Recommended Plan

7.1 Proposed Storm Drain Improvements

With the use of the hydraulic storm model and city staff input, a recommended improvement plan has been established for the City of Coos Bay Storm water system. This section contains the costs for each recommended project, the division of the financial responsibilities between city and development, and the priority of each project.

A number of outfalls and tidegates were discovered during site investigations that are not listed in current City records, many of them in poor condition. These outfalls and tidegates may be part of the City system, privately installed, old abandoned lines, or part of the ODOT drainage system for Highway 101. Projects were not developed for these outfalls and tidegates due to lack of information, however their condition is noted here and recommendations are made for follow up investigations that are outside the scope of this study.

A number of factors were considered in developing projects. In general the remediation measures included use of PVC or HDPE pipe in place of CMP to avoid future problems with corrosion. Lining or directional drilling were used where possible to install lines under the Central Oregon Pacific Railroad (CORP) lines and under Highway 101 to avoid problems associated with open trench construction in the right-of-ways. Duckbill tidegates are used in cost estimates due to the higher reliability and lower maintenance cost associated with this type of gate.

Projects in areas where the storm drain system currently has adequate capacity for a 50-year storm, but inadequate future capacity are rated Priority 3. Projects in areas where the system is currently at capacity or in poor condition, but no damage due to flooding problems have been reported, are generally rated as Priority 2. Projects in areas where there is currently flooding that affects structures or the use of the property, the system is significantly undersized for current flows, or where tidegates or piping are missing or non-operable are rated as Priority 1.

A map showing the location of individual projects is included in Appendix A. Projects are described below:

BASIN 1

Project 1-1 is recommended for Basin 1. The project includes replacing approximately 430 feet of 18" concrete piping with 18" PVC piping on Teakwood Avenue from N. 8th Street to Outfall 26 to improve system capacity. Approximately 90 feet of pipe replacement would be through pipe bursting to minimize affects on Highway 101 and CORP right-of-ways. This project is recommended as a Priority 3 Project. A project cost estimate is located below in Table 7.1.1.

TABLE 7.1.1
PROJECT 1-1 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$5,000	$5,000
2	Demolition and Site Preparation	LS	1	$3,000	$3,000
3	18" Storm Drain Piping-Class C Backfill	LF	340	$50	$17,000
4	18" Storm Drain-Pipe Bursting	LF	90	$115	$10,350
6	Catch Basin	EA	3	$1,000	$3,000
7	AC R&R	LF	100	$20	$2,000
8	Rip Rap	TON	20	$50	$1,000
9	Misc. Appurtenances	LS	1	$6,470	$6,670

Project Subtotal	***$48,020***
Contingency	***$7,350***
Engineering	***$9,800***
Legal Admin.	***$1,440***
Permitting	***$4,000***
Project Total	***$70,610***

Notes: 1) Permits required from ODOT, CORP, and COE
2) Tidegate not required

Additional Outfall Problems for Basin 1

Outfall 26A just north of Teakwood is a 12-inch CMP pipe in poor condition with visible flow. Recommend dye-testing catch basins above this outfall to determine if it is tied to the storm drain system. If so, this outfall is recommended for lining under the highway and replacement on the Bay side.

Outfall 26B, approximately 175 feet north of Teakwood is a 15-inch CMP pipe in poor condition with visible flow. Recommend dye-testing catch basins above this outfall to determine if it is tied to the storm drain system. If so, this outfall is recommended for lining under the highway, and extension to below the high tide line.

Tidegate 27, located directly across from the tank farm, is a 24-inch gate in a concrete headwall with significant flow. Recommend dye testing catch basins above this outfall and at the tank farm to determine if it is tied to the storm drain system. If so, this outfall is recommended for lining under the highway, replacement on the Bay side and rehabilitation of the existing tidegate.

BASIN 2

Capital improvement Project No. 2-1 is recommended for this area. Project 2-1 involves replacement of the existing 18-inch storm drain and 24-inch outfall from 6th Street to Tidegate 24 along Pine Avenue. The new work would consist of approximately 235 lineal feet of PVC 18-inch storm drain and pipe bursting 115 lineal feet of existing 24-inch pipe with a 24-inch HDPE replacement. A new duckbill style tidegate would be installed. This project is recommended as a Priority 3 Project. A project cost estimate is located below in Table 7.1.2.

TABLE 7.1.2
PROJECT 2-1 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$7,340	$7,340
2	Demolition and Site Preparation	LS	1	$4,410	$4,410
3	18" Storm Drain Piping-Class C Backfill	LF	235	$50	$11,750
4	24" Storm Drain-Pipe Bursting	LF	115	$145	$16,675
5	Tidegate-24"	EA	1	$8,000	$8,000
6	Manhole-Standard	EA	1	$4,000	$4,000
7	Catch Basin	EA	3	$1,000	$3,000
8	AC R&R	LF	235	$20	$4,700
9	Rip Rap	TON	20	$50	$1,000
10	Misc. Appurtenances	LS	1	$9,625	$9,625

Project Subtotal	***$70,500***
Contingency	***$10,580***
Engineering	***$14,100***
Legal Admin.	***$2,120***
Permitting	***$4,000***
Project Total	***$101,300***

Notes: 1) Permits required from ODOT, CORP, and COE

Additional Outfall Problems for Basin 2

Outfall 24A just north of Pine Avenue is a 12-inch CMP pipe in poor condition. Recommend dye-testing catch basins above this outfall to determine if it is tied to the storm drain system. If so, this outfall is recommended for lining under the highway and replacement on the Bay side.

BASIN 3

Project 3-1 is recommended for this area. This project involves lining the existing 130 feet of 15-inch storm line under Highway 101 at Myrtle Avenue, replacing 10 feet of 15-inch CMP with PVC pipe of a similar size on the Bay side, and refurbishing and reinstalling the existing tidegate. This project is recommended as a Priority 3 Project. A project cost estimate is located below in Table 7.1.3.

TABLE 7.1.3
PROJECT 3-1 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$16,760	$16,760
2	Demolition and Site Preparation	LS	1	$10,780	$10,780
3	15" Storm Drain Piping-Class C Backfill	LF	10	$40	$400
4	15" CMP Lining	LF	130	$80	$10,400
5	Refurbishing of Existing Tidegate	LS	1	$500	$500
6	Concrete Headwall	EA	1	$8,000	$8,000
7	AC R&R	LF	20	$20	$400
8	Rip Rap	TON	30	$50	$1,500
9	Misc. Appurtenances	LS	1	$3,940	$3,940

Project Subtotal	***$52,680***
Contingency	***$7,900***
Engineering	***$10,540***
Legal Admin.	***$1,580***
Permitting	***$4,000***
Project Total	***$76,700***

Additional Outfall Problems for Basin 3

Outfall 23A is a 12-inch concrete outfall located just north of Myrtle Avenue. This outfall is semi-buried but otherwise is in good condition. Recommend dye-testing catch basins above this outfall to determine if it is tied to the storm drain system. If so, recommend cleaning line.

BASIN 4

Capital improvement Project No. 4-1 is recommended for this area. This project involves separation of the storm water system from the wastewater plant effluent outfall. This project is rated as a Priority 2 Project. A project cost estimate is located below in Table 7.1.4.

TABLE 7.1.4
PROJECT 4-1 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$24,349	$24,349
2	Demolition and Site Preparation	LS	1	$13,590	$13,590
3	36" Storm Drain Piping-Class C Backfill	LF	500	$130	$72,500
4	Highway Crossing	LF	150	$250	$37,500
5	Tidegate36"	EA	1	$12,000	$16,000
6	Manhole-Standard	EA	4	$4,000	$16,000
7	Catch Basin	EA	4	$1,000	$4,000
8	Concrete Headwall	EA	1	$8,000	$8,000
9	AC R&R	LF	100	$20	$2,000
10	Rip Rap	TON	30	$50	$1,500
11	Misc. Appurtenances	LS	1	$23,700	$23,700

Project Subtotal	***$219,140***
Contingency	***$32,880***
Engineering	***$43,830***
Legal Admin.	***$6,570***
Permitting	***$4,000***
Project Total	***$306,420***

Notes: 1) Permits required from ODOT, CORP, DEQ, and COE

BASIN 5

Projects 5-1 and 5-2 are recommended for this basin. Project 5-1 includes the replacement of the existing 24-inch CMP outfall with approximately 290 feet of PVC and HDPE 30-inch pipe from the existing tidebox on Ivy Avenue east to the Bay. The section under Highway 101 and the railroad would be installed by pipe bursting the existing pipe to avoid open cuts in the right-of-ways. This project is recommended as a Priority 2 project. A project cost estimate is located below in Table 7.1.5.

TABLE 7.1.5
PROJECT 5-1 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$8,660	$8,660
2	Demolition and Site Preparation	LS	1	$5,200	$5,200
3	30" Storm Drain Piping-Class C Backfill	LF	190	$110	$20,900
4	30" Storm Drain-Pipe Bursting	LF	100	$200	$20,000
5	New Tidegate	EA	1	$10,000	$10,000
6	Manhole-Standard	EA	1	$4,000	$4,000
7	AC R&R	LF	100	$20	$2,000
8	Rip Rap	TON	20	$50	$1,000
9	Misc. Appurtenances	LS	1	$11,380	$11,380

Project Subtotal	***$83,140***
Contingency	***$12,500***
Engineering	***$16,700***
Legal Admin.	***$2,500***
Permitting	***$4,000***
Project Total	***$118,840***

Notes: 1) Permits required from ODOT, CORP, and COE

Project 5-2 involves replacing approximately 520 feet of existing 15-inch storm drain with 18-inch PVC to provide increased capacity for future flows by trench excavation from the tidebox on Ivy Avenue west to North 7th Street. This project is recommended as a Priority 3 Project. A project cost estimate is located in Table 7.1.6.

TABLE 7.1.6
PROJECT 5-2 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$7,710	$7,710
2	Demolition and Site Preparation	LS	1	$4,630	$4,630
3	18" Storm Drain Piping-Class C Backfill	LF	520	$50	$26,000
4	Manhole-Standard	EA	4	$4,000	$16,000
5	Catch Basin	EA	2	$1,000	$2,000
6	AC R&R	LF	370	$20	$7,400
7	Misc. Appurtenances	LS	1	$10,280	$10,280

Project Subtotal	***$74,020***
Contingency	***$11,100***
Engineering	***$14,800***
Legal Admin.	***$2,220***
Permitting	***$4,000***
Project Total	***$106,140***

BASIN 6

Project 6-1 is recommended for this basin. This project involves replacing approximately 430 lineal feet of existing 18-inch storm drain pipe with 18-inch PVC from Hemlock and Highway 101 to Outfall 18D in the Bay to increase the capacity of the system. Approximately 80 feet of pipe would be replaced through pipe bursting to avoid open cut trenches in the right-of-ways for Highway 101 and CORP. A tidegate would be installed at the outfall. This project is recommended as a Priority 2 project. A project cost estimate is located in Table 7.1.7.

TABLE 7.1.7
PROJECT 6-1 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$5,430	$5,430
2	Demolition and Site Preparation	LS	1	$3,260	$3,260
3	18" Storm Drain Piping-Class C Backfill	LF	340	$50	$17,000
4	18" Storm Drain-Pipe Bursting	LF	90	$115	$10,350
5	Tidegate-18"	EA	1	$5,000	$5,000
6	Catch Basin	EA	1	$1,000	$1,000
7	AC R&R	LF	100	$20	$2,000
8	Rip Rap	TON	20	$50	$1,000
9	Misc. Appurtenances	LS	1	$7,070	$7,070

Project Subtotal	***$52,110***
Contingency	***$7,820***
Engineering	***$10,420***
Legal Admin.	***$1,560***
Permitting	***$4,000***
Project Total	***$75,910***

Notes: 1) Permits required from ODOT, CORP, and COE

BASIN 7

Capital improvement Projects No. 7-1 and 7-2 are recommended for this area. Project 7-1 consists of replacing the existing 18-inch storm drain outfall line, located to the south of Lumbermen's store, from Highway 101 to the Bay with approximately 330 lineal feet of 24-inch PVC and HDPE pipe to improve capacity. Approximately 100 feet of pipe would be replaced through pipe bursting to avoid open cut trenches in the right-of –ways for Highway 101 and CORP. A tidegate would be installed at the outfall. This project is recommended as a Priority 2 project. A project cost estimate is located in Table 7.1.8.

TABLE 7.1.8
PROJECT 7-1 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$7,200	$7,200
2	Demolition and Site Preparation	LS	1	$4,320	$4,320
3	24" Storm Drain Piping-Class C Backfill	LF	230	$90	$20,700
4	24" Storm Drain-Pipe Bursting	LF	100	$145	$14,500
5	Tidegate-24"	EA	1	$8,000	$8,000
6	Catch Basin	EA	1	$1,000	$1,000
7	AC R&R	LF	150	$20	$3,000
8	Rip Rap	TON	20	$50	$1,000
9	Misc. Appurtenances	LS	1	$9,440	$9,440

Project Subtotal	***$69,160***
Contingency	***$10,370***
Engineering	***$13,830***
Legal Admin.	***$2,080***
Permitting	***$4,000***
Project Total	***$99,440***

Notes: 1) Permits required from ODOT, CORP, and COE

Project 7-2 consists of upsizing the existing 10” pipes within the basin to 12” diameter to improve capacity. This project is recommended as a Priority 3 project. A project cost estimate is located in Table 7.1.9.

TABLE 7.1.9
PROJECT 7-2 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$6,680	$6,680
2	Demolition and Site Preparation	LS	1	$4,010	$4,010
3	12" Storm Drain Piping-Class C Backfill	LF	1085	$30	$32,550
4	Catch Basin	EA	2	$1,000	$2,000
5	AC R&R	LF	500	$20	$10,000
6	Misc. Appurtenances	LS	1	$8,910	$8,910

Project Subtotal	***$64,150***
Contingency	***$9,620***
Engineering	***$12,830***
Legal Admin.	***$1,920***
Permitting	***$4,000***
Project Total	***$92,520***

BASIN 8

Capital improvement Projects No. 8-1 and 8-2 are recommended for this area. Project 8-1 consists of replacing the existing outfall piping at Date Avenue with 12-inch PVC by pipe bursting and then installing a tidegate. This project is recommended as a Priority 3 project. A project cost estimate is located in Table 7.1.10.

TABLE 7.1.10
PROJECT 8-1 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$3,410	$3,410
2	Demolition and Site Preparation	LS	1	$2,050	$2,050
3	12" Storm Drain-Pipe Bursting	LF	120	$75	$14,400
4	Tidegate-12"	EA	1	$3,500	$3,500
5	Manhole-Standard	EA	1	$4,000	$4,000
6	Rip Rap	TON	20	$50	$1,000
7	Misc. Appurtenances	LS	1	$4,380	$4,380

Project Subtotal	***$32,740***
Contingency	***$4,910***
Engineering	***$6,550***
Legal Admin.	***$980***
Permitting	***$4,000***
Project Total	***$49,180***

Notes: 1) Permits required from ODOT, CORP, and COE

Project 8-2 consists of replacing the existing 24-inch outfall at Birch Avenue and approximately 200 lineal feet of 12-inch by 16-inch box culvert with 24-inch PVC to improve capacity. This project is recommended as a Priority 2 project. A project cost estimate is located in Table 7.1.11.

Additional Outfall Problems for Basin 3

Outfall 17D, located just south of Birch, is not listed on the City plans, but is at an elevation that may require a tidegate. Recommend dye testing to verify which portions of the storm drains are connected to this outfall.

TABLE 7.1.11
PROJECT 8-2 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$9,620	$9,620
2	Demolition and Site Preparation	LS	1	$5,770	$5,770
3	24" Storm Drain Piping-Class C Backfill	LF	430	$90	$38,700
4	Tidegate-24"	EA	1	$8,000	$8,000
5	Manhole-Standard	EA	2	$4,000	$8,000
6	AC R&R	LF	430	$20	$8,600
7	Rip Rap	TON	20	$50	$1,000
8	Misc. Appurtenances	LS	1	$12,660	$12,660

Project Subtotal	***$92,350***
Contingency	***$13,850***
Engineering	***$18,470***
Legal Admin.	***$2,770***
Permitting	***$4,000***
Project Total	***$131,440***

Notes: 1) Permits required from ODOT, CORP, and COE

BASIN 9

Capital improvement Project No. 9-1 is recommended for this area. Project 9-1 includes replacing the existing 12-inch outfall at Alder Avenue and 8-inch storm drain line servicing this basin with 12-inch PVC to increase capacity. This project is recommended as a Priority 1 project. A project cost estimate is located in Table 7.1.12.

Additional Outfall Problems for Basin 3

Outfalls 17A and 17C, located just north of Alder Avenue, are in an area where the ground elevation is below the higher high tide line. These outfalls may be a source of tidal water backflowing in the storm system. Recommend dye testing the system to verify elevations and configuration of drainage sources to verify if these outfalls require tidegates.

TABLE 7.1.12
PROJECT 9-1 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$7,030	$7,030
2	Demolition and Site Preparation	LS	1	$4,220	$4,220
3	12" Storm Drain Piping-Class C Backfill	LF	550	$30	$16,500
4	Tidegate-12"	EA	1	$3,500	$3,500
5	Manhole-Standard	EA	3	$4,000	$12,000
6	Catch Basin	EA	3	$1,000	$3,000
7	AC R&R	LF	550	$20	$11,000
8	Rip Rap	TON	20	$50	$1,000
9	Misc. Appurtenances	LS	1	$9,200	$9,200

Project Subtotal	***$67,450***
Contingency	***$10,120***
Engineering	***$13,490***
Legal Admin.	***$2,020***
Permitting	***$4,000***
Project Total	***$97,080***

Notes: 1) Permits required from ODOT, CORP, and COE

BASIN 10

No projects are recommended for this basin.

BASIN 10A

Project 10A-1 is recommended for this basin. Project 10A-1 addresses problems associated with Pump Station 11. The pumps and controls at this station are at the end of their rated life. The station is also considered a confined space and is difficult to maintain. The station pressurizes a section of gravity line with catch basins downstream from the pump station. Water was observed backflowing from the catch basins during pump station operation. This project involves installing new submersible pumps to replace the existing turbine pumps, and relocating the control panel and electrical service to a pedestal mounted stainless steel control panel next to the wetwell. Backflow preventers would be installed at catch basins on Bayshore Drive.

TABLE 7.1.13
PROJECT 10A-1 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$12,750	$12,750
2	Demolition and Site Preparation	LS	1	$7,650	$7,650
3	New 15hp Pumps	EA	2	$15,000	$30,000
4	Catch Basin Backflow Preventers	EA	10	$2,000	$20,000
5	Wetwell Retrofit	LS	1	$10,000	$10,000
6	Electrical Controls and Panels	LS	1	$25,000	$25,000
7	Misc. Appurtenances	LS	1	$17,000	$17,000

Project Subtotal	***$122,400***
Contingency	***$18,360***
Engineering	***$24,480***
Legal Admin.	***$3,670***
Permitting	***$4,000***
Project Total	***$172,910***

BASIN 11

Projects 11-1 and 11-2 are recommended for this basin. Project 11-1 consists of replacing approximately 660 feet of existing 12-inch storm drain line on Broadway, between Central and Curtis Avenues, that was determined by OMI staff to be in poor condition during system video taping. Also included is removal of concrete residue from catch basin lines in front of the Egyptian Theater. This project is recommended as a Priority 1 Project. A project cost estimate is located in Table 7.1.14.

TABLE 7.1.14
PROJECT 11-1 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$5,250	$5,250
2	Demolition and Site Preparation	LS	1	$3,150	$3,150
3	12" Storm Drain Piping-Class C Backfill	LF	660	$30	$19,800
4	Catch Basin	EA	2	$1,000	$2,000
5	AC R&R	LF	660	$20	$13,200
6	Misc. Appurtenances	LS	1	$7,000	$7,000

Project Subtotal	***$50,400***
Contingency	***$7,560***
Engineering	***$10,080***
Legal Admin.	***$1,510***
Permitting	***$4,000***
Project Total	***$73,550***

Project 11-2 consists of replacing approximately 315 feet of existing 18-inch storm drain outfall at Central Avenue with 18-inch PVC to increase capacity. This project is based on the existing system drawings provided by the City. This project is recommended as a Priority 3 Project. A project cost estimate is located in Table 7.1.15.

TABLE 7.1.15
PROJECT 11-2 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$4,140	$4,140
2	Demolition and Site Preparation	LS	1	$2,480	$2,480
3	18" Storm Drain Piping-Class C Backfill	LF	315	$50	$15,750
4	Tidegate-18"	EA	1	$5,000	$5,000
5	AC R&R	LF	300	$20	$6,000
6	Rip Rap	TON	20	$50	$1,000
7	Misc. Appurtenances	LS	1	$5,350	$5,350

Project Subtotal	***$39,720***
Contingency	***$5,960***
Engineering	***$7,940***
Legal Admin.	***$1,190***
Permitting	***$4,000***
Project Total	***$58,810***

Notes: 1) Permits required from ODOT, CORP, and COE

Additional Outfall Problems for Basin 11

Outfalls 14A and 14B are located at Central Avenue, but are not shown on the City infrastructure maps. Both outfalls were not directly accessible during the study period. Outfall 14A appears to be abandoned, but this should be confirmed by the City. Outfall 14B has significant flow and may provide the outlet for a large portion of the storm flows for this basin. This 24-inch concrete pipe does not have a tidegate. It is recommended that the City dye test in this basin to determine system flows and install a tidegate on Outfall 14B if drainage areas lower than 10-foot elevation are drained by this outfall. If this outfall does drain Basin 11, then Project 11-2 is not needed.

BASIN 12A

Capital improvement Project No. 12A-1 is recommended for this area. Project 12A-1 consists of replacing approximately 810 lineal feet of the existing 36-inch storm drain overflow from Mingus Park Pond to improve capacity. This project is recommended as a Priority 3 Project. A project cost estimate is located in Table 7.1.16.

TABLE 7.1.16
PROJECT 12A-1 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$20,600	$20,600
2	Demolition and Site Preparation	LS	1	$12,360	$12,360
3	36" Storm Drain Piping-Class C Backfill	LF	810	$130	$105,300
4	42" Pipe Lining	LF	1200	$245	$294,000
5	Manhole- 36"	EA	4	$8,000	$32,000
6	Misc. Appurtenances	LS	1	$86,260	$86,260

Project Subtotal	***$550,520***
Contingency	***$82,580***
Engineering	***$110,110***
Legal Admin.	***$16,520***
Permitting	***$4,000***

Project Total ***$763,730***

BASIN 12B

There are no capital improvement projects recommended for this basin.

BASIN 12C

Capital improvement Projects No. 12C-1, 12C-2, 12C-3, and 12C-4 are recommended for this area. The first two projects address capacity issues with the Mill Slough Box. In addition to the recommended projects, it is recommended that a manual inspection and concrete testing of the Slough Box be made to determine the interior condition of the box culvert, the remaining strength of the concrete, and the condition of the gravity sewer lines that traverse the culvert during low stream flows in September. The City may want to consider installing metal protective shielding over the existing concrete and transite sewer pipes.

Project 12C-1 includes widening the Mill Slough Box at South 2nd Court where a 30-inch sewer pipe penetrates the box culvert. The Slough Box would be widened by approximately 6 feet over a gradual transition, with about 27 feet of the culvert affected. Widening the culvert is expected to restore the capacity lost due to the sewer pipe penetration. This project is recommended as a Priority 1 Project. A project cost summary is located in Table 7.1.17. A detailed cost estimate is included in Appendix E.

TABLE 7.1.17
PROJECT 12C-1 COST SUMMARY

Item	Amount
Total Construction Cost	$142,150
Contingency	$21,400
Administration/Legal	$2,900
Land Acquisition	N/a
Environmental Study/Permits	$15,000
Engineering	$28,500
Total Costs	**$209,800**

Project 12C-2 includes the installation of a storm water pump station at Blossom Gulch Creek and 10th Street with a force main following 10th Street north to Elrod Avenue and then following Elrod Avenue west to the Bay. The station would be sized to pump only those flows above the capacity of the Mill Slough Box, approximately 120 CFS with a head of 50 feet. This project is recommended as a Priority 1 Project. A project cost summary is located in Table 7.1.18. A detailed cost estimate is included in Appendix E.

TABLE 7.1.18
PROJECT 12C-2 COST SUMMARY

Item	Amount
Total Construction Cost	$1,786,700
Contingency	$268,000
Administration/Legal	$35,730
Land Acquisition	$100,000
Environmental Study/Permits	$75,000

Pre-Engineering Report	$40,000
Engineering	$357,340
Total Costs	**$2,662,770**

Project 12C-3 addresses removal of hardened concrete wastes that were dumped in the storm lines located at southwest corner of 4th and Anderson. The estimated cost for this project is $1,000. This project is considered a maintenance item and is not prioritized.

Project 12C-4 includes the installation of a manhole north of the Mill Slough Box to allow access to the storm system for cleaning the section on 4th Street from Anderson to Central Avenues. This section surcharges at the fire department due to built up debris in the system that cannot be removed due to lack of access. This project is recommended as a Priority 1 Project. A project cost estimate is located in Table 7.1.19.

TABLE 7.1.19
PROJECT 12C-4 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$1,020	$1,020
2	Demolition and Site Preparation	LS	1	$600	$600
3	Manhole-Standard	EA	1	$6,000	$6,000
4	AC R&R	LS	1	$800	$800
5	Misc. Appurtenances	LS	1	$1,360	$1,360

Project Subtotal	***$9,780***
Contingency	***$1,470***
Engineering	***$1,960***
Legal Admin.	***NA***
Permitting	***NA***
Project Total	***$13,210***

BASIN 13

No capital improvement projects are recommended for this basin.
Additional Outfall Problems for Basin 13

A wood outfall with flow and in poor condition was located at Elrod Avenue in the location shown on plans as Outfall 11. Recommend dye-testing catch basins above this outfall to determine if it is tied to the storm drain system. If so, then this outfall should be capped upon completion of Project 14-1 to prevent tidal backflow into the storm system.

BASIN 14

Capital improvement Projects No. 14-1,14-2, and 14-3 are recommended for this area. Project 14-1 consists of installing a new pump station at Golden Avenue west of Front Street with a 36-inch outfall and tidegate. This station would have an estimated capacity of 150 CFS at 10 feet of head. This project is recommended as a Priority 1 Project. A project cost summary is located in Table 7.1.20. A detailed cost estimate is included in Appendix E.

TABLE 7.1.20
PROJECT 14-1 COST SUMMARY

Item	Amount
Total Construction Cost	$913,000
Contingency	$136,950
Administration/Legal	$18,260
Land Acquisition	$30,000
Environmental Study/Permits	$100,000
Engineering	$182,600
Total Costs	**$1,380,810**

Project 14-2 consists of piping to tie existing storm drain piping to the new Golden Avenue Pump Station, particularly flows from Elrod and Hall Avenues. Redirecting flows to the new station would reduce the load on Pump Station 15, which is near

capacity. This project is recommended as a Priority 1 Project. A project cost estimate is located in Table 7.1.21.

TABLE 7.1.21
PROJECT 14-2 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$29,510	$29,510
2	Demolition and Site Preparation	LS	1	$17,710	$17,710
3	18" Storm Drain-Pipe Bursting	LF	650	$115	$74,750
4	30" Storm Drain-Pipe Bursting	LF	500	$200	$100,000
5	Manhole-Standard	EA	4	$4,000	$16,000
6	Catch Basin	EA	6	$1,000	$6,000
7	Misc. Appurtenances	LS	1	$39,350	$39,350

Project Subtotal	***$283,320***
Contingency	***$42,500***
Engineering	***$56,660***
Legal Admin.	***$8,500***
Permitting	***$4,000***
Project Total	***$394,980***

Project 14-3 addresses removal of hardened concrete wastes that were dumped in the storm lines located at 4th and Golden, by the Post Office. The estimated cost for this project is $1,000. This project is considered a maintenance item and is not prioritized.

BASIN 15

Project 15-1 is recommended for this basin. Project 15-1 consists of repairs to the discharge vault for Pump Station 15 including removal of the vault doors and frame, cutting the existing concrete lip back and pouring a new lip to seat the existing frame. A concrete collar around the vault top would add additional weight and reinforcement to secure the frame. This project is considered a maintenance item and is not prioritized. The estimated cost for this project is $5,000.

BASIN 16

Project 16-1 is recommended for this basin. Sediment basins are located before Tidegates 7 and 7A. Both basins are silted in with sediments and in need of cleaning. Based on the basin sizes shown on the infrastructure drawings, and estimating an average sediment depth of two feet, approximately 250 yards of sediment would be removed. The cost estimate for this project is $2,000. This project is considered a maintenance item and is not prioritized.

BASIN 17

Capital improvement Projects No. 17-1, 17-2, and 17-3 are recommended for this area. These measures are interdependent in that Projects 17-1 and 17-2 are piping replacements that are sized based on the pump station in measure 17-3. If the pump station is not built

then the areas served by this piping will likely flood, even with the larger piping installed.

Project 17-1 installs approximately 1,200 feet of 24-inch storm drain piping on Lockhart Street, from Broadway to 7th Street. This line would serve as the main interceptor line for Basin 16. This area is currently scheduled for development, making this a Priority 1 project. The cost estimate for the interceptor is presented in Table 7.1.22.

TABLE 7.1.22
PROJECT 17-1 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$21,000	$21,000
2	Demolition and Site Preparation	LS	1	$12,600	$12,600
3	24" Storm Drain Piping-Class C Backfill	LF	1200	$90	$108,000
4	Manhole-Standard	EA	4	$4,000	$16,000
5	AC R&R	LF	800	$20	$16,000
6	Misc. Appurtenances	LS	1	$28,000	$28,000

Project Subtotal	***$201,600***
Contingency	***$22,460***
Engineering	***$29,950***
Legal Admin.	***$4,490***
Permitting	***$4,000***
Project Total	***$262,500***

Project 17-2 includes approximately 2,400 feet of 24-inch and 36-inch storm drain interceptor piping to serve Basin 17. Connecting Basin 17 to the pump station would alleviate the flooding problems along Lockhart and at Tidegate 3B. This project is recommended as a Priority 1 project. The cost estimate is presented in Table 7.1.23.

TABLE 7.1.23
PROJECT 17-2 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$45,090	$45,090
2	Demolition and Site Preparation	LS	1	$27,050	$27,050
3	24" Storm Drain Piping-Class C Backfill	LF	1180	$90	$106,200
4	36" Storm Drain Piping-Class C Backfill	LF	1280	$130	$166,400
5	Manhole-Standard	EA	3	$4,000	$12,000
6	Manhole- 36"	EA	2	$8,000	$16,000
7	Misc. Appurtenances	LS	1	$60,120	$60,120

Project Subtotal	***$432,860***
Contingency	***$64,930***
Engineering	***$86,570***
Legal Admin.	***$12,990***
Permitting	***$4,000***
Project Total	***$601,350***

Project 17-3 includes installing a pump station at 7th Street and Lockhart Avenue on City owned property to provide drainage at high tide for properties in Basins 16 and 17. A large portion of these basins are below the higher high tide line. The station would have duplex axial pumps each sized for 90 CFS at 10 feet of head for a total capacity of 175 CFS. This project is recommended as a Priority 1 project. The cost estimate is presented in Table 7.1.24.

TABLE 7.1.24
PROJECT 17-3 COST SUMMARY

Item	Amount
Total Construction Cost	$1,002,000
Contingency	$150,300
Administration/Legal	$20,040
Land Acquisition	$30,000
Environmental Study/Permits	n/a
Engineering	$200,400
Total Costs	**$1,402,740**

BASIN 18

Capital improvement Project No. 18-1 is recommended for this area. This project includes installing a new 24-inch outfall at 11th Street and Southwest Boulevard to relieve flows from the existing 15-inch on Southwest Boulevard and increase overall system capacity. This outfall would not require a tidegate as the drainage openings are above the high water level. This project is recommended as a Priority 3 project. The cost estimate for this measure is presented in Table 7.1.25.

TABLE 7.1.25
PROJECT 18-1 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$3,870	$3,870
2	Demolition and Site Preparation	LS	1	$2,322	$2,322
3	24" Storm Drain Piping-Class C Backfill	LF	220	$90	$19,800
4	Manhole-Standard	EA	1	$4,000	$4,000

5	AC R&R	LF	100	$20	$2,000
6	Misc. Appurtenances	LS	1	$5,160	$5,160

Project Subtotal	***$37,150***
Contingency	***$5,570***
Engineering	***$7,430***
Legal Admin.	***$1,120***
Permitting	***$4,000***
Project Total	***$55,270***

BASIN 19

Capital improvement Projects No. 19-1 and 19-2 are recommended for this area. Project 19-1 includes upsizing the existing 42-inch CMP culvert at Dakota Avenue and Southwest Boulevard to a 48-inch PVC pipe with a new 48-inch tidegate. The existing culvert is in poor shape and the tidegate is currently malfunctioning, making this a Priority 1 project. The cost estimate is presented in Table 7.1.26.

TABLE 7.1.26
PROJECT 19-1 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$9,490	$9,490
2	Demolition and Site Preparation	LS	1	$5,690	$5,690
3	48" Storm Drain Piping-Class C Backfill	LF	170	$150	$28,900
4	Tidegate-48"	EA	1	$20,000	$20,000
5	Concrete Headwall	EA	1	$8,000	$8,000
6	AC R&R	LF	170	$30	$5,100
7	Rip Rap	TON	30	$50	$1,500
8	Misc. Appurtenances	LS	1	$12,400	$12,400

Project Subtotal	***$91,080***
Contingency	***$13,660***
Engineering	***$18,220***
Legal Admin.	***$2,730***
Permitting	***$4,000***
Project Total	***$129,690***

Project 19-2 includes the installation of a pump station at Dakota Avenue and Southwest Boulevard. The east portion of Basin 19 is below the higher high tide level and has experienced flooding during the study period. Upsizing the culvert and replacing the tidegate would reduce the incidence of flooding, but a pump station would be required to minimize floods. The recommended pump station has duplex pumps with a capacity of 75 CFS each at 10 feet of head for a total station capacity of 150 CFS. This project is recommended as a Priority 2 project. The cost summary is presented in Table 7.1.27 and a detailed cost estimate is included in Appendix E.

TABLE 7.1.27
PROJECT 19-2 COST SUMMARY

Item	Amount
Total Construction Cost	$825,000
Contingency	$123,750

Administration/Legal	$16,500
Land Acquisition	$30,000
Environmental Study/Permits	n/a
Engineering	$165,000
Total Costs	**$1,160,250**

Additional Outfall Problems for Basin 19

Outfall 0B is shown on City plans to run beneath the Englewood Market. This outfall was reported to have been abandoned, but possibly still drains the front lawn of a house across from the market. If this outfall were still active, then a tidegate would be required.

BASIN 20

Capital improvement Project No. 20-1 is recommended for this area. This project includes replacing the existing 24-inch outfall to Coalbank Slough, located between Washington and Oregon Avenues, with a new 30-inch PVC outfall. A tidegate is not needed for this outfall. This project is recommended as a Priority 2 project. The cost estimate for this measure is presented in Table 7.1.28. The City of Coos Bay is has slated a project for the summer of 2004 to alleviate the problems associated with this basin.

TABLE 7.1.28
PROJECT 20-1 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$3,270	$3,270
2	Demolition and Site Preparation	LS	1	$1,960	$1,960
3	30" Storm Drain Piping-Class C Backfill	LF	180	$110	$19,800
4	AC R&R	LF	100	$20	$2,000
5	Misc. Appurtenances	LS	1	$4,360	$4,360

Project Subtotal	***$31,390***
Contingency	***$4,710***
Engineering	***$6,280***
Legal Admin.	***$940***
Permitting	***$4,000***
Project Total	***$47,320***

BASIN 21

No projects are recommended for this basin.

BASIN 22

Project 22-1 is recommended for this area. This project involves installation of a 48-inch tidegate on the existing culvert under Southwest Boulevard at the crossing of Middle Creek. This project is recommended as a Priority 3 project. The cost estimate for this measure is presented in Table 7.1.29.

TABLE 7.1.29
PROJECT 22-1 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$3,000	$3,000
2	Demolition and Site Preparation	LS	1	$1,800	$1,800
3	Tidegate-48"	EA	1	$20,000	$20,000
4	Misc. Appurtenances	LS	1	$4,000	$4,000

Project Subtotal	***$28,800***
Contingency	***$4,320***
Engineering	***$5,760***
Legal Admin.	***$860***
Permitting	***$4,000***
Project Total	***$43,740***

Additional Outfall Problems for Basin 22

Basins 20 through 23 drain to Coalbank Slough indirectly through a series of drainage ditches and tidegates through the dike. Coalbank Slough frequently overtops the dike during high water, high wind conditions, flooding the low elevation pastures and the banks of Middle Creek in Basin 22. While the dikes are in the City limits, the Libby and Englewood Diking Districts currently have responsibility for dike maintenance. Further development in this area will likely cause pressure on the City to assume responsibility for dike maintenance. It is recommended that the City evaluate the dikes, their condition, and the property protected by the dike system to determine the roll that the City will play in future dike maintenance or development restrictions in this area.

BASIN 23

Capital improvement Project No. 23-1 is recommended for this area. This project includes replacing approximately 360 feet of the existing 12-inch storm drain line on the lower portion of Pennsylvania Avenue with 12-inch PVC to improve capacity for future flows. This project is recommended as a Priority 3 project. The cost estimate for this measure is presented in Table 7.1.30.

TABLE 7.1.30
PROJECT 23-1 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$2,700	$2,700
2	Demolition and Site Preparation	LS	1	$1,620	$1,620
3	12" Storm Drain Piping-Class C Backfill	LF	360	$30	$10,800
4	AC R&R	LF	360	$20	$7,200
5	Misc. Appurtenances	LS	1	$3,600	$3,600

Project Subtotal	***$25,920***
Contingency	***$3,890***
Engineering	***$5,180***
Legal Admin.	***$780***
Permitting	***$4,000***
Project Total	***$39,770***

BASIN 24

No projects are recommended for this basin.

BASIN 25

No projects are recommended for this basin.

BASIN 26

Capital improvement Project No. 26-1 and 26-2 are recommended for this area. Project

26-1 involves replacing the culvert at Thompson Road and the Pony Creek Hospital Branch crossing, both to increase capacity and to address the deteriorated condition of the culvert. This involves removing the existing deformed section of 36-inch CMP through trench excavation and installation of 95 feet of new 36-inch PVC. This project is recommended as a Priority 3 project. The cost estimate for this measure is presented in Table 7.1.31.

TABLE 7.1.31
PROJECT 26-1 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$3,480	$3,480
2	Demolition and Site Preparation	LS	1	$2,090	$2,090
3	36" Storm Drain Piping-Class C Backfill	LF	95	$130	$12,350
4	Manhole- 36"	EA	1	$8,000	$8,000
5	AC R&R	LF	95	$30	$2,850
6	Misc. Appurtenances	LS	1	$4,640	$4,640

Project Subtotal	***$33,410***
Contingency	***$5,010***
Engineering	***$6,680***
Legal Admin.	***$1,000***
Permitting	***$4,000***
Project Total	***$50,100***

Project 26-2 consists of replacing approximately 1,300 feet of the existing 18-inch and 21-inch storm lines on Thompson Road from Pony Creek to Bay Area Hospital with 18-inch and 24-inch PVC to improve capacity for current and future flows. This project is recommended as a Priority 3 project. The cost estimate for this measure is presented in Table 7.1.32.

TABLE 7.1.32
PROJECT 26-2 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$23,250	$23,250
2	Demolition and Site Preparation	LS	1	$13,950	$13,950
3	18" Storm Drain Piping-Class C Backfill	LF	300	$50	$15,000
4	24" Storm Drain Piping-Class C Backfill	LF	1000	$90	$90,000
5	Manhole-Standard	EA	6	$4,000	$24,000
6	AC R&R	LF	1300	$20	$26,000
7	Misc. Appurtenances	LS	1	$31,000	$31,000

Project Subtotal	***$223,200***
Contingency	***$33,480***
Engineering	***$44,640***
Legal Admin.	***$6,700***
Permitting	***$4,000***
Project Total	***$312,020***

BASIN 27

Capital improvement Project No. 27-1 is recommended for this area. This project consists of replacing approximately 600 feet of the existing 12-inch storm drain line on Thompson Road between Koosbay Boulevard and the ESD baseball field with 18-inch PVC to improve capacity for current and future flows. This project is recommended as a Priority 3 project. The cost estimate for this measure is presented in Table 7.1.33.

TABLE 7.1.33
PROJECT 27-1 COST ESTIMATE

Item	Description	Units	No. Units	Unit Cost	Subtotal
1	Const. Fac. & Temp. Controls	LS	1	$6,900	$6,900
2	Demolition and Site Preparation	LS	1	$4,140	$4,140
3	18" Storm Drain Piping-Class C Backfill	LF	600	$50	$30,000
4	Manhole-Standard	EA	1	$4,000	$4,000
5	AC R&R	LF	600	$20	$12,000
6	Misc. Appurtenances	LS	1	$9,200	$9,200

Project Subtotal	***$66,240***
Contingency	***$9,940***
Engineering	***$13,250***
Legal Admin.	***$1,990***
Permitting	***$4,000***
Project Total	***$95,420***

7.2 Basis of Cost Estimates

The magnitude cost estimates in the plan have for components: construction costs, engineering costs, legal and administrative costs, and property acquisition costs. The cost estimates are preliminary in nature and are based on large scale planning detail. As projects enter the individual planning stage, that is, closer to being realized, more information will be gathered and the cost estimates will be refined. Actual costs will

differ from what is shown here.

Construction Cost

The magnitude construction costs in this capital improvement plan are based on actual bidding results from similar work, published cost guides, and construction cost experience. Future changes in the cost of labor, equipment, and materials may be needed as the work is realized. For this reason, common engineering practices usually tie the cost estimates to a particular index that varies with changes in the national economy. The Engineering News Record (ENR) construction cost index is most commonly used. This index is based on the value of 100 for the year 1913. The ENR index for May 2004 was 7,064. Future yearly ENR indices can be used to calculate the cost of projects for their construction year based on the annual growth in the ENR index.

A contingency factor of 15 percent of the construction cost was added to the construction total. Because the cost estimates presented are based on low precision mapping and conceptual layouts, allowances must be made for variations in final quantities, bidding market conditions, adverse construction conditions, and other difficulties which were not included but may occur.

Engineering Cost

The cost of engineering services for projects typically include special investigations, a pre-design report, surveying, geotechnical exploration, preparation of contract drawings and specifications, bidding services, construction management, inspection, construction staking, start-up services, and the preparation of operation and maintenance manuals. Depending on the size and type of project, engineering costs may range from 15 to 25 percent of the contract cost when all of the above services are provided. The lower percentage applies to large projects without complicated mechanical systems. The higher percentage applies to small, complicated projects. The engineering costs for design and construction used in this study average 20 percent of the construction cost.

Environmental Review and Permits

A number of the recommended projects involve replacing piping that crosses Highway 101 and the Central Oregon Pacific Railroad (CORP) tracks and then empties into the Bay. ODOT requires a permit for each crossing of Highway 101, as does CORP for each crossing of the train tracks. The US Army Corps of Engineers requires a permit for any work below the ordinary high tide line in the Bay. The Department of State Lands requires a permit for any project in a wetlands or body of water that involves more than 50 cubic yards of fill or removal.

Legal and Administrative Cost

An allowance of three percent of construction cost was added for legal and administrative services. This allowance is intended to include internal project planning and budgeting.

Property Acquisition Cost

Costs for property acquisition and easements were not included in the cost estimate. At the beginning of each project, an evaluation of existing easements, both recorded and prescriptive should be made. It may be necessary to purchase easements or properties for routing storm drainage.

7.3 Cost Estimates

Magnitude cost estimates were developed for each recommended project. The detailed estimates are in Section 7.1 and Appendix E and the maps showing the projects may be found in Appendix A.
The summary of costs in the table below is the cost of the total project, that is, the price of a fully urbanized basin that will successfully drain during significant storms. Included in this cost is the price to relieve present day problems.

TABLE 7.3.1
TOTAL PROJECT COSTS

Project Number	Description	Cost (Dollars)	Priority
9-1	Alder Outfall	$97,080	1
10A-1	Pump Station 11 Upgrade	$172,910	1
11-1	Egyptian Interceptor	$73,550	1
12C-2	Blossom Pump Station	$2,662,770	1
12-4	Manhole to Mill Slough Box	$13,210	1
14-1	Golden Pump Station	$1,380,810	1
14-2	Golden Interceptors	$394,980	1
17-1	Lockhart Interceptor	$262,500	1
17-2	DMV Interceptor	$601,350	1
17-3	Lockhart Pump Station	$1,402,740	1
19-1	Dakota Tidegate	$129,690	1
19-2	Englewood Pump Station	$1,160,250	1
Subtotal Priority 1		**$8,351,840**	

TABLE 7.3.1
TOTAL PROJECT COSTS (CONT.)

Project Number	Description	Cost (Dollars)	Priority
4-1	Separate WWTP Outfall	$306,420	2
5-1	Ivy Outfall	$118,840	2
6-1	Hemlock Outfall	$75,910	2
7-1	Lumbermen's Outfall	$99,440	2
8-2	Birch Outfall/Interceptor	$131,440	2
12C-1	Slough Box Widening	$209,800	2
20-1	Washington Outfall	$47,320	2
Subtotal Priority 2		**$989,170**	
1-1	Teakwood Outfall	$70,610	3
2-1	Pine Outfall	$101,300	3
3-1	Myrtle Tidegate	$76,700	3
5-2	Ivy Interceptor	$106,140	3
7-2	Timber Inn Interceptors	$92,530	3
8-1	Date Outfall/Tidegate	$49,180	3
11-2	Central Outfall	$58,810	3
12A-1	Mingus Pond Interceptor	$763,730	3
18-1	11th Street Outfall	$55,270	3
22-1	Middle Creek Tidegate	$43,740	3
23-1	Pennsylvania Interceptor	$39,770	3
26-1	Pony Creek Culvert	$50,100	3
26-2	West Thompson Interceptor	$312,020	3
27-1	East Thompson Interceptor	$95,420	3
Subtotal Priority 3		**$1,915,320**	
12C-3	Fire Station Line Cleaning	$1,000	N/A
14-3	Post Office Line Cleaning	$1,000	N/A
15-1	Pump Station 15 Vault	$5,000	N/A
16-1	Sediment Basin Cleaning	$2,000	N/A
Subtotal Not Prioritized		**$9,000**	
Total		**$11,265,330**	

7.4 Division of Responsibilities

The storm water master plan suggests projects, which either alleviate present day problems or prepare the system for future use. Each project in the plan contains these two parts.

While present day problems may be the result of past development, it is difficult to recuperate the price of patching the problem from the perceived source of the problem. These costs become the city's burden.

This may not be the case with projects that prepare the storm drain system for future use. With proper financial structures in place, for example, systems development charges, the city can recover the costs of the future system from those who benefit from the utility.

The purpose of the table below is to separate these costs. Only projects that are located in basins containing projected development and that are SDC eligible are included in the table. Projects not located in the following table are not SDC eligible due to no development speculated for the basin area. The individual project cost estimates are contained in Appendix E.

TABLE 7.4.1
DIVISION OF TOTAL PROJECT COST

Project Number	Total Project Cost	Development Portion Cost To INCREASE CAPACITY	City Portion Cost To Relieve PRESENT DAY PROBLEM
12C-1	$209,800	$0	$209,800
12C-2	$2,662,770	$718,948	$1,943,822
14-1	$1,380,810	$138,081	$1,242,729
14-2	$394,980	$39,498	$355,482
14-3	$1,000	$0	$1,000
17-1	$262,500	$0	$262,500
17-2	$601,350	$312,702	$288,648
17-3	$1,402,740	$729,425	$673,315
18-1	$55,270	$55,270	$0
26-1	$50,100	$10,000	$40,100
26-2	$312,020	$93,606	$218,414
TOTAL	**$2,810,000**	**$2,097,530**	**$712,470**
PERCENT OF TOTAL	**100%**	**75%**	**25%**