

## **SECTION 7 – CAPITAL FACILITY PLAN**

In order to implement the recommendations of the Storm Drain Master Plan Update, the City intends to review the Impact Fee relating to storm drainage infrastructure. A key element of the impact fee evaluation process is the development of a Capital Facility Plan (CFP) to document the proposed improvements and clarify the distribution of costs between current City residents and future development. The CFP identifies the estimated cost of proposed storm drainage system improvements.

### **7.1 Construction Cost Estimates**

Estimated capital improvement construction costs were prepared for all identified projects using 2006 unit cost information. The 2006 costs have been escalated to 2008 using the Construction Cost Index published by the American City and County Magazine. The cost index data indicates an escalation of 5.65% from January 2006 to January 2008. The total cost estimate for these projects is \$22,995,000 in 2006 dollars and \$24,294,000 in 2008 dollars. Unit prices for the construction cost estimates were based on price quotes from suppliers, recent construction bids for similar storm drain work and 'Means Heavy Construction Cost Data, 2006'. All costs are presented in 2006 and 2008 dollars. It should be noted that construction prices are extremely variable and as such the costs presented should be regarded as conceptual and only appropriate for planning purposes. Detailed cost estimates for all projects are provided in Appendix C.

### **7.2 Existing System Replacement Costs**

Also an important part of the impact fee analysis is the cost of replacing the existing system facilities. A detailed replacement cost estimate for all existing system facilities has been prepared and is included within Appendix B. The cost to replace the existing system facilities was estimated to be approximately \$43,000,000 in 2006 dollars and \$45,400,000 in 2008 dollars. It was assumed that a design life of 50-years was appropriate for the piped conveyance systems. Although the capital cost of detention basins will be included in the impact fee analysis, it was assumed that detention facilities would not be replaced once constructed and would have minor maintenance that would not be associated with the impact fee analysis.

### **7.3 Cost Allocation Summary**

Another important facet of the CFP is the project cost allocation between existing storm drainage deficiencies (minimum level of service) and improvements required to support future development. The allocation of costs enables the City to determine the portion of the projects cost eligible for Impact Fee collection. As mentioned previously only those costs associated with future growth may be distributed to future developments through Impact Fees.

#### **7.3.1 Fractional Allocation Analysis**

An analysis of existing development versus future development was performed with the assistance of City Planning and Engineering Staff and use of existing development and future land use maps. This analysis provided the appropriate fraction of costs that may be

included within Impact Fees for new development. Table 7-1 summarizes the total proportionate costs between current deficiencies and future growth improvements for all of the proposed capital facilities. A detailed allocation of costs for each project is included in Appendix D; along with the future developable land figure. Fractional costs associated with storm water treatment can be found in Section 7.5 below and in Appendix E. The costs identified in Table 7-1 include the proposed storm drains, detention structures, and sumps as well as the costs to install storm water treatment structures.

**TABLE 7-1  
COST ALLOCATION SUMMARY**

Year	Cost to Address Existing Deficiencies	Cost to Address Future Development	Total Capital Facility Cost
2006	\$14,058,000	\$8,937,000	\$22,995,000
2008	\$14,852,000	\$9,442,000	\$24,294,000

The table illustrates that, of the estimated \$22.99 million dollars of total project costs in 2006 dollars, \$14.06 million dollars is required to address existing deficiencies while \$8.94 million dollars is the fraction necessary to address future development improvements. Of the estimated \$24.29 million dollars of total project costs in 2008 dollars, \$14.85 million dollars is required to address existing deficiencies while \$9.44 million dollars is the fraction necessary to address future development improvements. The cost to address future development is the proportion that may be used to develop Impact Fees.

#### **7.4 Capital Improvement Projects**

As a part of this SDMP specific projects have been identified. The projects identified and the costs associated with the projects can be seen on Table 7-2. Project costs were initially estimated based on 2006 unit costs. As mentioned above the project costs have been escalated to 2008 dollars using the Construction Cost Index published by American City and County Magazine. Both the 2006 and 2008 cost estimates are presented in Table 7-2. The construction of these projects will be built as funding allows and/or opportunities to combine projects and thereby reduce costs present themselves. The order in which projects are presented in Table 7-2 does not indicate a priority for construction.

**TABLE 7-2  
PROPOSED PROJECTS**

Project Name	Project Designation	2006 Cost	2008 Cost
Bingham Pipeline 1	4000 W. Pipeline	\$751,932	\$794,417
98th-A Pipeline 1	West 98th Pipeline Project	\$2,372,884	\$2,506,952
Bang-H Pipeline	Country Crossing Pipeline	\$527,930	\$557,758
98th-A Pipeline 2	102nd S. Pipeline	\$744,237	\$786,286
98th-A Proposed Detention Basin	102nd S. Detention Basin (4.0 Ac-ft)	\$94,783	\$100,138
98th-C Pipeline	East 98th Pipeline Project	\$279,175	\$294,948
98th-D Pipeline	94th Pipeline Project	\$1,814,064	\$1,916,558
98th-D Proposed Detention Basin	94th Detention Basin (16.4 Ac-ft)	\$1,793,623	\$1,894,963
Redwood Pipeline 3	13th W. 24" Pipeline	\$102,934	\$108,750
106th-A Pipeline 1	104th S. Pipeline	\$2,033,216	\$2,148,093
M-B Pipeline 5	Midas Creek North Pipeline	\$665,057	\$702,633
X M-B Proposed Detention Basin 3	Jones Meadow Detention Basin (2 Ac-ft)	\$235,892	\$249,219
Bang-C Retention Basin	Oquirrh Park Retention Basin	\$195,403	\$206,443
M-B Pipeline 7	Ivory Crossing Pipeline Upsize	\$262,594	\$277,431
X M-B Proposed Retention Basin 4	Ivory Park Retention Basin (3 Ac-ft)	\$53,157	\$56,160
J-A Pipeline 1	10th W./Witherspoon Estates Pipeline	\$322,784	\$341,021
Bingham Pipeline 2	4800 W. Pipeline	\$390,039	\$412,076
Bang-H Proposed Detention	118th South 40th West Detention Basin (3 Ac-ft)	\$344,625	\$364,096
98th-D Sump Drain	Sump Drain	\$6,500	\$6,867
Public Works Facility	Public Works Facility	\$544,089	\$574,830
X M-B Proposed Retention Basin 2	36th Retention Basin (2 Ac-ft)	\$235,892	\$249,219
X Bang-C Pipeline	102nd S. Pipeline	\$150,397	\$158,894
Redwood Pipeline 1	Beckstead Lane 18" Pipeline	\$166,400	\$175,802
Redwood Pipeline 2	11150 S. Pipeline	\$169,585	\$179,167
106th-A Pipeline 2	32nd W. Pipeline	\$79,560	\$84,055
106th-A Pipeline 3	Wheadon Estates Pipeline	\$127,985	\$135,216
106th-A Pipeline 6	Temple View Pipeline	\$126,880	\$134,049
M-B Pipeline 1	27th W. Pipeline	\$1,233,583	\$1,303,280
M-B Pipeline 2	Majestic Heights 18" Pipeline	\$303,030	\$320,151
M-B Pipeline 4	2865 W. Pipeline	\$288,015	\$304,288
M-B Pipeline 6	Midas Creek South Pipeline	\$512,688	\$541,654
M-B Proposed Detention Basin 1	27th Detention Basin (9 Ac-ft)	\$1,661,277	\$1,755,139
M-C Pipeline	114th S./Charter Pointe Pipeline	\$323,798	\$342,092
M-E Pipeline 1	Jordan Hills #1 Pipeline	\$590,265	\$623,615
M-E Pipeline 2	Jordan Hills #2 Pipeline	\$138,450	\$146,272
M-E Proposed Detention Basin	Jordan Hills Detention Basin (4.3 Ac-ft)	\$493,727	\$521,623
J-B Pipeline 1	Temple Cove/Meadow Moor Pipeline	\$268,288	\$283,446
J-B Pipeline 2	Wilshire/Spring Hill Pipeline	\$185,153	\$195,614
J-D Pipeline	Clover Ridge 18" Pipeline	\$156,260	\$165,089
J-E Pipeline 1	114th S. 18" Pipeline	\$199,680	\$210,962
J-E Pipeline 2	445 W. 18" Pipeline	\$117,910	\$124,572
J-E Proposed Detention Basin	114th Detention Basin (0.9 Ac-ft)	\$144,053	\$152,192
J-F Pipeline	Sterling Village #3 18" Pipeline	\$89,700	\$94,768
J-G Sheet Flow	105th S. Sheet Flow	\$97,500	\$103,009
Bang-D Pipeline	104th - West of Bangerter Pipeline	\$127,036	\$134,214
106th-A Pipeline 4	Sycamoor Pipeline	\$136,013	\$143,697
106th-A Pipeline 5	Burkhart Estates Pipeline	\$97,695	\$103,215
X M-B Pipeline 3	Lucas Dell Pipeline	\$210,340	\$222,224
M-F Pipeline	Creek Ridge Dr. 18" Pipeline	\$209,625	\$221,469
J-A Pipeline 2	Temple View Estates 21" Pipeline	\$300,983	\$317,988
J-A Pipeline 3	101st S. 18" Pipeline	\$343,785	\$363,209
J-C Pipeline	River Front Parkway 24" Pipeline	\$174,941	\$184,825
<b>Total Cost</b>		<b>\$22,995,000</b>	<b>\$24,295,000</b>

## 7.5 UPDES Compliance

The City has obtained a UPDES Municipal Permit jointly with Salt Lake County to discharge storm water to natural waterways. The UPDES permit stipulates that the City implement measures to improve the water quality of its storm water discharge. The UPDES Municipal Permit was initially issued in March of 2003 then renewed in 2007. A study to identify what treatment structures are needed has been conducted. This study identifies where treatment is needed and estimates the cost of providing that treatment. The results of the study are presented in Appendix E. A summary of the costs, in 2006 and 2008 dollars, associated with storm water treatment can be found in Tables 7-3 and 7-4 respectively.

**TABLE 7-3  
SUMMARY OF 2006 STORM WATER TREATMENT COSTS**

Creek/River	Cost	Fractional Cost Analysis	
		Developed	Undeveloped
Bingham Creek	\$1,213,615	\$1,179,634	\$33,981
Midas Creek	\$1,861,210	\$1,330,765	\$530,445
Jordan River	\$1,447,680	\$909,143	\$538,537
Little Willow Creek	\$294,710	\$185,078	\$109,632
<b>TOTALS</b>	<b>\$4,817,215</b>	<b>\$3,604,620</b>	<b>\$1,212,595</b>

**TABLE 7-4  
SUMMARY OF 2008 STORM WATER TREATMENT COSTS**

Creek/River	Cost	Fractional Cost Analysis	
		Developed	Undeveloped
Bingham Creek	\$1,282,184	\$1,246,283	\$35,901
Midas Creek	\$1,966,368	\$1,405,953	\$560,415
Jordan River	\$1,529,474	\$960,510	\$568,964
Little Willow Creek	\$311,361	\$195,535	\$115,826
<b>TOTALS</b>	<b>\$5,089,388</b>	<b>\$3,808,281</b>	<b>\$1,281,107</b>