



**Table 1**  
**Construction Cost Estimates Summary**

Major Basin	Basin 8	
Alternative	Conveyance	Detention
Item	Total Cost (\$)	Total Cost (\$)
Channels	346,544	118,848
Culverts	9,396,250	3,310,680
Drop Structures	-	0
Detention Facilities	86,203	1,241,253
Bridges	-	
Leaves	-	
<b>Sub-Total (Rounded)</b>	<b>\$9,829,000</b>	<b>\$4,671,000</b>
<b>30% Construction Contingency</b>	<b>\$2,948,700</b>	<b>\$1,401,300</b>
<b>15% Engineering Contingency</b>	<b>\$1,474,350</b>	<b>\$700,650</b>
<b>Total (Rounded)</b>	<b>\$14,252,000</b>	<b>\$6,773,000</b>



**Table 7-1-CH**  
**Channel Cost Estimates**  
**Major Basin 8 Alternative - Conveyance**

Channel and Reach	Existing 100-yr Flow (cfs)	Proposed 100-yr Flow (cfs)	Design Flow (cfs)	Channel Length	Channel Type	Material	Excavation (CY)	Unit Cost (\$)	Total Cost (\$)
Channel Reach S. Douglas Highway to End of E-Z St.	896	1192	1,200	1,360	Flat Channel Design	Grass	14,204	108	146,893
Channel Reach End of E-Z St. to constructed channel end.	1070	1457	1,500	1,550	Flat Channel Design	Grass	19,633	129	199,651

**Sub-Total**      **\$346,544**

**Table 7-2-CH**  
**Channel Cost Estimates**  
**Major Basin 8 Alternative - Detention**

Channel and Reach	Existing 100-yr Flow (cfs)	Proposed 100-yr Flow (cfs)	Design Flow (cfs)	Channel Length	Channel Type	Material	Excavation (CY)	Unit Cost (\$)	Total Cost (\$)
Channel Reach End of E-Z St. to constructed channel end.	1070	1125	1,200	1,550	Flat Channel Design	Grass	16,189	77	118,848

**Sub-Total**      **\$118,848**



**Table 7-1-CU  
Culvert Cost Estimate  
Major Basin 8 Alternative - Conveyance**

Design Point	Road Crossing	Channel and Reach	Existing Size	Future 100-yr Flow (cfs)	Necessary Facility for Future 100-year Flow	Number of Culverts	Culvert Length (ft) <sup>1</sup>	Unit Cost (\$)	End Section Unit Cost (\$)	Total Cost (\$)
8-213	Outlet of Cottonwood Park R3 Detention	West of S 4J Rd North of Granite St.	CPP, 36"	419	CBC 2-5'x5'	2	1800	700	40,000	2,560,000
8-211	Outlet of Sage Valley Park R1	North Trib. Donkey Creek	CONC, 27"	444	CBC 2-7'x5'	2	1687	700	40,000	2,401,800
8-214	Outlet of Sage Valley Park R4 Detention. Under S 4J Rd South of Frontier Dr	North Trib. Donkey Creek	RCP, 42" x 26", 60"x 36", 60" x 44"	342	CBC 2-8'x4'	2	180	650	40,000	274,000
8-208	Under Birch Ave North of E Walnut St	North Trib. Donkey Creek	CONC, 2-24"	323	CBC 11' x 3'	1	62	850	40,000	92,700
8-207	Under Maple Ave North of E Walnut St.	North Trib. Donkey Creek	CMP, 2-30"	569	CBC 32' x 3'	1	60	3,000	40,000	220,000
8-206	Under Emerson Ave North of E Walnut St.	North Trib. Donkey Creek	CONC. 12' x 3'	569	CBC 42' x 4.5'	1	60	3,000	40,000	220,000
8-220	Douglas Hwy storm system		CBC 3'x6'	211	CBC 10'x4'	1	630	850	40,000	575,500
8-220	Douglas Hwy storm system				CBC 15'x4'	1	435	850	40,000	409,750
8-220	Douglas Hwy storm system				12'x4'	1	360	1,300	40,000	508,000
8-230	4-J storm system		CMP 36"	145	CBC 6'x5'	1	670	350	40,000	274,500
8-230	4-J storm system		CMP 36"		CBC 4'x3'	1	2600	700	40,000	1,860,000
									<b>Sub-Total</b>	<b>\$9,396,250</b>

<sup>1</sup> Length is based on Future Land Use Road widths

**Table 7-2-CU  
Culvert Cost Estimate  
Major Basin 8 Alternative - Detention**

Facility Number	Road Crossing	Channel and Reach	Existing Size	Future 100-yr Flow (cfs)	Necessary Facility for Future 100-year Flow	Number of Culverts	Culvert Length (ft) <sup>1</sup>	Unit Cost (\$)	End Section Unit Cost (\$)	Total Cost (\$)
8-213	Outlet of Cottonwood Park R3 Detention	West of S 4J Rd North of Granite St.	CPP, 36"	232	CBC 7' x 5'	1	1800	700	40,000	1,300,000
8-211	Outlet of Sage Valley Park R1	North Trib. Donkey Creek	CONC, 27"	174	CBC 6' x 5'	1	1687	700	40,000	1,220,900
8-208	Under Birch Ave North of E Walnut St	North Trib. Donkey Creek	CONC, 2-24"	238	CBC 7' x 3'	1	62	700	40,000	83,400
8-207	Under Maple Ave North of E Walnut St.	North Trib. Donkey Creek	CMP, 2-30"	458	CBC 15' x 3'	1	60	1,400	40,000	124,000
8-206	Under Emerson Ave North of E Walnut St.	North Trib. Donkey Creek	CONC. 12' x 3'	457	CBC 20 x 3'	1	60	3,000	40,000	220,000
8-230	4-J storm system	North Trib. Donkey Creek	CMP 36"	48	CBC 6' x 3'	1	500	350	40,000	215,000
8-231	Ex Upper Sage to Future Up	North Trib. Donkey Creek	storm sewer	76	42" RCP	1	660	142	10,000	103,720
8-231	Ex Upper Stage to Future Up	North Trib. Donkey Creek	storm sewer	76	36" RCP	1	330	102	10,000	43,660
									<b>Sub-Total</b>	<b>\$3,310,680</b>



Table 7-2-D  
Detention Facility Construction Cost Estimates  
Major Basin 8 Alternative Detention

Major Basin Alternative Estimate																			
Detention Name	Storage Volume (ac-ft)	Excavation (CY)	Excavation Cost (\$)	Embankment (CY)	Embankment Cost (\$)	Reveg. Area (SF)	Low Level Outlet Intake Structure/EA (\$)			Low Level Outlet Conveyance Structure Type	Length of Low Level Outlet Conveyance Structure (ft)	Cost Low Level Outlet Conveyance Structure (\$)	Low Level Outlet Conveyance End Treatment Type	Low Level Outlet Conveyance End Treatment Cost (\$)	Spillway Flow Rate (cfs)	Spillway Cost (\$)	Total Cost (\$)		
							Topsoil (CY)	Topsoil Cost at 4" Thick (\$)	Seeding Cost (\$)										
Unit costs		<10,000CY : >10,000CY :	8.00 5.00		22.00			20.00	2400	3500									
Sage Valley Park R1	18	26.809	134,045	38	836	75,000	925	18,500	4,132	5,800	3'x3' CBC	0	0	HW & WW	20,000	130	15,567	198,880	
Sunflower Park R5	14	13.923	69,615	706.00	15,532	300,000	3,700	74,000	16,529	5,800	Existing	0	0	Existing	0	0	15,567	197,043	
Upper Sage Valley	5	32.195	160,975	0.00	0	51,500	635	12,703	2,837	5,800	36" RCP	330	31,631	HW & WW	5,000	0	15,567	234,514	
Upper Basin 4	1	4.337	34,696	5.00	110	23,500	290	5,797	1,295	5,800	12" RCP	935	41,971	HW & WW	5,000	0	15,567	110,236	
1-90 -1	6	12,799	63,995	2.00	44	15,000	185	3,700	826	5,800	Existing	0	0	Existing	0	0.00	15,567	89,933	
1-90 -2&3	7	22305	111,525	1313	28,886	26000	321	6,413	1,433	5,800	Existing	0	0	Existing	0	0.00	15,567	169,624	
1-90-4	6	28000	140,000	0	0	32000	395	7,893	1,763	5,800	30" RCP	200	70,000	HW & WW	0	0.00	15,567	241,024	
Sub-Total																		\$1,241,253	1,131,017.47642985

Table 7-2-D  
Detention Facility Construction Cost Estimates  
Major Basin 8 Alternative Conveyance

Detention Name		Storage Volume (ac-ft)	Excavation (CY)	Excavation Cost (\$)	Embankment (CY)	Embankment Cost (\$)	Reveg. Area (SF)	Topsoil (CY)	Topsoil Cost at 4" Thick (\$)	Seeding Cost (\$)	Low Level Outlet Intake Structure/EA (\$)	Low Level Outlet Conveyance Structure Type	Length of Low Level Outlet Conveyance Structure (ft)	Cost Low Level Outlet Conveyance Structure (\$)	Low Level Outlet Conveyance End Treatment Type	Low Level Outlet Conveyance End Treatment Cost (\$)	Spillway Flow Rate (cfs)	Spillway Cost (\$)	Total Cost (\$)
Unit costs			<10,000CY : >10,000CY :	8.00 5.00		22.00			20.00	2400	3500								
Sage Valley Park R1		8.0	0	0	38	836	75,000	925	18,500	4,132	5,800	3'x6' CBC	0	0	HW & WW	20,000	80	15,567	64,835
Cottonwood R3		4.8	0	0	0.00	0	0	0	0	0	5,800	4'x6' CBC	0	0	HW & WW	0	60	15,567	21,367
Sage Valley Park R1			0		0		0												
Sub-Total																			\$86,203