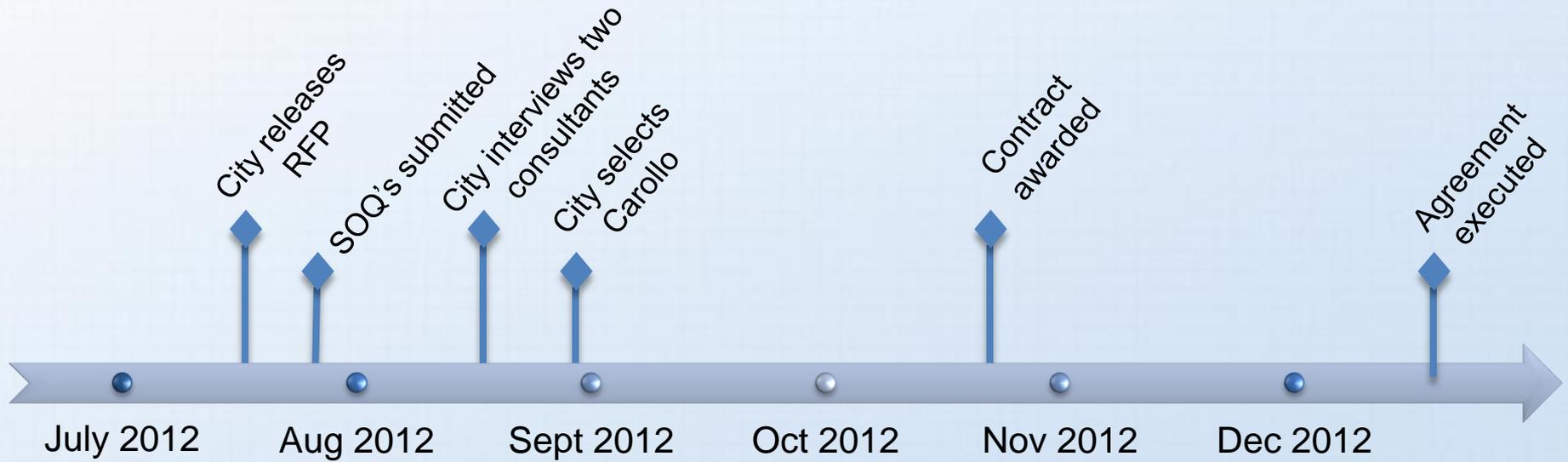
The plan must contain any appropriate requirements as described in the *Criteria for Sewage Works Design* (Washington State Department of Ecology, Publication No. 98-37 WQ, 2008). As required by RCW 90.48.112, the plan must address the feasibility of using reclaimed water as defined in RCW 90.46.010.

S11. Application for permit renewal or modification for facility changes

The Permittee must submit an application for renewal of this permit by January 1, 2017. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).

The Permittee must also submit a new application or supplement at least one hundred eighty (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.

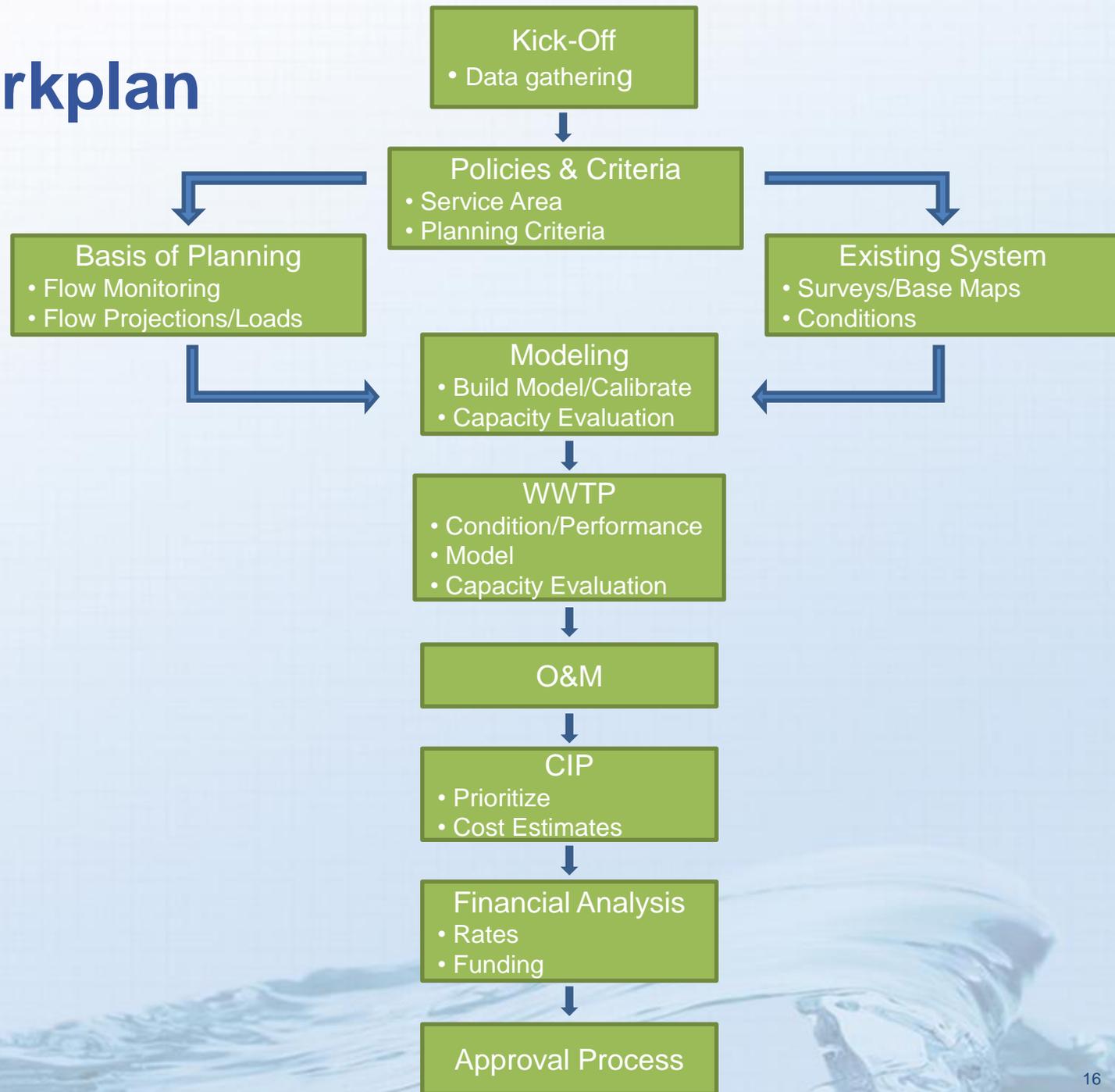
After extensive process, Carollo selected to assist City with update of General Sewer Plan



The General Sewer Plan will include 9 major elements

- Policies and Criteria
- Basis of Planning
- Existing System Evaluation
- Hydraulic Modeling
- Capacity Evaluation
- Treatment Plant Analysis
- Operations and Maintenance
- Capital Improvement Plan
- Financial Capacity Analysis

GSP Workplan

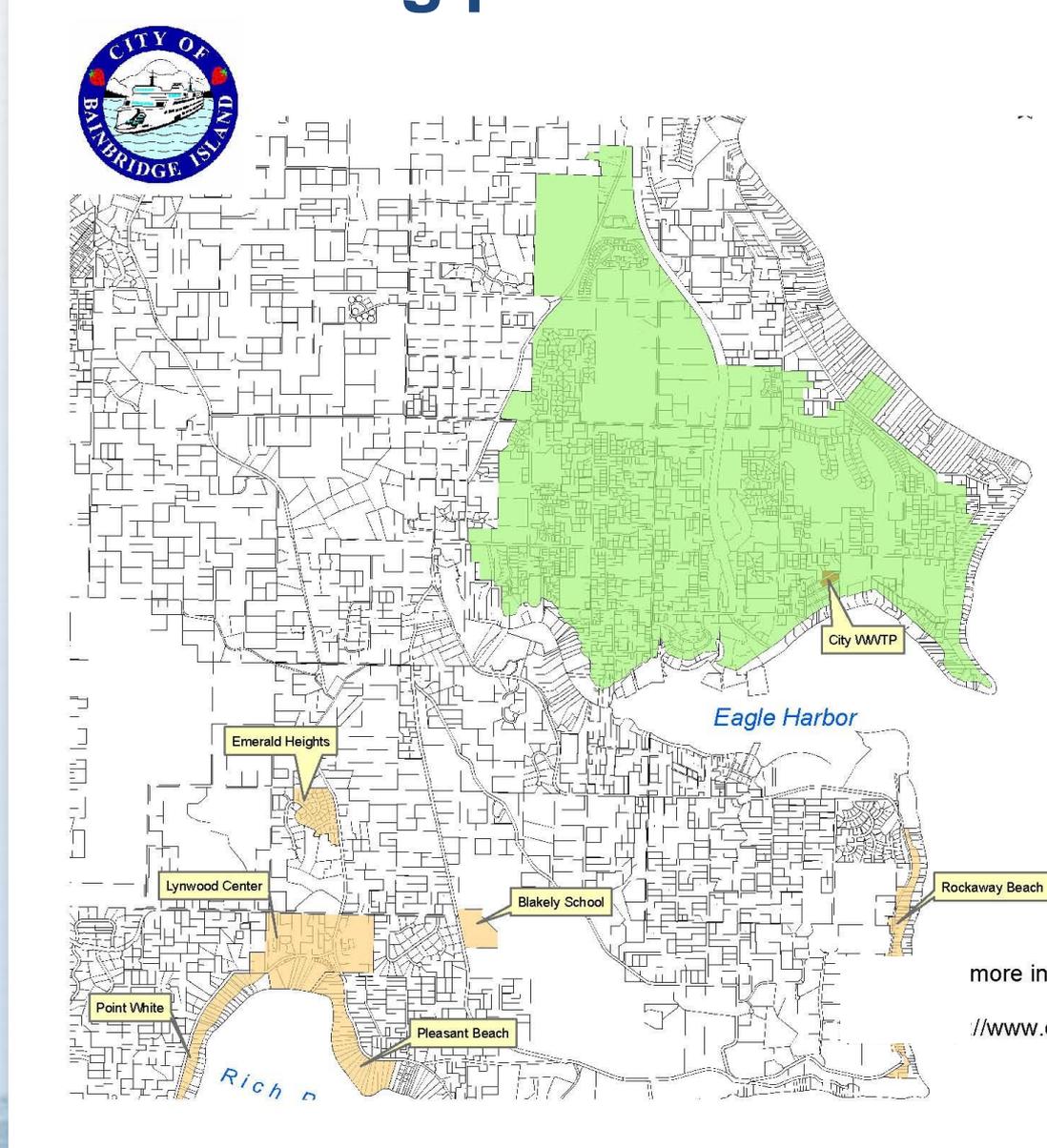


Planning Schedule

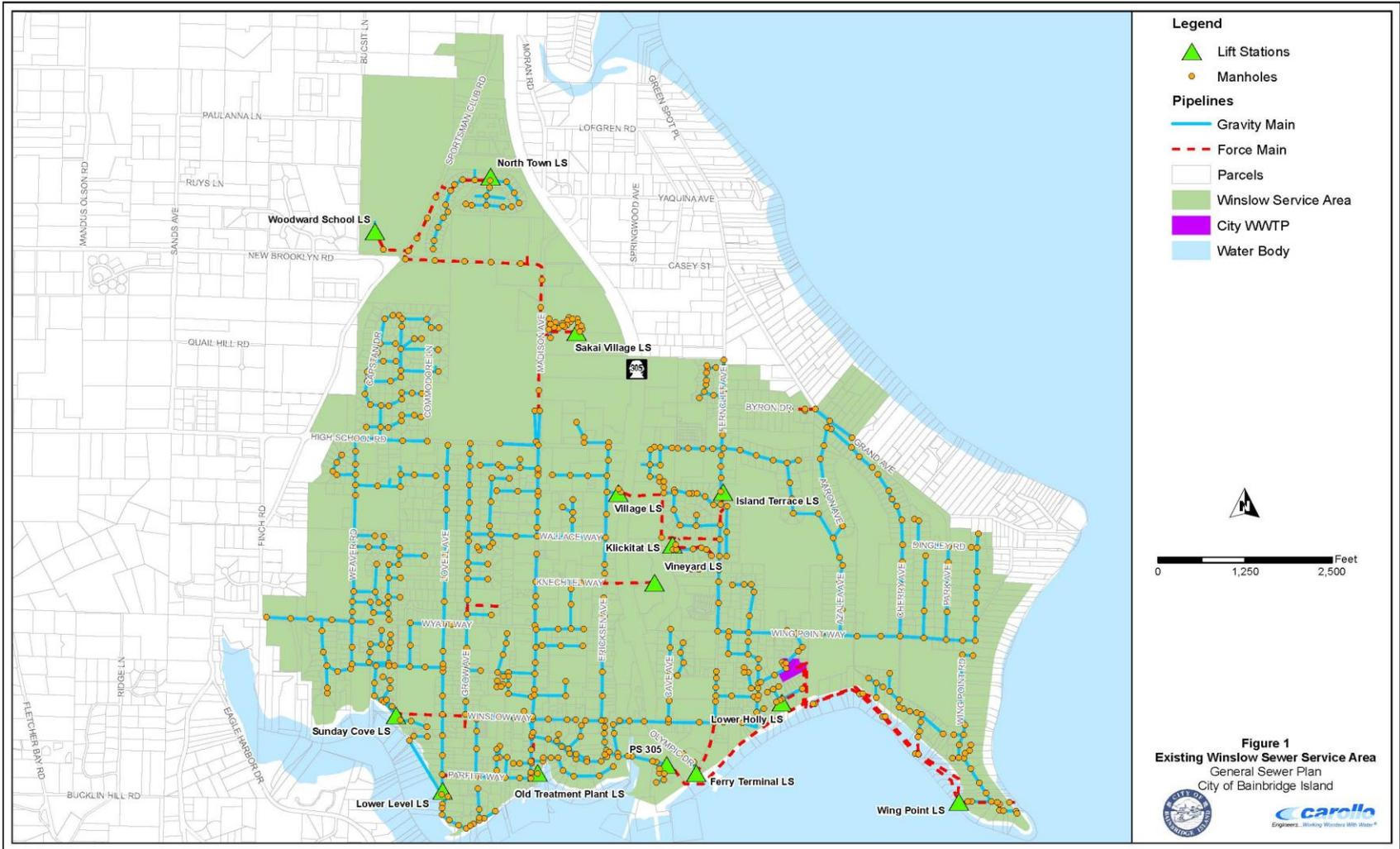
	2013												2014												2015														
Project Management	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Policy & Criteria	■	■	■	■	■	■	■	■	■	■	■	■																											
Basis of Planning																																							
Existing System		■	■	■	■	■																																	
Modeling & Capacity																																							
O&M Evaluation																																							
Treatment Plant Evaluation																																							
CIP																																							
Financial Analysis																																							
Regulatory Review/Approval																																							

EXISTING WASTEWATER COLLECTION & TREATMENT FACILITIES

The City of Bainbridge Island has two sewer service areas serving portions of island



The Winslow sewer service area is served by the City's WWTP

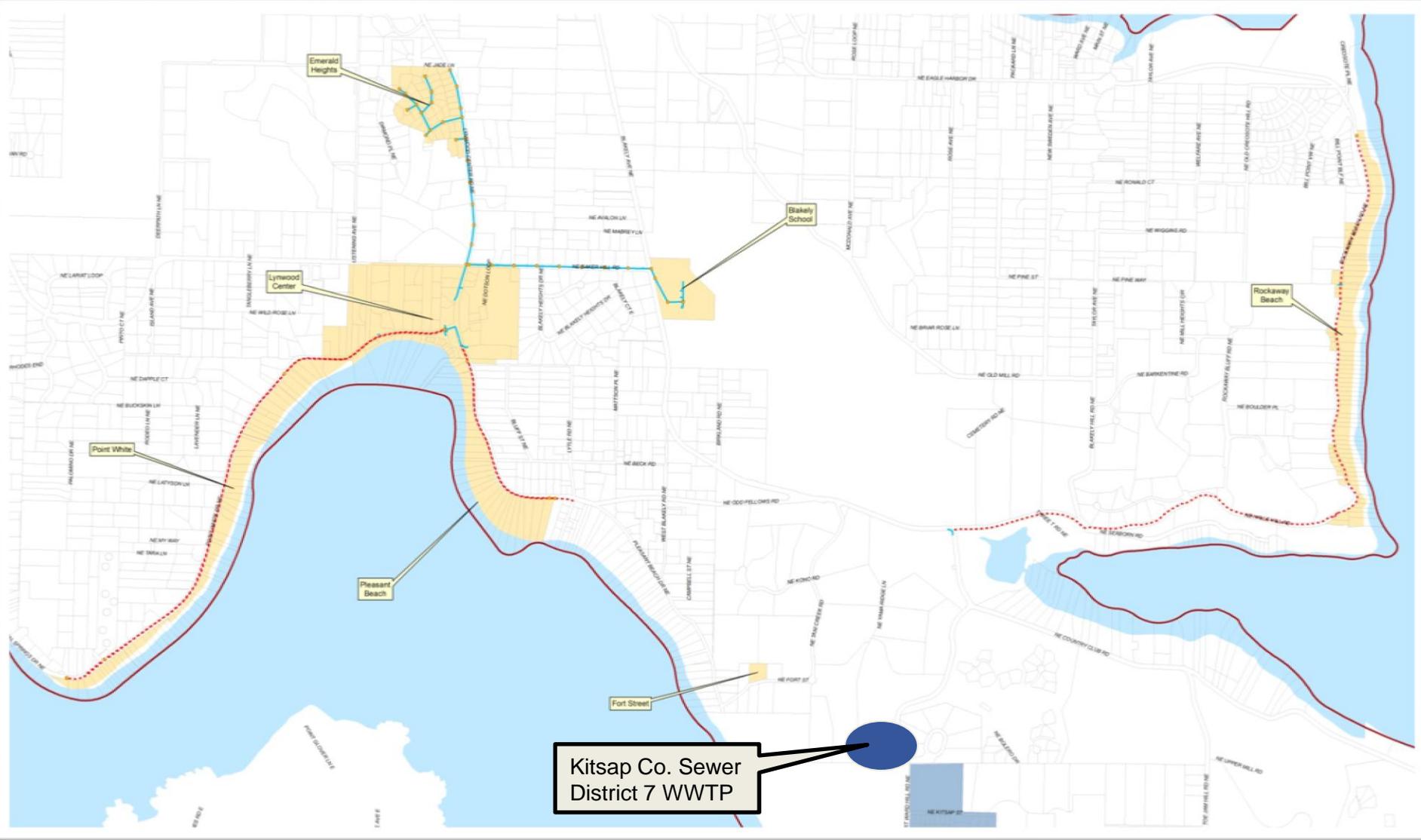


Source: City of Bainbridge Island (SEWER January 2011 dwg)

Source: 2004 City of Bainbridge Island Comprehensive Plan



The South Island service area is served by Kitsap County Sewer District 7



Kitsap Co. Sewer District 7 WWTTP

Treated effluent from the Winslow WWTP discharges to Puget Sound via a 16-in diameter force main



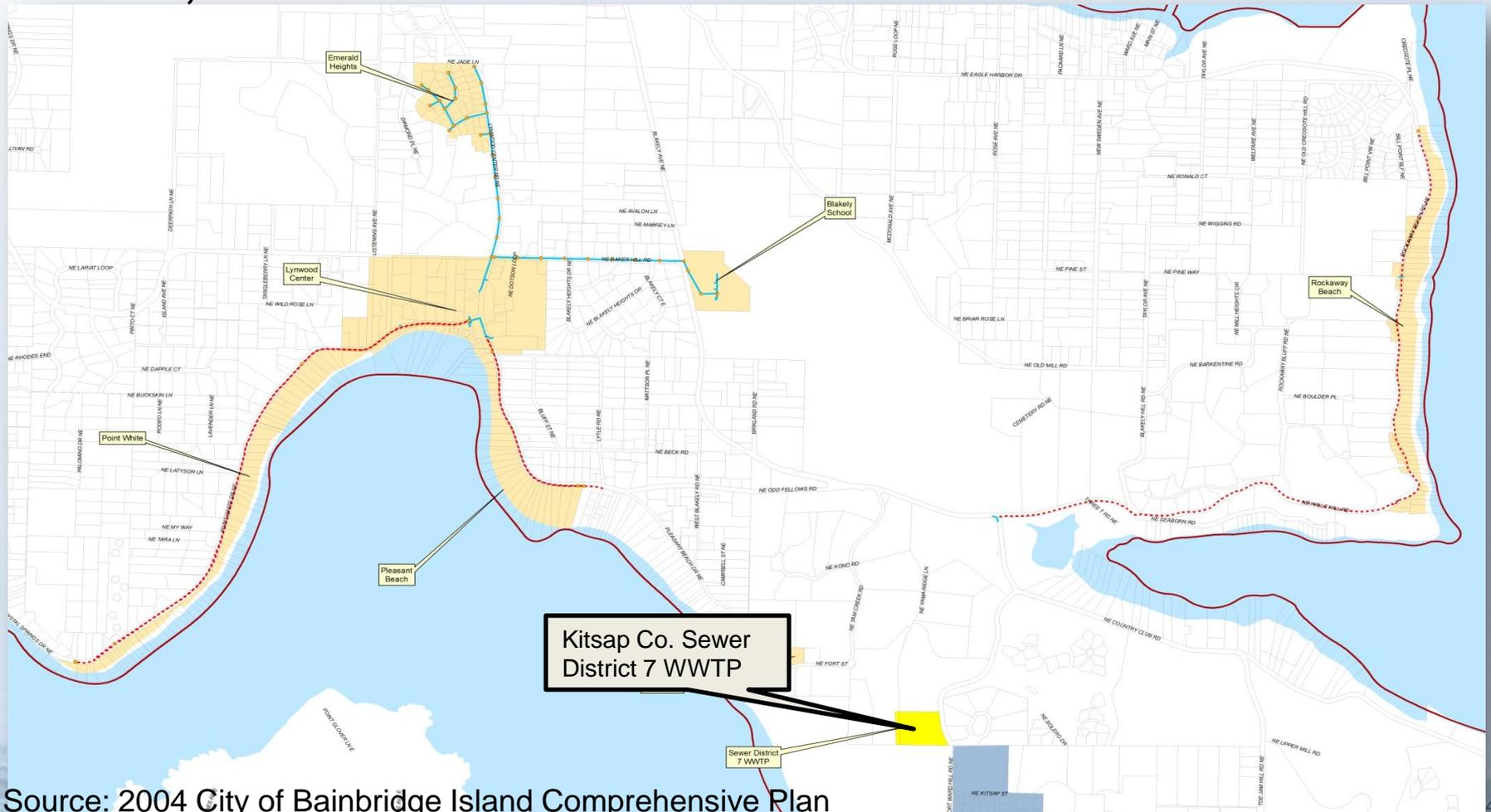
The Winslow service area includes:

- 14 lift stations
- 126,000 ft gravity sewer
- 29,000 ft force main



The South Island service area includes:

- 2 lift stations
- 10,000 ft gravity sewer
- 32,000 ft force main



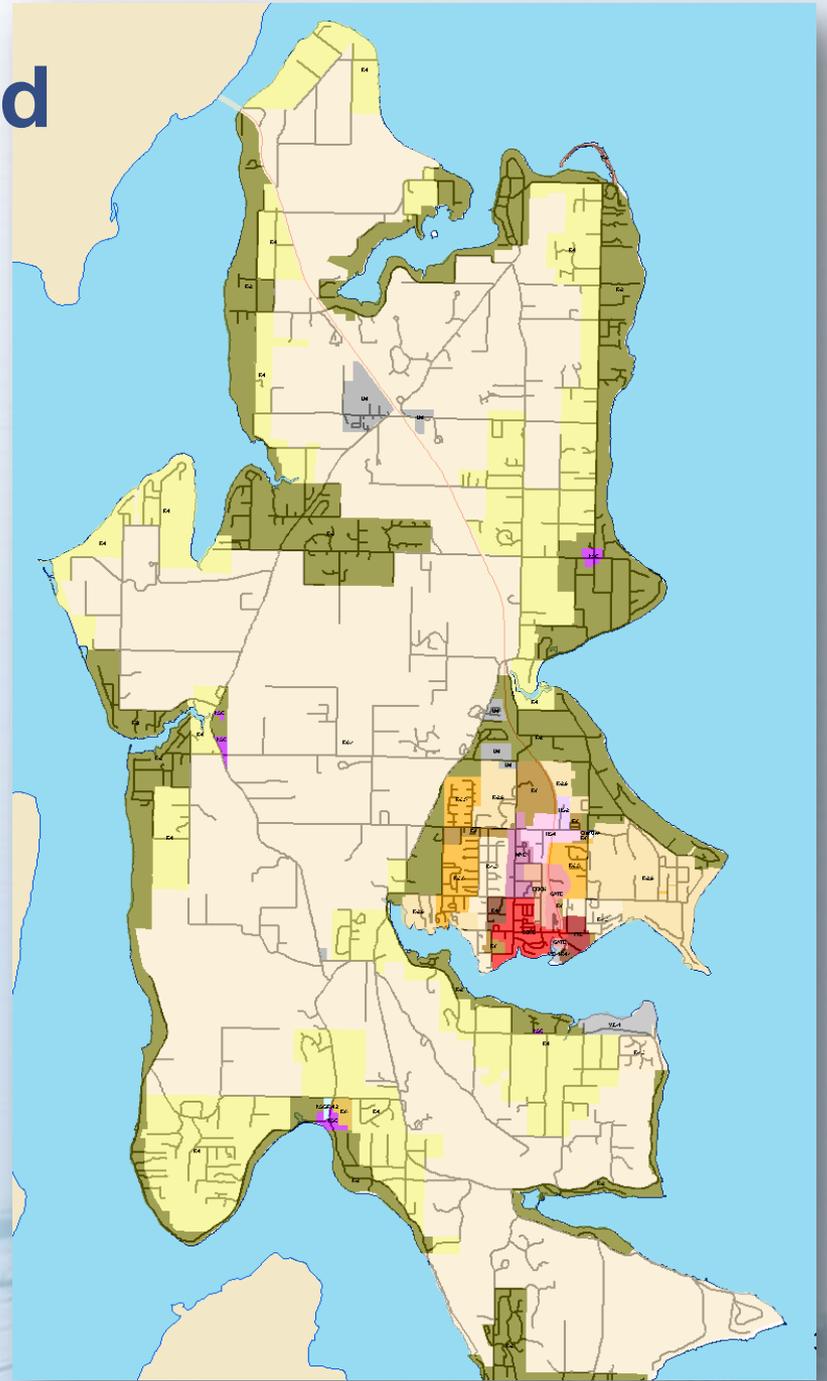
Source: 2004 City of Bainbridge Island Comprehensive Plan

CITY PLANNING ISSUES

Existing City Comprehensive Plan Status

- Goals
- Existing Land Use and Zoning
- Growth Strategy

City of Bainbridge Island Official Zoning Map



Current Growth Strategy

2004 COMPREHENSIVE PLAN

- Targets 50% of future Island growth into Winslow
- 5% into the three Neighborhood Centers: Lynwood Center, Island Center and Rolling Bay
- The remaining 45% of future growth into the outlying residential areas

Planning Sub Areas

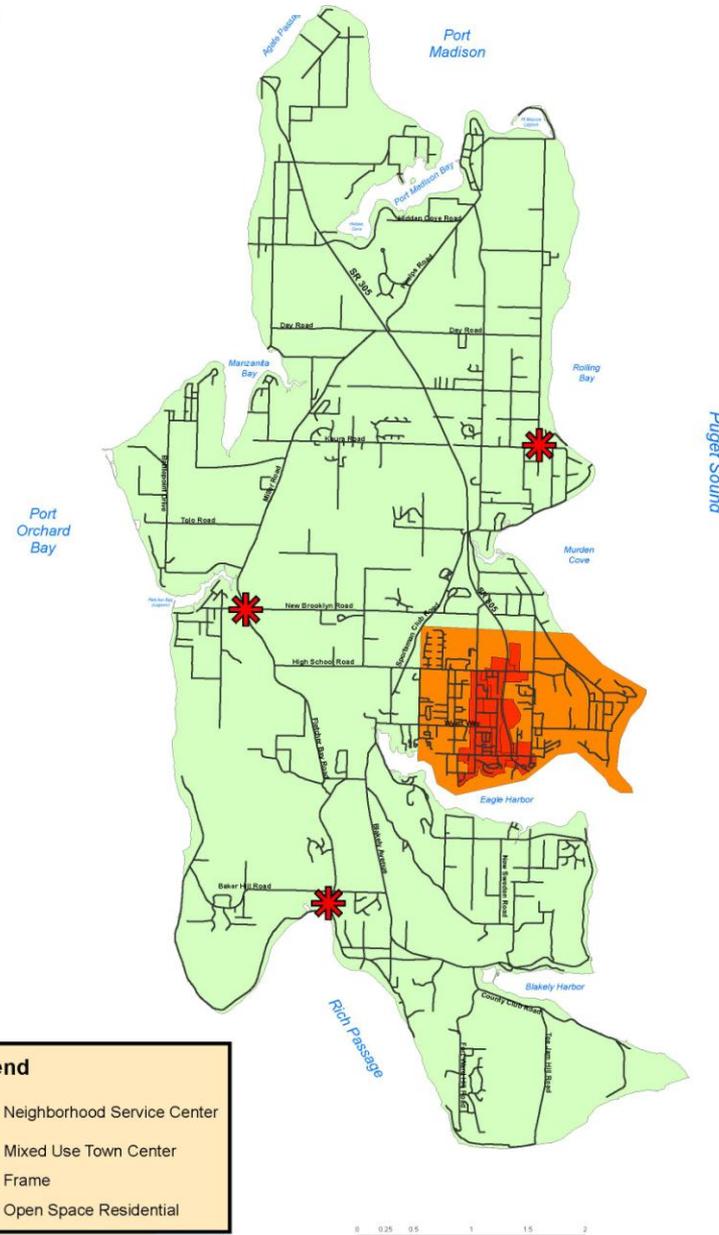
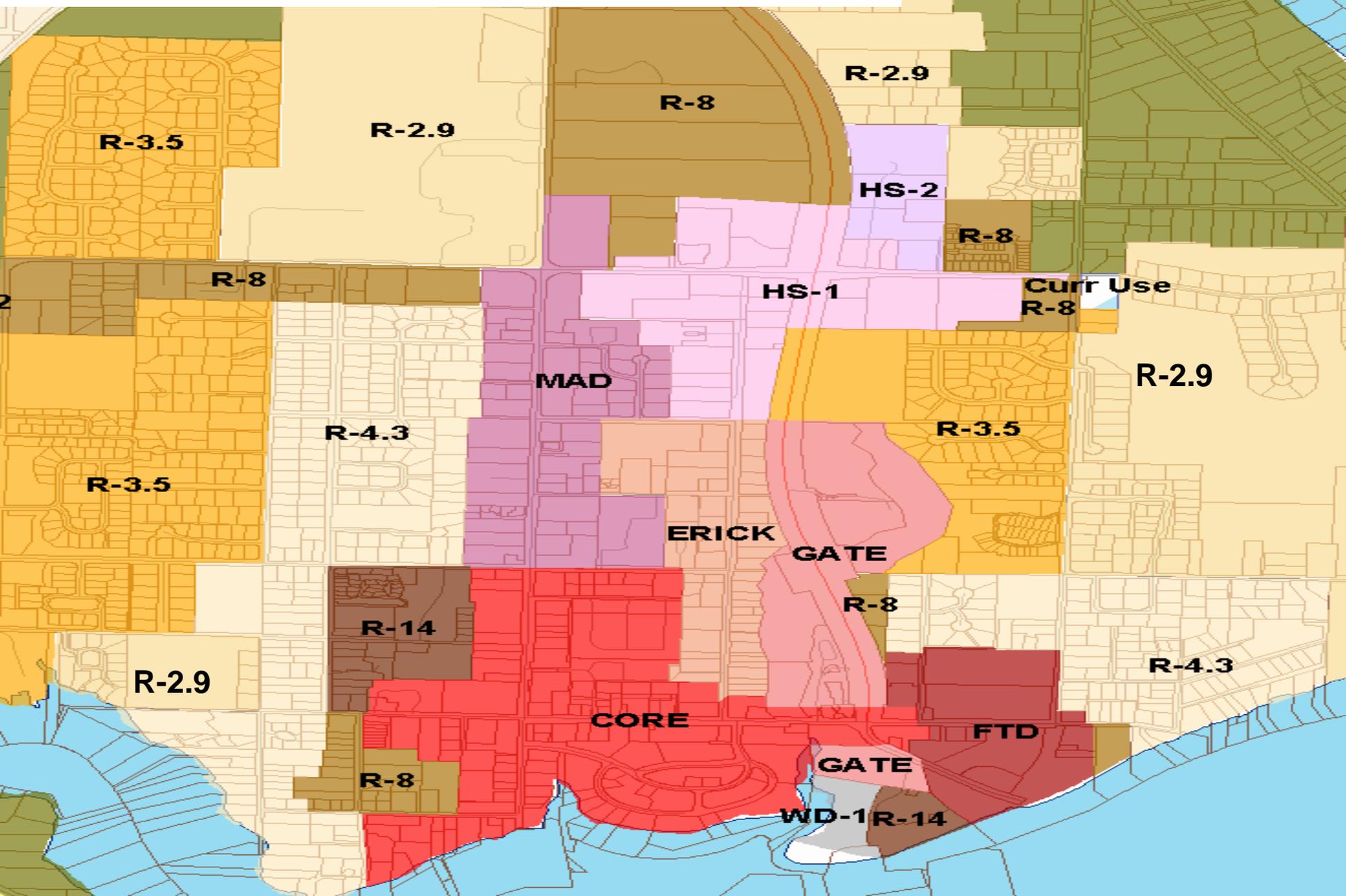


Figure 1: Planning Sub Areas

Winslow Area Zoning



GENERAL SEWER PLAN CONSIDERATIONS

General Planning Considerations

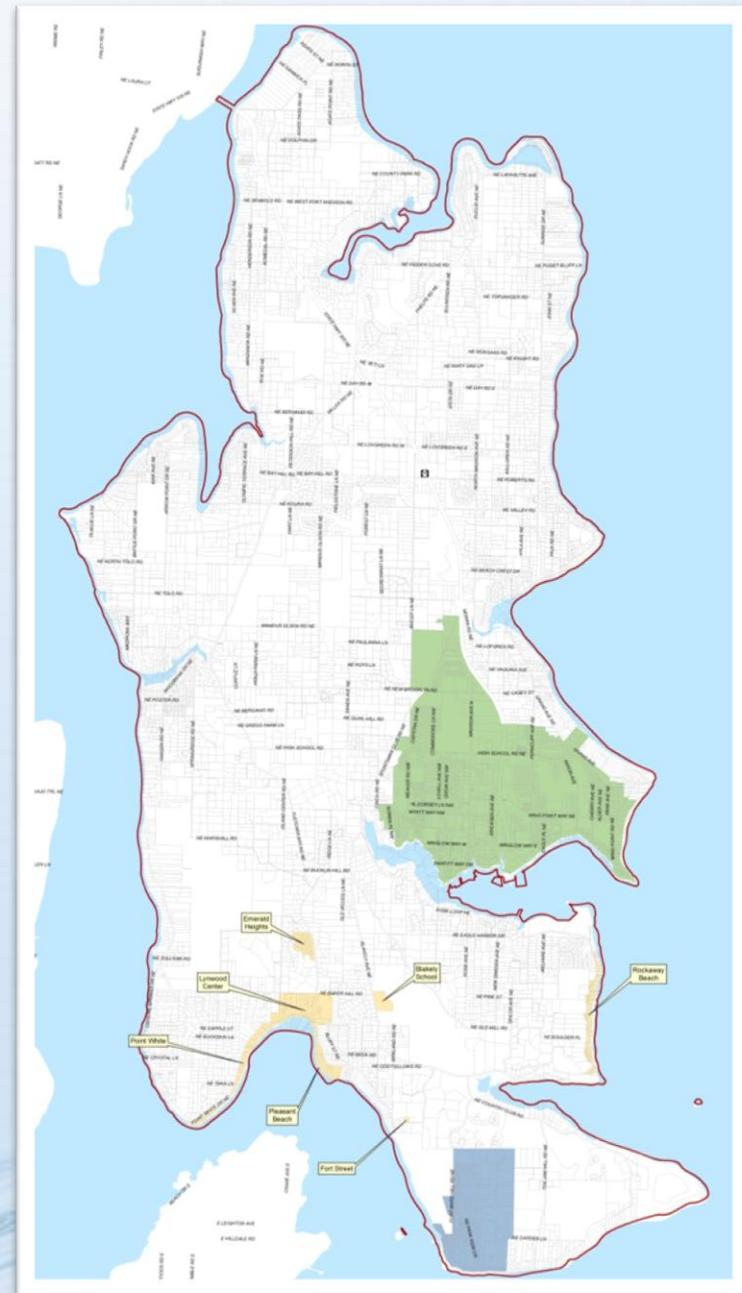
- Future sewer service area boundaries
- Future flows consistent with City Comp Plan growth projections
 - Low, medium, and high growth scenarios
- Hydraulic evaluation and sewer design criteria

These considerations will be the foundation for the technical analysis and CIP development

Policies & criteria will be presented in the following categories

- General sewer service policies
- Design criteria policies
- Financial policies
- Sewer service extension policies
- Environmental stewardship policies
- System reliability policies

City of Bainbridge Island Existing Sewer Service Area Boundary



Source: 2004 City of Bainbridge Island Comprehensive Plan

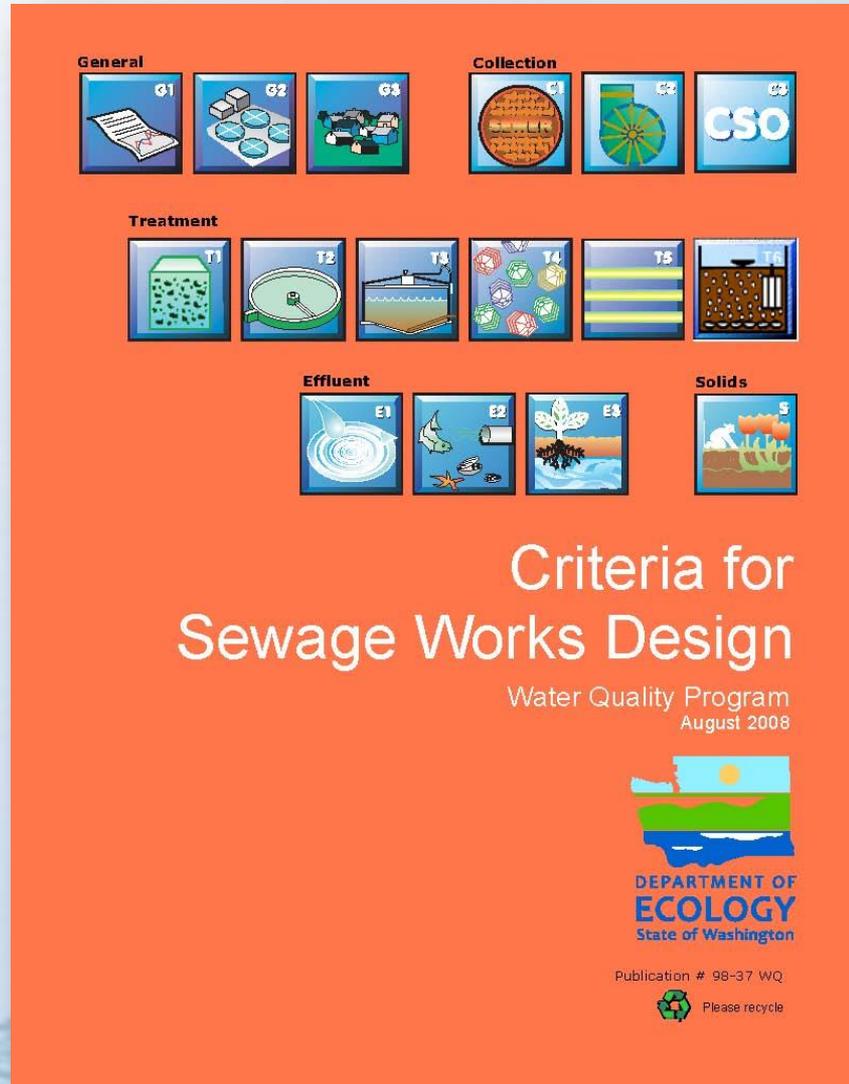
Service area policies can be found in the Water Resources Element of the City's Comp Plan

- SSP 2.1 – Public sewer service should be provided for areas designated in the Comprehensive Plan, including Winslow, the City-contracted service areas of Sewer District 7 and the future service areas at Point Monroe Drive and Lafayette Avenue. Such public sewer service shall not be used to justify development counter to the Comprehensive Plan.
- SSP 2.2 – In public sewer system service areas, new construction should provide for eventual connection to public sewer systems.

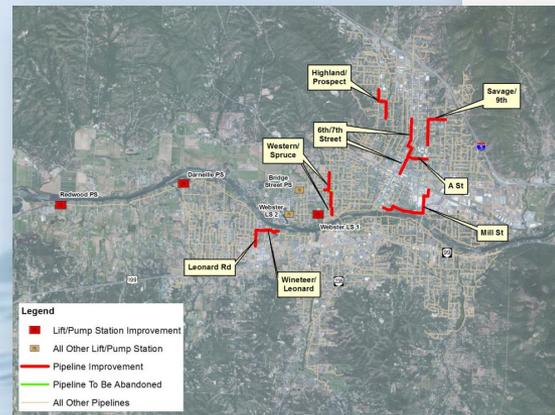
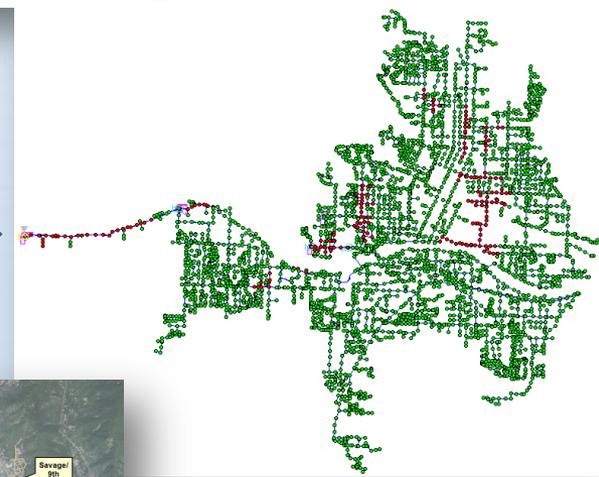
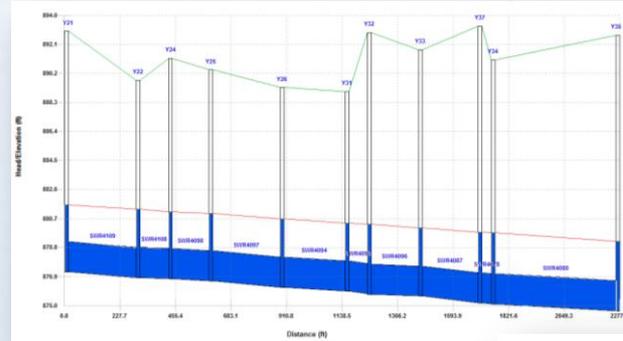
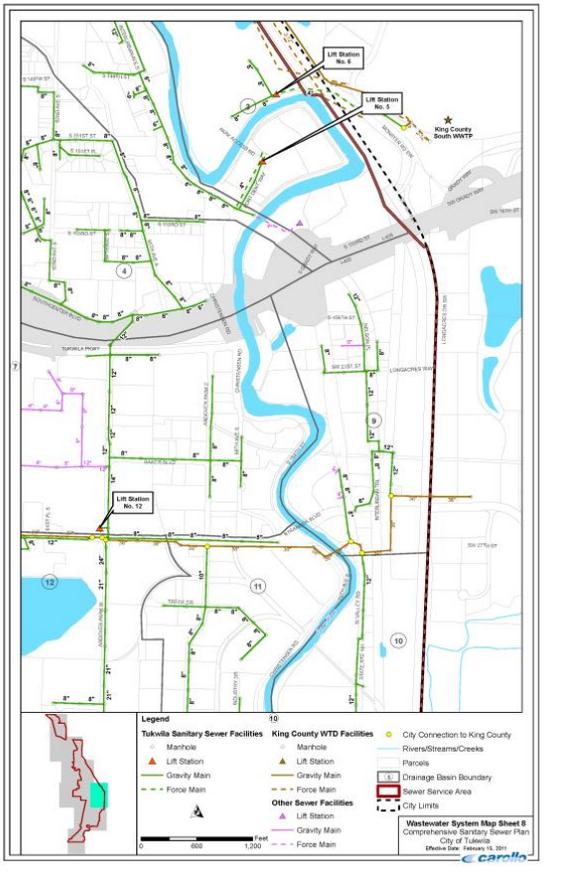
Service area policies can be found in the Water Resources Element of the City's Comp Plan

- SSP 2.4 – Emergency service or other minor modifications to the Winslow Sanitary Sewer System, which are within the existing sewer facility capacity, may be allowed with approval by the City Council, provided that such extensions serve areas that have an environmental need for sewer due to:
 1. A high number of documented failing septic systems; or
 2. Proximity to sensitive bodies of water that are unsuitable for on-site septic systems, according to the Kitsap County Health District.

Design criteria and standards can be found in the City's municipal code and Ecology's Orange Book



Hydraulic modeling will identify deficiencies within the collection system



Identifying capacity deficiencies allows development of a CIP

185th Street Pump Station

Current Pump Rated Design Capacity: 464 gpm

YEAR	PIF (gpm)	Firm Capacity (gpm)
2008	109	464
2028	1075	464

Intersection between PIF and Firm Capacity:
(Intersection year and flow will change with graph output)

Year:	2015
Flow:	464

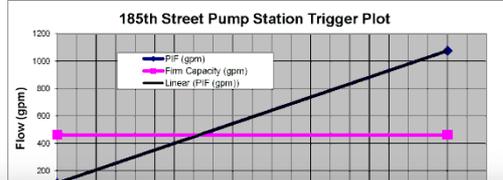
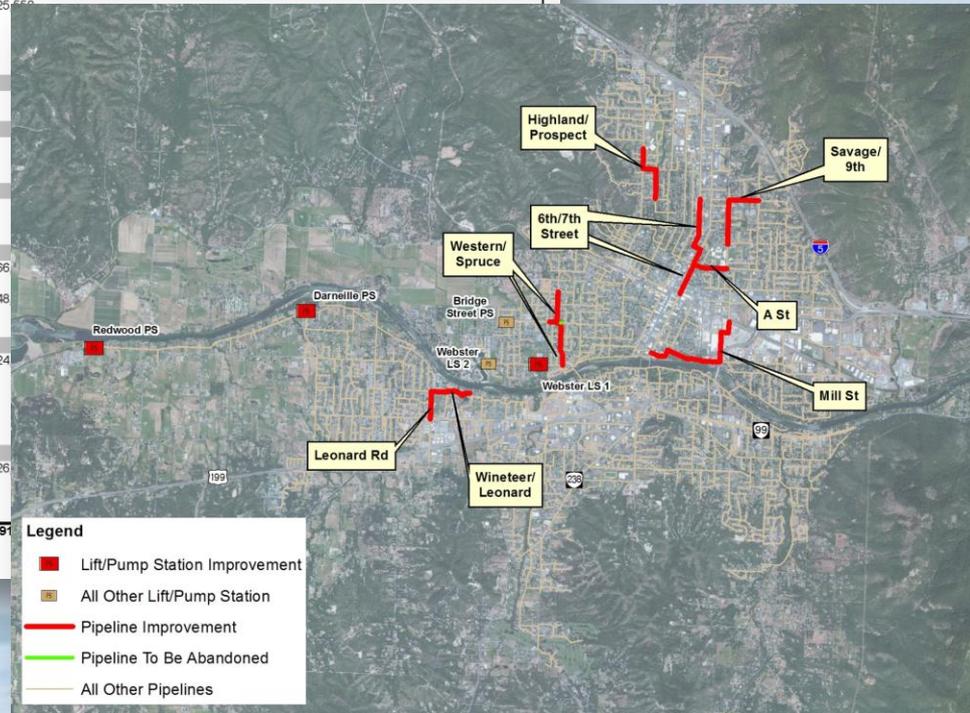


Table 10.2 Capital Improvements Plan
City of Gresham
Wastewater Pump Station Master Plan

CAPITAL IMPROVEMENTS PLAN

185th Street PS Improvements	Quantity	Units	Cost/ Unit	C
Flow Metering				
8" Flow Meter	1	EA	\$ 3,456	\$
5'X5' Precast Meter Vault	1	EA	\$ 4,433	\$
Meter Piping & Appurtenances	1	LS	\$ 4,000	\$
				\$ 11
Upgrades				
Minor				
O&M Manual	1	EA	\$ 4,500	\$
Fall Protection (Safety Nets)	1	EA	\$ 1,000	\$
Re-orient Isolation Valves	1	LS	\$ 100	\$
Replace Valve Vault Fan (Optional)	1	LS	\$ 1,500	\$
Remove wet well Fans & Install steel plate	1	LS	\$ 950	\$
				\$ 1
Major				
Replace Pump Guide Rails	1	LS	\$ 1,200	\$
Site Lighting & Pole	1	EA	\$ 3,500	\$
Electrical Allowances	1	LS	\$ 1,400	\$
				\$ 1
Replace Pumps/Increase Capacity				
New Pumps (640 gpm @ 245')	3	EA	\$ 40,000	\$ 121
New Valve Vault for 3rd Pump	1	LS	\$ 3,000	\$
Piping & Appurtenances	1	LS	\$ 10,000	\$ 11
Electrical Allowances	1	LS	\$ 21,200	\$ 21
New 8" FM extension	2300	LF	\$ 72	\$ 167
				\$ 311

Pump Station & Improvement Project	Recommended Fiscal Year of Project Implementation									
	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2018/2019	2021/2022	
185th Street										
Flow Monitoring										
Upgrades										
Pump Replacement Design										
Pump Replacement Construction										
Atherton										
Replace w/Gravity									\$333,535	
Cascade Glen 1										
Upgrades										
Pump Replacement										
Cascade Glen 2										
Upgrades										
Pump Replacement										
College										
Upgrades & Pump Replacement Design									\$66	
Upgrades & Pump Replacement Construction									\$48	
Possible Full Replacement - Additional Design										
Possible Full Replacement - Additional Const.										
Hunters Highland										
Flow Metering										
Upgrades and Pump Replacement									\$24	
OR										
Replace by Gravity Design										
Replace by Gravity Construction										
Rockwood										
Flow Metering										
Upgrades										
Pump Replacement									\$26	
TOTAL COSTS (Cost for Hunters Highland Replace with Gravity)									\$333,535	
TOTAL COSTS: Hunters Highland Replace w/Gravity									\$191	



Legend

- Red square: Lift/Pump Station Improvement
- Yellow square: All Other Lift/Pump Station
- Blue line: Pipeline Improvement
- Green line: Pipeline To Be Abandoned
- Grey line: All Other Pipelines

ROLE AND RESPONSIBILITIES OF THE GSP ADVISORY COMMITTEE

Role of the Advisory Committee

Policies related to Service Area:

- Assist with developing Service Area scenarios
- Assist with evaluating Service Area scenarios
- Develop consensus on Service Area Policies

Will begin with Service Area policies as this is fundamental to other issues

Role of the Advisory Committee

Will review and evaluate other policy areas next:

- Planning Policies
- System Design Policies
- Financial Policies
- Agency Coordination
- Environmental Stewardship

Process for Policy Review

- Iterative, as many topics are interrelated
- Includes periodic check-in with City Council (Fall 2013)
- Culminates in formal Council approval of final policies (early 2014)

Why are these policies important?

- Results will guide the management of the sewer system
- Will be used in early 2014 as input to model system requirements, capital planning, and estimated project costs

Timeline – Service Area Policies

- **July 9th** – intro to GSP update
- **July 30th** – service area discussion
- **Aug 13th** – service area discussion continued
- **Aug 20th** – develop consensus/recommendations for City Council
- **Sep 2013** – City Council consideration & approval

Timeline – Other Sewer Plan Policies

- **Sep – Dec, 2013**
 - additional policy discussions
 - develop consensus/recommendations for City Council
- **Jan 2014**
 - additional policies presented to City Council

Timeline – Finishing the GSP Update

- Q1 & Q2, 2014:
- Council formally approves policies
- Policies used to model system requirements
- Results used to develop Capital Plan
- Cost estimates developed for Capital Plan
- Council reviews and formally approves updated General System Plan

Target completion: Mid - 2014

Timeline – GSP & Comp Plan Update

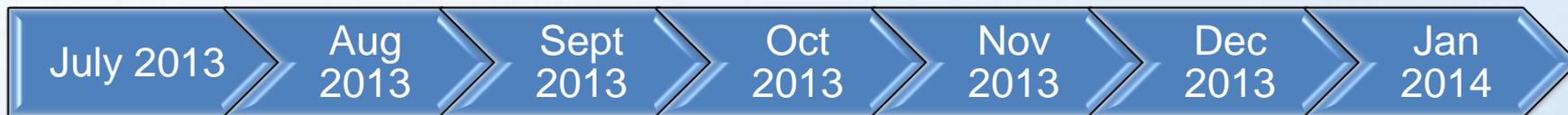
June/July, 2014 - *GSP submitted to Ecology*

June, 2015 - *GSP approved by Ecology*

June, 2015 - June, 2016 - *GSP incorporated into Comp Plan update*

June, 2016 - *Comp Plan update submitted to State*

Review timeline and meetings



July 9

- GSP Overview
- City Comp Plan

Aug 13

- Continue service area discussion

September

- City Council review and approval of sewer area policy recommendations

City Council Meeting

- Review and approval

July 30

- Sewer service area boundary
- Service area policies
- Growth scenarios

Aug 20

- Service area boundary recommendations

September to December Meeting Dates TBD

- General sewer service policies
- Design criteria policies
- Financial policies
- Sewer service extension policies
- Environmental stewardship policies
- System reliability policies