CHAPTER 7
CAPITAL IMPROVEMENT PLAN

INTRODUCTION

This Chapter presents the recommended storm system improvements that are included in the Capital Improvement Plan (CIP) to meet the needs of the environment, future development and growth. The types of improvements identified and scheduled include capacity, facility and habitat projects. Also included are habitat studies and annual programs such as general storm system repairs and mapping. As defined by the City Comprehensive Plan, Chapter 12 Capital Facilities Element, capital improvements are those major projects, activities or maintenance costing over $25,000.

The objectives of the CIP are to group various system needs, evaluate alternatives that are cost-effective and operationally sound, and ultimately, organize and prioritize the recommended improvements for implementation during the annual budgeting process. As described in Chapter 8 Finance, the City has initiated a Stormwater Capital Fund for stormwater CIP projects. In 2009, $229,000 was transferred into the fund, this limits the projects that can be completed. Additional budget must be transferred to this fund on a regular basis to complete the CIP projects.

CIP projects described in this Chapter are prioritized within the six-year planning period (2009 to 2014) for which this Plan has been developed. Projects shown beyond 2014 are also presented to allow for longer range planning. Alternative funding sources are discussed in Chapter 8. Project funding will depend on a variety of factors, including project type and scheduling. New development or changing land uses within the service area may necessitate project improvements well in advance of scheduled renewal and replacements. In these instances, system improvements could be completed by the developing property owner. Similarly, extenuating circumstances (such as deterioration of facilities in advance of the anticipated useful life) may require system improvements in advance of the projected scheduled and/or developer requests for service.

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Storm system and habitat improvement projects identified in the CIP were based on the Staff's knowledge of the service area, past studies and the hydrologic/hydraulic analysis discussed in Chapter 5. Projects that have not been completed from the 2001 Stormwater Comprehensive Plan and 2005 Gig Harbor Basin Plan were included in the CIP. A total cost of $8.4 million in projects has been identified. This includes the various storm system programs such as storm pipe replacements and mapping. The cost of the NPDES program is not included because it varies from year to year. Table 7-

1 provides information on the proposed storm and habitat improvements by proposed project number and is coordinated with the CIP Map (Figure 7-1).

According to the 2006 HDR NPDES Phase II Permit report, the cost of the NPDES Phase II Program varies during the next four years from $155,355 to $214,940. This Plan estimates an annual cost of $50,000 beyond the remaining four year permit period to continue the program. This cost will be dependent on the final program annual needs and future requirements from Ecology during future permit cycles.

Total cost for habitat improvement projects is $1.2 million. This is approximately 20% of the total CIP project cost. The Donkey Creek Daylighting Project is the third highest cost CIP project and includes the cost of improvements to Harborview Drive to allow for the removal of the culvert. There are two major stormwater facility projects identified, the Burnham Interchange Improvement Project ($2 million) and the Spadoni Aquifer Recharge Project ($1.7 million).

Approximately $2.8 million in capacity improvement projects have been identified. These projects include the annual stormwater repair/improvement programs. The largest capacity improvement project is on “Trunkline 1” (T1-01) identified in the analysis as the replacement of 1,640 feet of 12-inch pipe with 18-inch along Peacock Hill Avenue. This improvement would allow for increased capacity for additional flows due to future development. Capacity problems can also be resolved with flow control facilities similar to those constructed on Point Fosdick Drive NW. Onsite or regional facilities can reduce flows to minimize capacity impacts on the existing storm system. Regional facility locations should be considered as an alternative to pipe replacement.

There are four projects identified in the CIP as developer projects. Development proposals submitted in the vicinity of the project locations will be required to analyze the development impacts to these facilities. The property owner or developer will be responsible for the construction, permits and all costs associated with the improvements. Although these improvements are necessary for new development in those areas, they are not otherwise a high priority at this time. Developer system improvements such as connections to the existing storm system, water quality and flow control structures, and new drainage system associated with road improvements required for the development will be the responsibility of the developer to construct at the time of their development. Close coordination between the Planning Services and Permit Center and Public Works is required to ensure efficient implementation of the Capital Improvement Plan. Notification of Public Works when any development in the area of recommended improvements is proposed will provide the opportunity for consolidated design considerations and coordination with other Public Works Projects.

The annual storm pipe replacements and system mapping programs is estimated at $80,000 per year. Miscellaneous improvements such as replacement of damaged pipes or catch basins, control structure repairs, regrading of ponds or ditches, and bank stabilization can be included in the storm pipe replacement programs. This also provides funds for unforeseen problems that can be easily repaired or otherwise taken care of quickly. A typical example might be a short section of pipe that has been crushed or the addition of a single catch basin in an area that frequently suffers from localized flooding. The money could also be used in case of emergencies, thereby providing some buffer against the unavoidable expenditure of money that had been budgeted for a much-needed capital improvement project.

Six Year (2009-2014) Plan

During the six-year planning period, approximately $5 million in capital improvements have been identified for the City's storm system. This includes $815,000 for the NPDES Phase II Permit Program and $480,000 for the annual storm pipe replacements and mapping programs.

The City's highest budgeted CIP habitat project during this planning period is the Donkey Creek Restoration Project ($1.2 million). It is scheduled for planning year 2013. This will allow for time to obtain funding from possible grant sources such as the Salmon Recovery Funding Board and permitting. As discussed in Chapter 4, the Donkey Creek Restoration Project proposes to remove 300-feet of the 36-inch culvert and restore the creek to an open channel from the harbor outlet to North Harborview Drive. Removal of the culvert and restoration of the creek to the upper reaches of the watershed will improve the fish passage and habitat in Donkey Creek.

The aquifer recharge project at the Spadoni gravel pit is within the Donkey Creek basin and is also adjacent to the McCormick Creek basin. As part of the City's wastewater treatment plant expansion, it has been proposed that a gray water pipeline be constructed to the site and inject the water into the aquifer. This project is scheduled for 2011 and will provide additional flows for Donkey and McCormick Creeks during the low flow season. Basin hydrology, groundwater and geotechnical studies will be completed as a part of this project.

Channel erosion has been observed by residents and City staff along the Garr Creek tributary east of 38th Avenue NW (Trunkline 5). Scour pools have occurred at the outlets of the culvert crossing 38th Avenue NW, 47th Street Court NW and 50th Street Court NW. This has been an on-going maintenance item, removing the sediment from the storm system to maintain the proper capacity. A geotechnical and hydrological study has been recommended for this project. Proper channel stabilization methods will be recommended and implemented based on the conclusions of the study. An analysis of

the existing upstream facilities and possible regional flow control facility will be included in the study. This project is a priority to reduce the high amount of maintenance time required at this location. The capacity of the two existing culverts crossing 38th Avenue NE is limited by the downstream condition. These culverts discharge into a channel with a flat grade and that has been partially filled with sediment. The outlets of the culverts are submerged almost the entire year. A recommended pipe size for the culverts to convey the 25-year storm event has been provided, but prior to the replacement of the culverts it is recommended that the downstream channel be investigated for improvement opportunities such as regrading or sediment removal. This investigation and any improvements to the channel must be coordinated with Pierce County since it is outside the City limits.

In recent years, storm system improvement projects consisted of various pipe and asphalt berm installations at project costs of less than $50,000. The filter media cartridges for the Quail Run Water Quality Facility are replaced regularly at a cost of $15,000. For the CIP, the replacement of the filters has been scheduled for every two years. The scheduling and funding for the filter replacement can be refined by reviewing the inspection reports for the facility and filter invoices.

The majority of the recently completed storm system improvements have occurred in association with road improvement projects. The McCormick Creek culvert at Canterwood Boulevard was replaced this year with a concrete box culvert that was designed to improve fish passage at this crossing. This was included as a part of the Canterwood Boulevard NW Road Improvement Project. Flow control facilities were constructed for the road improvements at Point Fosdick Drive and 56th Street NW. In 2002, the storm system along Stanich Avenue, Stanich Lane and Judson Street to Pioneer Way was reconstructed to improve collection and conveyance.

The City has received $200,000 from the U.S. Environmental Protection Agency's Brownfields Cleanup Grant Program in 2007 for the Eddon Boathouse Project. This project consists of the cleanup of two parcels on Harborview Drive that had been used as a boathouse for boat construction, repair and maintenance. As a result of these activities the soils on these properties have been contaminated. Heavy metals and petroleum have been identified in the soils. The grant will fund the cleanup of this site and monitoring. This site is adjacent to Gig Harbor and by removing the contaminated soils this will improve water quality by preventing contaminants from leaching into the water. This project began in August 2008. After the cleanup is completed this site has been proposed to become a park.

Long Range Plan (2015-2020)

For the 2015-2020 planning period, approximately $4.7 million in capital improvements have been identified for the City's storm system. This includes an annual cost of $50,000 to continue the NPDES Phase II Permit Program and $80,000 for the annual storm pipe replacements and mapping programs.

The capacity improvement projects identified from the modeling analysis was based on the future full build-out scenario and has been scheduled for the long range planning period. Currently the City has not observed any pipe capacity issues at these sites. It is recommended that the City continue to monitor these locations and require stormwater flow control facilities for all future developments and road improvement projects within the basins of the modeled trunkline.

The Burnham Interchange Improvement Project is associated with two road improvement project included in the Transportation Improvement Program, the Burnham Drive Improvements and SR 16/Borgen/Canterwood Hospital Mitigation Improvements. There may be opportunities to partner with WSDOT on this project. This project includes a retention/detention facility and wetland mitigation. Reviewing this project for the possibility of a shared facility for SR 16 and Burnham Drive may benefit both the City and WSDOT.

PROJECT COST ESTIMATES AND SCHEDULES

The planning level cost estimates provided in this Plan are intended to be conservative estimates that will be refined during the design process of each improvement project. It is important to realize that the actual design of the improvements and possible changes made during that design could significantly alter the cost of the project from the estimate provided. Prior to the initiation of the projects shown in the Plan, any changes should be reviewed and the cost estimate updated to reflect current conditions.

The cost estimates presented in the CIP are based on 2008 dollars and reflect total project costs. These costs include construction costs plus a contingency of 40 percent that includes engineering costs and 20 percent for overhead costs such as sales tax, permitting, legal fees and project administration. Cost estimates do not include such items as right-of-way acquisition, utility relocations, trench dewatering, traffic control or other unforeseen complications.

Table 7-2 shows the proposed schedule for the recommended capital improvements and costs for each year. Costs estimates are detailed in Appendix A.

RECOMMENDATIONS

Following are recommendations related to the CIP:

- Continued coordination between the Planning Department, Permit Center and Public Works to ensure efficient implementation of the Capital Improvement Plan. Provide a CIP map to the departments and one copy at the counter to be used while reviewing a proposed development.

- Investigate opportunities for regional flow control facilities. This may eliminate some of the capacity improvement projects identified in the CIP.

- Investigate opportunities for regional water quality facilities. There may be areas where offsite flows from public roads or facilities are conveyed through private properties. This may be an opportunity for the City to partner with the developer to construct a regional water quality facility to treat water from the developer's site and offsite.

- Investigate opportunities to use Low Impact Development methods in projects or developments to reduce the amount of runoff from site.

- Following studies were identified in the 2001 Stormwater Comprehensive Plan. In order of priority they should be completed to evaluate the fish and wildlife habitat within the City and identify possible projects to improve the habitat and remove fish barriers:

    - Donkey Creek Habitat Enhancement Study

    - McCormick Creek Habitat Enhancement Study

    - Crescent Creek Habitat Enhancement Study

    - Gooch Creek Habitat Enhancement Study

- In addition to the studies, the acquisition of property or conservation easements along Donkey Creek and the other creeks should be evaluated to preserve the habitat corridor. Request the dedication of conservation easements from properties along the creek corridor as they develop or develop a City program to inform property owners adjacent to the creek in the importance of preserving the habitat along the creek corridor.

- Continue to update the storm system map. This is an on-going project that will continue as the City develops and annexes new areas. Developers can assist in

the mapping by providing the project record drawings in a file format that can be imported into GIS. The City should require that these drawing files be submitted in the City's standard coordinate system that is used in the GIS mapping.

- Begin a monitoring program for the Garr Creek Tributary east of 38th Avenue NW. Develop a standard reporting schedule and format, document any observed erosion through photographs and written description. Map the erosion locations. Visit the site after heavy rainstorm events. Inspect the upstream stormwater flow control facilities to verify that they are operating properly. Implement a Low Impact Development requirement for all development within this basin.

- Developers could assist with the identified storm improvements by constructing the recommended improvement, providing a level of funding as determined by the City or implement Low Impact Development methods.

- Review the habitat projects with the outside permitting agencies (WDFW, ACOE, Ecology…) to determine permitting requirements, permit review time, funding and partnership opportunities.

- Continue relationships with the public and neighboring jurisdiction within common watersheds and seek partnership opportunities.

- Establish stormwater facility inspection program. Proper maintenance can reduce future problems.