

Appendix I

Capital Improvement Project

Cost Worksheets

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Middle Creek Watershed Masterplan - Cost Opinion Worksheet

Project ID: MC 1

Project Description: Grade Control Main Stem Near S Folsom and Rosa Parks



SURVEYING

Description	Unit	Quantity	Unit Cost	Sub Total
Boundary and Topo Surveying	ACRE	0.70	\$ 5,000	\$ 3,500
Prepare Easement Plat and Scripts	EACH	0	\$ 400	\$ -
Construction Staking and As-Built Surveying	ACRE	0.70	\$ 2,500	\$ 1,800
			Subtotal =	\$ 5,300
			Contingency = 15%	\$ 800
TOTAL OPINION OF SURVEYING COST =				\$ 6,100

GEOTECHNICAL

Description	Unit	Quantity	Unit Cost	Sub Total
Field Borings	LF	30	\$ 20	\$ 600
Geotechnical Report	LUMP	1	\$ 4,500	\$ 4,500
Global Stability Analysis	EACH	2	\$ 100	\$ 200
			Subtotal =	\$ 5,300
			Contingency = 15%	\$ 800
TOTAL OPINION OF GEOTECHNICAL COST =				\$ 6,100

ENGINEERING DESIGN AND CONSTRUCTION DOCUMENTS

Description	Unit	Quantity	Unit Cost	Sub Total
Preliminary Design	HOURS	80	\$ 100	\$ 8,000
ROW	HOURS	20	\$ 100	\$ 2,000
Permitting	HOURS	40	\$ 100	\$ 4,000
Final Design	HOURS	60	\$ 100	\$ 6,000
Develop Plans and Construction Documents	HOURS	100	\$ 75	\$ 7,500
Construction Support	HOURS	80	\$ 100	\$ 8,000
			\$ -	\$ -
			Subtotal =	\$ 35,500
			Contingency = 15%	\$ 5,300
TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =				\$ 40,800

CONSTRUCTION

Description	Unit	Quantity	Unit Cost	Sub Total
Removal of Existing Structures	LUMP	1	\$ 2,000	\$ 2,000
Excavation and Embankment in Place	CY	533	\$ 30	\$ 16,000
Rock Grade Control	CY	533	\$ 75	\$ 40,000
Rock Stilling Basin	CY	0	\$ 75	\$ -
Rock Toe and Slope Protection	CY	0	\$ 50	\$ -
Riparian Corridor Planting	SF	4,800	\$ 0.70	\$ 3,400
Site Restoration	ACRE	0.50	\$ 30,000	\$ 15,000
New Culvert	LF	0	\$ 500.0	\$ -
Retaining Wall	SF	0	\$ 50	\$ -
Wetland Planting	ACRE	0.00	\$ 40,000	\$ -
			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
Mobilization and Bond	5%	1	\$ 3,820	\$ 3,800
			Subtotal =	\$ 80,200
			Contingency = 15%	\$ 12,000
TOTAL OPINION OF CONSTRUCTION COST =				\$ 92,200

TOTAL SURVEYING, GEOTECHNICAL, ENGINEERING AND CONSTRUCTION COST OPINION = \$ 145,200

Middle Creek Watershed Masterplan - Cost Opinion Worksheet

Project ID: **MC 2**Project Description: **Grade Control Tributary MC005R005 North of Rosa Parks and S Folsom**

SURVEYING

Description	Unit	Quantity	Unit Cost	Sub Total
Boundary and Topo Surveying	ACRE	0.50	\$ 5,000	\$ 2,500
Prepare Easement Plat and Scripts	EACH	0	\$ 400	\$ -
Construction Staking and As-Built Surveying	ACRE	0.50	\$ 2,500	\$ 1,300
			Subtotal =	\$ 3,800
			Contingency = 15%	\$ 600
			TOTAL OPINION OF SURVEYING COST =	\$ 4,400

GEOTECHNICAL

Description	Unit	Quantity	Unit Cost	Sub Total
Field Borings	LF	30	\$ 20	\$ 600
Geotechnical Report	LUMP	1	\$ 4,500	\$ 4,500
Global Stability Analysis	EACH	2	\$ 100	\$ 200
			Subtotal =	\$ 5,300
			Contingency = 15%	\$ 800
			TOTAL OPINION OF GEOTECHNICAL COST =	\$ 6,100

ENGINEERING DESIGN AND CONSTRUCTION DOCUMENTS

Description	Unit	Quantity	Unit Cost	Sub Total
Preliminary Design	HOURS	80	\$ 100	\$ 8,000
ROW	HOURS	20	\$ 100	\$ 2,000
Permitting	HOURS	40	\$ 100	\$ 4,000
Final Design	HOURS	60	\$ 100	\$ 6,000
Develop Plans and Construction Documents	HOURS	100	\$ 75	\$ 7,500
Construction Support	HOURS	80	\$ 100	\$ 8,000
			\$ -	\$ -
			Subtotal =	\$ 35,500
			Contingency = 15%	\$ 5,300
			TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =	\$ 40,800

CONSTRUCTION

Description	Unit	Quantity	Unit Cost	Sub Total
Removal of Existing Structures	LUMP	1	\$ 2,000	\$ 2,000
Excavation and Embankment in Place	CY	178	\$ 30	\$ 5,300
Rock Grade Control	CY	178	\$ 75	\$ 13,400
Rock Stilling Basin	CY	0	\$ 75	\$ -
Rock Toe and Slope Protection	CY	0	\$ 50	\$ -
Riparian Corridor Planting	SF	1,800	\$ 0.70	\$ 1,300
Site Restoration	ACRE	0.25	\$ 30,000	\$ 7,500
New Culvert	LF	0	\$ 500.0	\$ -
Retaining Wall	SF	0	\$ 50	\$ -
Wetland Planting	ACRE	0.00	\$ 40,000	\$ -
			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
Mobilization and Bond	5%	1	\$ 1,475	\$ 1,500
			Subtotal =	\$ 31,000
			Contingency = 15%	\$ 4,700
			TOTAL OPINION OF CONSTRUCTION COST =	\$ 35,700

TOTAL SURVEYING, GEOTECHNICAL, ENGINEERING AND CONSTRUCTION COST OPINION =	\$ 87,000
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Middle Creek Watershed Masterplan - Cost Opinion Worksheet

Project ID: **MC 3**Project Description: **Pipe Outfall Restoration and Erosion Protection along Rosa Parks Way**

SURVEYING

Description	Unit	Quantity	Unit Cost	Sub Total
Boundary and Topo Surveying	ACRE	1.50	\$ 5,000	\$ 7,500
Prepare Easement Plat and Scripts	EACH	0	\$ 400	\$ -
Construction Staking and As-Built Surveying	ACRE	0.75	\$ 2,500	\$ 1,900
			Subtotal =	\$ 9,400
			Contingency = 15%	\$ 1,400
TOTAL OPINION OF SURVEYING COST =				\$ 10,800

GEOTECHNICAL

Description	Unit	Quantity	Unit Cost	Sub Total
Field Borings	LF	50	\$ 20	\$ 1,000
Geotechnical Report	LUMP	1	\$ 4,500	\$ 4,500
Global Stability Analysis	EACH	2	\$ 100	\$ 200
			Subtotal =	\$ 5,700
			Contingency = 15%	\$ 900
TOTAL OPINION OF GEOTECHNICAL COST =				\$ 6,600

ENGINEERING DESIGN AND CONSTRUCTION DOCUMENTS

Description	Unit	Quantity	Unit Cost	Sub Total
Preliminary Design	HOURS	80	\$ 100	\$ 8,000
ROW	HOURS	20	\$ 100	\$ 2,000
Permitting	HOURS	40	\$ 100	\$ 4,000
Final Design	HOURS	60	\$ 100	\$ 6,000
Develop Plans and Construction Documents	HOURS	100	\$ 75	\$ 7,500
Construction Support	HOURS	80	\$ 100	\$ 8,000
			\$ -	\$ -
			Subtotal =	\$ 35,500
			Contingency = 15%	\$ 5,300
TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =				\$ 40,800

CONSTRUCTION

Description	Unit	Quantity	Unit Cost	Sub Total
Removal of Existing Structures	LUMP	1	\$ 2,000	\$ 2,000
Excavation and Embankment in Place	CY	417	\$ 30	\$ 12,500
Rock Grade Control	CY	0	\$ 75	\$ -
Rock Stilling Basin	CY	417	\$ 75	\$ 31,300
Rock Toe and Slope Protection	CY	0	\$ 50	\$ -
Riparian Corridor Planting	SF	0	\$ 0.70	\$ -
Site Restoration	ACRE	0.40	\$ 30,000	\$ 12,100
New Culvert	LF	0	\$ 500.0	\$ -
Retaining Wall	SF	0	\$ 50	\$ -
Wetland Planting	ACRE	0.00	\$ 40,000	\$ -
			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
Mobilization and Bond	5%	1	\$ 2,895	\$ 2,900
			Subtotal =	\$ 60,800
			Contingency = 15%	\$ 9,100
TOTAL OPINION OF CONSTRUCTION COST =				\$ 69,900

TOTAL SURVEYING, GEOTECHNICAL, ENGINEERING AND CONSTRUCTION COST OPINION =	\$ 128,100
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Middle Creek Watershed Masterplan - Cost Opinion Worksheet

Project ID: **MC 4**Project Description: **Bank Stabilization and Grade Control Erosion Along Tributary MC015R005**

SURVEYING

Description	Unit	Quantity	Unit Cost	Sub Total
Boundary and Topo Surveying	ACRE	2.60	\$ 5,000	\$ 13,000
Prepare Easement Plat and Scripts	EACH	0	\$ 400	\$ -
Construction Staking and As-Built Surveying	ACRE	0.75	\$ 2,500	\$ 1,900
			Subtotal =	\$ 14,900
			Contingency = 15%	\$ 2,200
TOTAL OPINION OF SURVEYING COST =				\$ 17,100

GEOTECHNICAL

Description	Unit	Quantity	Unit Cost	Sub Total
Field Borings	LF	60	\$ 20	\$ 1,200
Geotechnical Report	LUMP	1	\$ 4,500	\$ 4,500
Global Stability Analysis	EACH	6	\$ 100	\$ 600
			Subtotal =	\$ 6,300
			Contingency = 15%	\$ 900
TOTAL OPINION OF GEOTECHNICAL COST =				\$ 7,200

ENGINEERING DESIGN AND CONSTRUCTION DOCUMENTS

Description	Unit	Quantity	Unit Cost	Sub Total
Preliminary Design	HOURS	100	\$ 100	\$ 10,000
ROW	HOURS	40	\$ 100	\$ 4,000
Permitting	HOURS	80	\$ 100	\$ 8,000
Final Design	HOURS	80	\$ 100	\$ 8,000
Develop Plans and Construction Documents	HOURS	150	\$ 75	\$ 11,300
Construction Support	HOURS	150	\$ 100	\$ 15,000
			\$ -	\$ -
			Subtotal =	\$ 56,300
			Contingency = 15%	\$ 8,400
TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =				\$ 64,700

CONSTRUCTION

Description	Unit	Quantity	Unit Cost	Sub Total
Removal of Existing Structures	LUMP	1	\$ 2,000	\$ 2,000
Excavation and Embankment in Place	CY	482	\$ 30	\$ 14,500
Rock Grade Control	CY	356	\$ 75	\$ 26,700
Rock Stilling Basin	CY	59	\$ 75	\$ 4,400
Rock Toe and Slope Protection	CY	67	\$ 50	\$ 3,400
Riparian Corridor Planting	SF	24,000	\$ 0.70	\$ 16,800
Site Restoration	ACRE	0.10	\$ 30,000	\$ 3,000
New Culvert	LF	0	\$ 500.0	\$ -
Retaining Wall	SF	0	\$ 50	\$ -
Wetland Planting	ACRE	0.00	\$ 40,000	\$ -
			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
Mobilization and Bond	5%	1	\$ 3,540	\$ 3,500
			Subtotal =	\$ 74,300
			Contingency = 15%	\$ 11,100
TOTAL OPINION OF CONSTRUCTION COST =				\$ 85,400

TOTAL SURVEYING, GEOTECHNICAL, ENGINEERING AND CONSTRUCTION COST OPINION =	\$ 174,400
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Middle Creek Watershed Masterplan - Cost Opinion Worksheet

Project ID: **MC 5**Project Description: **Grade Control Main Stem East of SW 40th**

SURVEYING

Description	Unit	Quantity	Unit Cost	Sub Total
Boundary and Topo Surveying	ACRE	5.00	\$ 5,000	\$ 25,000
Prepare Easement Plat and Scripts	EACH	3	\$ 400	\$ 1,200
Construction Staking and As-Built Surveying	ACRE	2.50	\$ 2,500	\$ 6,300
			Subtotal =	\$ 32,500
			Contingency = 15%	\$ 4,900
TOTAL OPINION OF SURVEYING COST =				\$ 37,400

GEOTECHNICAL

Description	Unit	Quantity	Unit Cost	Sub Total
Field Borings	LF	300	\$ 20	\$ 6,000
Geotechnical Report	LUMP	1	\$ 4,500	\$ 4,500
Global Stability Analysis	EACH	12	\$ 100	\$ 1,200
			Subtotal =	\$ 11,700
			Contingency = 15%	\$ 1,800
TOTAL OPINION OF GEOTECHNICAL COST =				\$ 13,500

ENGINEERING DESIGN AND CONSTRUCTION DOCUMENTS

Description	Unit	Quantity	Unit Cost	Sub Total
Preliminary Design	HOURS	150	\$ 100	\$ 15,000
ROW	HOURS	50	\$ 100	\$ 5,000
Permitting	HOURS	40	\$ 100	\$ 4,000
Final Design	HOURS	80	\$ 100	\$ 8,000
Develop Plans and Construction Documents	HOURS	150	\$ 75	\$ 11,300
Construction Support	HOURS	100	\$ 100	\$ 10,000
			\$ -	\$ -
			Subtotal =	\$ 53,300
			Contingency = 15%	\$ 8,000
TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =				\$ 61,300

CONSTRUCTION

Description	Unit	Quantity	Unit Cost	Sub Total
Removal of Existing Structures	LUMP	0	\$ 2,000	\$ -
Excavation and Embankment in Place	CY	2,844	\$ 30	\$ 85,300
Rock Grade Control	CY	2,844	\$ 75	\$ 213,300
Rock Stilling Basin	CY	0	\$ 75	\$ -
Rock Toe and Slope Protection	CY	0	\$ 50	\$ -
Riparian Corridor Planting	SF	26,800	\$ 0.70	\$ 18,800
Site Restoration	ACRE	2.60	\$ 30,000	\$ 78,000
New Culvert	LF	0	\$ 500.0	\$ -
Retaining Wall	SF	0	\$ 50	\$ -
Wetland Planting	ACRE	0.00	\$ 40,000	\$ -
			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
Mobilization and Bond	5%	1	\$ 19,770	\$ 19,800
			Subtotal =	\$ 415,200
			Contingency = 15%	\$ 62,300
TOTAL OPINION OF CONSTRUCTION COST =				\$ 477,500

TOTAL SURVEYING, GEOTECHNICAL, ENGINEERING AND CONSTRUCTION COST OPINION =	\$ 589,700
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Middle Creek Watershed Masterplan - Cost Opinion Worksheet

Project ID: **MC 6**Project Description: **Stilling Basin at Perched W O Culvert on Tributary MC60R015**

SURVEYING

Description	Unit	Quantity	Unit Cost	Sub Total
Boundary and Topo Surveying	ACRE	0.45	\$ 5,000	\$ 2,300
Prepare Easement Plat and Scripts	EACH	2	\$ 400	\$ 800
Construction Staking and As-Built Surveying	ACRE	0.25	\$ 2,500	\$ 600
			Subtotal =	\$ 3,700
			Contingency = 15%	\$ 600
TOTAL OPINION OF SURVEYING COST =				\$ 4,300

GEOTECHNICAL

Description	Unit	Quantity	Unit Cost	Sub Total
Field Borings	LF	50	\$ 20	\$ 1,000
Geotechnical Report	LUMP	1	\$ 4,500	\$ 4,500
Global Stability Analysis	EACH	2	\$ 100	\$ 200
			Subtotal =	\$ 5,700
			Contingency = 15%	\$ 900
TOTAL OPINION OF GEOTECHNICAL COST =				\$ 6,600

ENGINEERING DESIGN AND CONSTRUCTION DOCUMENTS

Description	Unit	Quantity	Unit Cost	Sub Total
Preliminary Design	HOURS	120	\$ 100	\$ 12,000
ROW	HOURS	40	\$ 100	\$ 4,000
Permitting	HOURS	40	\$ 100	\$ 4,000
Final Design	HOURS	80	\$ 100	\$ 8,000
Develop Plans and Construction Documents	HOURS	100	\$ 75	\$ 7,500
Construction Support	HOURS	100	\$ 100	\$ 10,000
			\$ -	\$ -
			Subtotal =	\$ 45,500
			Contingency = 15%	\$ 6,800
TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =				\$ 52,300

CONSTRUCTION

Description	Unit	Quantity	Unit Cost	Sub Total
Removal of Existing Structures	LUMP	0	\$ 2,000	\$ -
Excavation and Embankment in Place	CY	1,777	\$ 30	\$ 53,300
Rock Grade Control	CY	296	\$ 75	\$ 22,200
Rock Stilling Basin	CY	741	\$ 75	\$ 55,600
Rock Toe and Slope Protection	CY	741	\$ 50	\$ 37,000
Riparian Corridor Planting	SF	20,000	\$ 0.70	\$ 14,000
Site Restoration	ACRE	0.10	\$ 30,000	\$ 3,000
New Culvert	LF	0	\$ 500.0	\$ -
Retaining Wall	SF	0	\$ 50	\$ -
Wetland Planting	ACRE	0.00	\$ 40,000	\$ -
			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
Mobilization and Bond	5%	1	\$ 9,255	\$ 9,300
			Subtotal =	\$ 194,400
			Contingency = 15%	\$ 29,200
TOTAL OPINION OF CONSTRUCTION COST =				\$ 223,600

TOTAL SURVEYING, GEOTECHNICAL, ENGINEERING AND CONSTRUCTION COST OPINION =	\$ 286,800
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Middle Creek Watershed Masterplan - Cost Opinion Worksheet

Project ID: **MC 7**Project Description: **Grade Control Knick Point and Stilling Basin at 1-80 Culvert Outfall on Tributary MC070R005**

SURVEYING

Description	Unit	Quantity	Unit Cost	Sub Total
Boundary and Topo Surveying	ACRE	2.30	\$ 5,000	\$ 11,500
Prepare Easement Plat and Scripts	EACH	2	\$ 400	\$ 800
Construction Staking and As-Built Surveying	ACRE	0.75	\$ 2,500	\$ 1,900
Subtotal =				\$ 14,200
Contingency = 15%				\$ 2,100
TOTAL OPINION OF SURVEYING COST =				\$ 16,300

GEOTECHNICAL

Description	Unit	Quantity	Unit Cost	Sub Total
Field Borings	LF	150	\$ 20	\$ 3,000
Geotechnical Report	LUMP	1	\$ 4,500	\$ 4,500
Global Stability Analysis	EACH	6	\$ 100	\$ 600
Subtotal =				\$ 8,100
Contingency = 15%				\$ 1,200
TOTAL OPINION OF GEOTECHNICAL COST =				\$ 9,300

ENGINEERING DESIGN AND CONSTRUCTION DOCUMENTS

Description	Unit	Quantity	Unit Cost	Sub Total
Preliminary Design	HOURS	80	\$ 100	\$ 8,000
ROW	HOURS	40	\$ 100	\$ 4,000
Permitting	HOURS	40	\$ 100	\$ 4,000
Final Design	HOURS	60	\$ 100	\$ 6,000
Develop Plans and Construction Documents	HOURS	150	\$ 75	\$ 11,300
Construction Support	HOURS	100	\$ 100	\$ 10,000
Subtotal =				\$ 43,300
Contingency = 15%				\$ 6,500
TOTAL OPINION OF ENGINEERING AND CONSTRUCTION OBSERVATION COST =				\$ 49,800

CONSTRUCTION

Description	Unit	Quantity	Unit Cost	Sub Total
Removal of Existing Structures	LUMP	0	\$ 2,000	\$ -
Excavation and Embankment in Place	CY	1,097	\$ 30	\$ 32,900
Rock Grade Control	CY	356	\$ 75	\$ 26,700
Rock Stilling Basin	CY	741	\$ 75	\$ 55,600
Rock Toe and Slope Protection	CY	0	\$ 50	\$ -
Riparian Corridor Planting	SF	2,400	\$ 0.70	\$ 1,700
Site Restoration	ACRE	2.20	\$ 30,000	\$ 66,100
New Culvert	LF	0	\$ 500.0	\$ -
Retaining Wall	SF	0	\$ 50	\$ -
Wetland Planting	ACRE	0.00	\$ 40,000	\$ -
			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
Mobilization and Bond	5%	1	\$ 9,150	\$ 9,200
Subtotal =				\$ 192,200
Contingency = 15%				\$ 28,800
TOTAL OPINION OF CONSTRUCTION COST =				\$ 221,000

TOTAL SURVEYING, GEOTECHNICAL, ENGINEERING AND CONSTRUCTION COST OPINION =	\$ 296,400
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