

CHAPTER 6

CAPITAL IMPROVEMENT PLAN

INTRODUCTION

The recommended improvements for stormwater, water, wastewater and transportation facilities required to support projected development in the Town of Friday Harbor and the proposed UGA are specifically discussed in Chapters 2 through 5.

The study assumes that 80 percent of the area in the UGA is developed within the 20-year planning horizon for the traffic evaluation, however, the water, wastewater and stormwater analysis are based on the assumption of 100 percent development in the UGA.

The analysis of the water, wastewater and transportation facilities required to support development in the UGA must take into account the future system demands that will be created by development within the Town of Friday Harbor service areas. The Town of Friday Harbor future water system demands included in this study are based on the water system demands projected in the Town's 2003 *Water System Plan* for the year 2022. The future wastewater system demands for the Town are based on build-out of the Town as defined in the Town of Friday Harbor 2001 *Update to the General Sewer Plan and Wastewater Facilities Engineering Report*. The transportation analysis develops the probable impacts associated with growth in the Town to the year 2028.

The Capital Improvement Plan (CIP) lists for each of the major utility groups are reproduced in Tables 6-1, 6-2, 6-3, 6-4, and 6-5. The costs of the recommended stormwater, water, wastewater and transportation improvements required to accommodate development in the UGA are allocated per single family residential equivalent.

STORMWATER CIP

The analysis of future infrastructure needs for the stormwater system varies from the analysis of the water, wastewater and transportation needs because stormwater treatment and conveyance for the various basins contained in the UGA areas is, for the most part, independent from the infrastructure currently owned and operated by the Town of Friday Harbor and the County. In addition, stormwater treatment and conveyance facilities can be constructed for each UGA basin as development occurs in the basin.

TABLE 6-1

**Recommended Stormwater Facility Capital Improvement Projects
(Prepared by Gray & Osborne, Inc.)**

Stormwater Facilities			
Major Basin	Study Areas	Recommended Facility	Estimated Project Cost
San Juan Valley Creek/False Bay	3 & 7	North Fork Tributary - Infiltration/Detention and Wetpond Facility	\$1,410,000
San Juan Valley Creek/False Bay	3 & 6	South Fork Tributary – North Detention and Wetpond Facility	\$800,000
San Juan Valley Creek/False Bay	4 & 6	North Fork Tributary – South Detention and Wetpond Facility	\$910,000
North Bay	1, 2, 3, 4 & 9	Tightline Conveyance Across Port of Friday Harbor to North Bay	\$1,140,000
North Bay	3, 4, & 6	North Wetpond Facility	\$290,000
North Bay	4	West Detention and Wetpond Facility	\$620,000
North Bay	1	East Infiltration and Wetpond Facility	\$137,000
North Bay	2 & 9	South Wetpond	\$229,000
Friday Harbor	5	North Wetpond & Conveyance System	\$163,000
Friday Harbor	1 & 5	Middle Wetpond & Conveyance System	\$470,000
Friday Harbor	5	South Wetpond & Conveyance System	\$198,000
Total			\$6,367,000

- (1) Project Costs include 8.8 percent sales tax, 30 percent Construction Contingency and 25 percent Engineering, Administration and Legal Costs.
- (2) Project Costs exclude Land Acquisition and Permitting Costs.

The allocation of the recommended stormwater facility costs per single family residential equivalent is \$4,600 (\$6,367,000/1,384).

WATER SYSTEM CIP

The water system improvements discussed in Chapter 3 to provide sufficient raw water capacity, treatment capacity, storage, and conveyance to serve the UGA areas and the existing Town of Friday Harbor service area are shown in Table 6-2.

TABLE 6-2

**Recommended Water Facility Capital Improvement Projects
(Prepared by Brown and Caldwell, Inc.)**

Water System	
Improvement	Estimated Capital Improvement Cost⁽¹⁾
Trout Lake Dam and Raw Water Supply: Raise Dam and Reservoir Level to increase annual sustainable raw water ADD supply capacity by 0.24 mgd.	Unknown, previous estimates suggest a total in excess of \$7 million, actual costs for needed improvements could potentially greatly exceed this amount, further analysis required.
WTP: Add additional Chlorine Contact Clearwell Tank to increase capacity of 0.39 mgd.	\$400,000
WTP to 207-ft Pressure Zone Pump Station: Pumping capacity expansion improvements to increase capacity by 0.09 mgd.	\$150,000
WTP: Transmission Main: San Juan Valley Road from WTP to Marguerite Place South, Replace approximately 16,000 LF of 10-inch-diameter water main with 12-inch or 16-inch-diameter water main.	\$8,800,000
Existing system 232-ft Pressure Zone: Park Street from Blair Street to Marguerite Place North, Marguerite Place North from Park Street to Guard Street, Guard Street from Marguerite Place North to Tucker Avenue, Replace approximately 3,200 LF of 4-inch-diameter water main with 8-inch-diameter water main.	\$800,000
Existing System 327-ft Pressure Zone: Lampard Road, San Juan Valley Road to Marguerite Place South, Replace approximately 1,200 LF of 6-inch-diameter water main with 8-inch-diameter water main.	\$300,000
Total	In excess of \$18.4 million

(1) Project Costs include 30 percent Construction Contingency and 30 percent Engineering/Design, Administration, Legal and Construction Management Costs.

The allocation of the recommended stormwater facility costs per single family residential equivalent is \$13,295 (\$18,400,000/1,384 housing units).

If the Town decides to expand its water service area to include the UGA the town is required by the Washington State Department of Health to update the Water System Plan. The Water System Plan addresses growth and capital facilities required provide water to the identified service area. The Water System Plan must also include a financial analysis

that addresses rates and connection charges to support existing and proposed development.

WASTEWATER SYSTEM CIP

The wastewater system improvements recommended in Chapter 4 provide sufficient conveyance, treatment and disposal capacity to serve the UGA area and the existing Town of Friday Harbor service area are shown in Table 6-3.

TABLE 6-3

**Recommended Wastewater Facility Capital Improvement Projects
(Prepared by Brown and Caldwell, Inc.)**

Recommended Improvement	Estimated Capital Improvement Cost
Conveyance Improvements from UGA Basin 1 to WWTP. 300 LF 15 inch, 620 LF 10 inch ⁽¹⁾	\$1,500,000
Pump Station No. 1 Pump and Electrical Upgrades ⁽²⁾	\$520,000
WWTP Upgrades ⁽³⁾	\$9,000,000 to \$13,000,000
Outfall Upgrade ⁽³⁾	\$5,000,000 to \$8,000,000
Misc. Improvements Allotment - Headworks, disinfection, solids, etc. ⁽³⁾	\$5,000,000
Total	\$21,000,000 to \$28,000,000

- (1) Project costs include 50 percent Construction Contingency and 30 percent Engineering/Design, Administration, Legal and Construction Management costs
- (2) Project Costs include 35 percent Construction Contingency and 30 percent Engineering/Design, Administration, Legal and Construction Management costs.
- (3) Project Costs include 30 percent Engineering/Design, Administration, Legal and Construction Management costs.

The allocation of the recommended wastewater facility improvement costs per single family residential equivalent is \$15,173 to \$20,231 (\$21,000,000/1,384 housing units to \$28,000,000/1,384 housing units).

If the Town elects to expand its wastewater service area the Town is required by the Department of Ecology to update its General Sewer Plan and Wastewater Facilities Plan. The Plan must address conveyance, treatment and disposal facilities that will be required to meet growth expectations within the planning horizon. The Wastewater Facility plan must provide preliminary analysis, including alternatives analysis, of wastewater treatment processes and plant improvements and may need to include an outfall analysis if additional outfall capacity is required. The General Sewer Plan must contain a

financial analysis addresses rates and connection charges to support existing and proposed development.

TRANSPORTATION SYSTEM CIP

The transportation system improvements discussed in Chapter 5 are required to provide sufficient intersection and street capacity to provide a LOS D to serve the UGA areas and the existing Town of Friday Harbor service area. The estimated cost of the intersection improvements discussed in Chapter 5 are shown in Table 6-4.

TABLE 6-4

**Estimated Project Costs for Recommended Intersection Improvements
(Prepared by Gray & Osborne, Inc.)**

Intersection No.	Intersection	Estimated Project Costs
1	Spring Street/Lampard Road	\$673,000
2	Spring Street (San Juan Valley Road)/Franklin Drive	\$432,000
3	Spring Street/Mullis Street	\$376,000
4	Franklin Drive/Weber Way	No Improvement Required
5	Mullis Street/Cattle Point Road/Argyle Avenue	\$163,000
6	Argyle Avenue/Pear Point Road	\$113,000
7	Argyle Avenue/Dougherty Lane	\$206,000
8	Argyle Avenue/Grover Street	\$264,000
9	Turn Point Road/Harrison Street/Warbass Way	No Improvement Required
10	Harrison Street/Warbass Way/"B" Street	No Improvement Required
Total		\$2,227,000

Notes:

- (1) Estimated project costs are based on conceptual layouts and are preliminary.
- (2) Project costs do not include right-of-way acquisition or permits.
- (3) Project costs do not include installation of curb gutter and sidewalk if these facilities do not currently exist.
- (4) Project costs include 30 percent construction contingency and 30 percent allocation for engineering, administration and legal fees.

The cost allocation for the recommended intersection improvements per the number of daily trips estimated for the 2028 build-out of the UGA is \$159/daily trip (\$2,227,000/14,000 total daily trips). The cost allocation for the intersection improvements per single family residential equivalent is \$2,000 (\$2,227,000/1,113 housing units).

There are many streets within the UGA that do not meet the Town's street standards and would need to be upgraded to meet the applicable standard.

The Town has not adopted a traffic impact fee. Currently, streets within the Town are improved to meet the Town's adopted street standards when development value greater than \$50,000 occurs adjacent to the street. It is assumed the Town would continue with this policy.

The Town currently requires intersection improvements through the SEPA review process if the traffic analysis indicates a level of service (LOS) C can not be met.