



## **APPENDIX G**

### **CONCEPTUAL DESIGN INFORMATION**

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH					
PROJECT :	Boulder Creek MDP - Reach 1				
DRAINAGEWAY :	Boulder Creek				
REACH :	1A				
JURISDICTION :	City of Longmont				
REACH ID :	BCM-Reach1A	Jeremy Deischer	DATE :	2015-10-05	
DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
ERC Estimated Riparian Restoration	1	AC	\$35,000.00	\$33,747.00	700 ft. of 30 ft each side of channel
<b>Master Plan Capital Improvement Cost Summary</b>					
Capital Improvement Costs					
Pipe Culverts and Storm Drains				\$0.00	
Concrete Box Culverts				\$0.00	
Hydraulic Structures				\$0.00	
Channel Improvements				\$0.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$0.00	
Special Items (User Defined)				\$33,747.00	
<b>Subtotal Capital Improvement Costs</b>				<b>\$33,747.00</b>	
Additional Capital Improvement Costs					
Dewatering	3337.47	L.S.		\$337.00	
Mobilization	5%			\$1,687.00	
Traffic Control	\$843.68	L.S.		\$844.00	
Utility Coordination/Relocation	\$843.68	L.S.		\$844.00	
Stormwater Management/Erosion Control	5%			\$1,687.00	
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$5,399.00</b>	
Land Acquisition Costs					
ROW/Easements				\$0.00	
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>	
Other Costs (percentage of Capital Improvement Costs)					
Engineering	15%			\$5,872.00	
Legal/Administrative	5%			\$1,957.00	
Contract Admin/Construction Management	10%			\$3,915.00	
Contingency	25%			\$9,787.00	
<b>Subtotal Other Costs</b>				<b>\$21,531.00</b>	
<b>Total Capital Improvement Costs</b>				<b>\$60,677.00</b>	
<b>Master Plan Operation and Maintenance Cost Summary</b>					
Description	Quantity	Unit	Unit Cost	Total Annual Cost	
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	700	L.F.	\$2.00	\$280.00	
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$280.00</b>	
Effective Interest Rate			1.50%		
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$9,800.00</b>	

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH					
PROJECT :	Boulder Creek MDP - Reach 1				
DRAINAGEWAY :	Boulder Creek				
REACH :	1B				
JURISDICTION :	City of Longmont				
REACH ID :	BCM-Reach1B	Jeremy Deischer	DATE :	2015-10-05	
DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Riverside Spillway	1	L.S.	\$225,000.00	\$225,000.00	
<b>Master Plan Capital Improvement Cost Summary</b>					
Capital Improvement Costs					
Pipe Culverts and Storm Drains				\$0.00	
Concrete Box Culverts				\$0.00	
Hydraulic Structures				\$0.00	
Channel Improvements				\$0.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$0.00	
Special Items (User Defined)				\$225,000.00	
<b>Subtotal Capital Improvement Costs</b>				<b>\$225,000.00</b>	
Additional Capital Improvement Costs					
Dewatering	\$2,250.00	L.S.		\$2,250.00	
Mobilization	5%			\$11,250.00	
Traffic Control	\$5,625.00	L.S.		\$5,625.00	
Utility Coordination/Relocation	\$5,625.00	L.S.		\$5,625.00	
Stormwater Management/Erosion Control	5%			\$11,250.00	
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$36,000.00</b>	
Land Acquisition Costs					
ROW/Easements				\$0.00	
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>	
Other Costs (percentage of Capital Improvement Costs)					
Engineering	15%			\$39,150.00	
Legal/Administrative	5%			\$13,050.00	
Contract Admin/Construction Management	10%			\$26,100.00	
Contingency	25%			\$65,250.00	
<b>Subtotal Other Costs</b>				<b>\$143,550.00</b>	
<b>Total Capital Improvement Costs</b>				<b>\$404,550.00</b>	
<b>Master Plan Operation and Maintenance Cost Summary</b>					
Description	Quantity	Unit	Unit Cost	Total Annual Cost	
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	1	EA	\$610.00	\$31.00	
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$31.00</b>	
Effective Interest Rate			1.50%		
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$1,085.00</b>	

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 2  
 DRAINAGEWAY : Boulder Creek  
 REACH : 2A  
 JURISDICTION : Weld County  
 REACH ID : BCM-Reach2A Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
180 ft. span bridge at CO Rd 20.5	1	SF	\$250.00	\$1,350,000.00	30 ft width bridge
Removal of old bridge	1	SF	\$50.00	\$195,000.00	130 ft x 30 ft

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$1,545,000.00
<b>Subtotal Capital Improvement Costs</b>				
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$15,450.00	L.S.		\$15,450.00
Mobilization	5%			\$77,250.00
Traffic Control	\$38,625.00	L.S.		\$38,625.00
Utility Coordination/Relocation	\$38,625.00	L.S.		\$38,625.00
Stormwater Management/Erosion Control	5%			\$77,250.00
<b>Subtotal Additional Capital Improvement Costs</b>				
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$268,830.00
Legal/Administrative	5%			\$89,610.00
Contract Admin/Construction Management	10%			\$179,220.00
Contingency	25%			\$448,050.00
<b>Subtotal Other Costs</b>				
<b>Total Capital Improvement Costs</b>				
<b>\$2,777,910.00</b>				

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	30	L.F.	\$2.00	\$122.00
Bridge Maintenance	1	EA	\$1,000.00	\$1,000.00
<b>Total Annual Operation and Maintenance Cost</b>				
<b>\$1,012.00</b>				
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				
<b>\$35,420.00</b>				

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 2  
 DRAINAGEWAY : Boulder Creek  
 REACH : 2B  
 JURISDICTION : Weld County  
 REACH ID : BCM-Reach2B Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Modfly Diversion for Aquatic Passage	1	L.S.	\$205,000.00	\$205,000.00	

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$205,000.00
<b>Subtotal Capital Improvement Costs</b>				
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$2,050.00	L.S.		\$2,050.00
Mobilization	5%			\$10,250.00
Traffic Control	\$5,125.00	L.S.		\$5,125.00
Utility Coordination/Relocation	\$5,125.00	L.S.		\$5,125.00
Stormwater Management/Erosion Control	5%			\$10,250.00
<b>Subtotal Additional Capital Improvement Costs</b>				
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$35,670.00
Legal/Administrative	5%			\$11,890.00
Contract Admin/Construction Management	10%			\$23,780.00
Contingency	25%			\$58,450.00
<b>Subtotal Other Costs</b>				
<b>Total Capital Improvement Costs</b>				
<b>\$368,590.00</b>				

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	1	EA	\$610.00	\$122.00
<b>Total Annual Operation and Maintenance Cost</b>				
<b>\$122.00</b>				
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				
<b>\$4,270.00</b>				

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH					
PROJECT :	Boulder Creek MDP - Reach 2				
DRAINAGEWAY :	Boulder Creek				
REACH :	2C				
JURISDICTION :	Weld County				
REACH ID :	BCM-Reach2C	Jeremy Deischer	DATE :	2015-10-05	
DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Modify Ditch for Aquatic & Habitat Passage	1	L.S.	\$250,000.00	\$250,000.00	
<b>Master Plan Capital Improvement Cost Summary</b>					
Capital Improvement Costs					
Pipe Culverts and Storm Drains			\$0.00		
Concrete Box Culverts			\$0.00		
Hydraulic Structures			\$0.00		
Channel Improvements			\$0.00		
Detention/Water Quality Facilities			\$0.00		
Removals			\$0.00		
Landscaping and Maintenance Improvements			\$0.00		
Special Items (User Defined)			\$250,000.00		
<b>Subtotal Capital Improvement Costs</b>				<b>\$250,000.00</b>	
Additional Capital Improvement Costs					
Dewatering	\$2,500.00	L.S.	\$2,500.00		
Mobilization	5%		\$12,500.00		
Traffic Control	\$6,250.00	L.S.	\$6,250.00		
Utility Coordination/Relocation	\$6,250.00	L.S.	\$6,250.00		
Stormwater Management/Erosion Control	5%		\$12,500.00		
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$40,000.00</b>	
Land Acquisition Costs					
ROW/Easements			\$0.00		
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>	
Other Costs (percentage of Capital Improvement Costs)					
Engineering	15%		\$43,500.00		
Legal/Administrative	5%		\$14,500.00		
Contract Admin/Construction Management	10%		\$29,000.00		
Contingency	25%		\$72,500.00		
<b>Subtotal Other Costs</b>				<b>\$159,500.00</b>	
<b>Total Capital Improvement Costs</b>				<b>\$449,500.00</b>	
<b>Master Plan Operation and Maintenance Cost Summary</b>					
Description	Quantity	Unit	Unit Cost	Total Annual Cost	
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	1	EA	\$610.00	\$122.00	
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$122.00</b>	
Effective Interest Rate			1.50%		
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$4,270.00</b>	

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH					
PROJECT :	Boulder Creek MDP - Reach 2				
DRAINAGEWAY :	Boulder Creek				
REACH :	2D				
JURISDICTION :	Weld County				
REACH ID :	BCM-Reach2D	Jeremy Deischer	DATE :	2015-10-05	
DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Modify Ditch for Aquatic & Habitat Passage	1	L.S.	\$250,000.00	\$250,000.00	
<b>Master Plan Capital Improvement Cost Summary</b>					
Capital Improvement Costs					
Pipe Culverts and Storm Drains			\$0.00		
Concrete Box Culverts			\$0.00		
Hydraulic Structures			\$0.00		
Channel Improvements			\$0.00		
Detention/Water Quality Facilities			\$0.00		
Removals			\$0.00		
Landscaping and Maintenance Improvements			\$0.00		
Special Items (User Defined)			\$250,000.00		
<b>Subtotal Capital Improvement Costs</b>				<b>\$250,000.00</b>	
Additional Capital Improvement Costs					
Dewatering	\$2,500.00	L.S.	\$2,500.00		
Mobilization	5%		\$12,500.00		
Traffic Control	\$6,250.00	L.S.	\$6,250.00		
Utility Coordination/Relocation	\$6,250.00	L.S.	\$6,250.00		
Stormwater Management/Erosion Control	5%		\$12,500.00		
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$40,000.00</b>	
Land Acquisition Costs					
ROW/Easements			\$0.00		
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>	
Other Costs (percentage of Capital Improvement Costs)					
Engineering	15%		\$43,500.00		
Legal/Administrative	5%		\$14,500.00		
Contract Admin/Construction Management	10%		\$29,000.00		
Contingency	25%		\$72,500.00		
<b>Subtotal Other Costs</b>				<b>\$159,500.00</b>	
<b>Total Capital Improvement Costs</b>				<b>\$449,500.00</b>	
<b>Master Plan Operation and Maintenance Cost Summary</b>					
Description	Quantity	Unit	Unit Cost	Total Annual Cost	
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	1	EA	\$610.00	\$122.00	
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$122.00</b>	
Effective Interest Rate			1.50%		
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$4,270.00</b>	

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 2  
 DRAINAGEWAY : Boulder Creek  
 REACH : 2E  
 JURISDICTION : Weld County  
 REACH ID : BCM-Reach2E Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
180 ft span bridge	1	←---User Defined Items		\$1,350,000.00	30 ft width bridge
Removal of old bridge	1	←---User Defined Items	\$50.00	\$195,000.00	130 ft x 30 ft

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$1,545,000.00
<b>Subtotal Capital Improvement Costs</b>				
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$15,450.00	L.S.		\$15,450.00
Mobilization	5%			\$77,250.00
Traffic Control	\$38,625.00	L.S.		\$38,625.00
Utility Coordination/Relocation	\$38,625.00	L.S.		\$38,625.00
Stormwater Management/Erosion Control	5%			\$77,250.00
<b>Subtotal Additional Capital Improvement Costs</b>				
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$268,830.00
Legal/Administrative	5%			\$89,610.00
Contract Admin/Construction Management	10%			\$179,220.00
Contingency	25%			\$448,050.00
<b>Subtotal Other Costs</b>				
<b>Total Capital Improvement Costs</b>				

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	30	L.F.	\$2.00	\$12.00
Bridge Maintenance	1	←---User Defined Items	\$1,000.00	\$1,000.00
<b>Total Annual Operation and Maintenance Cost</b>				
<b>Effective Interest Rate</b>				
1.50%				
<b>Total Operation and Maintenance Costs Over 50 Years</b>				
<b>\$35,420.00</b>				

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 2  
 DRAINAGEWAY : Boulder Creek  
 REACH : 2F  
 JURISDICTION : Weld County  
 REACH ID : BCM-Reach2F Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Riverbank Spillway	20	←---User Defined Items	\$225,000.00	\$4,500,000.00	
Lateral Spillway	1	←---User Defined Items	\$225,000.00	\$225,000.00	

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$4,725,000.00
<b>Subtotal Capital Improvement Costs</b>				
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$47,250.00	L.S.		\$47,250.00
Mobilization	5%			\$236,250.00
Traffic Control	\$118,125.00	L.S.		\$118,125.00
Utility Coordination/Relocation	\$118,125.00	L.S.		\$118,125.00
Stormwater Management/Erosion Control	5%			\$236,250.00
<b>Subtotal Additional Capital Improvement Costs</b>				
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$822,150.00
Legal/Administrative	5%			\$274,050.00
Contract Admin/Construction Management	10%			\$548,100.00
Contingency	25%			\$1,370,250.00
<b>Subtotal Other Costs</b>				
<b>Total Capital Improvement Costs</b>				

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	21	EA	\$610.00	\$641.00
<b>Total Annual Operation and Maintenance Cost</b>				
<b>Effective Interest Rate</b>				
1.50%				
<b>Total Operation and Maintenance Costs Over 50 Years</b>				
<b>\$22,435.00</b>				

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 2  
 DRAINAGEWAY : Boulder Creek  
 REACH : 2G  
 JURISDICTION : Weld County  
 REACH ID : BCM-Reach2G Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
ERC Stream Restoration	2000	L.F.	\$133.00	\$266,000.00	
ERC Riparian Restoration	18	AC	\$35,000.00	\$642,792.00	200 ft. on each side of river

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$908,792.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$908,792.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$9,087.92	L.S.		\$9,088.00
Mobilization	5%			\$45,440.00
Traffic Control	\$22,719.80	L.S.		\$22,720.00
Utility Coordination/Relocation	\$22,719.80	L.S.		\$22,720.00
Stormwater Management/Erosion Control	5%			\$45,440.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$145,408.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$158,130.00
Legal/Administrative	5%			\$52,710.00
Contract Admin/Construction Management	10%			\$105,420.00
Contingency	25%			\$263,550.00
<b>Subtotal Other Costs</b>				<b>\$579,810.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$1,634,010.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	2000	L.F.	\$2.00	\$800.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$800.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$28,000.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 3  
 DRAINAGEWAY : Boulder Creek  
 REACH : 3A  
 JURISDICTION : Weld County  
 REACH ID : BCM-Reach3A Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
ERC Stream Restoration	2000	L.F.	\$135.00	\$270,000.00	
ERC Riparian Restoration	18	AC	\$35,000.00	\$642,792.00	200 ft. on each side of stream

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$912,792.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$912,792.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$9,127.92	L.S.		\$9,128.00
Mobilization	5%			\$45,640.00
Traffic Control	\$22,819.80	L.S.		\$22,820.00
Utility Coordination/Relocation	\$22,819.80	L.S.		\$22,820.00
Stormwater Management/Erosion Control	5%			\$45,640.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$146,048.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$158,826.00
Legal/Administrative	5%			\$52,942.00
Contract Admin/Construction Management	10%			\$105,984.00
Contingency	25%			\$264,710.00
<b>Subtotal Other Costs</b>				<b>\$582,362.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$1,641,202.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	2000	L.F.	\$2.00	\$800.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$800.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$28,000.00</b>

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH					
PROJECT :	Boulder Creek MDP - Reach 3				
DRAINAGEWAY :	Boulder Creek				
REACH :	3B				
JURISDICTION :	Weld County				
REACH ID :	BCM-Reach3B	Jeremy Deischer	DATE :	2015-10-05	
DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Riverside Spillway	1	EA	\$225,000.00	\$225,000.00	
<b>Master Plan Capital Improvement Cost Summary</b>					
Capital Improvement Costs					
Pipe Culverts and Storm Drains			\$0.00		
Concrete Box Culverts			\$0.00		
Hydraulic Structures			\$0.00		
Channel Improvements			\$0.00		
Detention/Water Quality Facilities			\$0.00		
Removals			\$0.00		
Landscaping and Maintenance Improvements			\$0.00		
Special Items (User Defined)			\$225,000.00		
<b>Subtotal Capital Improvement Costs</b>				<b>\$225,000.00</b>	
Additional Capital Improvement Costs					
Dewatering	\$2,250.00	L.S.	\$2,250.00		
Mobilization	5%		\$11,250.00		
Traffic Control	\$5,625.00	L.S.	\$5,625.00		
Utility Coordination/Relocation	\$5,625.00	L.S.	\$5,625.00		
Stormwater Management/Erosion Control	5%		\$11,250.00		
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$36,000.00</b>	
Land Acquisition Costs					
ROW/Easements			\$0.00		
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>	
Other Costs (percentage of Capital Improvement Costs)					
Engineering	15%		\$39,150.00		
Legal/Administrative	5%		\$13,050.00		
Contract Admin/Construction Management	10%		\$26,100.00		
Contingency	25%		\$65,250.00		
<b>Subtotal Other Costs</b>				<b>\$143,550.00</b>	
<b>Total Capital Improvement Costs</b>				<b>\$404,550.00</b>	
<b>Master Plan Operation and Maintenance Cost Summary</b>					
Description	Quantity	Unit	Unit Cost	Total Annual Cost	
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	1	EA	\$610.00	\$31.00	
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$31.00</b>	
Effective Interest Rate			1.50%		
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$1,085.00</b>	

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH					
PROJECT :	Boulder Creek MDP - Reach 4				
DRAINAGEWAY :	Boulder Creek				
REACH :	4A				
JURISDICTION :	Weld County				
REACH ID :	BCM-Reach4A	Jeremy Deischer	DATE :	2015-10-05	
DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Modfly Ditch for Aquatic & Habitat Passage	1	L.S.	\$250,000.00	\$250,000.00	
<b>Master Plan Capital Improvement Cost Summary</b>					
Capital Improvement Costs					
Pipe Culverts and Storm Drains			\$0.00		
Concrete Box Culverts			\$0.00		
Hydraulic Structures			\$0.00		
Channel Improvements			\$0.00		
Detention/Water Quality Facilities			\$0.00		
Removals			\$0.00		
Landscaping and Maintenance Improvements			\$0.00		
Special Items (User Defined)			\$250,000.00		
<b>Subtotal Capital Improvement Costs</b>				<b>\$250,000.00</b>	
Additional Capital Improvement Costs					
Dewatering	\$2,500.00	L.S.	\$2,500.00		
Mobilization	5%		\$12,500.00		
Traffic Control	\$6,250.00	L.S.	\$6,250.00		
Utility Coordination/Relocation	\$6,250.00	L.S.	\$6,250.00		
Stormwater Management/Erosion Control	5%		\$12,500.00		
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$40,000.00</b>	
Land Acquisition Costs					
ROW/Easements			\$0.00		
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>	
Other Costs (percentage of Capital Improvement Costs)					
Engineering	15%		\$43,500.00		
Legal/Administrative	5%		\$14,500.00		
Contract Admin/Construction Management	10%		\$29,000.00		
Contingency	25%		\$72,500.00		
<b>Subtotal Other Costs</b>				<b>\$159,500.00</b>	
<b>Total Capital Improvement Costs</b>				<b>\$449,500.00</b>	
<b>Master Plan Operation and Maintenance Cost Summary</b>					
Description	Quantity	Unit	Unit Cost	Total Annual Cost	
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	1	EA	\$610.00	\$122.00	
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$122.00</b>	
Effective Interest Rate			1.50%		
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$4,270.00</b>	

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT :	Boulder Creek MDP - Reach 4
DRAINAGEWAY :	Boulder Creek
REACH :	4B
JURISDICTION :	Boulder County
REACH ID :	BCM-Reach4B Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Channel Improvements</b>					
Soil Riprap, Type M	178	C.Y.	\$85.00	\$15,111.00	400 L.F. of Right Bank stabilization
<b>Landscaping and Maintenance Improvements</b>					
Reclamation & seeding (native grasses)	0	ACRE	\$1,219.00	\$305.00	
<b>Special Items (User Defined)</b>					
180 ft. span bridge at County Line road	1	S.F.	\$1,800,000.00	\$1,800,000.00	40 ft. width
Old bridge removal	1	S.F.	\$240,000.00	\$240,000.00	120 ft. x 40 ft.

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$15,111.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$305.00
Special Items (User Defined)				\$2,040,000.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$2,055,416.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$20,554.16	L.S.		\$20,554.00
Mobilization	5%			\$102,771.00
Traffic Control	\$51,385.40	L.S.		\$51,385.00
Utility Coordination/Relocation	\$51,385.40	L.S.		\$51,385.00
Stormwater Management/Erosion Control	5%			\$102,771.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$328,866.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$307,642.00
Legal/Administrative	5%			\$119,214.00
Contract Admin/Construction Management	10%			\$238,428.00
Contingency	25%			\$599,071.00
<b>Subtotal Other Costs</b>				<b>\$1,311,355.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$3,695,637.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	40	L.F.	\$2.00	\$16.00
Bridge Maintenance	1	EA	\$800.00	\$800.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$816.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$28,560.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT :	Boulder Creek MDP - Reach 4
DRAINAGEWAY :	Boulder Creek
REACH :	4B-100yr
JURISDICTION :	Boulder County
REACH ID :	BCM-Reach4B-100yr Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Channel Improvements</b>					
Excavation, Mid Range	9458	C.Y.	\$29.00	\$274,282.00	Fill required to raise roadway
Soil Riprap, Type M	178	C.Y.	\$85.00	\$15,111.00	400 L.F. RB Stabilization
<b>Landscaping and Maintenance Improvements</b>					
Reclamation & seeding (native grasses)	0	ACRE	\$1,219.00	\$305.00	
<b>Special Items (User Defined)</b>					
220 ft span bridge at County Line Road	1	S.F.	\$2,200,000.00	\$2,200,000.00	40 ft. width
Asphalt for roadway	7022	S.Y.	\$60.00	\$421,333.00	1580 ft. of roadway construction (N side)
Old bridge removal	1	S.F.	\$240,000.00	\$240,000.00	120 ft. x 40 ft.

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$289,393.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$305.00
Special Items (User Defined)				\$2,861,333.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$3,151,031.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$31,510.31	L.S.		\$31,510.00
Mobilization	5%			\$157,552.00
Traffic Control	\$78,775.78	L.S.		\$78,776.00
Utility Coordination/Relocation	\$78,775.78	L.S.		\$78,776.00
Stormwater Management/Erosion Control	5%			\$157,552.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$504,166.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$548,280.00
Legal/Administrative	5%			\$182,760.00
Contract Admin/Construction Management	10%			\$365,520.00
Contingency	25%			\$913,799.00
<b>Subtotal Other Costs</b>				<b>\$2,010,359.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$5,665,556.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	40	L.F.	\$2.00	\$16.00
Bridge Maintenance	1	EA	\$800.00	\$800.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$816.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$28,560.00</b>



**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 4  
 DRAINAGEWAY : Boulder Creek  
 REACH : 4C-Boulder  
 JURISDICTION : Boulder County  
 REACH ID : BCM-Reach4C-Boulder Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Riverbank Spillway	11	L.S.	\$225,000.00	\$2,475,000.00	
Lateral Spillway	2	L.S.	\$225,000.00	\$450,000.00	

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$2,925,000.00
<b>Subtotal Capital Improvement Costs</b>				
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$29,250.00	L.S.		\$29,250.00
Mobilization	5%			\$146,250.00
Traffic Control	\$73,125.00	L.S.		\$73,125.00
Utility Coordination/Relocation	\$73,125.00	L.S.		\$73,125.00
Stormwater Management/Erosion Control	5%			\$146,250.00
<b>Subtotal Additional Capital Improvement Costs</b>				
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$508,950.00
Legal/Administrative	5%			\$169,650.00
Contract Admin/Construction Management	10%			\$339,300.00
Contingency	25%			\$948,250.00
<b>Subtotal Other Costs</b>				
<b>Total Capital Improvement Costs</b>				
<b>\$5,259,150.00</b>				

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	13	EA	\$610.00	\$397.00
<b>Total Annual Operation and Maintenance Cost</b>				
<b>\$397.00</b>				
Effective Interest Rate				
1.50%				
<b>Total Operation and Maintenance Costs Over 50 Years</b>				
<b>\$13,895.00</b>				

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 4  
 DRAINAGEWAY : Boulder Creek  
 REACH : 4C-Weld  
 JURISDICTION : Weld County  
 REACH ID : BCM-Reach4C-Weld Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Riverbank spillway	2	L.S.	\$225,000.00	\$450,000.00	

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$450,000.00
<b>Subtotal Capital Improvement Costs</b>				
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$4,500.00	L.S.		\$4,500.00
Mobilization	5%			\$22,500.00
Traffic Control	\$11,250.00	L.S.		\$11,250.00
Utility Coordination/Relocation	\$11,250.00	L.S.		\$11,250.00
Stormwater Management/Erosion Control	5%			\$22,500.00
<b>Subtotal Additional Capital Improvement Costs</b>				
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$78,300.00
Legal/Administrative	5%			\$26,100.00
Contract Admin/Construction Management	10%			\$52,200.00
Contingency	25%			\$130,500.00
<b>Subtotal Other Costs</b>				
<b>Total Capital Improvement Costs</b>				
<b>\$809,100.00</b>				

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	2	EA	\$610.00	\$610.00
<b>Total Annual Operation and Maintenance Cost</b>				
<b>\$610.00</b>				
Effective Interest Rate				
1.50%				
<b>Total Operation and Maintenance Costs Over 50 Years</b>				
<b>\$2,135.00</b>				

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 4  
 DRAINAGEWAY : Boulder Creek  
 REACH : 4D  
 JURISDICTION : Boulder County  
 REACH ID : BCM-Reach4D Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Channel Improvements</b>					
Soil Riprap, Type M	102	C.Y.	\$85.00	\$8,670.00	230 ft. x 6 ft. x 2 ft.
Excavation, Mid Range	188	C.Y.	\$29.00	\$5,452.00	Fill required in addition to soil riprap
<b>Landscaping and Maintenance Improvements</b>					
Reclamation & seeding (native grasses)	1	ACRE	\$1,219.00	\$610.00	

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$14,122.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$610.00
Special Items (User Defined)				\$0.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$14,732.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$147.32	L.S.		\$147.00
Mobilization	5%			\$737.00
Traffic Control	\$368.30	L.S.		\$368.00
Utility Coordination/Relocation	\$368.30	L.S.		\$368.00
Stormwater Management/Erosion Control	5%			\$737.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$2,357.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$2,563.00
Legal/Administrative	5%			\$854.00
Contract Admin/Construction Management	10%			\$1,709.00
Contingency	25%			\$4,272.00
<b>Subtotal Other Costs</b>				<b>\$9,398.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$26,487.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	230	L.F.	\$2.00	\$92.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$92.00</b>
Effective Interest Rate			1.50%	
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$3,220.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 4  
 DRAINAGEWAY : Boulder Creek  
 REACH : 4E  
 JURISDICTION : Boulder County  
 REACH ID : BCM-Reach4E Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Remove washed out bridge	1200	S.F.	\$50.00	\$60,000.00	15 ft. x 80 ft.

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$60,000.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$60,000.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$600.00	L.S.		\$600.00
Mobilization	5%			\$3,000.00
Traffic Control	\$1,500.00	L.S.		\$1,500.00
Utility Coordination/Relocation	\$1,500.00	L.S.		\$1,500.00
Stormwater Management/Erosion Control	5%			\$3,000.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$9,600.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$10,440.00
Legal/Administrative	5%			\$3,480.00
Contract Admin/Construction Management	10%			\$6,960.00
Contingency	25%			\$17,400.00
<b>Subtotal Other Costs</b>				<b>\$38,280.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$107,880.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 4  
 DRAINAGEWAY : Boulder Creek  
 REACH : 4F  
 JURISDICTION : Boulder County  
 REACH ID : BCM-Reach4F Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
ERC Estimate - New Stream	1	L.S.	\$1,130,000.00	\$1,130,000.00	
ERC Estimate - Riparian Restoration	1	L.S.	\$2,730,000.00	\$2,730,000.00	

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$3,860,000.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$3,860,000.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$38,600.00	L.S.		\$38,600.00
Mobilization	5%			\$193,000.00
Traffic Control	\$96,500.00	L.S.		\$96,500.00
Utility Coordination/Relocation	\$96,500.00	L.S.		\$96,500.00
Stormwater Management/Erosion Control	5%			\$193,000.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$617,600.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$671,640.00
Legal/Administrative	5%			\$223,880.00
Contract Admin/Construction Management	10%			\$447,760.00
Contingency	25%			\$1,119,400.00
<b>Subtotal Other Costs</b>				<b>\$2,462,680.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$6,940,280.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	8000	L.F.	\$2.00	\$3,400.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$3,400.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$118,999.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 4  
 DRAINAGEWAY : Boulder Creek  
 REACH : 4G  
 JURISDICTION : Boulder County  
 REACH ID : BCM-Reach4G Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Channel Improvements</b>					
Excavation, Mid Range	804	C.Y.	\$29.00	\$23,316.00	Cut & Haul
Excavation, Low Range	368	C.Y.	\$13.00	\$4,784.00	Cut & Fill Onsite
Soil Riprap, Type M	778	C.Y.	\$85.00	\$66,130.00	1050 ft. x 2 ft. x 5 ft.
<b>Special Items (User Defined)</b>					
Modify Ditch for Aquatic & Habitat Passage	1	L.S.	\$250,000.00	\$250,000.00	

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$94,230.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$250,000.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$344,230.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$3,442.30	L.S.		\$3,442.00
Mobilization	5%			\$17,212.00
Traffic Control	\$8,606.75	L.S.		\$8,606.00
Utility Coordination/Relocation	\$8,606.75	L.S.		\$8,606.00
Stormwater Management/Erosion Control	5%			\$17,212.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$55,078.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$59,896.00
Legal/Administrative	5%			\$19,965.00
Contract Admin/Construction Management	10%			\$39,931.00
Contingency	25%			\$99,827.00
<b>Subtotal Other Costs</b>				<b>\$219,619.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$618,927.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	1	EA	\$610.00	\$122.00
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	230	L.F.	\$2.00	\$92.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$214.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$7,490.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT :	Boulder Creek MDP - Reach 4
DRAINAGEWAY :	Boulder Creek
REACH :	4H
JURISDICTION :	Boulder County
REACH ID :	BCM-Reach4H
DATE :	2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
180 ft. span bridge at Kenosha Road	1	S.F.	\$250.00	\$1,800,000.00	40 ft. Bridge width
Old bridge removal	3600	S.F.	\$50.00	\$180,000.00	90 ft. x 40 ft.

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$1,980,000.00
<b>Subtotal Capital Improvement Costs</b>				
<b>\$1,980,000.00</b>				
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$19,800.00	L.S.		\$19,800.00
Mobilization	5%			\$99,000.00
Traffic Control	\$49,500.00	L.S.		\$49,500.00
Utility Coordination/Relocation	\$49,500.00	L.S.		\$49,500.00
Stormwater Management/Erosion Control	5%			\$99,000.00
<b>Subtotal Additional Capital Improvement Costs</b>				
<b>\$316,800.00</b>				
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				
<b>\$0.00</b>				
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$344,520.00
Legal/Administrative	5%			\$114,840.00
Contract Admin/Construction Management	10%			\$229,680.00
Contingency	25%			\$574,200.00
<b>Subtotal Other Costs</b>				
<b>\$1,263,240.00</b>				
<b>Total Capital Improvement Costs</b>				
<b>\$3,560,040.00</b>				

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	40	L.F.	\$2.00	\$16.00
Bridge Maintenance	1	EA	\$800.00	\$800.00
<b>Total Annual Operation and Maintenance Cost</b>				
<b>\$816.00</b>				
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				
<b>\$28,560.00</b>				

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT :	Boulder Creek MDP - Reach 4
DRAINAGEWAY :	Boulder Creek
REACH :	4I
JURISDICTION :	Boulder County
REACH ID :	BCM-Reach4I
DATE :	2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Grade Control for Aquatic & Habitat Passage	1	L.S.	\$205,000.00	\$205,000.00	

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$205,000.00
<b>Subtotal Capital Improvement Costs</b>				
<b>\$205,000.00</b>				
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$2,050.00	L.S.		\$2,050.00
Mobilization	5%			\$10,250.00
Traffic Control	\$5,125.00	L.S.		\$5,125.00
Utility Coordination/Relocation	\$5,125.00	L.S.		\$5,125.00
Stormwater Management/Erosion Control	5%			\$10,250.00
<b>Subtotal Additional Capital Improvement Costs</b>				
<b>\$32,800.00</b>				
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				
<b>\$0.00</b>				
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$35,670.00
Legal/Administrative	5%			\$11,890.00
Contract Admin/Construction Management	10%			\$23,780.00
Contingency	25%			\$58,450.00
<b>Subtotal Other Costs</b>				
<b>\$130,790.00</b>				
<b>Total Capital Improvement Costs</b>				
<b>\$368,590.00</b>				

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	1	EA	\$610.00	\$122.00
<b>Total Annual Operation and Maintenance Cost</b>				
<b>\$122.00</b>				
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				
<b>\$4,270.00</b>				

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 4  
 DRAINAGEWAY : Boulder Creek  
 REACH : 4J  
 JURISDICTION : Boulder County  
 REACH ID : BCM-Reach4J Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
180 ft. span bridge at 109th St.	5400	S.F.	\$250.00	\$1,350,000.00	30 ft. bridge width
Old bridge removal	2400	S.F.	\$50.00	\$120,000.00	80 ft. x 30 ft.
Stream Restoration	1	Mile	\$350,750.00	\$350,750.00	Average of New and Existing Stream Restoration
Riparian Restoration	18	ACRE	\$35,000.00	\$630,000.00	

Master Plan Capital Improvement Cost Summary					
<b>Capital Improvement Costs</b>					
Pipe Culverts and Storm Drains				\$0.00	
Concrete Box Culverts				\$0.00	
Hydraulic Structures				\$0.00	
Channel Improvements				\$0.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$0.00	
Special Items (User Defined)				\$2,443,750.00	
<b>Subtotal Capital Improvement Costs</b>				<b>\$2,443,750.00</b>	
<b>Additional Capital Improvement Costs</b>					
Dewatering	\$24,437.50	L.S.		\$24,438.00	
Mobilization	5%			\$122,188.00	
Traffic Control	\$61,093.75	L.S.		\$61,094.00	
Utility Coordination/Relocation	\$61,093.75	L.S.		\$61,094.00	
Stormwater Management/Erosion Control	5%			\$122,188.00	
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$391,002.00</b>	
<b>Land Acquisition Costs</b>					
ROW/Easements				\$0.00	
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>	
<b>Other Costs (percentage of Capital Improvement Costs)</b>					
Engineering	15%			\$425,213.00	
Legal/Administrative	5%			\$141,738.00	
Contract Admin/Construction Management	10%			\$283,475.00	
Contingency	25%			\$708,688.00	
<b>Subtotal Other Costs</b>				<b>\$1,559,114.00</b>	
<b>Total Capital Improvement Costs</b>				<b>\$4,393,866.00</b>	

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	30	L.F.	\$2.00	\$12.00
Bridge Maintenance	1	EA	\$800.00	\$800.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$812.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$28,420.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 4  
 DRAINAGEWAY : Boulder Creek  
 REACH : 4K  
 JURISDICTION : Boulder County  
 REACH ID : BCM-Reach4K Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
ERC Stream Restoration	4600	L.F.	\$133.00	\$611,800.00	
ERC Riparian Restoration	42	AC	\$35,000.00	\$1,470,000.00	200 ft on each side of stream

Master Plan Capital Improvement Cost Summary					
<b>Capital Improvement Costs</b>					
Pipe Culverts and Storm Drains				\$0.00	
Concrete Box Culverts				\$0.00	
Hydraulic Structures				\$0.00	
Channel Improvements				\$0.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$0.00	
Special Items (User Defined)				\$2,090,221.00	
<b>Subtotal Capital Improvement Costs</b>				<b>\$2,090,221.00</b>	
<b>Additional Capital Improvement Costs</b>					
Dewatering	\$20,902.21	L.S.		\$20,902.00	
Mobilization	5%			\$104,511.00	
Traffic Control	\$52,255.53	L.S.		\$52,256.00	
Utility Coordination/Relocation	\$52,255.53	L.S.		\$52,256.00	
Stormwater Management/Erosion Control	5%			\$104,511.00	
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$334,436.00</b>	
<b>Land Acquisition Costs</b>					
ROW/Easements				\$0.00	
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>	
<b>Other Costs (percentage of Capital Improvement Costs)</b>					
Engineering	15%			\$363,699.00	
Legal/Administrative	5%			\$121,233.00	
Contract Admin/Construction Management	10%			\$242,466.00	
Contingency	25%			\$606,164.00	
<b>Subtotal Other Costs</b>				<b>\$1,333,562.00</b>	
<b>Total Capital Improvement Costs</b>				<b>\$3,758,219.00</b>	

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	4600	L.F.	\$2.00	\$1,840.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$1,840.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$64,399.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 5  
 DRAINAGEWAY : Boulder Creek  
 REACH : SA  
 JURISDICTION : Boulder County  
 REACH ID : BCM-Reach5A Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
ERC Estimated New Stream	1	L.S.	\$600,000.00	\$600,000.00	
ERC Estimated Riparian Restoration	1	L.S.	\$1,450,000.00	\$1,450,000.00	

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$2,050,000.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$2,050,000.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$20,500.00	L.S.		\$20,500.00
Mobilization	5%			\$102,500.00
Traffic Control	\$51,250.00	L.S.		\$51,250.00
Utility Coordination/Relocation	\$51,250.00	L.S.		\$51,250.00
Stormwater Management/Erosion Control	5%			\$102,500.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$328,000.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$356,700.00
Legal/Administrative	5%			\$118,900.00
Contract Admin/Construction Management	10%			\$237,800.00
Contingency	25%			\$994,500.00
<b>Subtotal Other Costs</b>				<b>\$1,307,900.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$3,685,900.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	4800	L.F.	\$2.00	\$1,800.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$1,800.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$62,999.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 5  
 DRAINAGEWAY : Boulder Creek  
 REACH : SB  
 JURISDICTION : Boulder County  
 REACH ID : BCM-Reach5B Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Modfly Ditch for Aquatic & Habitat Passage	1	L.S.	\$250,000.00	\$250,000.00	

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$250,000.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$250,000.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$2,500.00	L.S.		\$2,500.00
Mobilization	5%			\$12,500.00
Traffic Control	\$6,250.00	L.S.		\$6,250.00
Utility Coordination/Relocation	\$6,250.00	L.S.		\$6,250.00
Stormwater Management/Erosion Control	5%			\$12,500.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$40,000.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$43,500.00
Legal/Administrative	5%			\$14,500.00
Contract Admin/Construction Management	10%			\$29,000.00
Contingency	25%			\$72,500.00
<b>Subtotal Other Costs</b>				<b>\$159,500.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$449,500.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	1	EA	\$610.00	\$122.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$122.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$4,270.00</b>

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH					
PROJECT :	Boulder Creek MDP - Reach 5				
DRAINAGEWAY :	Boulder Creek				
REACH :	5C				
JURISDICTION :	Boulder County				
REACH ID :	BCM-Reach5C	Jeremy Deischer	DATE :	2015-10-05	
DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Riverbank spillway	←---User Defined Items	5	L.S.	\$225,000.00	\$1,125,000.00
Master Plan Capital Improvement Cost Summary					
Capital Improvement Costs					
Pipe Culverts and Storm Drains				\$0.00	
Concrete Box Culverts				\$0.00	
Hydraulic Structures				\$0.00	
Channel Improvements				\$0.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$0.00	
Special Items (User Defined)				\$1,125,000.00	
<b>Subtotal Capital Improvement Costs</b>				<b>\$1,125,000.00</b>	
Additional Capital Improvement Costs					
Dewatering	\$11,250.00	L.S.		\$11,250.00	
Mobilization	5%			\$66,250.00	
Traffic Control	\$28,125.00	L.S.		\$28,125.00	
Utility Coordination/Relocation	\$28,125.00	L.S.		\$28,125.00	
Stormwater Management/Erosion Control	5%			\$56,250.00	
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$180,000.00</b>	
Land Acquisition Costs					
ROW/Easements				\$0.00	
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>	
Other Costs (percentage of Capital Improvement Costs)					
Engineering	15%			\$195,750.00	
Legal/Administrative	5%			\$66,250.00	
Contract Admin/Construction Management	10%			\$130,500.00	
Contingency	25%			\$326,250.00	
<b>Subtotal Other Costs</b>				<b>\$717,750.00</b>	
<b>Total Capital Improvement Costs</b>				<b>\$2,022,750.00</b>	
Master Plan Operation and Maintenance Cost Summary					
Description	Quantity	Unit	Unit Cost	Total Annual Cost	
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	5	EA	\$610.00	\$153.00	
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$153.00</b>	
Effective Interest Rate				1.50%	
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$5,355.00</b>	

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH					
PROJECT :	Boulder Creek MDP - Reach 5				
DRAINAGEWAY :	Boulder Creek				
REACH :	5D				
JURISDICTION :	Boulder County				
REACH ID :	BCM-Reach5D	Jeremy Deischer	DATE :	2015-10-05	
DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Grade Control for Aquatic & Habitat Passage	←---User Defined Items	1	L.S.	\$205,000.00	\$205,000.00
Master Plan Capital Improvement Cost Summary					
Capital Improvement Costs					
Pipe Culverts and Storm Drains				\$0.00	
Concrete Box Culverts				\$0.00	
Hydraulic Structures				\$0.00	
Channel Improvements				\$0.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$0.00	
Special Items (User Defined)				\$205,000.00	
<b>Subtotal Capital Improvement Costs</b>				<b>\$205,000.00</b>	
Additional Capital Improvement Costs					
Dewatering	\$2,050.00	L.S.		\$2,050.00	
Mobilization	5%			\$10,250.00	
Traffic Control	\$5,125.00	L.S.		\$5,125.00	
Utility Coordination/Relocation	\$5,125.00	L.S.		\$5,125.00	
Stormwater Management/Erosion Control	5%			\$10,250.00	
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$32,800.00</b>	
Land Acquisition Costs					
ROW/Easements				\$0.00	
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>	
Other Costs (percentage of Capital Improvement Costs)					
Engineering	15%			\$36,670.00	
Legal/Administrative	5%			\$11,890.00	
Contract Admin/Construction Management	10%			\$23,780.00	
Contingency	25%			\$58,450.00	
<b>Subtotal Other Costs</b>				<b>\$130,790.00</b>	
<b>Total Capital Improvement Costs</b>				<b>\$368,590.00</b>	
Master Plan Operation and Maintenance Cost Summary					
Description	Quantity	Unit	Unit Cost	Total Annual Cost	
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	1	EA	\$610.00	\$122.00	
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$122.00</b>	
Effective Interest Rate				1.50%	
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$4,270.00</b>	

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH					
PROJECT :	Boulder Creek MDP - Reach 5				
DRAINAGEWAY :	Boulder Creek				
REACH :	SE				
JURISDICTION :	Boulder County				
REACH ID :	BCM-ReachSE	Jeremy Deischer	DATE :	2015-10-05	
DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Grade Control for Aquatic & Habitat Passage	2	L.S.	\$205,000.00	\$410,000.00	Two diversions DS of 95th St.
<b>Master Plan Capital Improvement Cost Summary</b>					
<b>Capital Improvement Costs</b>					
Pipe Culverts and Storm Drains				\$0.00	
Concrete Box Culverts				\$0.00	
Hydraulic Structures				\$0.00	
Channel Improvements				\$0.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$0.00	
Special Items (User Defined)				\$410,000.00	
<b>Subtotal Capital Improvement Costs</b>					
<b>Additional Capital Improvement Costs</b>					
Dewatering	\$4,100.00	L.S.		\$4,100.00	
Mobilization	5%			\$20,500.00	
Traffic Control	\$10,250.00	L.S.		\$10,250.00	
Utility Coordination/Relocation	\$10,250.00	L.S.		\$10,250.00	
Stormwater Management/Erosion Control	5%			\$20,500.00	
<b>Subtotal Additional Capital Improvement Costs</b>					
<b>Land Acquisition Costs</b>					
ROW/Easements				\$0.00	
<b>Subtotal Land Acquisition Costs</b>					
<b>Other Costs (percentage of Capital Improvement Costs)</b>					
Engineering	15%			\$71,340.00	
Legal/Administrative	5%			\$23,780.00	
Contract Admin/Construction Management	10%			\$47,560.00	
Contingency	25%			\$118,900.00	
<b>Subtotal Other Costs</b>					
<b>Total Capital Improvement Costs</b>					
<b>\$737,180.00</b>					
<b>Master Plan Operation and Maintenance Cost Summary</b>					
Description	Quantity	Unit	Unit Cost	Total Annual Cost	
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	2	EA	\$610.00	\$244.00	
<b>Total Annual Operation and Maintenance Cost</b>					
<b>\$244.00</b>					
Effective Interest Rate	1.50%				
<b>Total Operation and Maintenance Costs Over 50 Years</b>					
<b>\$8,540.00</b>					

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH					
PROJECT :	Boulder Creek MDP - Reach 5				
DRAINAGEWAY :	Boulder Creek				
REACH :	SF				
JURISDICTION :	Boulder County				
REACH ID :	BCM-ReachSF	Jeremy Deischer	DATE :	2015-10-05	
DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
ERC New Stream Restoration	2000	L.F.	\$133.00	\$266,000.00	
ERC Riparian Restoration	18	Acre	\$35,000.00	\$642,792.00	200 ft on each side of stream
<b>Land Acquisition</b>					
Easement/ROW Acquisition	23.67	ACRE	\$569.71	\$13,485.00	Parcel: 146516010001 (6.7% Easement of Parcel Required)
<b>Master Plan Capital Improvement Cost Summary</b>					
<b>Capital Improvement Costs</b>					
Pipe Culverts and Storm Drains				\$0.00	
Concrete Box Culverts				\$0.00	
Hydraulic Structures				\$0.00	
Channel Improvements				\$0.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$0.00	
Special Items (User Defined)				\$908,792.00	
<b>Subtotal Capital Improvement Costs</b>					
<b>Additional Capital Improvement Costs</b>					
Dewatering	\$9,087.92	L.S.		\$9,088.00	
Mobilization	5%			\$45,440.00	
Traffic Control	\$22,719.80	L.S.		\$22,720.00	
Utility Coordination/Relocation	\$22,719.80	L.S.		\$22,720.00	
Stormwater Management/Erosion Control	5%			\$45,440.00	
<b>Subtotal Additional Capital Improvement Costs</b>					
<b>Land Acquisition Costs</b>					
ROW/Easements				\$13,485.00	
<b>Subtotal Land Acquisition Costs</b>					
<b>Other Costs (percentage of Capital Improvement Costs)</b>					
Engineering	15%			\$158,130.00	
Legal/Administrative	5%			\$52,710.00	
Contract Admin/Construction Management	10%			\$105,420.00	
Contingency	25%			\$283,550.00	
<b>Subtotal Other Costs</b>					
<b>Total Capital Improvement Costs</b>					
<b>\$1,647,495.00</b>					
<b>Master Plan Operation and Maintenance Cost Summary</b>					
Description	Quantity	Unit	Unit Cost	Total Annual Cost	
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	2000	L.F.	\$2.00	\$800.00	
<b>Total Annual Operation and Maintenance Cost</b>					
<b>\$800.00</b>					
Effective Interest Rate	1.50%				
<b>Total Operation and Maintenance Costs Over 50 Years</b>					
<b>\$28,000.00</b>					



**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 5  
 DRAINAGEWAY : Boulder Creek  
 REACH : 5G  
 JURISDICTION : Boulder County  
 REACH ID : BCM-Reach5G Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Old bridge removal	4800	S.F.	\$50.00	\$240,000.00	120 ft. x 40 ft.
180 ft. span bridge	7200	S.F.	\$250.00	\$1,800,000.00	

Master Plan Capital Improvement Cost Summary					
<b>Capital Improvement Costs</b>					
Pipe Culverts and Storm Drains				\$0.00	
Concrete Box Culverts				\$0.00	
Hydraulic Structures				\$0.00	
Channel Improvements				\$0.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$0.00	
Special Items (User Defined)				\$2,040,000.00	
<b>Subtotal Capital Improvement Costs</b>				<b>\$2,040,000.00</b>	
<b>Additional Capital Improvement Costs</b>					
Dewatering	\$20,400.00	L.S.		\$20,400.00	
Mobilization	5%			\$102,000.00	
Traffic Control	\$51,000.00	L.S.		\$51,000.00	
Utility Coordination/Relocation	\$51,000.00	L.S.		\$51,000.00	
Stormwater Management/Erosion Control	5%			\$102,000.00	
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$326,400.00</b>	
<b>Land Acquisition Costs</b>					
ROW/Easements				\$0.00	
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>	
<b>Other Costs (percentage of Capital Improvement Costs)</b>					
Engineering	15%			\$354,060.00	
Legal/Administrative	5%			\$118,320.00	
Contract Admin/Construction Management	10%			\$236,640.00	
Contingency	25%			\$914,600.00	
<b>Subtotal Other Costs</b>				<b>\$1,301,520.00</b>	
<b>Total Capital Improvement Costs</b>				<b>\$3,667,920.00</b>	

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	40	L.F.	\$2.00	\$16.00
Bridge Maintenance	1	EA	\$800.00	\$800.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$816.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$28,560.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 5  
 DRAINAGEWAY : Boulder Creek  
 REACH : 5G-100yr  
 JURISDICTION : Boulder County  
 REACH ID : BCM-Reach5G-100yr Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Channel Improvements</b>					
Excavation, Mid Range	14304	C.Y.	\$29.00	\$414,816.00	Fill Required for roadway reconstruction
<b>Special Items (User Defined)</b>					
Removal of old 120 ft. bridge	4800	S.F.	\$50.00	\$240,000.00	40 ft. width
220' span bridge	8800	S.F.	\$250.00	\$2,200,000.00	40 ft. width
Asphalt Remove and Replace	6711	S.Y.	\$60.00	\$402,667.00	1510 ft. of roadway reconstruction

Master Plan Capital Improvement Cost Summary					
<b>Capital Improvement Costs</b>					
Pipe Culverts and Storm Drains				\$0.00	
Concrete Box Culverts				\$0.00	
Hydraulic Structures				\$0.00	
Channel Improvements				\$414,816.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$0.00	
Special Items (User Defined)				\$2,842,667.00	
<b>Subtotal Capital Improvement Costs</b>				<b>\$3,257,483.00</b>	
<b>Additional Capital Improvement Costs</b>					
Dewatering	\$32,574.83	L.S.		\$32,575.00	
Mobilization	5%			\$162,874.00	
Traffic Control	\$81,437.08	L.S.		\$81,437.00	
Utility Coordination/Relocation	\$81,437.08	L.S.		\$81,437.00	
Stormwater Management/Erosion Control	5%			\$162,874.00	
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$521,197.00</b>	
<b>Land Acquisition Costs</b>					
ROW/Easements				\$0.00	
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>	
<b>Other Costs (percentage of Capital Improvement Costs)</b>					
Engineering	15%			\$566,802.00	
Legal/Administrative	5%			\$188,934.00	
Contract Admin/Construction Management	10%			\$377,868.00	
Contingency	25%			\$944,670.00	
<b>Subtotal Other Costs</b>				<b>\$2,078,274.00</b>	
<b>Total Capital Improvement Costs</b>				<b>\$5,856,954.00</b>	

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	40	L.F.	\$2.00	\$16.00
Bridge Maintenance	1	EA	\$800.00	\$800.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$816.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$28,560.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT :	Boulder Creek MDP - Reach 5
DRAINAGEWAY :	Boulder Creek
REACH :	5G-Interim
JURISDICTION :	Boulder County
REACH ID :	BCM-Reach5G-Interim
DATE :	2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Channel Improvements</b>					
Excavation, Mid Range	3290	C.Y.	\$29.00	\$95,410.00	Fill required for roadway reconstruction raising roadway 2 ft.
<b>Special Items (User Defined)</b>					
Asphalt Remove and Replace	4511	S.Y.	\$60.00	\$270,667.00	1015 ft (40 ft width)
Geo-Fabric roadway protection	4511	S.Y.	\$17.00	\$76,689.00	Turf Reinforcement Mat (TRM) US and DS side of 95th St.
(2) Vegetated spillways 95th St. Pond	2	L.S.	\$225,000.00	\$450,000.00	Upstream of 95th Street
Lower Boulder Ditch Modification (2 structures)	2	L.S.	\$250,000.00	\$500,000.00	2 structures DS of 95th adjusted for aquatic and habitat passage
Stream Restoration DS of 95th St.	750	L.F.	\$133.00	\$99,750.00	
Riparian Restoration DS of 95th St.	7	AC	\$35,000.00	\$241,047.00	
Stream Restoration US of 95th St.	3000	L.F.	\$133.00	\$399,000.00	
Riparian Restoration US of 95th St.	28	AC	\$35,000.00	\$984,187.00	
<b>Land Acquisition</b>					
Easement/ROW Acquisition	17.00	ACRE	\$569.73	\$9,685.00	

**Master Plan Capital Improvement Cost Summary**

Category	Subtotal
<b>Capital Improvement Costs</b>	
Pipe Culverts and Storm Drains	\$0.00
Concrete Box Culverts	\$0.00
Hydraulic Structures	\$0.00
Channel Improvements	\$95,410.00
Detention/Water Quality Facilities	\$0.00
Removals	\$0.00
Landscaping and Maintenance Improvements	\$0.00
Special Items (User Defined)	\$3,001,340.00
<b>Subtotal Capital Improvement Costs</b>	<b>\$3,096,750.00</b>
<b>Additional Capital Improvement Costs</b>	
Dewatering	\$30,967.50
Mobilization	\$154,838.00
Traffic Control	\$77,418.75
Utility Coordination/Relocation	\$77,418.75
Stormwater Management/Erosion Control	\$154,838.00
<b>Subtotal Additional Capital Improvement Costs</b>	<b>\$495,482.00</b>
<b>Land Acquisition Costs</b>	
ROW/Easements	\$9,685.00
<b>Subtotal Land Acquisition Costs</b>	<b>\$9,685.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>	
Engineering	\$538,835.00
Legal/Administrative	\$179,612.00
Contract Admin/Construction Management	\$369,223.00
Contingency	\$898,058.00
<b>Subtotal Other Costs</b>	<b>\$1,975,728.00</b>
<b>Total Capital Improvement Costs</b>	<b>\$5,577,645.00</b>

**Master Plan Operation and Maintenance Cost Summary**

Description	Quantity	Unit	Unit Cost	Total Annual Cost
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	2	EA	\$610.00	\$244.00
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	5500	L.F.	\$2.00	\$2,200.00
Gravel Pit Spillway Maintenance	2	EA	\$610.00	\$610.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$2,505.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$87,674.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT :	Boulder Creek MDP - Reach 5
DRAINAGEWAY :	Boulder Creek
REACH :	5H
JURISDICTION :	City of Boulder
REACH ID :	BCM-Reach5H
DATE :	2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
ERC Stream Restoration	4500	L.F.	\$133.00	\$598,500.00	
ERC Riparian Restoration	41	AC	\$35,000.00	\$1,446,281.00	200 ft. riparian restoration each side of stream

**Master Plan Capital Improvement Cost Summary**

Category	Subtotal
<b>Capital Improvement Costs</b>	
Pipe Culverts and Storm Drains	\$0.00
Concrete Box Culverts	\$0.00
Hydraulic Structures	\$0.00
Channel Improvements	\$0.00
Detention/Water Quality Facilities	\$0.00
Removals	\$0.00
Landscaping and Maintenance Improvements	\$0.00
Special Items (User Defined)	\$2,044,781.00
<b>Subtotal Capital Improvement Costs</b>	<b>\$2,044,781.00</b>
<b>Additional Capital Improvement Costs</b>	
Dewatering	\$20,447.81
Mobilization	\$102,239.00
Traffic Control	\$51,119.53
Utility Coordination/Relocation	\$51,119.53
Stormwater Management/Erosion Control	\$102,239.00
<b>Subtotal Additional Capital Improvement Costs</b>	<b>\$327,166.00</b>
<b>Land Acquisition Costs</b>	
ROW/Easements	\$0.00
<b>Subtotal Land Acquisition Costs</b>	<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>	
Engineering	\$365,792.00
Legal/Administrative	\$118,597.00
Contract Admin/Construction Management	\$237,195.00
Contingency	\$592,967.00
<b>Subtotal Other Costs</b>	<b>\$1,304,571.00</b>
<b>Total Capital Improvement Costs</b>	<b>\$3,676,518.00</b>

**Master Plan Operation and Maintenance Cost Summary**

Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	4500	L.F.	\$2.00	\$1,800.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$1,800.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$62,999.00</b>

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH					
PROJECT :	Boulder Creek MDP - Reach 6				
DRAINAGEWAY :	Boulder Creek				
REACH :	6A				
JURISDICTION :	Boulder County				
REACH ID :	BCM-Reach6A	Jeremy Deischer	DATE :	2015-10-05	
DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Modify Ditch for Aquatic & Habitat Passage	1	L.S.	\$250,000.00	\$250,000.00	
<b>Master Plan Capital Improvement Cost Summary</b>					
<b>Capital Improvement Costs</b>					
Pipe Culverts and Storm Drains				\$0.00	
Concrete Box Culverts				\$0.00	
Hydraulic Structures				\$0.00	
Channel Improvements				\$0.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$0.00	
Special Items (User Defined)				\$250,000.00	
<b>Subtotal Capital Improvement Costs</b>				<b>\$250,000.00</b>	
<b>Additional Capital Improvement Costs</b>					
Dewatering	\$2,500.00	L.S.		\$2,500.00	
Mobilization	5%			\$12,500.00	
Traffic Control	\$6,250.00	L.S.		\$6,250.00	
Utility Coordination/Relocation	\$6,250.00	L.S.		\$6,250.00	
Stormwater Management/Erosion Control	5%			\$12,500.00	
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$40,000.00</b>	
<b>Land Acquisition Costs</b>					
ROW/Easements				\$0.00	
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>	
<b>Other Costs (percentage of Capital Improvement Costs)</b>					
Engineering	15%			\$43,500.00	
Legal/Administrative	5%			\$14,500.00	
Contract Admin/Construction Management	10%			\$29,000.00	
Contingency	25%			\$72,500.00	
<b>Subtotal Other Costs</b>				<b>\$159,500.00</b>	
<b>Total Capital Improvement Costs</b>				<b>\$449,500.00</b>	
<b>Master Plan Operation and Maintenance Cost Summary</b>					
Description	Quantity	Unit	Unit Cost	Total Annual Cost	
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	1	EA	\$610.00	\$122.00	
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$122.00</b>	
Effective Interest Rate				1.50%	
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$4,270.00</b>	

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH					
PROJECT :	Boulder Creek MDP - Reach 6				
DRAINAGEWAY :	Boulder Creek				
REACH :	6B				
JURISDICTION :	Boulder County				
REACH ID :	BCM-Reach6B	Jeremy Deischer	DATE :	2015-10-05	
DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
180 ft. span bridge at 75th St.	7200	S.F.	\$250.00	\$1,800,000.00	40 ft width at 75th St.
Old bridge removal	4400	S.F.	\$50.00	\$220,000.00	110 x 40 ft
<b>Master Plan Capital Improvement Cost Summary</b>					
<b>Capital Improvement Costs</b>					
Pipe Culverts and Storm Drains				\$0.00	
Concrete Box Culverts				\$0.00	
Hydraulic Structures				\$0.00	
Channel Improvements				\$0.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$0.00	
Special Items (User Defined)				\$2,020,000.00	
<b>Subtotal Capital Improvement Costs</b>				<b>\$2,020,000.00</b>	
<b>Additional Capital Improvement Costs</b>					
Dewatering	\$20,200.00	L.S.		\$20,200.00	
Mobilization	5%			\$101,000.00	
Traffic Control	\$50,500.00	L.S.		\$50,500.00	
Utility Coordination/Relocation	\$50,500.00	L.S.		\$50,500.00	
Stormwater Management/Erosion Control	5%			\$101,000.00	
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$323,200.00</b>	
<b>Land Acquisition Costs</b>					
ROW/Easements				\$0.00	
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>	
<b>Other Costs (percentage of Capital Improvement Costs)</b>					
Engineering	15%			\$381,480.00	
Legal/Administrative	5%			\$117,160.00	
Contract Admin/Construction Management	10%			\$234,320.00	
Contingency	25%			\$505,800.00	
<b>Subtotal Other Costs</b>				<b>\$1,288,760.00</b>	
<b>Total Capital Improvement Costs</b>				<b>\$3,631,960.00</b>	
<b>Master Plan Operation and Maintenance Cost Summary</b>					
Description	Quantity	Unit	Unit Cost	Total Annual Cost	
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	40	L.F.	\$2.00	\$16.00	
Bridge Maintenance	1	EA	\$800.00	\$800.00	
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$816.00</b>	
Effective Interest Rate				1.50%	
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$28,560.00</b>	

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT :	Boulder Creek MDP - Reach 6
DRAINAGEWAY :	Boulder Creek
REACH :	6B-100yr
JURISDICTION :	Boulder County
REACH ID :	BCM-Reach6B-100yr
DATE :	2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Channel Improvements</b>					
Excavation, Mid Range	7242	C.Y.	\$29.00	\$210,018.00	Fill required for roadway improvement
<b>Special Items (User Defined)</b>					
180 ft span bridge at 75th St	1	←User Defined Items		\$1,800,000.00	40 ft. width at 75th
Remove and Replace Asphalt	7333	S.Y.	\$60.00	\$440,000.00	1650 feet of roadway reconstruction ( South Side)
Old bridge removal	4400	S.F.	\$50.00	\$220,000.00	110 ft x 40 ft

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$210,018.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$2,460,000.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$2,670,018.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$26,700.18	L.S.		\$26,700.00
Mobilization	5%			\$133,501.00
Traffic Control	\$66,750.45	L.S.		\$66,750.00
Utility Coordination/Relocation	\$66,750.45	L.S.		\$66,750.00
Stormwater Management/Erosion Control	5%			\$133,501.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$427,202.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$400,503.00
Legal/Administrative	5%			\$133,501.00
Contract Admin/Construction Management	10%			\$267,002.00
Contingency	25%			\$667,504.50
<b>Subtotal Other Costs</b>				<b>\$1,708,471.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$4,800,691.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	40	L.F.	\$2.00	\$16.00
Bridge Maintenance	1	←User Defined Items	\$800.00	\$800.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$816.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$28,560.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT :	Boulder Creek MDP - Reach 7
DRAINAGEWAY :	Boulder Creek
REACH :	7A
JURISDICTION :	Boulder County
REACH ID :	BCM-Reach7A
DATE :	2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Riverside Spillway	4	←User Defined Items	\$225,000.00	\$900,000.00	
Lateral Spillway	3	←User Defined Items	\$225,000.00	\$675,000.00	

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$1,575,000.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$1,575,000.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$15,750.00	L.S.		\$15,750.00
Mobilization	5%			\$78,750.00
Traffic Control	\$39,375.00	L.S.		\$39,375.00
Utility Coordination/Relocation	\$39,375.00	L.S.		\$39,375.00
Stormwater Management/Erosion Control	5%			\$78,750.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$252,000.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$236,250.00
Legal/Administrative	5%			\$78,750.00
Contract Admin/Construction Management	10%			\$157,500.00
Contingency	25%			\$393,750.00
<b>Subtotal Other Costs</b>				<b>\$1,066,250.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$2,831,850.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	7	EA	\$214.00	\$214.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$214.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$7,490.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT :	Boulder Creek MDP - Reach 7
DRAINAGEWAY :	Boulder Creek
REACH :	7B
JURISDICTION :	Boulder County
REACH ID :	BCM-Reach7B
Prepared by :	Jeremy Deischer
DATE :	2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Riverside Spillway	5	LS	\$225,000.00	\$1,125,000.00	<---User Defined Items
Lateral Spillway	2	LS	\$225,000.00	\$450,000.00	<---User Defined Items

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$1,575,000.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$1,575,000.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$15,750.00	L.S.		\$15,750.00
Mobilization	5%			\$78,750.00
Traffic Control	\$39,375.00	L.S.		\$39,375.00
Utility Coordination/Relocation	\$39,375.00	L.S.		\$39,375.00
Stormwater Management/Erosion Control	5%			\$78,750.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$252,000.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$274,050.00
Legal/Administrative	5%			\$91,350.00
Contract Admin/Construction Management	10%			\$182,700.00
Contingency	25%			\$466,750.00
<b>Subtotal Other Costs</b>				<b>\$1,094,850.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$2,831,850.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	7	EA	\$610.00	\$214.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$214.00</b>
Effective Interest Rate			1.50%	
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$7,490.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT :	Boulder Creek MDP - Reach 7
DRAINAGEWAY :	Boulder Creek
REACH :	7C
JURISDICTION :	Boulder County
REACH ID :	BCM-Reach7C
Prepared by :	Jeremy Deischer
DATE :	2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Modfly Ditch for Aquatic & Habitat Passage	1	L.S.	\$250,000.00	\$250,000.00	<---User Defined Items

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$250,000.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$250,000.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$2,500.00	L.S.		\$2,500.00
Mobilization	5%			\$12,500.00
Traffic Control	\$6,250.00	L.S.		\$6,250.00
Utility Coordination/Relocation	\$6,250.00	L.S.		\$6,250.00
Stormwater Management/Erosion Control	5%			\$12,500.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$40,000.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$43,500.00
Legal/Administrative	5%			\$14,500.00
Contract Admin/Construction Management	10%			\$29,000.00
Contingency	25%			\$72,500.00
<b>Subtotal Other Costs</b>				<b>\$159,500.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$449,500.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	1	EA	\$610.00	\$122.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$122.00</b>
Effective Interest Rate			1.50%	
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$4,270.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT :	Boulder Creek MDP - Reach 7
DRAINAGEWAY :	Boulder Creek
REACH :	7D
JURISDICTION :	Boulder County
REACH ID :	BCM-Reach7D
Prepared by :	Jeremy Deischer
DATE :	2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Modify Ditch for Aquatic & Habitat Passage	1	L.S.	\$250,000.00	\$250,000.00	

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$250,000.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$250,000.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$2,500.00	L.S.		\$2,500.00
Mobilization	5%			\$12,500.00
Traffic Control	\$6,250.00	L.S.		\$6,250.00
Utility Coordination/Relocation	\$6,250.00	L.S.		\$6,250.00
Stormwater Management/Erosion Control	5%			\$12,500.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$40,000.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$43,500.00
Legal/Administrative	5%			\$14,500.00
Contract Admin/Construction Management	10%			\$29,000.00
Contingency	25%			\$72,500.00
<b>Subtotal Other Costs</b>				<b>\$159,500.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$449,500.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	1	EA	\$610.00	\$122.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$122.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$4,270.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT :	Boulder Creek MDP - Reach 7
DRAINAGEWAY :	Boulder Creek
REACH :	7E
JURISDICTION :	Boulder County
REACH ID :	BCM-Reach7E
Prepared by :	Jeremy Deischer
DATE :	2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
180 ft. span bridge at 61st St.	5400	S.F.	\$250.00	\$1,350,000.00	30 ft width bridge at 61st St.
Old bridge removal	2700	S.F.	\$50.00	\$135,000.00	80 ft x 30 ft

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$1,485,000.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$1,485,000.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$14,850.00	L.S.		\$14,850.00
Mobilization	5%			\$74,250.00
Traffic Control	\$37,125.00	L.S.		\$37,125.00
Utility Coordination/Relocation	\$37,125.00	L.S.		\$37,125.00
Stormwater Management/Erosion Control	5%			\$74,250.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$237,600.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$268,390.00
Legal/Administrative	5%			\$86,130.00
Contract Admin/Construction Management	10%			\$172,260.00
Contingency	25%			\$430,650.00
<b>Subtotal Other Costs</b>				<b>\$947,430.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$2,670,030.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	30	L.F.	\$2.00	\$12.00
Bridge Maintenance	1	EA	\$800.00	\$800.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$812.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$28,420.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT :	Boulder Creek MDP - Reach 7
DRAINAGEWAY :	Boulder Creek
REACH :	7E-100yr
JURISDICTION :	Boulder County
REACH ID :	BCM-Reach7E-100yr
DATE :	2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Channel Improvements</b>					
Excavation, Mid Range	9180	C.Y.	\$29.00	\$266,220.00	Fill required for roadway reconstruction
<b>Special Items (User Defined)</b>					
220 ft. span bridge	1	S.F.	\$1,650,000.00	\$1,650,000.00	30 ft width bridge at 61st St.
Remove and replace asphalt	6667	S.Y.	\$60.00	\$400,000.00	2000 ft of roadway reconstruction (N and S Side)
Old bridge removal	2700	S.F.	\$50.00	\$135,000.00	90 ft x 30 ft

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$266,220.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$2,185,000.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$2,451,220.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$24,512.20	L.S.		\$24,512.00
Mobilization	5%			\$122,561.00
Traffic Control	\$61,280.50	L.S.		\$61,281.00
Utility Coordination/Relocation	\$61,280.50	L.S.		\$61,281.00
Stormwater Management/Erosion Control	5%			\$122,561.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$392,196.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$426,512.00
Legal/Administrative	5%			\$142,171.00
Contract Admin/Construction Management	10%			\$284,342.00
Contingency	25%			\$710,854.00
<b>Subtotal Other Costs</b>				<b>\$1,563,879.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$4,407,295.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	30	L.F.	\$2.00	\$12.00
Bridge Maintenance	1	EA	\$800.00	\$800.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$812.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$28,420.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT :	Boulder Creek MDP - Reach 7
DRAINAGEWAY :	Boulder Creek
REACH :	7F
JURISDICTION :	Boulder County
REACH ID :	BCM-Reach7F
DATE :	2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Remove pedestrian bridge	2250	S.F.	\$50.00	\$112,500.00	Existing 75ft x 30 ft
180 ft span pedestrian bridge	2700	S.F.	\$300.00	\$810,000.00	180 ft x 15 ft

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$922,500.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$922,500.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$9,225.00	L.S.		\$9,225.00
Mobilization	5%			\$46,125.00
Traffic Control	\$13,837.50	L.S.		\$13,838.00
Utility Coordination/Relocation	\$80,000.00	L.S.		\$80,000.00
Stormwater Management/Erosion Control	5%			\$46,125.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$195,313.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$167,672.00
Legal/Administrative	5%			\$55,891.00
Contract Admin/Construction Management	10%			\$111,781.00
Contingency	25%			\$279,453.00
<b>Subtotal Other Costs</b>				<b>\$614,797.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$1,732,610.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	15	L.F.	\$2.00	\$6.00
Bridge Maintenance	1	EA	\$800.00	\$800.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$806.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$28,210.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 7  
 DRAINAGEWAY : Boulder Creek  
 REACH : 7G  
 JURISDICTION : Boulder County  
 REACH ID : BCM-Reach7G Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Pipe Culverts and Storm Drains</b>					
Circular Pipes					
Diameter (in)	Length (ft)	No. of Barrels			
54-inch	600	1	600	L.F.	\$263.00 \$157,800.00
Headwalls					
Diameter (in)	Applicable	No. of Barrels			
54-inch	Yes	1	EA	\$1,780.84	\$3,522.00
Wingwalls (includes concrete apron)					
Diameter (in)		No. of Barrels			
54-inch		1	EA	\$10,733.84	\$21,468.00
<b>Special Items (User Defined)</b>					
Remove existing diversion structure	1	L.S.		\$20,000.00	\$20,000.00

Master Plan Capital Improvement Cost Summary				
Capital Improvement Costs				
Pipe Culverts and Storm Drains				\$182,790.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$20,000.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$202,790.00</b>
Additional Capital Improvement Costs				
Dewatering	\$2,027.90	L.S.		\$2,028.00
Mobilization	5%			\$10,140.00
Traffic Control	\$5,069.75	L.S.		\$5,070.00
Utility Coordination/Relocation	\$5,069.75	L.S.		\$5,070.00
Stormwater Management/Erosion Control	5%			\$10,140.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$32,448.00</b>
Land Acquisition Costs				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
Other Costs (percentage of Capital Improvement Costs)				
Engineering	15%			\$35,298.00
Legal/Administrative	5%			\$11,762.00
Contract Admin/Construction Management	10%			\$23,524.00
Contingency	25%			\$56,810.00
<b>Subtotal Other Costs</b>				<b>\$129,382.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$364,620.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Culvert Maintenance (e.g. sediment & debris removal, erosion at entrance/exit, structural repairs, etc.)	600	L.F.	\$1.00	\$120.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$120.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$4,200.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 7  
 DRAINAGEWAY : Boulder Creek  
 REACH : 7H  
 JURISDICTION : Boulder County  
 REACH ID : BCM-Reach7H Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Channel Improvements</b>					
Soil Riprap, Type M	356	C.Y.	\$85.00	\$30,222.00	Protection for Sanitary near Boulder Creek (400 LF)
<b>Landscaping and Maintenance Improvements</b>					
Reclamation & seeding (native grasses)	0	ACRE	\$1,219.00	\$305.00	
<b>Special Items (User Defined)</b>					
Grade Control Structure to Protect Sanitary	2	L.S.	\$205,000.00	\$410,000.00	

Master Plan Capital Improvement Cost Summary				
Capital Improvement Costs				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$30,222.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$305.00
Special Items (User Defined)				\$410,000.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$440,527.00</b>
Additional Capital Improvement Costs				
Dewatering	\$4,405.27	L.S.		\$4,405.00
Mobilization	5%			\$22,026.00
Traffic Control	\$11,013.18	L.S.		\$11,013.00
Utility Coordination/Relocation	\$11,013.18	L.S.		\$11,013.00
Stormwater Management/Erosion Control	5%			\$22,026.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$70,483.00</b>
Land Acquisition Costs				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
Other Costs (percentage of Capital Improvement Costs)				
Engineering	15%			\$76,652.00
Legal/Administrative	5%			\$25,551.00
Contract Admin/Construction Management	10%			\$51,101.00
Contingency	25%			\$127,753.00
<b>Subtotal Other Costs</b>				<b>\$281,057.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$792,067.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	2	EA	\$610.00	\$244.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$244.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$8,540.00</b>



MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH						
PROJECT :	Boulder Creek MDP - Reach 7					
DRAINAGEWAY :	Boulder Creek					
REACH :	71					
JURISDICTION :	City of Boulder					
REACH ID :	BCM-Reach71	Jeremy Deischer	DATE :	2015-10-05		
DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS	
<b>Special Items (User Defined)</b>						
ERC Stream Restoration	←User Defined Items	6250	L.F.	\$133.00	\$831,250.00	
ERC Riparian Restoration	←User Defined Items	14	A.C.	\$35,000.00	\$502,181.00	50 ft each side
<b>Master Plan Capital Improvement Cost Summary</b>						
<b>Capital Improvement Costs</b>						
Pipe Culverts and Storm Drains				\$0.00		
Concrete Box Culverts				\$0.00		
Hydraulic Structures				\$0.00		
Channel Improvements				\$0.00		
Detention/Water Quality Facilities				\$0.00		
Removals				\$0.00		
Landscaping and Maintenance Improvements				\$0.00		
Special Items (User Defined)				\$1,333,431.00		
<b>Subtotal Capital Improvement Costs</b>				<b>\$1,333,431.00</b>		
<b>Additional Capital Improvement Costs</b>						
Dewatering	\$13,334.31	L.S.		\$13,334.00		
Mobilization	5%			\$66,672.00		
Traffic Control	\$33,335.78	L.S.		\$33,336.00		
Utility Coordination/Relocation	\$33,335.78	L.S.		\$33,336.00		
Stormwater Management/Erosion Control	5%			\$66,672.00		
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$213,350.00</b>		
<b>Land Acquisition Costs</b>						
ROW/Easements				\$0.00		
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>		
<b>Other Costs (percentage of Capital Improvement Costs)</b>						
Engineering	15%			\$232,017.00		
Legal/Administrative	5%			\$77,339.00		
Contract Admin/Construction Management	10%			\$133,336.00		
Contingency	25%			\$388,695.00		
<b>Subtotal Other Costs</b>				<b>\$850,729.00</b>		
<b>Total Capital Improvement Costs</b>				<b>\$2,397,510.00</b>		
<b>Master Plan Operation and Maintenance Cost Summary</b>						
Description	Quantity	Unit	Unit Cost	Total Annual Cost		
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	6250	L.F.	\$2.00	\$2,500.00		
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$2,500.00</b>		
Effective Interest Rate			1.50%			
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$87,499.00</b>		

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH					
PROJECT :	Boulder Creek MDP - Reach 8				
DRAINAGEWAY :	Boulder Creek				
REACH :	8A				
JURISDICTION :	Boulder County				
REACH ID :	BCM-Reach8A	Jeremy Deischer	DATE :	2015-10-05	
DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
ERC Estimate New Stream	←User Defined Items	1	L.S.	\$230,000.00	\$230,000.00
ERC Estimate Riparian Restoration	←User Defined Items	1	L.S.	\$140,000.00	\$140,000.00
<b>Master Plan Capital Improvement Cost Summary</b>					
<b>Capital Improvement Costs</b>					
Pipe Culverts and Storm Drains				\$0.00	
Concrete Box Culverts				\$0.00	
Hydraulic Structures				\$0.00	
Channel Improvements				\$0.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$0.00	
Special Items (User Defined)				\$370,000.00	
<b>Subtotal Capital Improvement Costs</b>				<b>\$370,000.00</b>	
<b>Additional Capital Improvement Costs</b>					
Dewatering	\$3,700.00	L.S.		\$3,700.00	
Mobilization	5%			\$18,500.00	
Traffic Control	\$9,250.00	L.S.		\$9,250.00	
Utility Coordination/Relocation	\$9,250.00	L.S.		\$9,250.00	
Stormwater Management/Erosion Control	5%			\$18,500.00	
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$59,200.00</b>	
<b>Land Acquisition Costs</b>					
ROW/Easements				\$0.00	
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>	
<b>Other Costs (percentage of Capital Improvement Costs)</b>					
Engineering	15%			\$64,380.00	
Legal/Administrative	5%			\$21,460.00	
Contract Admin/Construction Management	10%			\$42,920.00	
Contingency	25%			\$107,300.00	
<b>Subtotal Other Costs</b>				<b>\$236,060.00</b>	
<b>Total Capital Improvement Costs</b>				<b>\$665,260.00</b>	
<b>Master Plan Operation and Maintenance Cost Summary</b>					
Description	Quantity	Unit	Unit Cost	Total Annual Cost	
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	1700	L.F.	\$2.00	\$680.00	
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$680.00</b>	
Effective Interest Rate			1.50%		
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$23,800.00</b>	

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 8  
 DRAINAGEWAY : Boulder Creek  
 REACH : 8B  
 JURISDICTION : Boulder County  
 REACH ID : BCM-Reach8B Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
ERC Estimate New Stream	1	L.S.	\$640,000.00	\$640,000.00	
ERC Estimate Riparian Restoration	1	L.S.	\$390,000.00	\$390,000.00	

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$1,030,000.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$1,030,000.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$10,300.00	L.S.		\$10,300.00
Mobilization	5%			\$51,500.00
Traffic Control	\$25,750.00	L.S.		\$25,750.00
Utility Coordination/Relocation	\$25,750.00	L.S.		\$25,750.00
Stormwater Management/Erosion Control	5%			\$51,500.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$164,800.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$179,220.00
Legal/Administrative	5%			\$59,740.00
Contract Admin/Construction Management	10%			\$119,480.00
Contingency	25%			\$298,700.00
<b>Subtotal Other Costs</b>				<b>\$657,140.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$1,851,940.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	4800	L.F.	\$2.00	\$1,920.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$1,920.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$67,199.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 8  
 DRAINAGEWAY : Boulder Creek  
 REACH : 8C  
 JURISDICTION : City of Boulder  
 REACH ID : BCM-Reach8C Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
220 ft railroad replacement	4000	S.F.	\$450.00	\$1,800,000.00	20 ft width
Temp Bridge	1500	S.F.	\$350.00	\$525,000.00	75 ft x 50 ft

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$2,325,000.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$2,325,000.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$23,250.00	L.S.		\$23,250.00
Mobilization	5%			\$116,250.00
Traffic Control	\$58,125.00	L.S.		\$58,125.00
Utility Coordination/Relocation	\$58,125.00	L.S.		\$58,125.00
Stormwater Management/Erosion Control	5%			\$116,250.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$372,000.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$404,550.00
Legal/Administrative	5%			\$134,850.00
Contract Admin/Construction Management	10%			\$269,700.00
Contingency	25%			\$674,250.00
<b>Subtotal Other Costs</b>				<b>\$1,483,350.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$4,180,350.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	20	L.F.	\$2.00	\$8.00
Bridge Maintenance	1	EA	\$800.00	\$800.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$808.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$28,280.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT :	Boulder Creek MDP - Reach 8
DRAINAGEWAY :	Boulder Creek
REACH :	8D
JURISDICTION :	City of Boulder
REACH ID :	BCM-Reach8D
DATE :	2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
ERC Estimate New Stream	1	L.S.	\$340,000.00	\$340,000.00	
ERC Estimate Stream Restoration	1	L.S.	\$210,000.00	\$210,000.00	

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$550,000.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$550,000.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$5,500.00	L.S.		\$5,500.00
Mobilization	5%			\$27,500.00
Traffic Control	\$13,750.00	L.S.		\$13,750.00
Utility Coordination/Relocation	\$13,750.00	L.S.		\$13,750.00
Stormwater Management/Erosion Control	5%			\$27,500.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$88,000.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$85,700.00
Legal/Administrative	5%			\$31,900.00
Contract Admin/Construction Management	10%			\$63,800.00
Contingency	25%			\$159,500.00
<b>Subtotal Other Costs</b>				<b>\$359,900.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$988,900.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	2600	L.F.	\$2.00	\$1,040.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$1,040.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$36,400.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT :	Boulder Creek MDP - Reach 8
DRAINAGEWAY :	Boulder Creek
REACH :	8E
JURISDICTION :	City of Boulder
REACH ID :	BCM-Reach8E
DATE :	2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Channel Improvements</b>					
Excavation, Mid Range	133	C.Y.	\$29.00	\$3,867.00	30 ft x 40 ft x 3 ft
<b>Special Items (User Defined)</b>					
Roadway Surface (Concrete)	43	C.Y.	\$730.00	\$31,543.00	25 ft x 70 ft x 6 in
Landscaping	700	S.F.	\$2.00	\$1,400.00	2 of 70 ft x 5 ft
Trees	2	EA	\$500.00	\$1,000.00	
Signage / Barriers	2	EA	\$1,500.00	\$3,000.00	

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$3,867.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$36,943.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$40,810.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering		L.S.		\$0.00
Mobilization	5%			\$2,041.00
Traffic Control	\$1,020.25	L.S.		\$1,020.00
Utility Coordination/Relocation	\$1,020.25	L.S.		\$1,020.00
Stormwater Management/Erosion Control	5%			\$2,041.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$6,122.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$7,040.00
Legal/Administrative	5%			\$2,347.00
Contract Admin/Construction Management	10%			\$4,693.00
Contingency	25%			\$11,733.00
<b>Subtotal Other Costs</b>				<b>\$25,813.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$72,745.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 8  
 DRAINAGEWAY : Boulder Creek  
 REACH : 8F  
 JURISDICTION : Boulder County  
 REACH ID : BCM-Reach8F Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Master Plan Capital Improvement Cost Summary</b>					
Capital Improvement Costs					
Pipe Culverts and Storm Drains				\$0.00	
Concrete Box Culverts				\$0.00	
Hydraulic Structures				\$0.00	
Channel Improvements				\$0.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$0.00	
Special Items (User Defined)				\$0.00	
<b>Subtotal Capital Improvement Costs</b>				<b>\$0.00</b>	
Additional Capital Improvement Costs					
Dewatering	\$0.00	L.S.		\$0.00	
Mobilization	5%			\$0.00	
Traffic Control	\$0.00	L.S.		\$0.00	
Utility Coordination/Relocation	\$0.00	L.S.		\$0.00	
Stormwater Management/Erosion Control	5%			\$0.00	
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$0.00</b>	
Land Acquisition Costs					
ROW/Easements				\$0.00	
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>	
Other Costs (percentage of Capital Improvement Costs)					
Engineering	15%			\$0.00	
Legal/Administrative	5%			\$0.00	
Contract Admin/Construction Management	10%			\$0.00	
Contingency	25%			\$0.00	
<b>Subtotal Other Costs</b>				<b>\$0.00</b>	
<b>Total Capital Improvement Costs</b>				<b>\$0.00</b>	
<b>Master Plan Operation and Maintenance Cost Summary</b>					
Description	Quantity	Unit	Unit Cost	Total Annual Cost	
Sediment Removal (4 locations 1x annually) <small>← User Defined Items</small>	800	C.Y.	\$30.00	\$24,000.00	
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$24,000.00</b>	
Effective Interest Rate				1.50%	
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$839,993.00</b>	

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 9  
 DRAINAGEWAY : Boulder Creek  
 REACH : 9A  
 JURISDICTION : City of Boulder  
 REACH ID : BCM-Reach9A Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Channel Improvements</b>					
Excavation, Mid Range	1303	C.Y.	\$29.00	\$37,773.00	Estimated cut
<b>Landscaping and Maintenance Improvements</b>					
Reclamation & seeding (native grasses)	1	ACRE	\$1,219.00	\$1,219.00	
Trail/Path, Concrete (10' Width)	325	L.F.	\$54.00	\$17,550.00	
<b>Land Acquisition</b>					
Easement/ROW Acquisition	0.30	ACRE	\$550,000.00	\$165,000.00	
<b>Master Plan Capital Improvement Cost Summary</b>					
Capital Improvement Costs					
Pipe Culverts and Storm Drains				\$0.00	
Concrete Box Culverts				\$0.00	
Hydraulic Structures				\$0.00	
Channel Improvements				\$37,773.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$18,769.00	
Special Items (User Defined)				\$0.00	
<b>Subtotal Capital Improvement Costs</b>				<b>\$56,542.00</b>	
Additional Capital Improvement Costs					
Dewatering	\$565.42	L.S.		\$565.00	
Mobilization	5%			\$2,827.00	
Traffic Control	\$1,413.55	L.S.		\$1,414.00	
Utility Coordination/Relocation	\$1,413.55	L.S.		\$1,414.00	
Stormwater Management/Erosion Control	5%			\$2,827.00	
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$9,047.00</b>	
Land Acquisition Costs					
ROW/Easements				\$165,000.00	
<b>Subtotal Land Acquisition Costs</b>				<b>\$165,000.00</b>	
Other Costs (percentage of Capital Improvement Costs)					
Engineering	15%			\$9,838.00	
Legal/Administrative	5%			\$3,279.00	
Contract Admin/Construction Management	10%			\$6,559.00	
Contingency	25%			\$16,397.00	
<b>Subtotal Other Costs</b>				<b>\$36,073.00</b>	
<b>Total Capital Improvement Costs</b>				<b>\$266,662.00</b>	
<b>Master Plan Operation and Maintenance Cost Summary</b>					
Description	Quantity	Unit	Unit Cost	Total Annual Cost	
Trail Maintenance (e.g. structural repairs, crusher fines, etc.)	325	L.F.	\$6.00	\$390.00	
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$390.00</b>	
Effective Interest Rate				1.50%	
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$13,650.00</b>	

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 9  
 DRAINAGEWAY : Boulder Creek  
 REACH : 9B  
 JURISDICTION : City of Boulder  
 REACH ID : BCM-Reach9B Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Channel Improvements</b>					
Excavation, Mid Range	21201	C.Y.	\$29.00	\$614,829.00	Out required
<b>Landscaping and Maintenance Improvements</b>					
Reclamation & seeding (native grasses)	7	ACRE	\$1,219.00	\$8,533.00	
Trail/Path, Concrete (10' Width)	250	L.F.	\$54.00	\$13,500.00	
<b>Special Items (User Defined)</b>					
Tennis Court Reconstruction	7	EA	\$65,000.00	\$455,000.00	
Basketball Court Relocation	1	EA	\$30,000.00	\$30,000.00	
Acquisition of Homes (3)	5594	S.F.	\$100.00	\$559,400.00	
Removal of Homes (3)	3	EA	\$40,000.00	\$120,000.00	
Asphalt Remove and Replace	5640	S.Y.	\$60.00	\$338,400.00	
<b>Land Acquisition</b>					
Easement/ROW Acquisition	7.00	ACRE	\$1,132,560.00	\$7,927,920.00	\$26 per S.F.

Master Plan Capital Improvement Cost Summary					
<b>Capital Improvement Costs</b>					
Pipe Culverts and Storm Drains				\$0.00	
Concrete Box Culverts				\$0.00	
Hydraulic Structures				\$0.00	
Channel Improvements				\$614,829.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$22,033.00	
Special Items (User Defined)				\$1,502,800.00	
<b>Subtotal Capital Improvement Costs</b>				<b>\$2,139,662.00</b>	
<b>Additional Capital Improvement Costs</b>					
Dewatering	\$21,396.62	L.S.		\$21,397.00	
Mobilization	5%			\$106,983.00	
Traffic Control	\$53,491.55	L.S.		\$53,492.00	
Utility Coordination/Relocation	\$53,491.55	L.S.		\$53,492.00	
Stormwater Management/Erosion Control	5%			\$106,983.00	
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$342,347.00</b>	
<b>Land Acquisition Costs</b>					
ROW/Easements				\$7,927,920.00	
<b>Subtotal Land Acquisition Costs</b>				<b>\$7,927,920.00</b>	
<b>Other Costs (percentage of Capital Improvement Costs)</b>					
Engineering	15%			\$320,949.30	
Legal/Administrative	5%			\$106,983.10	
Contract Admin/Construction Management	10%			\$213,966.20	
Contingency	25%			\$534,915.50	
<b>Subtotal Other Costs</b>				<b>\$1,176,814.10</b>	
<b>Total Capital Improvement Costs</b>				<b>\$11,775,033.00</b>	

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 9  
 DRAINAGEWAY : Boulder Creek  
 REACH : 9C  
 JURISDICTION : City of Boulder  
 REACH ID : BCM-Reach9C Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Boulder Creek Pedestrian Bridges	2	EA	\$1,520,000.00	\$3,040,000.00	

Master Plan Capital Improvement Cost Summary					
<b>Capital Improvement Costs</b>					
Pipe Culverts and Storm Drains				\$0.00	
Concrete Box Culverts				\$0.00	
Hydraulic Structures				\$0.00	
Channel Improvements				\$0.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$0.00	
Special Items (User Defined)				\$3,040,000.00	
<b>Subtotal Capital Improvement Costs</b>				<b>\$3,040,000.00</b>	
<b>Additional Capital Improvement Costs</b>					
Dewatering	\$30,400.00	L.S.		\$30,400.00	
Mobilization	5%			\$152,000.00	
Traffic Control	\$45,600.00	L.S.		\$45,600.00	
Utility Coordination/Relocation	\$76,000.00	L.S.		\$76,000.00	
Stormwater Management/Erosion Control	5%			\$152,000.00	
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$456,000.00</b>	
<b>Land Acquisition Costs</b>					
ROW/Easements				\$0.00	
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>	
<b>Other Costs (percentage of Capital Improvement Costs)</b>					
Engineering	15%			\$524,400.00	
Legal/Administrative	5%			\$174,800.00	
Contract Admin/Construction Management	10%			\$349,600.00	
Contingency	25%			\$874,000.00	
<b>Subtotal Other Costs</b>				<b>\$1,922,800.00</b>	
<b>Total Capital Improvement Costs</b>				<b>\$5,418,800.00</b>	

Master Plan Operation and Maintenance Cost Summary					
Description	Quantity	Unit	Unit Cost	Total Annual Cost	
Bridge Maintenance	2	EA	\$1,000.00	\$2,000.00	
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$2,000.00</b>	
Effective Interest Rate				1.50%	
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$69,999.00</b>	

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT :	Boulder Creek MDP - Reach 9
DRAINAGEWAY :	Boulder Creek
REACH :	9D
JURISDICTION :	City of Boulder
REACH ID :	BCM-Reach9D
DATE :	2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Pipe Culverts and Storm Drains</b>					
Circular Pipes					
Diameter (in)	Length (ft)	No. of Barrels			
48-inch	750	1	L.F.	\$176.00	\$132,000.00
Flare End Sections					
Diameter (in)	Applicable	No. of Barrels			
48-inch	Yes	1	EA	\$2,512.00	\$2,512.00
<b>Channel Improvements</b>					
Excavation, Low Range	2010	C.Y.	\$13.00	\$26,130.00	Earthwork
<b>Special Items (User Defined)</b>					
Asphalt Remove and Replace	2060	S.Y.	\$60.00	\$123,600.00	14th Street
Manhole Box Base	3	EA	\$7,000.00	\$21,000.00	
Concrete for Weir Diversion	48	CY	\$730.00	\$35,184.00	

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$134,512.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$26,130.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$179,788.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$340,428.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$3,404.28	L.S.		\$3,404.00
Mobilization	5%			\$17,021.00
Traffic Control	\$8,750.00	L.S.		\$8,750.00
Utility Coordination/Relocation	\$100,000.00	L.S.		\$100,000.00
Stormwater Management/Erosion Control	5%			\$17,021.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$145,957.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$72,958.00
Legal/Administrative	5%			\$24,319.00
Contract Admin/Construction Management	10%			\$48,638.00
Contingency	25%			\$121,596.00
<b>Subtotal Other Costs</b>				<b>\$267,511.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$753,897.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Culvert Maintenance (e.g. sediment & debris removal, erosion at entrance/exit, structural repairs, etc.)	750	L.F.	\$1.00	\$150.00
Manhole and Inlet Maintenance (e.g. sediment & debris removal, structural repairs, etc.)	3	EA	\$61.00	\$37.00
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	1	EA	\$610.00	\$122.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$309.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$10,815.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT :	Boulder Creek MDP - Reach 9
DRAINAGEWAY :	Boulder Creek
REACH :	9E
JURISDICTION :	City of Boulder
REACH ID :	BCM-Reach9E
DATE :	2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Modify Ditch for Aquatic & Habitat Passage	1	L.S.	\$250,000.00	\$250,000.00	
Additional Improvements	1	L.S.	\$100,000.00	\$100,000.00	

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$350,000.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$350,000.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$3,500.00	L.S.		\$3,500.00
Mobilization	5%			\$17,500.00
Traffic Control	\$8,750.00	L.S.		\$8,750.00
Utility Coordination/Relocation	\$8,750.00	L.S.		\$8,750.00
Stormwater Management/Erosion Control	5%			\$17,500.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$56,000.00</b>
<b>ROW/Easements</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$60,900.00
Legal/Administrative	5%			\$20,300.00
Contract Admin/Construction Management	10%			\$40,600.00
Contingency	25%			\$101,500.00
<b>Subtotal Other Costs</b>				<b>\$223,300.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$629,300.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	1	EA	\$610.00	\$122.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$122.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$4,270.00</b>

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 9  
 DRAINAGEWAY : Boulder Creek  
 REACH : 9F  
 JURISDICTION : City of Boulder  
 REACH ID : BCM-Reach9F Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Master Plan Capital Improvement Cost Summary</b>					
<b>Capital Improvement Costs</b>					
Pipe Culverts and Storm Drains				\$0.00	
Concrete Box Culverts				\$0.00	
Hydraulic Structures				\$0.00	
Channel Improvements				\$0.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$0.00	
Special Items (User Defined)				\$0.00	
<b>Subtotal Capital Improvement Costs</b>				<b>\$0.00</b>	
<b>Additional Capital Improvement Costs</b>					
Dewatering	\$0.00	L.S.		\$0.00	
Mobilization	5%			\$0.00	
Traffic Control	\$0.00	L.S.		\$0.00	
Utility Coordination/Relocation	\$0.00	L.S.		\$0.00	
Stormwater Management/Erosion Control	5%			\$0.00	
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$0.00</b>	
<b>Land Acquisition Costs</b>					
ROW/Easements				\$0.00	
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>	
<b>Other Costs (percentage of Capital Improvement Costs)</b>					
Engineering	15%			\$0.00	
Legal/Administrative	5%			\$0.00	
Contract Admin/Construction Management	10%			\$0.00	
Contingency	25%			\$0.00	
<b>Subtotal Other Costs</b>				<b>\$0.00</b>	
<b>Total Capital Improvement Costs</b>				<b>\$0.00</b>	
<b>Master Plan Operation and Maintenance Cost Summary</b>					
Description	Quantity	Unit	Unit Cost	Total Annual Cost	
Sediment Removal (6 locations - 1x annually) ←User Defined Items	1200	C-Y	\$30.00	\$36,000.00	
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$36,000.00</b>	
Effective Interest Rate				1.50%	
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$1,259,989.00</b>	

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT : Boulder Creek MDP - Reach 10  
 DRAINAGEWAY : Boulder Creek  
 REACH : 10A  
 JURISDICTION : City of Boulder  
 REACH ID : BCM-Reach10A Jeremy Deischer DATE : 2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
Modfly Ditch for Aquatic & Habitat Passage ←User Defined Items	1	L.S.	\$250,000.00	\$250,000.00	
<b>Master Plan Capital Improvement Cost Summary</b>					
<b>Capital Improvement Costs</b>					
Pipe Culverts and Storm Drains				\$0.00	
Concrete Box Culverts				\$0.00	
Hydraulic Structures				\$0.00	
Channel Improvements				\$0.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$0.00	
Special Items (User Defined)				\$250,000.00	
<b>Subtotal Capital Improvement Costs</b>				<b>\$250,000.00</b>	
<b>Additional Capital Improvement Costs</b>					
Dewatering	\$12,500.00	L.S.		\$12,500.00	
Mobilization	5%			\$12,500.00	
Traffic Control	\$6,250.00	L.S.		\$6,250.00	
Utility Coordination/Relocation	\$6,250.00	L.S.		\$6,250.00	
Stormwater Management/Erosion Control	5%			\$12,500.00	
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$50,000.00</b>	
<b>Land Acquisition Costs</b>					
ROW/Easements				\$0.00	
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>	
<b>Other Costs (percentage of Capital Improvement Costs)</b>					
Engineering	15%			\$45,000.00	
Legal/Administrative	5%			\$15,000.00	
Contract Admin/Construction Management	10%			\$30,000.00	
Contingency	25%			\$75,000.00	
<b>Subtotal Other Costs</b>				<b>\$165,000.00</b>	
<b>Total Capital Improvement Costs</b>				<b>\$465,000.00</b>	
<b>Master Plan Operation and Maintenance Cost Summary</b>					
Description	Quantity	Unit	Unit Cost	Total Annual Cost	
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	1	EA	\$610.00	\$122.00	
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$122.00</b>	
Effective Interest Rate				1.50%	
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$4,270.00</b>	

**MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH**

PROJECT :	Boulder Creek MDP - Reach 10
DRAINAGEWAY :	Boulder Creek
REACH :	10B
JURISDICTION :	Boulder County
REACH ID :	BCM-Reach10B
	Jeremy Deischer
DATE :	2015-10-05

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
<b>Special Items (User Defined)</b>					
ERC Estimate Enhanced Stream	1	L.S.	\$410,000.00	\$410,000.00	<---User Defined Items
ERC Estimate Riparian Restoration	1	L.S.	\$190,000.00	\$190,000.00	<---User Defined Items

Master Plan Capital Improvement Cost Summary				
<b>Capital Improvement Costs</b>				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$0.00
Channel Improvements				\$0.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$600,000.00
<b>Subtotal Capital Improvement Costs</b>				<b>\$600,000.00</b>
<b>Additional Capital Improvement Costs</b>				
Dewatering	\$6,000.00	L.S.		\$6,000.00
Mobilization	5%			\$30,000.00
Traffic Control	\$15,000.00	L.S.		\$15,000.00
Utility Coordination/Relocation	\$15,000.00	L.S.		\$15,000.00
Stormwater Management/Erosion Control	5%			\$30,000.00
<b>Subtotal Additional Capital Improvement Costs</b>				<b>\$96,000.00</b>
<b>Land Acquisition Costs</b>				
ROW/Easements				\$0.00
<b>Subtotal Land Acquisition Costs</b>				<b>\$0.00</b>
<b>Other Costs (percentage of Capital Improvement Costs)</b>				
Engineering	15%			\$104,400.00
Legal/Administrative	5%			\$34,800.00
Contract Admin/Construction Management	10%			\$69,600.00
Contingency	25%			\$174,000.00
<b>Subtotal Other Costs</b>				<b>\$382,800.00</b>
<b>Total Capital Improvement Costs</b>				<b>\$1,078,800.00</b>

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	4800	L.F.	\$2.00	\$1,920.00
<b>Total Annual Operation and Maintenance Cost</b>				<b>\$1,920.00</b>
Effective Interest Rate				1.50%
<b>Total Operation and Maintenance Costs Over 50 Years</b>				<b>\$67,199.00</b>