



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 | - | |
| Sub-Total (Rounded) | \$9,829,000 | \$4,671,000 |
| 30% Construction Contingency | \$2,948,700 | \$1,401,300 |
| 15% Engineering Contingency | \$1,474,350 | \$700,650 |
| Total (Rounded) | \$14,252,000 | \$6,773,000 |



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) ¹ | 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 |
| | | | | | | | | | Sub-Total | \$9,396,250 |

¹ 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) ¹ | 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 Stage to Future U ₁ | North Trib. Donkey Creek | storm sewer | 76 | 42" RCP | 1 | 660 | 142 | 10,000 | 103,720 |
| 8-231 | Ex Upper Stage to Future U ₁ | North Trib. Donkey Creek | storm sewer | 76 | 36" RCP | 1 | 330 | 102 | 10,000 | 43,660 |
| | | | | | | | | | Sub-Total | \$3,310,680 |



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

| Major Basin's Alternative Solution | | | | | | | | | | | | | | | | | | | |
|------------------------------------|------------------------|----------------------------|----------------------|-----------------|----------------------|------------------|---------|-----------------------|-------------------|--|--|--|---|--|---|--------------------------|--------------------|-----------------|--------------------|
| Detention Name | Storage Volume (ac-ft) | Excavation (CY) | Excavation Cost (\$) | Embankment (CY) | Embankment Cost (\$) | Reveg. Area (SF) | Topsoil | | | 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 (\$) | |
| | | | | | | | (CY) | Cost at 4" Thick (\$) | Seeding Cost (\$) | | | | | | | | | | |
| Unit costs | | <10,000CY : >10,000CY : | 8.00 5.00 | | 22.00 | | | 20.00 | 2400 | 5800 | | | | | | | | | |
| 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 | 5800 | | | | | | | | |
| 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 |