

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH

PROJECT :	Town of Lyons Masterplan
DRAINAGEWAY :	Town of Lyons
REACH :	ALTA
JURISDICTION :	Town of Lyons
REACH ID :	TL-ReachALTA
	Enter Estimator Name on Project Info
DATE :	2016-11-22

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
Channel Improvements					
Excavation, Low Range	2824	C.Y.	\$14.00	\$39,536.00	Cut and fill on site
Excavation, Mid Range	6975	C.Y.	\$30.00	\$209,250.00	Cut and haul off site
Soil Riprap, Type M	1250	C.Y.	\$89.00	\$111,250.00	Riprap Rundown into diversion channel

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				\$360,036.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$0.00
Special Items (User Defined)				\$0.00
Subtotal Capital Improvement Costs				\$360,036.00
Additional Capital Improvement Costs				
Dewatering	\$3,600.36	L.S.		\$3,600.00
Mobilization	5%			\$18,002.00
Traffic Control	\$0.00	L.S.		\$0.00
Utility Coordination/Relocation	\$36,003.60	L.S.		\$36,004.00
Stormwater Management/Erosion Control	5%			\$18,002.00
Subtotal Additional Capital Improvement Costs				\$75,608.00
Land Acquisition Costs				
ROW/Easements				\$0.00
Subtotal Land Acquisition Costs				\$0.00
Other Costs (percentage of Capital Improvement Costs)				
Engineering	15%			\$65,347.00
Legal/Administrative	5%			\$21,782.00
Contract Admin/Construction Management	10%			\$43,564.00
Contingency	25%			\$108,911.00
Subtotal Other Costs				\$239,604.00
Total Capital Improvement Costs				\$675,248.00

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.)	860	L.F.	\$3.00	\$2,580.00
Total Annual Operation and Maintenance Cost				\$2,580.00
Effective Interest Rate				2.00%
Total Operation and Maintenance Costs Over 50 Years				\$81,073.00

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH

PROJECT : Town of Lyons Masterplan
 DRAINAGEWAY : Town of Lyons
 REACH : ALTB
 JURISDICTION : Town of Lyons
 REACH ID : TL-ReachALTB Enter Estimator Name on Project Info DATE : 2016-11-22

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
Hydraulic Structures					
Sloping Drop Structures					
Height (ft)	Bottom Width (ft)	Yn (ft)			
6	90	5	1	EA	\$258,492.14 \$258,492.00
4	90	5	2	EA	\$224,412.13 \$448,824.00
Channel Improvements					
Excavation, Low Range	5799	C.Y.	\$14.00	\$81,186.00	Cut and fill onsite
Excavation, Mid Range	10163	C.Y.	\$30.00	\$304,890.00	Cut and haul offsite
Landscaping and Maintenance Improvements					
Trail/Path, Concrete (10' Width)	1650	L.F.	\$56.00	\$92,400.00	
Land Acquisition					
Easement/ROW Acquisition	5.10	ACRE	\$39,280.00	\$200,328.00	

Master Plan Capital Improvement Cost Summary				
Capital Improvement Costs				
Pipe Culverts and Storm Drains				\$0.00
Concrete Box Culverts				\$0.00
Hydraulic Structures				\$707,316.00
Channel Improvements				\$386,076.00
Detention/Water Quality Facilities				\$0.00
Removals				\$0.00
Landscaping and Maintenance Improvements				\$92,400.00
Special Items (User Defined)				\$0.00
Subtotal Capital Improvement Costs				\$1,185,792.00
Additional Capital Improvement Costs				
Dewatering	\$11,857.92	L.S.		\$11,858.00
Mobilization	5%			\$59,290.00
Traffic Control	\$0.00	L.S.		\$0.00
Utility Coordination/Relocation	\$118,579.20	L.S.		\$118,579.00
Stormwater Management/Erosion Control	5%			\$59,290.00
Subtotal Additional Capital Improvement Costs				\$249,017.00
Land Acquisition Costs				
ROW/Easements				\$200,328.00
Subtotal Land Acquisition Costs				\$200,328.00
Other Costs (percentage of Capital Improvement Costs)				
Engineering	15%			\$215,221.00
Legal/Administrative	5%			\$71,740.00
Contract Admin/Construction Management	10%			\$143,481.00
Contingency	25%			\$358,702.00
Subtotal Other Costs				\$789,144.00
Total Capital Improvement Costs				\$2,424,281.00

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.)	3	EA	\$634.00	\$1,902.00
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	1650	L.F.	\$3.00	\$4,950.00
Trail Maintenance (e.g. structural repairs, crusher fines, etc.)	1650	L.F.	\$6.00	\$9,900.00
Total Annual Operation and Maintenance Cost				\$16,752.00
Effective Interest Rate				2.00%
Total Operation and Maintenance Costs Over 50 Years				\$526,408.00

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH

PROJECT :	Town of Lyons Masterplan
DRAINAGEWAY :	Town of Lyons
REACH :	ALTC
JURISDICTION :	Town of Lyons
REACH ID :	TL-ReachALTC
	Enter Estimator Name on Project Info
DATE :	2016-11-22

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS	
Pipe Culverts and Storm Drains						
Circular Pipes						
Diameter (in)	Length (ft)	No. of Barrels				
48-inch	50	2	100	L.F.	\$182.00	\$18,200.00
Flare End Sections						
Diameter (in)	Applicable	No. of Barrels				
48-inch	Yes	2	4	EA	\$2,611.00	\$10,444.00
Hydraulic Structures						
Sloping Drop Structures						
Height (ft)	Bottom Width (ft)	Yn (ft)				
4	40	4	3	EA	\$124,056.43	\$372,169.00
Channel Improvements						
Excavation, Low Range			1912	C.Y.	\$14.00	\$26,768.00
Excavation, Mid Range			18485	C.Y.	\$30.00	\$554,550.00
Landscaping and Maintenance Improvements						
Reclamation & seeding (native grasses)			1	ACRE	\$1,267.00	\$1,774.00
Special Items (User Defined)						
Asphalt Repave	<----User Defined Items		462	S.Y.	\$40.00	\$18,480.00
Land Acquisition						
Easement/ROW Acquisition			3.20	ACRE	\$156,250.00	\$500,000.00

Master Plan Capital Improvement Cost Summary					
Capital Improvement Costs					
Pipe Culverts and Storm Drains					\$28,644.00
Concrete Box Culverts					\$0.00
Hydraulic Structures					\$372,169.00
Channel Improvements					\$581,318.00
Detention/Water Quality Facilities					\$0.00
Removals					\$0.00
Landscaping and Maintenance Improvements					\$1,774.00
Special Items (User Defined)					\$18,480.00
Subtotal Capital Improvement Costs					\$1,002,385.00
Additional Capital Improvement Costs					
Dewatering	\$10,023.85	L.S.			\$10,024.00
Mobilization	5%				\$50,119.00
Traffic Control	\$50,119.25	L.S.			\$50,119.00
Utility Coordination/Relocation	\$100,238.50	L.S.			\$100,239.00
Stormwater Management/Erosion Control	5%				\$50,119.00
Subtotal Additional Capital Improvement Costs					\$260,620.00
Land Acquisition Costs					
ROW/Easements					\$500,000.00
Subtotal Land Acquisition Costs					\$500,000.00
Other Costs (percentage of Capital Improvement Costs)					
Engineering	15%				\$189,451.00
Legal/Administrative	5%				\$63,150.00
Contract Admin/Construction Management	10%				\$126,301.00
Contingency	25%				\$315,751.00
Subtotal Other Costs					\$694,653.00
Total Capital Improvement Costs					\$2,457,658.00

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.)	100	L.F.	\$1.00	\$100.00	
Hydraulic Structure Maintenance (e.g. debris removal, erosion, structural repairs, etc.)	3	EA	\$634.00	\$1,902.00	
Channel Maintenance (e.g. sediment & debris removal, erosion, tree & weed removal, etc.)	100	L.F.	\$3.00	\$300.00	
Total Annual Operation and Maintenance Cost				\$2,302.00	
Effective Interest Rate				2.00%	
Total Operation and Maintenance Costs Over 50 Years				\$72,337.00	

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH

PROJECT :	Town of Lyons Masterplan
DRAINAGEWAY :	Town of Lyons
REACH :	ALTD
JURISDICTION :	Town of Lyons
REACH ID :	TL-ReachALTD
	Enter Estimator Name on Project Info
DATE :	2016-11-22

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
Pipe Culverts and Storm Drains					
Circular Pipes					
Diameter (in)	Length (ft)	No. of Barrels			
18-inch	50	20	1000	L.F.	\$68.00
					\$68,000.00
Inlet Laterals					
Manholes and Inlets					
Type B Manhole (Pipe Dia. 48" and larger, deflection < 10 degrees)	6	EA	\$15,208.00		\$91,248.00
Storm Inlet, Type R/Type 14, 5-foot	20	EA	\$5,830.00		\$116,600.00
Concrete Box Culverts					
Box Culvert Pipe					
Individual Box Span (ft)	Box Height (ft)	No. of Barrels	Length (ft)		
8	4	1	950	L.F.	\$810.44
					\$769,918.00
9	4	1	1400	L.F.	\$868.80
					\$1,216,320.00
Headwall and Toewalls					
Individual Box Span (ft)	No. of Barrels	Total Span (ft)			
8	1	10.00	1	EA	\$871.00
					\$871.00
9	1	11.00	1	EA	\$958.10
					\$958.00
Wingwalls (includes wingwalls on either side of channel and concrete apron)					
Individual Box Span (ft)	Box Rise (ft)	No. of Barrels			
8	4	1	1	EA	\$8,344.73
					\$8,344.70
9	4	1	1	EA	\$8,566.80
					\$8,566.80
Special Items (User Defined)					
Curb and Gutter	<---User Defined Items	3000	L.F.	\$30.00	\$90,000.00
Asphalt Repaving	<---User Defined Items	150	S.Y.	\$40.00	\$6,000.00
Land Acquisition					
Easement/ROW Acquisition		1.82	ACRE	\$1,552,387.85	\$2,825,346.00

Master Plan Capital Improvement Cost Summary				
Capital Improvement Costs				
Pipe Culverts and Storm Drains				\$275,848.00
Concrete Box Culverts				\$2,004,979.00
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)				\$96,000.00
Subtotal Capital Improvement Costs				\$2,376,827.00
Additional Capital Improvement Costs				
Dewatering	\$23,768.27	L.S.		\$23,768.00
Mobilization	5%			\$118,841.00
Traffic Control	\$118,841.35	L.S.		\$118,841.00
Utility Coordination/Relocation	\$237,682.70	L.S.		\$237,683.00
Stormwater Management/Erosion Control	5%			\$118,841.00
Subtotal Additional Capital Improvement Costs				\$617,974.00
Land Acquisition Costs				
ROW/Easements				\$2,825,346.00
Subtotal Land Acquisition Costs				\$2,825,346.00
Other Costs (percentage of Capital Improvement Costs)				
Engineering	15%			\$449,220.00
Legal/Administrative	5%			\$149,740.00
Contract Admin/Construction Management	10%			\$299,480.00
Contingency	25%			\$748,700.00
Subtotal Other Costs				\$1,647,140.00
Total Capital Improvement Costs				\$7,467,287.00

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Manhole and Inlet Maintenance (e.g. sediment & debris removal, structural repairs, etc.)	26	EA	\$63.00	\$1,638.00
Total Annual Operation and Maintenance Cost				\$1,638.00
Effective Interest Rate				2.00%
Total Operation and Maintenance Costs Over 50 Years				\$51,472.00

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH

PROJECT : Town of Lyons Masterplan
 DRAINAGEWAY : Town of Lyons
 REACH : ALTE
 JURISDICTION : Town of Lyons
 REACH ID: TL-ReachALTE Enter Estimator Name on Project Info DATE : 2016-11-22

DESCRIPTION		QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
Special Items (User Defined)						
Curb and Gutter	<----User Defined Items	3600	L.F.	\$30.00	\$108,000.00	
Asphalt Repave	<----User Defined Items	1000	S.Y.	\$40.00	\$40,000.00	

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)					\$148,000.00	
Subtotal Capital Improvement Costs					\$148,000.00	
Additional Capital Improvement Costs						
Dewatering		\$20,000.00	L.S.		\$20,000.00	
Mobilization		5%			\$7,400.00	
Traffic Control		\$100,000.00	L.S.		\$100,000.00	
Utility Coordination/Relocation		\$100,000.00	L.S.		\$100,000.00	
Stormwater Management/Erosion Control		5%			\$7,400.00	
Subtotal Additional Capital Improvement Costs					\$234,800.00	
Land Acquisition Costs						
ROW/Easements					\$0.00	
Subtotal Land Acquisition Costs					\$0.00	
Other Costs (percentage of Capital Improvement Costs)						
Engineering		15%			\$57,420.00	
Legal/Administrative		5%			\$19,140.00	
Contract Admin/Construction Management		10%			\$38,280.00	
Contingency		25%			\$95,700.00	
Subtotal Other Costs					\$210,540.00	
Total Capital Improvement Costs					\$593,340.00	

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH

PROJECT :	Town of Lyons Masterplan
DRAINAGEWAY :	Town of Lyons
REACH :	ALTF
JURISDICTION :	Town of Lyons
REACH ID :	TL-ReachALTF
	Enter Estimator Name on Project Info
DATE :	2016-11-22

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS		
Pipe Culverts and Storm Drains							
Circular Pipes							
Diameter (in)	Length (ft)	No. of Barrels					
42-inch	825	1	825	L.F.	\$160.00	\$132,000.00	From 3rd Ave to Stickney Ave
36-inch	325	1	325	L.F.	\$137.00	\$44,525.00	East Stickney to 3rd Ave
60-inch	625	1	625	L.F.	\$304.00	\$190,000.00	From Stickney to Main St
66-inch	1300	1	1300	L.F.	\$335.00	\$435,500.00	From Main St to N St Vrain
18-inch	50	20	1000	L.F.	\$68.00	\$68,000.00	Inlet Laterals
Flare End Sections							
Diameter (in)	Applicable	No. of Barrels					
42-inch	Yes	1	1	EA	\$2,154.00	\$2,154.00	
36-inch	Yes	1	1	EA	\$2,040.00	\$2,040.00	
Headwalls							
Diameter (in)	Applicable	No. of Barrels					
66-inch	Yes	1	1	EA	\$2,225.00	\$2,225.00	
Wingwalls (includes concrete apron)							
Diameter (in)		No. of Barrels					
66-inch		1	1	EA	\$13,109.91	\$13,110.00	
Manholes and Inlets							
Manhole, 5' Dia. (Pipe Dia. 36" - 42")			3	EA	\$4,942.00	\$14,826.00	
Type B Manhole (Pipe Dia. 48" and larger, deflection < 10 degrees)			5	EA	\$15,208.00	\$76,040.00	
Type P Manhole (Pipe Dia. 48" and larger, deflection > 10 degrees)			1	EA	\$19,010.00	\$19,010.00	
Storm Inlet, Type R/Type 14, 5-foot			20	EA	\$5,830.00	\$116,600.00	
Special Items (User Defined)							
Asphalt Repave	<---User Defined Items		8375	S.Y.	\$40.00	\$335,000.00	
Curb and Gutter	<---User Defined Items		3950	L.F.	\$30.00	\$118,500.00	

Master Plan Capital Improvement Cost Summary					
Capital Improvement Costs					
Pipe Culverts and Storm Drains					\$1,116,030.00
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)					\$453,500.00
Subtotal Capital Improvement Costs					\$1,569,530.00
Additional Capital Improvement Costs					
Dewatering		\$15,695.30		L.S.	\$15,695.00
Mobilization		5%			\$78,477.00
Traffic Control		\$78,476.50		L.S.	\$78,477.00
Utility Coordination/Relocation		\$156,953.00		L.S.	\$156,953.00
Stormwater Management/Erosion Control		5%			\$78,477.00
Subtotal Additional Capital Improvement Costs					\$408,079.00
Land Acquisition Costs					
ROW/Easements					\$0.00
Subtotal Land Acquisition Costs					\$0.00
Other Costs (percentage of Capital Improvement Costs)					
Engineering		15%			\$296,641.00
Legal/Administrative		5%			\$98,880.00
Contract Admin/Construction Management		10%			\$197,761.00
Contingency		25%			\$494,402.00
Subtotal Other Costs					\$1,087,684.00
Total Capital Improvement Costs					\$3,065,293.00

Master Plan Operation and Maintenance Cost Summary					
Description	Quantity	Unit	Unit Cost	Total Annual Cost	
Manhole and Inlet Maintenance (e.g. sediment & debris removal, structural repairs, etc.)	26	EA	\$63.00	\$1,638.00	
Total Annual Operation and Maintenance Cost				\$1,638.00	
Effective Interest Rate				2.00%	
Total Operation and Maintenance Costs Over 50 Years				\$51,472.00	

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH

PROJECT :	Town of Lyons Masterplan
DRAINAGEWAY :	Town of Lyons
REACH :	ALTG
JURISDICTION :	Town of Lyons
REACH ID :	TL-ReachALTG
	Enter Estimator Name on Project Info
DATE :	2016-11-22

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS		
Pipe Culverts and Storm Drains							
Circular Pipes							
Diameter (in)	Length (ft)	No. of Barrels					
66-inch	1300	1	1300	L.F.	\$335.00	\$435,500.00	From Main St to N St Vrain
18-inch	50	20	1000	L.F.	\$68.00	\$68,000.00	Inlet Laterals
Manholes and Inlets							
Type B Manhole (Pipe Dia. 48" and larger, deflection < 10 degrees)		3	EA	\$15,208.00	\$45,624.00		
Type P Manhole (Pipe Dia. 48" and larger, deflection > 10 degrees)		1	EA	\$19,010.00	\$19,010.00		
Storm Inlet, Type R/Type 14, 5-foot		20	EA	\$5,830.00	\$116,600.00		
Special Items (User Defined)							
Asphalt Repave	<---User Defined Items	940	S.Y.	\$40.00	\$37,600.00		
Curb and Gutter	<---User Defined Items	1400	L.F.	\$30.00	\$42,000.00		

Master Plan Capital Improvement Cost Summary				
Capital Improvement Costs				
Pipe Culverts and Storm Drains				\$684,734.00
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)				\$79,600.00
Subtotal Capital Improvement Costs				\$764,334.00
Additional Capital Improvement Costs				
Dewatering	\$7,643.34	L.S.		\$7,643.00
Mobilization	5%			\$38,217.00
Traffic Control	\$38,216.70	L.S.		\$38,217.00
Utility Coordination/Relocation	\$76,433.40	L.S.		\$76,433.00
Stormwater Management/Erosion Control	5%			\$38,217.00
Subtotal Additional Capital Improvement Costs				\$196,727.00
Land Acquisition Costs				
ROW/Easements				\$0.00
Subtotal Land Acquisition Costs				\$0.00
Other Costs (percentage of Capital Improvement Costs)				
Engineering	15%			\$144,459.00
Legal/Administrative	5%			\$48,153.00
Contract Admin/Construction Management	10%			\$96,306.00
Contingency	25%			\$240,765.00
Subtotal Other Costs				\$529,683.00
Total Capital Improvement Costs				\$1,492,744.00

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Manhole and Inlet Maintenance (e.g. sediment & debris removal, structural repairs, etc.)	24	EA	\$63.00	\$1,512.00
Total Annual Operation and Maintenance Cost				\$1,512.00
Effective Interest Rate				2.00%
Total Operation and Maintenance Costs Over 50 Years				\$47,512.00

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH

PROJECT : Town of Lyons Masterplan
 DRAINAGEWAY : Town of Lyons
 REACH : ALTQ
 JURISDICTION : Town of Lyons
 REACH ID: TL-ReachALTQ Enter Estimator Name on Project Info DATE : 2016-11-22

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
Special Items (User Defined)					
Curb and Gutter	<----User Defined Items	6080	L.F.	\$30.00	\$182,400.00
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)				\$182,400.00	
Subtotal Capital Improvement Costs				\$182,400.00	
Additional Capital Improvement Costs					
Dewatering		L.S.		\$0.00	
Mobilization	5%			\$9,120.00	
Traffic Control	\$9,120.00	L.S.		\$9,120.00	
Utility Coordination/Relocation	\$18,240.00	L.S.		\$18,240.00	
Stormwater Management/Erosion Control	5%			\$9,120.00	
Subtotal Additional Capital Improvement Costs				\$45,600.00	
Land Acquisition Costs					
ROW/Easements				\$0.00	
Subtotal Land Acquisition Costs				\$0.00	
Other Costs (percentage of Capital Improvement Costs)					
Engineering	15%			\$34,200.00	
Legal/Administrative	5%			\$11,400.00	
Contract Admin/Construction Management	10%			\$22,800.00	
Contingency	25%			\$57,000.00	
Subtotal Other Costs				\$125,400.00	
Total Capital Improvement Costs				\$353,400.00	

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH

PROJECT : Town of Lyons Masterplan
 DRAINAGEWAY : Town of Lyons
 REACH : ALTI
 JURISDICTION : Town of Lyons
 REACH ID: TL-ReachALTI Enter Estimator Name on Project Info DATE : 2016-11-22

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
Special Items (User Defined)					
Curb and Gutter	<----User Defined Items	3215	L.F.	\$30.00	\$96,450.00
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)				\$96,450.00	
Subtotal Capital Improvement Costs				\$96,450.00	
Additional Capital Improvement Costs					
Dewatering		L.S.		\$0.00	
Mobilization	5%			\$4,823.00	
Traffic Control	\$4,822.50	L.S.		\$4,823.00	
Utility Coordination/Relocation	\$9,645.00	L.S.		\$9,645.00	
Stormwater Management/Erosion Control	5%			\$4,823.00	
Subtotal Additional Capital Improvement Costs				\$24,114.00	
Land Acquisition Costs					
ROW/Easements				\$0.00	
Subtotal Land Acquisition Costs				\$0.00	
Other Costs (percentage of Capital Improvement Costs)					
Engineering	15%			\$18,085.00	
Legal/Administrative	5%			\$6,028.00	
Contract Admin/Construction Management	10%			\$12,056.00	
Contingency	25%			\$30,141.00	
Subtotal Other Costs				\$66,310.00	
Total Capital Improvement Costs				\$186,874.00	

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH

PROJECT :	Town of Lyons Masterplan
DRAINAGEWAY :	Town of Lyons
REACH :	ALTJ
JURISDICTION :	Town of Lyons
REACH ID :	TL-ReachALTJ
	Enter Estimator Name on Project Info
DATE :	2016-11-22

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS		
Pipe Culverts and Storm Drains							
Circular Pipes							
Diameter (in)	Length (ft)	No. of Barrels					
36-inch	600	1	600	L.F.	\$137.00	\$82,200.00	From Main St to Park St
18-inch	50	36	1800	L.F.	\$68.00	\$122,400.00	Inlet Laterals
Manholes and Inlets							
Manhole, 5' Dia. (Pipe Dia. 36" - 42")			3	EA	\$4,942.00	\$14,826.00	
Type P Manhole (Pipe Dia. 48" and larger, deflection > 10 degrees)			2	EA	\$19,010.00	\$38,020.00	
Storm Inlet, Type R/Type 14, 5-foot			36	EA	\$5,830.00	\$209,880.00	
Concrete Box Culverts							
Box Culvert Pipe							
Individual Box Span (ft)	Box Height (ft)	No. of Barrels	Length (ft)				
9	3	1	500	L.F.	\$810.44	\$405,220.00	
Headwall and Toewalls							
Individual Box Span (ft)	No. of Barrels	Total Span (ft)					
9	1	11.00	1	EA	\$958.10	\$958.00	
Wingwalls (includes wingwalls on either side of channel and concrete apron)							
Individual Box Span (ft)	Box Rise (ft)	No. of Barrels					
9	3	1	1	EA	\$6,894.73	\$6,894.70	
Special Items (User Defined)							
Asphalt Repave	<---User Defined Items		800	S.Y.	\$40.00	\$32,000.00	
Curb and Gutter	<---User Defined Items		1000	L.F.	\$30.00	\$30,000.00	

Master Plan Capital Improvement Cost Summary				
Capital Improvement Costs				
Pipe Culverts and Storm Drains				\$467,326.00
Concrete Box Culverts				\$413,073.00
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)				\$62,000.00
Subtotal Capital Improvement Costs				\$942,399.00
Additional Capital Improvement Costs				
Dewatering	\$9,423.99	L.S.		\$9,424.00
Mobilization	5%			\$47,120.00
Traffic Control	\$47,119.95	L.S.		\$47,120.00
Utility Coordination/Relocation	\$94,239.90	L.S.		\$94,240.00
Stormwater Management/Erosion Control	5%			\$47,120.00
Subtotal Additional Capital Improvement Costs				\$245,024.00
Land Acquisition Costs				
ROW/Easements				\$0.00
Subtotal Land Acquisition Costs				\$0.00
Other Costs (percentage of Capital Improvement Costs)				
Engineering	15%			\$178,113.00
Legal/Administrative	5%			\$59,371.00
Contract Admin/Construction Management	10%			\$118,742.00
Contingency	25%			\$296,856.00
Subtotal Other Costs				\$653,082.00
Total Capital Improvement Costs				\$1,840,505.00

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Manhole and Inlet Maintenance (e.g. sediment & debris removal, structural repairs, etc.)	41	EA	\$63.00	\$2,583.00
Total Annual Operation and Maintenance Cost				\$2,583.00
Effective Interest Rate				2.00%
Total Operation and Maintenance Costs Over 50 Years				\$81,167.00

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH

PROJECT :	Town of Lyons Masterplan		
DRAINAGEWAY :	Town of Lyons		
REACH :	ALTK		
JURISDICTION :	Town of Lyons		
REACH ID:	TL-ReachALTK	Enter Estimator Name on Project Info	DATE : 2016-11-22

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS		
Pipe Culverts and Storm Drains							
Circular Pipes							
Diameter (in)	Length (ft)	No. of Barrels					
30-inch	600	1	600	L.F.	\$114.00	\$68,400.00	Bohn Ct. to Estes Ct.
36-inch	750	1	750	L.F.	\$137.00	\$102,750.00	Estes Ct. to McConnell Dr
18-inch	50	35	1750	L.F.	\$68.00	\$119,000.00	Inlet Lateral
36-inch	660	1	660	L.F.	\$137.00	\$90,420.00	S McConnell
60-inch	100	1	100	L.F.	\$304.00	\$30,400.00	
72-inch	950	1	950	L.F.	\$456.00	\$433,200.00	
Headwalls							
Diameter (in)	Applicable	No. of Barrels					
60-inch	Yes	1	1	EA	\$2,022.00	\$2,022.00	
72-inch	Yes	1	1	EA	\$2,436.00	\$2,436.00	
Wingwalls (includes concrete apron)							
Diameter (in)		No. of Barrels					
60-inch		1	1	EA	\$11,306.20	\$11,306.00	
72-inch		1	1	EA	\$14,706.38	\$14,706.00	
Manholes and Inlets							
Manhole, 4' Dia. (Pipe Dia. < 36")		3	3	EA	\$3,675.00	\$11,025.00	
Manhole, 5' Dia. (Pipe Dia. 36" - 42")		7	7	EA	\$4,942.00	\$34,594.00	
Type B Manhole (Pipe Dia. 48" and larger, deflection < 10 degrees)		5	5	EA	\$15,208.00	\$76,040.00	
Type P Manhole (Pipe Dia. 48" and larger, deflection > 10 degrees)		1	1	EA	\$19,010.00	\$19,010.00	
Storm Inlet, Type R/Type 14, 5-foot		35	35	EA	\$5,830.00	\$204,050.00	
Special Items (User Defined)							
Asphalt Repave	<----User Defined Items	630	630	S.Y.	\$40.00	\$25,200.00	

Master Plan Capital Improvement Cost Summary				
Capital Improvement Costs				
Pipe Culverts and Storm Drains				\$1,219,359.00
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)				\$25,200.00
Subtotal Capital Improvement Costs				\$1,244,559.00
Additional Capital Improvement Costs				
Dewatering	\$12,445.59	L.S.		\$12,446.00
Mobilization	5%			\$62,228.00
Traffic Control	\$62,227.95	L.S.		\$62,228.00
Utility Coordination/Relocation	\$124,455.90	L.S.		\$124,456.00
Stormwater Management/Erosion Control	5%			\$62,228.00
Subtotal Additional Capital Improvement Costs				\$323,586.00
Land Acquisition Costs				
ROW/Easements				\$0.00
Subtotal Land Acquisition Costs				\$0.00
Other Costs (percentage of Capital Improvement Costs)				
Engineering	15%			\$235,222.00
Legal/Administrative	5%			\$78,407.00
Contract Admin/Construction Management	10%			\$156,815.00
Contingency	25%			\$392,036.00
Subtotal Other Costs				\$862,480.00
Total Capital Improvement Costs				\$2,430,625.00

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Manhole and Inlet Maintenance (e.g. sediment & debris removal, structural repairs, etc.)	51	EA	\$63.00	\$3,213.00
Total Annual Operation and Maintenance Cost				\$3,213.00
Effective Interest Rate				2.00%
Total Operation and Maintenance Costs Over 50 Years				\$100,964.00

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH

PROJECT :	Town of Lyons Masterplan
DRAINAGEWAY :	Town of Lyons
REACH :	ALTL
JURISDICTION :	Town of Lyons
REACH ID :	TL-ReachALTL
	Enter Estimator Name on Project Info
DATE :	2016-11-22

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
Channel Improvements					
Excavation, Low Range	888	C.Y.	\$14.00	\$12,437.00	Cut and fill onsite
Excavation, Mid Range	235	C.Y.	\$30.00	\$7,050.00	
Special Items (User Defined)					
Concrete for Diversion Flume	<---User Defined Items	740	C.Y.	\$760.00	\$562,400.00
Energy Dissapator	<---User Defined Items	1	L.S.	\$7,500.00	\$7,500.00

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				\$19,487.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$0.00	
Special Items (User Defined)				\$569,900.00	
Subtotal Capital Improvement Costs				\$589,387.00	
Additional Capital Improvement Costs					
Dewatering	\$5,893.87	L.S.		\$5,894.00	
Mobilization	5%			\$29,469.00	
Traffic Control	\$29,469.35	L.S.		\$29,469.00	
Utility Coordination/Relocation	\$58,938.70	L.S.		\$58,939.00	
Stormwater Management/Erosion Control	5%			\$29,469.00	
Subtotal Additional Capital Improvement Costs				\$153,240.00	
Land Acquisition Costs					
ROW/Easements				\$0.00	
Subtotal Land Acquisition Costs				\$0.00	
Other Costs (percentage of Capital Improvement Costs)					
Engineering	15%			\$111,394.00	
Legal/Administrative	5%			\$37,131.00	
Contract Admin/Construction Management	10%			\$74,263.00	
Contingency	25%			\$185,657.00	
Subtotal Other Costs				\$408,445.00	
Total Capital Improvement Costs				\$1,151,072.00	

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/exi, structural repairs, etc.)	1400	L.F.	\$1.00	\$1,400.00	
Total Annual Operation and Maintenance Cost				\$1,400.00	
Effective Interest Rate				2.00%	
Total Operation and Maintenance Costs Over 50 Years				\$43,993.00	

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH

PROJECT :	Town of Lyons Masterplan		
DRAINAGEWAY :	Town of Lyons		
REACH :	ALTM		
JURISDICTION :	Town of Lyons		
REACH ID :	TL-ReachALTM	Enter Estimator Name on Project Info	DATE : 2016-11-22

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS	
Pipe Culverts and Storm Drains						
Circular Pipes						
Diameter (in)	Length (ft)	No. of Barrels				
54-inch	1000	1	1000	L.F.	\$274.00	\$274,000.00
18-inch	50	32	1600	L.F.	\$68.00	\$108,800.00
30-inch	450	1	450	L.F.	\$114.00	\$51,300.00
Headwalls						
Diameter (in)	Applicable	No. of Barrels				
54-inch	Yes	1	1	EA	\$1,820.20	\$1,820.00
Wingwalls (includes concrete apron)						
Diameter (in)		No. of Barrels				
54-inch		1	1	EA	\$11,120.20	\$11,120.00
Manholes and Inlets						
Type P Manhole (Pipe Dia. 48" and larger, deflection > 10 degrees)		4	EA	\$19,010.00	\$76,040.00	
Storm Inlet, Type R/Type 14, 5-foot		32	EA	\$5,830.00	\$186,560.00	
Special Items (User Defined)						
Asphalt Repave	<---User Defined Items	790	S.Y.	\$40.00	\$31,600.00	

Master Plan Capital Improvement Cost Summary				
Capital Improvement Costs				
Pipe Culverts and Storm Drains				\$709,640.00
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)				\$31,600.00
Subtotal Capital Improvement Costs				\$741,240.00
Additional Capital Improvement Costs				
Dewatering	\$7,412.40	L.S.		\$7,412.00
Mobilization	5%			\$37,062.00
Traffic Control	\$37,062.00	L.S.		\$37,062.00
Utility Coordination/Relocation	\$74,124.00	L.S.		\$74,124.00
Stormwater Management/Erosion Control	5%			\$37,062.00
Subtotal Additional Capital Improvement Costs				\$192,722.00
Land Acquisition Costs				
ROW/Easements				\$0.00
Subtotal Land Acquisition Costs				\$0.00
Other Costs (percentage of Capital Improvement Costs)				
Engineering	15%			\$140,094.00
Legal/Administrative	5%			\$46,698.00
Contract Admin/Construction Management	10%			\$93,396.00
Contingency	25%			\$233,491.00
Subtotal Other Costs				\$513,679.00
Total Capital Improvement Costs				\$1,447,641.00

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Manhole and Inlet Maintenance (e.g. sediment & debris removal, structural repairs, etc.)	36	EA	\$63.00	\$2,268.00
Total Annual Operation and Maintenance Cost				\$2,268.00
Effective Interest Rate				2.00%
Total Operation and Maintenance Costs Over 50 Years				\$71,269.00

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH

PROJECT :	Town of Lyons Masterplan
DRAINAGEWAY :	Town of Lyons
REACH :	ALTN
JURISDICTION :	Town of Lyons
REACH ID :	TL-ReachALTN
	Enter Estimator Name on Project Info
DATE :	2016-11-22

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
Channel Improvements					
Excavation, Low Range	970	C.Y.	\$14.00	\$13,580.00	Cut and fill onsite
Excavation, Mid Range	3890	C.Y.	\$30.00	\$116,700.00	Cut and haul offsite
Special Items (User Defined)					
Concrete Flume Diversion Channel	380	C.Y.	\$760.00	\$288,800.00	
Energy Dissipation	1	L.S.	\$7,500.00	\$7,500.00	

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				\$130,280.00	
Detention/Water Quality Facilities				\$0.00	
Removals				\$0.00	
Landscaping and Maintenance Improvements				\$0.00	
Special Items (User Defined)				\$296,300.00	
Subtotal Capital Improvement Costs				\$426,580.00	
Additional Capital Improvement Costs					
Dewatering	\$4,265.80	L.S.		\$4,266.00	
Mobilization	5%			\$21,329.00	
Traffic Control	\$21,329.00	L.S.		\$21,329.00	
Utility Coordination/Relocation	\$42,658.00	L.S.		\$42,658.00	
Stormwater Management/Erosion Control	5%			\$21,329.00	
Subtotal Additional Capital Improvement Costs				\$110,911.00	
Land Acquisition Costs					
ROW/Easements				\$0.00	
Subtotal Land Acquisition Costs				\$0.00	
Other Costs (percentage of Capital Improvement Costs)					
Engineering	15%			\$80,624.00	
Legal/Administrative	5%			\$26,875.00	
Contract Admin/Construction Management	10%			\$53,749.00	
Contingency	25%			\$134,373.00	
Subtotal Other Costs				\$295,621.00	
Total Capital Improvement Costs				\$833,112.00	

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/exi, structural repairs, etc.)	1450	L.F.	\$1.00	\$290.00	
Total Annual Operation and Maintenance Cost				\$290.00	
Effective Interest Rate				2.00%	
Total Operation and Maintenance Costs Over 50 Years				\$9,113.00	

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH

PROJECT :	Town of Lyons Masterplan
DRAINAGEWAY :	Town of Lyons
REACH :	ALTO
JURISDICTION :	Town of Lyons
REACH ID :	TL-ReachALTO
	Enter Estimator Name on Project Info
DATE :	2016-11-22

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS		
Pipe Culverts and Storm Drains							
Circular Pipes							
Diameter (in)	Length (ft)	No. of Barrels					
42-inch	1200	1	1200	L.F.	\$160.00	\$192,000.00	From Ewald Ave to confluence area
18-inch	50	40	2000	L.F.	\$68.00	\$136,000.00	Inlet Laterals
Flare End Sections							
Diameter (in)	Applicable	No. of Barrels					
42-inch	Yes	1	1	EA	\$2,154.00	\$2,154.00	
Manholes and Inlets							
Manhole, 5' Dia. (Pipe Dia. 36" - 42")		4		EA	\$4,942.00	\$19,768.00	
Storm Inlet, Type R/Type 14, 5-foot		40		EA	\$5,830.00	\$233,200.00	
Special Items (User Defined)							
Asphalt Repave	<----User Defined Items	780		S.Y.	\$40.00	\$31,200.00	
Curb and Gutter	<----User Defined Items	1000		L.F.	\$30.00	\$30,000.00	Curb and Gutter on Prospect east of 5th Ave.

Master Plan Capital Improvement Cost Summary				
Capital Improvement Costs				
Pipe Culverts and Storm Drains				\$583,122.00
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)				\$61,200.00
Subtotal Capital Improvement Costs				\$644,322.00
Additional Capital Improvement Costs				
Dewatering	\$6,443.22	L.S.		\$6,443.00
Mobilization	5%			\$32,216.00
Traffic Control	\$32,216.10	L.S.		\$32,216.00
Utility Coordination/Relocation	\$64,432.20	L.S.		\$64,432.00
Stormwater Management/Erosion Control	5%			\$32,216.00
Subtotal Additional Capital Improvement Costs				\$167,523.00
Land Acquisition Costs				
ROW/Easements				\$0.00
Subtotal Land Acquisition Costs				\$0.00
Other Costs (percentage of Capital Improvement Costs)				
Engineering	15%			\$121,777.00
Legal/Administrative	5%			\$40,592.00
Contract Admin/Construction Management	10%			\$81,185.00
Contingency	25%			\$202,961.00
Subtotal Other Costs				\$446,515.00
Total Capital Improvement Costs				\$1,258,360.00

Master Plan Operation and Maintenance Cost Summary				
Description	Quantity	Unit	Unit Cost	Total Annual Cost
Manhole and Inlet Maintenance (e.g. sediment & debris removal, structural repairs, etc.)	44	EA	\$63.00	\$1,386.00
Total Annual Operation and Maintenance Cost				\$1,386.00
Effective Interest Rate				2.00%
Total Operation and Maintenance Costs Over 50 Years				\$43,553.00

MASTER PLAN COST ESTIMATE FOR INDIVIDUAL REACH

PROJECT :	Town of Lyons Masterplan		
DRAINAGEWAY :	Town of Lyons		
REACH :	ALTQ		
JURISDICTION :	Town of Lyons		
REACH ID :	TL-ReachALTQ	Enter Estimate or Name on Project Info	DATE : 2016-11-22

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	USER COMMENTS
Concrete Box Culverts					
Box Culvert Pipe					
Individual Box Span (ft)	Box Height (ft)	No. of Barrels	Length (ft)		
12	4	4	150	L.F.	\$4,188.64
					\$628,296.00
Headwall and Toewalls					
Individual Box Span (ft)	No. of Barrels	Total Span (ft)			
12	4	52.00	2	EA	\$4,794.40
					\$9,589.00
Wingwalls (includes wingwalls on either side of channel and concrete apron)					
Individual Box Span (ft)	Box Rise (ft)	No. of Barrels			
12	4	4	2	EA	\$17,893.73
					\$35,787.50
Special Items (User Defined)					
Asphalt Repave	←--User Defined Items		380	S.Y.	\$40.00
					\$15,200.00

Master Plan Capital Improvement Cost Summary					
Capital Improvement Costs					
Pipe Culverts and Storm Drains					\$0.00
Concrete Box Culverts					\$673,673.00
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)					\$15,200.00
Subtotal Capital Improvement Costs					\$688,873.00
Additional Capital Improvement Costs					
Dewatering	\$6,888.73	L.S.			\$6,889.00
Mobilization	5%				\$34,444.00
Traffic Control	\$34,443.65	L.S.			\$34,444.00
Utility Coordination/Relocation	\$68,887.30	L.S.			\$68,887.00
Stormwater Management/Erosion Control	5%				\$34,444.00
Subtotal Additional Capital Improvement Costs					\$179,108.00
Land Acquisition Costs					
ROW/Easements					\$0.00
Subtotal Land Acquisition Costs					\$0.00
Other Costs (percentage of Capital Improvement Costs)					
Engineering	15%				\$130,197.00
Legal/Administrative	5%				\$43,399.00
Contract Admin/Construction Management	10%				\$86,798.00
Contingency	25%				\$216,995.00
Subtotal Other Costs					\$477,389.00
Total Capital Improvement Costs					\$1,345,370.00

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.)	150	L.F.	\$1.00	\$150.00	
Total Annual Operation and Maintenance Cost				\$150.00	
Effective Interest Rate				2.00%	
Total Operation and Maintenance Costs Over 50 Years				\$4,714.00	