



CITY of CALABASAS

APPENDIX No. 2



Dry Canyon Creek Filed Notes and Detail Cost Estimates

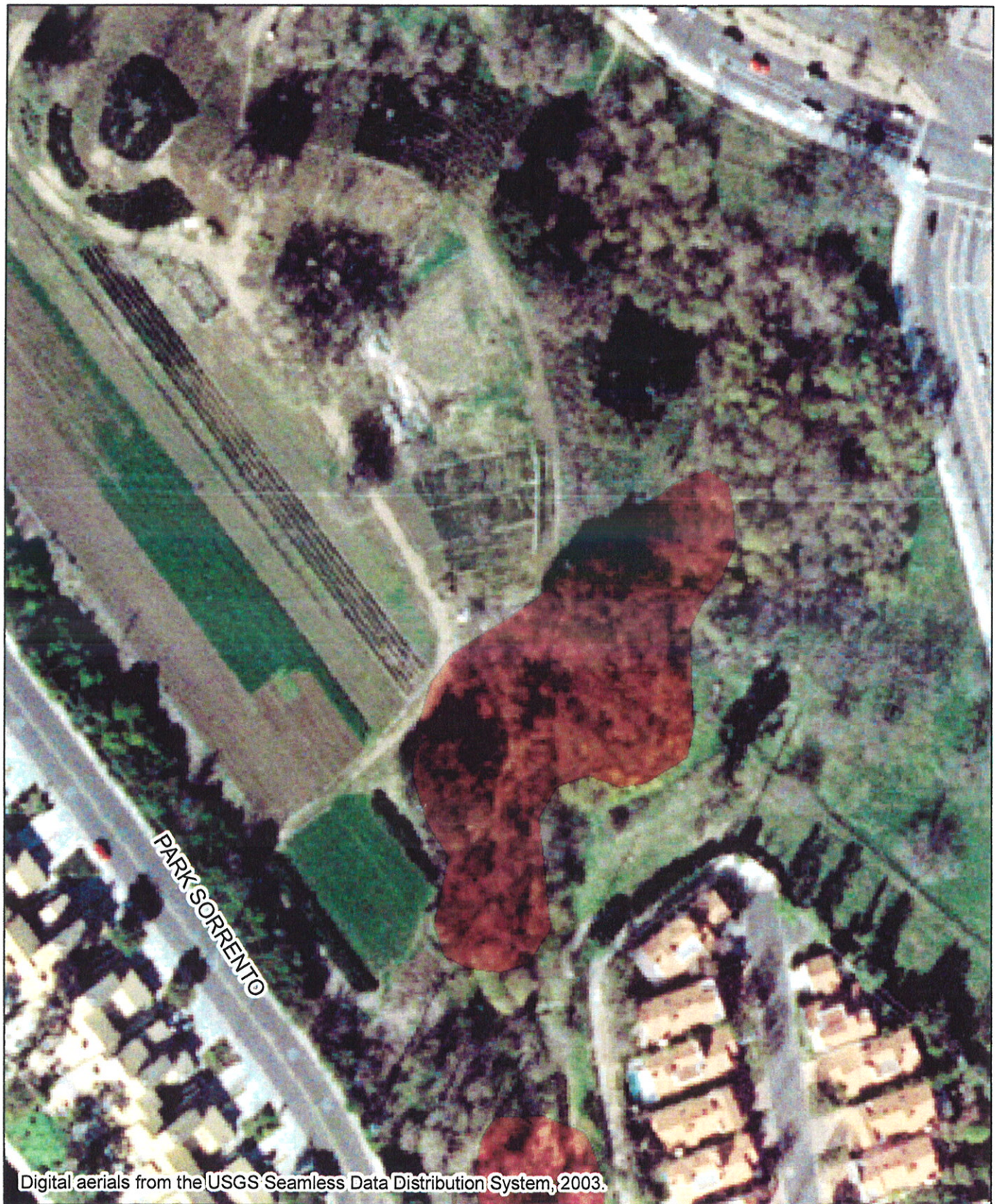




CITY of CALABASAS

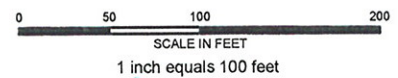
Dry Canyon Creek

Construction Code	Project Codes	Project Description	Assumptions	Study & Design Cost	Construction & Inspection Cost	Total Design & Construction	Projected O & M Costs	Comments	Priority
FH-D01	DC03, 04, 05, 06	At DC03, protect large oaks, eradicate Arundo, install rock/willow bank toe protection, create land management buffer, plant, recontour banks at S end. At DC04, exotic weed removal, strategic planting to encourage sinuosity, rock dams for erosion, bioengineering in channel. At DC05, continue exotic weed removal, plant riparian forest. At DC06, establish step-pool morphology, plant banks and floodplain with riparian forest. Maintain and monitor all sites for 3-5 years.	Good access to all sites. Design will require construction documents.	\$38,375.00	\$133,106.65	\$171,481.65	\$106,795.68		Mod-High
FH-D02	DC13, 15, 16, 17	At DC13, continue expanding riparian habitat to the west of the drainage (30'x100' area). Plant additional 20'x50' area where the road crosses the drainage upstream. At DC15, expand riparian forest plantings in 50'x50' area surrounding concrete ditch. At DC16, eradicate invasive weed species and enhance native plantings on banks; establish filter strip at top of banks. At DC17, eradicate Vinca and other invasive weeds, remove trash, demolish small building, and enhance riparian forest plantings.	Good access, but DC15 is on a blind curve. No supplemental watering. No CD's.	\$14,920.00	\$37,987.00	\$52,907.00	\$52,500.00		Moderate
FH-D03	DC14	Re-meander creek 200' of stream and recontour inside banks of 200' of stream (major earthwork), weed removal, riparian forest planting, bioengineering	Earthwork cannot be balanced on-site. No supplemental watering. CD's are required. Good access. Property acquisition not included.	\$30,470.00	\$115,226.71	\$145,696.71	\$41,500.00	Coordinate planning and design with MRT offices next door.	Moderate
FH-D04	DC08	This is an excellent opportunity to achieve multiple benefits in the watershed. Work should be designed and constructed in conjunction with DC07, 09, and 10. Eradicate Arundo and other invasives. Reserve an access paths for drainage maintenance. Plant banks with riparian forest. Maintain and monitor for 3-5 years.	Easy access. No supplemental watering. No CD's.	\$9,910.00	\$20,109.72	\$30,019.72	\$44,000.00	Arundo removal efforts currently in progress with partial success.	High



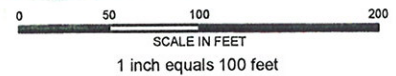
Digital aerials from the USGS Seamless Data Distribution System, 2003.

Site DCC- 03



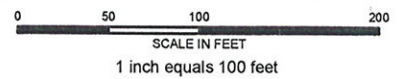


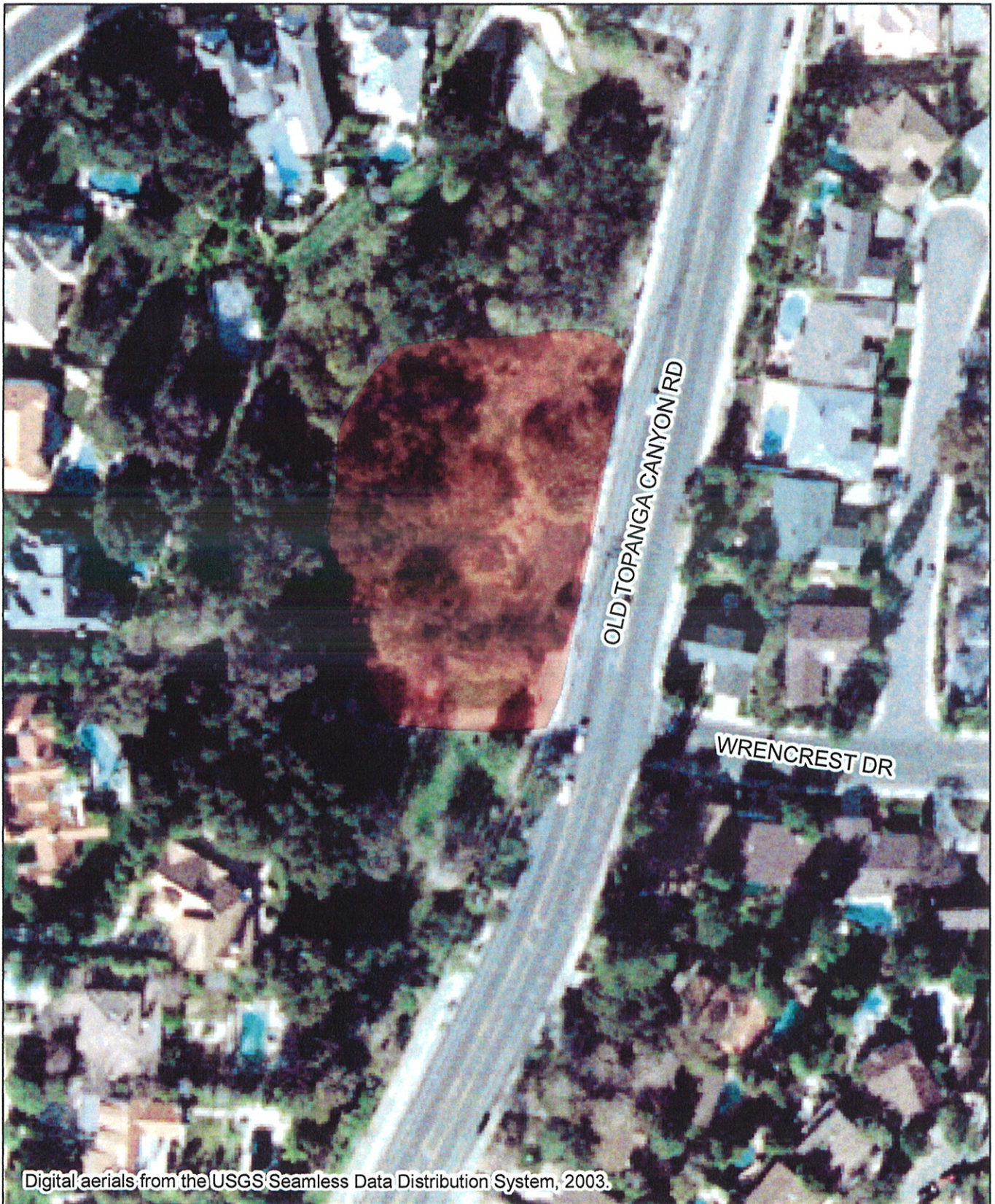
Sites DCC- 04 and DCC- 05





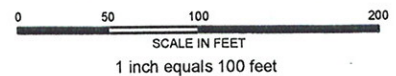
Site DCC- 06





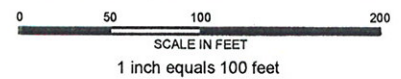
Digital aeriels from the USGS Seamless Data Distribution System, 2003.

Site DCC- 08





Site DCC-13





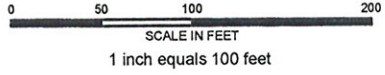
Digital aeriels from the USGS Seamless Data Distribution System, 2003.

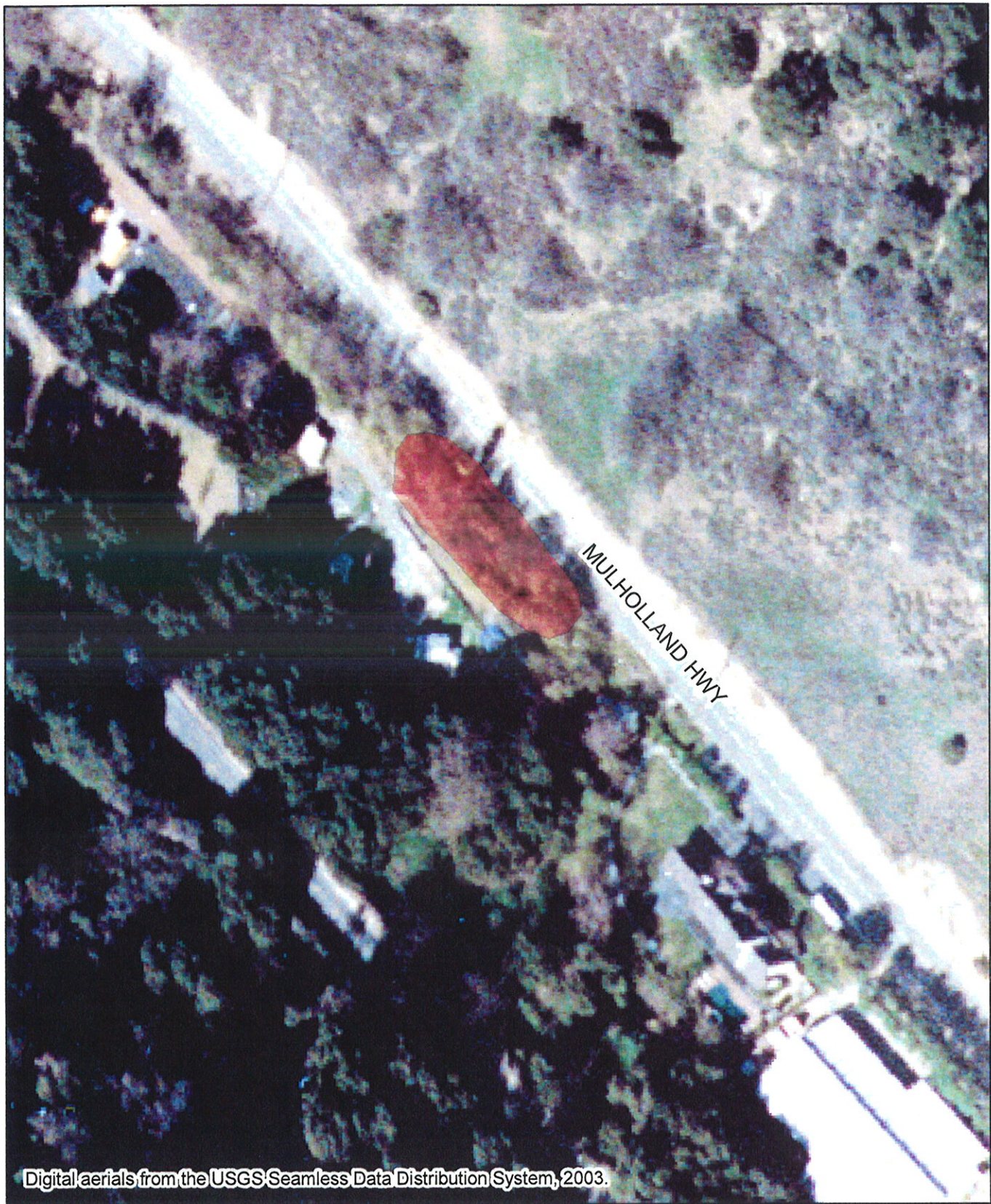
Sites DCC-14, DCC-15 and DCC-16



Digital aeriels from the USGS Seamless Data Distribution System, 2003.

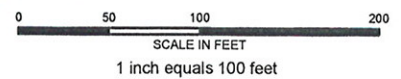
Site DCC-17





Digital aeriels from the USGS Seamless Data Distribution System, 2003.

Site DCC-19





Overall Cost Estimate Assumption

This cost estimate is based on several assumptions:

- These types of projects are extremely variable in their costs, depending on biological, political, and logistical issues encountered. Included costs are estimated at the high end of range when there is question. Each project could potentially be completed at 30% less than the estimate provided in this study.
- Economy of scale is an important factor in controlling costs. Projects can be grouped in a variety of ways that may be different than those used in this study.
- Costs on each sheet in this workbook assume that each project will be built separately. The sheet titled "Grouping" provides recommendations on how to combine projects, and calculates the savings realized through the grouping.
- The scope of work for this task did not include searching for additional projects or issues outside of the immediate areas indicated on our site maps. There may be additional work not captured in these cost-estimates.
- This study assumes that all projects with permits will need 5 years of maintenance and monitoring to meet success criteria, and that all projects will be targeting mitigation-quality results.
- Estimates do not include costs associated with endangered species consultation or associate mitigation measures. Project proponent should take all possible Any impacts incurred to wetland habitats during implementation will be self-mitigated within the proposed project through replacement and expansion of same or similar habitats. The purpose of each project is inherently intended to improve quality and function of natural habitats and systems.



Cost Estimation for DCC- 03

Standard Rough Order of Magnitude Costs	Bid Item	Unit Cost	Units	Quant	Cost	
Design Costs	Field Investigation/Bio Surveying/Mapping	\$ 2,000.00	LS	1	\$ 2,000.00	
	Field Equipment	\$ 110.00	day	2	\$ 220.00	
	Topographic Survey	\$ 450.00	acre	1	\$ 450.00	
	Base Plan Preparation	\$ 650.00	LS	1	\$ 650.00	
	Conceptual Restoration Plan (map + narrative)	\$ 5,000.00	LS	1	\$ 5,000.00	
	Renderings, models or photosimulations	\$ 650.00	each	1	\$ 650.00	
	Grading Plan	\$ 2,500.00	LS	1	\$ 2,500.00	
	Planting Plan	\$ 1,600.00	acre	1	\$ 1,600.00	
	Irrigation Plan	\$ 3,000.00	acre	1	\$ 3,000.00	
	Erosion Control Plan	\$ 400.00	LS	1	\$ 400.00	
	Specifications	\$ 2,000.00	LS	1	\$ 2,000.00	
	Client review and coordination	\$ 800.00	year	1	\$ 800.00	
	ACOE nationwide permit	\$ 6,000.00	LS	1	\$ 6,000.00	
	Water Quality Certification	\$ 3,000.00	LS	1	\$ 3,000.00	
	DFG 1600 agreement	\$ 3,000.00	LS	1	\$ 3,000.00	
	Design Total					\$ 27,170.00
Construction Costs	Preconstruction Surveys (sensitive species)	\$ 600.00	LS	1	\$ 600.00	
	Mobilization / Demobilization	\$ 6,000.00	LS	1	\$ 6,000.00	
	Large Tree removal	\$ 650.00	each			
	Clearing and Grubbing	\$ 2,330.00	acre	0.1148	\$ 267.45	
	Invasive Weed Kill (Arundo, Tamarisk, etc.)	\$ 15,000.00	acre	0.0459	\$ 686.71	
	Traffic Control	\$ 400.00	day			
	Earthwork (balanced)	\$ 20.00	cyd	50	\$ 1,000.00	
	Earthwork (imported fill)	\$ 33.00	cyd			
	Earthwork (disposal of cut)	\$ 16.00	cyd			
	In-stream structures (boulders, logs, etc)	\$ 500.00	each	1	\$ 500.00	
	Site/Plant Protection (flagging/fencing)	\$ 1,500.00	acre	5000	\$ 7,500.00	
	Seeding: Hydroseeding	\$ 0.10	S.F.			
	Seeding: Imprinting	\$ 0.05	S.F.			
	Seeding: Hand Broadcast	\$ 0.20	S.F.	10000	\$ 2,000.00	
	Plant Salvage & Replant: Tree Spade	\$ 50.00	each			
	Plant Salvage & Replant: By Hand	\$ 7.00	each	300	\$ 2,100.00	
	Potted Plantings (1 gal)	\$ 1.00	each	500	\$ 500.00	
	Cuttings Installation	\$ 30.00	LF	100	\$ 3,000.00	
	Bioengineering Practices	\$ 3,000.00	LS	1	\$ 3,000.00	
	Erosion Control Installation	\$ 3,100.00	week	4	\$ 12,400.00	
	Construction Monitoring					
	Construction Total					\$ 33,556.15
	Maintenance & Monitoring Costs	Invasive Weed Eradication maint	\$ 5,000.00	acre/year	0.2296	\$ 1,147.84
Standard Maint (trash, weeds, erosion, etc)		\$ 3,000.00	acre/year	5	\$ 15,000.00	
Hand/truck watering		\$ 800.00	acre/visit	15	\$ 12,000.00	
LA/Bio monitoring of progress (qual & quan)		\$ 3,500.00	year	5	\$ 17,500.00	
Reporting		\$ 800.00	year	5	\$ 4,000.00	
M&M Total						\$ 49,647.84
Project Total						\$ 110,373.99

Project Description

Site 03 is roughly 1 acre in size, stretching along roughly 400' of Dry Creek. It is generally located on the outside of a stream meander, where relatively tall and steep banks are typically expected. Subsoils appear to be fractured sandstone, which should withstand erosional forces well. Two very large oak trees are located mid-bank and would not be salvageable if bank recontouring were completed. For these reasons, and because no substantial benefits would be gained from laying back banks, we recommend avoiding major earthwork on this site. Minor bank shaping should be done at the south end of the project. The farming operation on the N and W banks is apparently cutting trees and dumping waste on the banks. Some weeding and planting opportunities exist (arundo, washingtonia, ricinus). Truck access should be possible through the adjacent farm. Foot access is good from Park Sorrento to the South. Stream supports thick overhanging riparian trees, large willow trees, a few walnuts, coast live oaks.

Recommendations

- 1) Do not recontour outside banks of meander.
- 2) Protect large oak trees and their root systems.
- 3) Eradicate ~2000 sqft of Arundo.
- 4) Install rock/willow toe protection on outside bank
- 5) Provide land management buffer on N and W banks
- 6) Planting in bare spots. ~3000 sqft.
- 7) Actively maintain and monitor the site for 3-5 years.
- 8) Lay back banks on ~20' long section of west bank at south end of project.

Assumptions

- 1) Construction drawings and specifications will be necessary.
- 2) Access will be granted from the adjacent farm property

Project Benefits

Water Quality	Moderate
Habitat Improvement	Moderate
Flood conveyance	-
Groundwater recharge	-
Aesthetics	Low
Public Safety	Low
Permitting Difficulty	Low

Site Map and Photos

Photos\DCC03\DCC03NW2SE.JPG
 Photos\DCC03\DCC03WBANK.JPG
 Photos\DCC03\DCC03Arundo.JPG
 Photos\DCC03\DCC03NBANK.JPG
 Photos\DCC03\DCC03NBANK2.JPG
 Graphics & Figures\Site Locations\DCC-03.pdf



CITY of CALABASAS

Cost Estimation for DCC-04

Standard Rough Order of Magnitude Costs

Big Item	Unit Cost	Units	Quant	Cost
Design Costs				
Field Investigation/Bio Surveying/Mapping	\$ 1,000.00	LS	1	\$ 1,000.00
Field Equipment	\$ 110.00	day	1	\$ 110.00
Topographic Survey	\$ 450.00	acre	1	\$ 450.00
Base Plan Preparation	\$ 650.00	LS	1	\$ 650.00
Conceptual Restoration Plan (map + narrative)	\$ 5,000.00	LS	1	\$ 5,000.00
Renderings, models or photosimulations	\$ 650.00	each	1	\$ 650.00
Grading Plan	\$ 2,500.00	acre	1	\$ 2,500.00
Planting Plan	\$ 1,600.00	acre	1	\$ 1,600.00
Irrigation Plan	\$ 3,000.00	acre	1	\$ 3,000.00
Erosion Control Plan	\$ 400.00	LS	1	\$ 400.00
Specifications	\$ 2,000.00	LS	1	\$ 2,000.00
Client review and coordination	\$ 800.00	year	1	\$ 800.00
ACOE Nationwide permit	\$ 6,000.00	LS	1	\$ 6,000.00
Water Quality Certification	\$ 3,000.00	LS	1	\$ 3,000.00
DFG 1600 agreement	\$ 3,000.00	LS	1	\$ 3,000.00
Design Total				\$ 26,510.00
Construction Costs				
Preconstruction Surveys (sensitive species)	\$ 600.00	LS	1	\$ 600.00
Mobilization / Demobilization	\$ 6,000.00	LS	1	\$ 6,000.00
Large Tree removal	\$ 650.00	each		\$ -
Clearing and Grubbing (selective kill)	\$ 2,330.00	acre	0.4591	\$ 1,069.79
Invasive Weed Kill (Arundo, Tamarisk, etc.)	\$ 15,000.00	acre	0.0459	\$ 688.71
Traffic Control	\$ 400.00	day	10	\$ 4,000.00
Earthwork (balanced)	\$ 20.00	cyd		\$ -
Earthwork (imported fill)	\$ 33.00	cyd		\$ -
Earthwork (disposal of cut)	\$ 16.00	cyd		\$ -
In-stream structures (boulders, logs, checks)	\$ 500.00	each	10	\$ 5,000.00
Site/Plant Protection (flagging/fencing)	\$ 1,500.00	acre	1	\$ 1,500.00
Seeding: Hydroseeding	\$ 0.10	S.F.	43560	\$ 4,356.00
Seeding: Imprinting	\$ 0.05	S.F.		\$ -
Seeding: Hand Broadcast	\$ 0.20	S.F.		\$ -
Plant Salvage & Replant: Tree Spade	\$ 50.00	each		\$ -
Plant Salvage & Replant: By Hand	\$ 7.00	each		\$ -
Potted Plantings (1 gal)	\$ 1.00	each	600	\$ 600.00
Cuttings Installation	\$ 30.00	LF	500	\$ 15,000.00
Bioengineering Practices	\$ 3,000.00	LS	1	\$ 3,000.00
Erosion Control Installation	\$ 3,100.00	week	4	\$ 12,400.00
Construction Monitoring				\$ -
Construction Total				\$ 44,014.49
Maintenance & Monitoring Costs				
Invasive Weed Eradication maint	\$ 5,000.00	acre/year	0.2296	\$ 1,147.84
Standard Maint (trash, weeds, erosion, etc)	\$ 3,000.00	acre/year	5	\$ 15,000.00
Hand/truck watering	\$ 800.00	acre/visit		\$ -
LA/Bio monitoring of progress (qual & quan)	\$ 3,500.00	year	5	\$ 17,500.00
Reporting	\$ 800.00	year	5	\$ 4,000.00
M&M Total				\$ 37,647.84
Project Total				\$ 108,172.34

Project Description
 Site 04 is roughly .75 acre in size, stretching along roughly 400' of Dry Creek. It is located in a straight reach of the floodplain. Left bank is a mix of natural & fill slopes with high quality riparian woodland habitat. Right bank is a crib-wall with generally lower quality habitat. The creek has formed two channels in this reach. The west channel is original and has some erosion problems. City Public Works crews have been clearing weeds in this reach. Options for restoration range from complete re-meandering of the channel to just focused planting/weeding efforts. Equipment access should be possible from Park Sorrento directly into the work area.

Recommendations
 This reach needs improvements in channel form and stability. We recommend achieving that goal through strategic planting and minor structural modifications, rather than wholesale recontouring. Structural modifications should be made at key points to stabilize erosion in the channel or reinforce planned meanders. Planting should be used to increase flow roughness (and thus decrease conveyance and velocity) at ground, shrub, and overstory levels and to hold soil in areas that are planned to be floodplain. A converse decrease in roughness should be planned for areas where channel flow is desired. This strategy will allow for minor deformation over time and will minimally disturb existing riparian vegetation. Basic hydrology and hydraulic calculations should be conducted in conjunction with direct observation of high flow conditions to quantify erosive forces.
 1) Continue arundo, castor bean, washingtonia, and eucalyptus removal efforts.
 2) Strategic riparian plantings as described above
 3) Rock/Boulder check dams in left channel to arrest downcutting
 4) Heavy planting and/or bioengineering on banks of desired channel
 5) Protect and preserve existing riparian vegetation.
 6) Actively maintain and monitor the site for 3-5 years.

Assumptions
 1) Construction drawings and specifications will be necessary.
 2) Results of hydraulic study are conducive to the approach described above.
 3) Supplemental watering will not be necessary.

Project Benefits

Water Quality	Moderate
Habitat Improvement	High
Flood conveyance	-
Groundwater recharge	Low
Aesthetics	Moderate
Public Safety	Moderate
Permitting Difficulty	Moderate

Site Map and Photos
 Photos\DCC04\DCC04NorthEndN2S.JPG
 Photos\DCC04\DCC04LeftChannel.JPG
 Photos\DCC04\DCC04RightChannelN2S.JPG
 Photos\DCC04\DCC04SouthEndN2S.JPG
 Graphics & Figures\Site Locations\DCC-04.05.pdf



CITY of CALABASAS

Cost Estimation for DCC-05

Standard Rough Order of Magnitude Costs

Bid Item	Unit Cost	Units	Quant	Cost
Design Costs				
Field Investigation/Bio Surveying/Mapping	\$ 1,000.00	LS	1	\$ 1,000.00
Field Equipment	\$ 110.00	day	1	\$ 110.00
Topographic Survey	\$ 450.00	acre	1	\$ -
Base Plan Preparation	\$ 650.00	LS	1	\$ 650.00
Conceptual Restoration Plan (map + narrative)	\$ 5,000.00	LS	1	\$ 5,000.00
Renderings, models or photosimulations	\$ 650.00	each		\$ -
Grading Plan	\$ 2,500.00	acre		\$ -
Planting Plan	\$ 1,600.00	acre	0.5	\$ 800.00
Irrigation Plan	\$ 3,000.00	acre		\$ -
Erosion Control Plan	\$ 400.00	LS	1	\$ 400.00
Specifications	\$ 2,000.00	LS	1	\$ 2,000.00
Client review and coordination	\$ 800.00	year	1	\$ 800.00
ACOE Nationwide permit	\$ 6,000.00	LS	1	\$ 6,000.00
Water Quality Certification	\$ 3,000.00	LS	1	\$ 3,000.00
DFG 1600 agreement	\$ 3,000.00	LS	1	\$ 3,000.00
Design Total				\$ 22,760.00
Construction Costs				
Preconstruction Surveys (sensitive species)	\$ 600.00	LS	1	\$ 600.00
Mobilization / Demobilization	\$ 6,000.00	LS	1	\$ 6,000.00
Large Tree removal	\$ 650.00	each		\$ -
Clearing and Grubbing (selective kill)	\$ 2,330.00	acre	0.5	\$ 1,165.00
Invasive Weed Kill (Arundo, Tamarisk, etc.)	\$ 15,000.00	acre		\$ -
Traffic Control	\$ 400.00	day		\$ -
Earthwork (balanced)	\$ 20.00	cyd		\$ -
Earthwork (imported fill)	\$ 33.00	cyd		\$ -
Earthwork (disposal of cut)	\$ 16.00	cyd		\$ -
In-stream structures (boulders, logs, checks)	\$ 500.00	each		\$ -
Site/Plant Protection (flagging/fencing)	\$ 1,500.00	acre	1	\$ 1,500.00
Seeding: Hydroseeding	\$ 0.10	S.F.	21780	\$ 2,178.00
Seeding: imprinting	\$ 0.05	S.F.		\$ -
Seeding: Hand Broadcast	\$ 0.20	S.F.		\$ -
Plant Salvage & Replant: Tree Spade	\$ 50.00	each		\$ -
Plant Salvage & Replant: By Hand	\$ 7.00	each	300	\$ 2,100.00
Potted Plantings (1 gal)	\$ 1.00	each	200	\$ 200.00
Cuttings Installation	\$ 30.00	LF		\$ -
Bioengineering Practices	\$ 3,000.00	LS	1	\$ 3,000.00
Erosion Control Installation	\$ 3,100.00	week	3	\$ 9,300.00
Construction Monitoring				\$ 26,043.00
Construction Total				\$ 77,803.00
Maintenance & Monitoring Costs				
Invasive Weed Eradication maint	\$ 5,000.00	acre/year		\$ -
Standard Maint (trash, weeds, erosion, etc)	\$ 3,000.00	acre/year	2.5	\$ 7,500.00
Hand/truck watering	\$ 800.00	acre/visit	5	\$ 4,000.00
LA/Bio monitoring of progress (qual & quan)	\$ 3,500.00	year	5	\$ 17,500.00
Reporting	\$ 800.00	year	5	\$ 4,000.00
M&M Total				\$ 29,000.00
Project Total				\$ 77,803.00

Project Description
It is unclear exactly what the master plan is referring to in this area. No major erosion problems were seen. The project is approximately .5 acres located immediately downstream from the Park Ora Rd bridge, which is the end of a long constricted reach. Velocities should inherently slow at this point. The area would benefit from basic weed eradication and riparian habitat creation, which makes it a natural extension of DCC04.

Recommendations
This site should be designed in conjunction with DCC04. If budgets allow, it should also be installed in conjunction with DCC04. Because the main access to sites DCC04 and 06 is from the Park Sorrento entrance at this site, DCC05 should be construction after completion of 04 and 06. We recommend concentrating on heavy riparian plantings in the floodplain and on the channel banks in this project area.

- 1) Continue arundo, castor bean, washingtonia, and eucalyptus removal efforts.
- 2) Riparian plantings in floodplain and along banks.
- 3) Protect and preserve existing riparian vegetation.
- 4) Actively maintain and monitor the site for 3-5 years.

Assumptions
1) Construction drawings and specifications will be necessary.
3) Supplemental watering will not be necessary.

Project Benefits

Water Quality	-
Habitat Improvement	High
Flood conveyance	-
Groundwater recharge	Low
Aesthetics	Moderate
Public Safety	-
Permitting Difficulty	Low

Site Map and Photos
Photos\DCC05\DCC05BridgeNorth.JPG
Photos\DCC05\DCC05NorthEndN2S.JPG
Graphics & Figures\Site Locations\DCC-04.05.pdf



Cost Estimation for DCC- 06

Standard Rough Order of Magnitude Costs

Bid Item	Unit Cost	Units	Quant	Cost
Design Costs				
Field Investigation/Bio Surveying/Mapping	\$ 1,000.00	LS	1	\$ 1,000.00
Field Equipment	\$ 110.00	day	1	\$ 110.00
Topographic Survey	\$ 450.00	acre	0.5	\$ 225.00
Base Plan Preparation	\$ 650.00	LS	1	\$ 650.00
Conceptual Restoration Plan (map + narrative)	\$ 5,000.00	LS	1	\$ 5,000.00
Renderings, models or photosimulations	\$ 650.00	each		-
Grading Plan	\$ 2,500.00	acre		-
Planting Plan	\$ 1,600.00	acre	0.5	\$ 800.00
Irrigation Plan	\$ 3,000.00	acre		-
Erosion Control Plan	\$ 400.00	LS	1	\$ 400.00
Specifications	\$ 2,000.00	LS	1	\$ 2,000.00
Client review and coordination	\$ 800.00	year	1	\$ 800.00
ACOE Nationwide permit	\$ 6,000.00	LS	1	\$ 6,000.00
Water Quality Certification	\$ 3,000.00	LS	1	\$ 3,000.00
DFG 1600 agreement	\$ 3,000.00	LS	1	\$ 3,000.00
Design Total				\$ 22,985.00

Bid Item	Unit Cost	Units	Quant	Cost
Construction Costs				
Preconstruction Surveys (sensitive species)	\$ 600.00	LS	1	\$ 600.00
Mobilization / Demobilization	\$ 6,000.00	LS	1	\$ 6,000.00
Large Tree removal	\$ 650.00	each		-
Clearing and Grubbing	\$ 2,330.00	acre	0.5	\$ 1,165.00
Invasive Weed Kill (Arundo, Tamarisk, etc.)	\$ 15,000.00	acre	0.1	\$ 1,500.00
Traffic Control	\$ 400.00	day		-
Earthwork (balanced)	\$ 20.00	cyd		-
Earthwork (imported fill)	\$ 33.00	cyd		-
Earthwork (disposal of cut)	\$ 16.00	cyd		-
In-stream structures (boulders, logs, etc)	\$ 500.00	each	10	\$ 5,000.00
Site/Plant Protection (flagging/fencing)	\$ 1,500.00	acre	0.5	\$ 750.00
Seeding: Hydroseeding	\$ 0.10	S.F.	21780	\$ 2,178.00
Seeding: Imprinting	\$ 0.05	S.F.		-
Seeding: Hand Broadcast	\$ 0.20	S.F.		-
Plant Salvage & Replant: Tree Spade	\$ 50.00	each	10	\$ 500.00
Plant Salvage & Replant: By Hand	\$ 7.00	each	300	\$ 2,100.00
Potted Plantings (1 gal)	\$ 1.00	each	300	\$ 300.00
Cuttings Installation	\$ 30.00	LF		-
Bioengineering Practices	\$ 3,000.00	LS	1	\$ 3,000.00
Erosion Control Installation	\$ 3,100.00	week	4	\$ 12,400.00
Construction Monitoring				
Construction Total				\$ 35,493.00

Bid Item	Unit Cost	Units	Quant	Cost
Maintenance & Monitoring Costs				
Invasive Weed Eradication maint	\$ 5,000.00	acre/year		-
Standard Maint (trash, weeds, erosion, etc)	\$ 4,000.00	acre/year	2.5	\$ 10,000.00
Hand/truck watering	\$ 800.00	acre/visit		-
LAV/Bio monitoring of progress (qual & quan)	\$ 3,500.00	year	5	\$ 17,500.00
Reporting	\$ 800.00	year	5	\$ 4,000.00
M&M Total				\$ 31,500.00
Project Total				\$ 89,978.00

Project Description
 Site 06 is roughly .5 acre in size, stretching along roughly 500' of Dry Creek to the south of the Park Ora Bridge. It is a straight reach constrained on both sides by crib walls. Existing habitat in the floodplain is sparse and the creek bed is slightly incised. Velocities during high flows are likely to be relatively high. The channel immediately upstream of this section has a step-pool morphology created primarily by tree roots crossing the creek.

Recommendations
 Plant the floodplain heavily, but with a pattern of patches that alternate to either side of the channel. The goal is to break up high flows and reduce velocities that are beginning to cause stream downcutting. Establish a step-pool channel pattern that mimics the upstream pattern.

- 1) Protect existing native plant material
- 2) Install rock or log drop structures
- 3) Plant alder near drop structures to encourage a "root drop" over time.
- 4) Plant banks and floodplain with riparian forest species.
- 5) Actively maintain and monitor the site for 3-5 years.

Assumptions
 1) Construction drawings and specifications will be necessary.
 2) Access is possible from Park Sorrento at DCC05
 3) Increased floodplain roughness will not cause flooding problems upstream
 4) Supplemental watering will not be necessary.

Project Benefits	Water Quality	Habitat Improvement	Flood conveyance	Groundwater recharge	Aesthetics	Public Safety	Permitting Difficulty
	Moderate	High	-	Low	Moderate	Low	Moderate

Site Map and Photos
 Photos\DCC06\NorthEndN2S.JPG
 Photos\DCC06\SouthEndS2N.JPG
 Photos\DCC06\MiddleN2S.JPG
 Graphics & Figures\Site_Locations\DCC-06.pdf



Cost Estimation for DCC-08

Standard Rough Order of Magnitude Costs

Bid Item	Unit Cost	Units	Quant	Cost
Design Costs				
Field Investigation/Bio Surveying/Mapping	\$ 1,000.00	LS	1	\$ 1,000.00
Field Equipment	\$ 110.00	day	1	\$ 110.00
Topographic Survey	\$ 450.00	acre		\$ -
Base Plan Preparation	\$ 650.00	LS		\$ -
Conceptual Restoration Plan (map + narrative)	\$ 5,000.00	LS	1	\$ 5,000.00
Renderings, models or photosimulations	\$ 650.00	each		\$ -
Grading Plan	\$ 2,500.00	acre		\$ -
Planting Plan	\$ 1,600.00	acre		\$ -
Irrigation Plan	\$ 3,000.00	acre		\$ -
Erosion Control Plan	\$ 400.00	LS		\$ -
Specifications	\$ 2,000.00	LS		\$ -
Client review and coordination	\$ 800.00	year	1	\$ 800.00
ACOE Nationwide permit	\$ 6,000.00	LS		\$ -
Water Quality Certification	\$ 3,000.00	LS		\$ -
DFG 1600 agreement	\$ 3,000.00	LS	1	\$ 3,000.00
Design Total				\$ 9,910.00

Construction Costs

Preconstruction Surveys (sensitive species)	\$ 600.00	LS	1	\$ 600.00
Mobilization / Demobilization	\$ 3,000.00	LS	1	\$ 3,000.00
Large Tree removal	\$ 650.00	each		\$ -
Clearing and Grubbing	\$ 2,330.00	acre	0.5	\$ 1,165.00
Invasive Weed Kill (Arundo, Tamarisk, etc.)	\$ 15,000.00	acre	0.1377	\$ 2,066.12
Traffic Control	\$ 400.00	day		\$ -
Earthwork (balanced)	\$ 20.00	cyd		\$ -
Earthwork (imported fill)	\$ 33.00	cyd		\$ -
Earthwork (disposal of cut)	\$ 16.00	cyd		\$ -
In-stream structures (boulders, logs, etc)	\$ 500.00	each		\$ -
Site/Plant Protection (flagging/fencing)	\$ 1,500.00	acre	0.5	\$ 750.00
Seeding: Hydroseeding	\$ 0.10	S.F.	21780	\$ 2,178.00
Seeding: imprinting	\$ 0.05	S.F.		\$ -
Seeding: Hand Broadcast	\$ 0.20	S.F.		\$ -
Plant Salvage & Replant: Tree Spade		each		\$ -
Plant Salvage & Replant: By Hand	\$ 50.00	each		\$ -
Potted Plantings (1 gal)	\$ 7.00	each	600	\$ 4,200.00
Cuttings Installation	\$ 1.00	each	500	\$ 500.00
Bioengineering Practices	\$ 30.00	LF		\$ -
Erosion Control Installation	\$ 1,000.00	LS	1	\$ 1,000.00
Construction Monitoring	\$ 3,100.00	week	1.5	\$ 4,650.00
Construction Total				\$ 20,109.12

Maintenance & Monitoring Costs

Invasive Weed Eradication maint	\$ 5,000.00	acre/year	2.5	\$ 12,500.00
Standard Maint (trash, weeds, erosion, etc)	\$ 4,000.00	acre/year	2.5	\$ 10,000.00
Hand/truck watering	\$ 800.00	acre/visit		\$ -
LA/Bio monitoring of progress (qual & quan)	\$ 3,500.00	year	5	\$ 17,500.00
Reporting	\$ 800.00	year	5	\$ 4,000.00
M&M Total				\$ 44,000.00
Project Total				\$ 74,019.12

Project Description

Site 08 is roughly 1.25 acre in size, on the West side of Old Topanga Canyon Road, where it intersects Wrencrest Drive. There are several patches of arundo on the site (~6000sqft), with the rest of the site being a mix of bare areas and weedy species such as Conzlia. An old asphalt road extends to a drainage structure in the creek. DCC08 is in a tight cluster of project points (DCC07, DCC09, and DCC10), which are being investigated by Qwesta Eng. It will likely be most economical to design and construct this project with the rest of the cluster. There appears to be some existing efforts to control arundo on the site.

Recommendations

This is an excellent opportunity to achieve multiple benefits in the watershed. Work should be designed and constructed in conjunction with DCC07, 09, and 10.

- 1) Protect existing native plant material
- 2) Eradicate arundo and other invasive exotic species.
- 3) Reserve a 8-15' wide access path for maintenance of the drainage structure, if it remains.
- 4) Plant banks and floodplain with riparian forest species.
- 5) Actively maintain and monitor the site for 3-5 years.

Assumptions

- 1) Construction drawings and specifications will not be necessary for site 08
- 2) Access is possible from Old Topanga Road.
- 5) Supplemental watering will not be necessary.

Project Benefits

Water Quality	Moderate
Habitat Improvement	High
Flood conveyance	-
Groundwater recharge	Low
Aesthetics	Moderate to High
Public Safety	Low
Permitting Difficulty	Low

Site Map and Photos

Photos\DCC08\DCC08PathE2W.JPG
 Photos\DCC08\DCC08ArundoS2N.JPG
 Photos\DCC08\DCC08ArundoA1StreamBanks2N.JPG
 Photos\DCC08\DCC08ArundoAndConzliaN2S.JPG
 Photos\DCC08\DCC08ArundoN2S.JPG
 Graphics & Figures\Site Locations\DCC-08.pdf



CITY of CALABASAS

Cost Estimation for DCC-13

Standard Rough Order of Magnitude Costs

Bid Item	Unit Cost	Units	Quant	Cost
Design Costs				
Field Investigation/Bio Surveying/Mapping	\$ 1,000.00	LS	1	\$ 1,000.00
Field Equipment	\$ 110.00	day	1	\$ 110.00
Topographic Survey	\$ 450.00	acre		-
Base Plan Preparation	\$ 650.00	LS	1	\$ 650.00
Conceptual Restoration Plan (map + narrative)	\$ 5,000.00	LS	1	\$ 5,000.00
Renderings, models or photosimulations	\$ 650.00	each		-
Grading Plan	\$ 2,500.00	acre		-
Planting Plan	\$ 1,600.00	acre		-
Irrigation Plan	\$ 3,000.00	acre		-
Erosion Control Plan	\$ 400.00	LS		-
Specifications	\$ 2,000.00	LS		-
Client review and coordination	\$ 800.00	year	1	\$ 800.00
ACOE Nationwide permit	\$ 6,000.00	LS		-
Water Quality Certification	\$ 3,000.00	LS		-
DFG 1600 agreement	\$ 3,000.00	LS	1	\$ 3,000.00
Design Total				\$ 9,910.00
Construction Costs				
Preconstruction Surveys (sensitive species)	\$ 600.00	LS	1	\$ 600.00
Mobilization / Demobilization	\$ 3,000.00	LS	1	\$ 3,000.00
Large Tree removal	\$ 650.00	each		-
Clearing and Grubbing	\$ 2,330.00	acre		-
Invasive Weed Kill (Arundo, Tamarisk, etc.)	\$ 15,000.00	acre		-
Traffic Control	\$ 400.00	day		-
Earthwork (balanced)	\$ 20.00	cyd		-
Earthwork (imported fill)	\$ 33.00	cyd		-
Earthwork (disposal of cut)	\$ 16.00	cyd		-
In-stream structures (boulders, logs, etc)	\$ 500.00	each		-
Stip/Plant Protection (flagging/fencing)	\$ 1,500.00	acre	0.1	\$ 150.00
Seeding: Hydroseeding	\$ 0.10	S.F.		-
Seeding: Imprinting	\$ 0.05	S.F.		-
Seeding: Hand Broadcast	\$ 0.20	S.F.		-
Plant Salvage & Replant: Tree Spade	\$ 50.00	each		-
Plant Salvage & Replant: By Hand	\$ 7.00	each		-
Potted Plantings (1 gal)	\$ 1.00	each	75	\$ 75.00
Cuttings Installation	\$ 30.00	LF	50	\$ 1,500.00
Bioengineering Practices	\$ 1,000.00	LS	1	\$ 1,000.00
Erosion Control Installation	\$ 3,100.00	week	1	\$ 3,100.00
Construction Monitoring	\$ 8,425.00			\$ 8,425.00
Construction Total				\$ 16,000.00
Maintenance & Monitoring Costs				
Invasive Weed Eradication maint	\$ 5,000.00	acre/year		-
Standard Maint (trash, weeds, erosion, etc)	\$ 4,000.00	acre/year	0.5	\$ 2,000.00
Land/Truck watering	\$ 800.00	acre/visit	5	\$ 4,000.00
LA/Bio monitoring of progress (qual & quan)	\$ 2,000.00	year	5	\$ 10,000.00
Reporting	\$ 800.00	year	5	\$ 4,000.00
M&M Total				\$ 16,000.00
Project Total				\$ 34,335.00

Project Description

Site 13 is roughly .5 acre in size, on the SE side of Mulholland Hwy, just S of its intersection with Old Topanga Canyon Road. Creek supports large overhanging trees, Mule fat, large coast live oak, willow. Existing restoration efforts are in progress to the west of the drainage. Restoration efforts underway on the west bank (by MRT). Moderate opportunity for expansion of creek. A better site for restoration may be slightly upstream from DC-13, across the road crossing of the stream. Enhancement of riparian vegetation and stream shading may be accomplished there.

Recommendations

Continue expanding riparian habitat to the west of the drainage (30'x100' area). Plant additional 20'x50' area where the road crosses the drainage upstream.

- 1) Protect existing native plant material
- 2) Plant riparian forest species.
- 3) Actively maintain and monitor the site for 3-5 years.

Assumptions

- 1) Construction drawings and specifications will not be necessary.
- 2) Access is possible from Mulholland Hwy and the side road paralleling the project.
- 3) Supplemental watering will not be necessary.
- 4) Planting will be done exclusively through container stock and cuttings.
- 5) No substantial clearing or weeding will be necessary.

Project Benefits	Level
Water Quality	Low
Habitat Improvement	Moderate
Flood conveyance	-
Groundwater recharge	-
Aesthetics	Moderate
Public Safety	-
Permitting Difficulty	Low

Site Map and Photos

Photos\DCC13\DCC13PlantingExpansionAreaS2N.JPG
 Photos\DCC13\DCC13UnderOaksN2S.JPG
 Photos\DCC13\DCC13UpstreamPlantingAreaN2S.JPG
 Graphics & Figures\Site Locations\DCC-13.pdf



CITY of CALABASAS

Cost Estimation for DCC-14

Bid Item	Unit Cost	Units	Quant	Cost	Project Description
Standard Rough Order of Magnitude Costs					
Design Costs					
Field Investigation/Bio Surveying/Mapping	\$ 2,000.00	LS	1	\$ 2,000.00	Site 14 is roughly .75 acre in size, on the North side of Mulholland Hwy, near the intersection with Old Topanga Canyon Road, on MRT property. The creek has been straightened through the property and pushed against the north bank, where it is causing erosion. MRT has conceptual plans for future uses of the area, which will require planning coordination. The exact extent of the masterplan's intentions for this project are unclear. We are assuming a substantial reconstruction to near-original creek morphology is desired.
Field Equipment	\$ 110.00	day	2	\$ 220.00	
Topographic Survey	\$ 1,000.00	acre	2	\$ 2,000.00	
Base Plan Preparation	\$ 650.00	LS	1	\$ 650.00	
Conceptual Restoration Plan (map + narrative)	\$ 5,000.00	LS	1	\$ 5,000.00	
Renderings, models or photosimulations	\$ 650.00	each	2	\$ 1,300.00	
Grading Plan	\$ 2,500.00	acre	1	\$ 2,500.00	
Planting Plan	\$ 1,600.00	acre	1	\$ 1,600.00	
Irrigation Plan	\$ 3,000.00	acre	1	\$ 3,000.00	
Erosion Control Plan	\$ 400.00	LS	1	\$ 400.00	
Specifications	\$ 2,000.00	LS	1	\$ 2,000.00	
Client review and coordination	\$ 800.00	year	1	\$ 800.00	
ACOE Nationwide permit	\$ 6,000.00	LS	1	\$ 6,000.00	
Water Quality Certification	\$ 3,000.00	LS	1	\$ 3,000.00	
DFG 1600 agreement	\$ 3,000.00	LS	1	\$ 3,000.00	
Design Total				\$ 30,470.00	
Construction Costs					
Preconstruction Surveys (sensitive species)	\$ 600.00	LS	1	\$ 600.00	Remeander and recontour banks roughly as shown on the project site map. Revegetate the entire area with riparian forest habitat. Accurate topographic survey and hydrology data will be essential design elements. Will require salvage or removal of ~4000k of riparian vegetation. Recommendations 1) Protect existing native plant material along edges of the project. 2) Salvage willow cuttings and clumps from areas to be impacted by grading. 3) Remeander roughly 200' section upstream from house yard. 4) Establish "inside bend" topography on roughly 200' upstream section. 5) Plant banks and floodplain with riparian forest species. 6) Protect toe of outside bends with rock/willow applications. 7) Actively maintain and monitor the site for 3-5 years.
Mobilization / Demobilization	\$ 6,000.00	LS	1	\$ 6,000.00	
Large Tree removal	\$ 650.00	each	8	\$ 5,200.00	
Clearing and Grubbing	\$ 2,330.00	acre	1	\$ 2,330.00	
Invasive Weed Kill (Arundo, Tamarisk, etc.)	\$ 15,000.00	acre	1	\$ 15,000.00	
Traffic Control	\$ 400.00	day	866.67	\$ 346,668.00	
Earthwork (balanced)	\$ 20.00	cyd		\$ 17,333.33	
Earthwork (imported fill)	\$ 33.00	cyd		\$ -	
Earthwork (disposal of cut)	\$ 16.00	cyd	3163	\$ 50,607.41	
In-stream structures (boulders, logs, etc)	\$ 500.00	each	5	\$ 2,500.00	
Site/Plant Protection (flagging/fencing)	\$ 1,500.00	acre	1	\$ 1,500.00	
Seeding: Hydroseeding	\$ 0.10	S.F.	43560	\$ 4,356.00	
Seeding: Imprinting	\$ 0.05	S.F.		\$ -	
Seeding: Hand Broadcast	\$ 0.20	S.F.		\$ -	
Plant Salvage & Replant: Tree Spade/backho	\$ 2,500.00	LS	1	\$ 2,500.00	
Plant Salvage & Replant: By Hand	\$ 10.00	each	100	\$ 1,000.00	
Potted Plantings (1 gal)	\$ 7.00	each	500	\$ 3,500.00	
Cuttings Installation	\$ 1.00	each	2000	\$ 2,000.00	
Bioengineering Practices	\$ 30.00	LF	150	\$ 4,500.00	
Erosion Control Installation	\$ 2,000.00	LS	1	\$ 2,000.00	
Construction Monitoring	\$ 3,100.00	week	3	\$ 9,300.00	
Construction Total				\$ 115,226.74	
Maintenance & Monitoring Costs					
Invasive Weed Eradication maint	\$ 5,000.00	acre/year	5	\$ 20,000.00	Photos/DCC14/DCC14/StartOfmeander/SE2NW.JPG Photos/DCC14/DCC14/PathOfNewMeander/NW2SE.JPG Photos/DCC14/DCC14/MeanderEnd/N2S.JPG Photos/DCC14/DCC14/OverviewOfMeander.JPG Graphics & Figures/Site_Locations/DCC-14-16.pdf
Standard Maint (trash, weeds, erosion, etc)	\$ 4,000.00	acre/year	5	\$ 20,000.00	
Hand/truck watering	\$ 800.00	acre/visit	5	\$ 4,000.00	
LA/Bio monitoring of progress (qual & quan)	\$ 3,500.00	year	5	\$ 17,500.00	
Reporting	\$ 800.00	year	5	\$ 4,000.00	
M&M Total				\$ 41,500.00	
Project Total				\$ 187,196.74	



Cost Estimation for DCC-15

Standard Rough Order of Magnitude Costs

Bid Item	Unit Cost	Units	Quant	Cost
Design Costs				
Field Investigation/Bio Surveying/Mapping	\$ 400.00 LS		1	\$ 400.00
Field Equipment	\$ 110.00 day		1	\$ 110.00
Topographic Survey	\$ 450.00 acre			-
Base Plan Preparation	\$ 650.00 LS			-
Conceptual Restoration Plan (map + narrative, renderings, models or photosimulations)	\$ 2,000.00 LS		1	\$ 2,000.00
Grading Plan	\$ 650.00 each			-
Irrigation Plan	\$ 1,600.00 acre			-
Erosion Control Plan	\$ 3,000.00 acre			-
Specifications	\$ 400.00 LS			-
Client review and coordination	\$ 2,000.00 LS			-
ACOE Nationwide permit	\$ 800.00 year		1	\$ 800.00
Water Quality Certification	\$ 6,000.00 LS			-
DFG 1600 agreement	\$ 3,000.00 LS			-
Design Total	\$ 1,000.00 LS		1	\$ 1,000.00
				\$ 4,310.00

Construction Costs

Preconstruction Surveys (sensitive species)	\$ 600.00 LS		1	\$ 600.00
Mobilization / Demobilization	\$ 1,000.00 LS		1	\$ 1,000.00
Large Tree removal	\$ 650.00 each			-
Clearing and Grubbing	\$ 2,330.00 acre			-
Invasive Weed Kill (Arundo, Tamarisk, etc.)	\$ 15,000.00 acre			-
Traffic Control	\$ 400.00 day			-
Earthwork (balanced)	\$ 20.00 cyd			-
Earthwork (imported fill)	\$ 33.00 cyd			-
Earthwork (disposed of cut)	\$ 16.00 cyd			-
In-stream structures (boulders, logs, etc)	\$ 500.00 each			-
Site/Plant Protection (flagging/fencing)	\$ 1,500.00 acre		0.05	\$ 75.00
Seeding: Hydroseeding	\$ 0.10 S.F.			-
Seeding: Imprinting	\$ 0.05 S.F.			-
Seeding: Hand Broadcast	\$ 0.20 S.F.			-
Plant Salvage & Replant: Tree Spade	\$ 50.00 each			-
Plant Salvage & Replant: By Hand	\$ 7.00 each		75	\$ 525.00
Potted Plantings (1 gal)	\$ 1.00 each		50	\$ 50.00
Cuttings Installation	\$ 30.00 LF			-
Bioengineering Practices	\$ 1,000.00 LS		1	\$ 1,000.00
Erosion Control Installation	\$ 3,100.00 week		1	\$ 3,100.00
Construction Monitoring				\$ 6,350.00
Construction Total				

Maintenance & Monitoring Costs

Invasive Weed Eradication maint	\$ 5,000.00 acre/year		0.5	\$ 2,000.00
Standard Maint (trash, weeds, erosion, etc)	\$ 4,000.00 acre/year			-
Hand/truck watering	\$ 800.00 acre/visit		5	\$ 10,000.00
LA/Bio monitoring of progress (qual & quan)	\$ 2,000.00 year		5	\$ 4,000.00
Reporting	\$ 800.00 year			\$ 16,000.00
M&M Total				\$ 26,660.00

Project Description
 Site 15 is roughly .1 acre in size, on the N side of Mulholland Hwy, just W of its intersection with Old Topanga Canyon Road S. The area contains a concrete drainage ditch paralleling the road. A clear area roughly 50'x50' surrounds it. The adjacent creek supports healthy riparian forest.

Recommendations
 1) Protect existing native plant material
 2) Plant riparian forest species.
 3) Actively maintain and monitor the site for 3-5 years.

Assumptions
 1) Construction drawings and specifications will not be necessary.
 2) Access is possible from Mulholland Hwy via a farm driveway.
 3) Supplemental watering will not be necessary.
 4) Planting will be done exclusively through container stock and cuttings.
 5) No substantial clearing or weeding will be necessary.

Project Benefits

Water Quality	Moderate
Habitat Improvement	Moderate
Flood conveyance	-
Groundwater recharge	Low
Aesthetics	Low
Public Safety	-
Permitting Difficulty	Low

Site Map and Photos
 Photos\DCC15\DSC02809.JPG
 Graphics & Figures\Site Locations\DCC-14-16.pdf



CITY of CALABASAS

Cost Estimation for DCC-16

Standard Rough Order of Magnitude Costs

Bid Item	Unit Cost	Units	Quant	Cost
Design Costs				
Field Investigation/Bio Surveying/Mapping	\$ 1,000.00	LS	1	\$ 1,000.00
Field Equipment	\$ 110.00	day	1	\$ 110.00
Topographic Survey	\$ 450.00	acre		-
Base Plan Preparation	\$ 650.00	LS		-
Conceptual Restoration Plan (map + narrative)	\$ 5,000.00	LS	1	\$ 5,000.00
Renderings, models or photosimulations	\$ 550.00	each		-
Grading Plan	\$ 2,500.00	acre		-
Planting Plan	\$ 1,600.00	acre		-
Irrigation Plan	\$ 3,000.00	acre		-
Erosion Control Plan	\$ 400.00	LS		-
Specifications	\$ 2,000.00	LS		-
Client review and coordination	\$ 800.00	year	1	\$ 800.00
ACOE Nationwide permit	\$ 6,000.00	LS		-
Water Quality Certification	\$ 3,000.00	LS		-
DFG 1600 agreement	\$ 1,000.00	LS	1	\$ 1,000.00
Design Total				\$ 7,910.00

Project Description
 Site 15 is roughly .25 acre (130'x50') in size, on the S side of Mulholland Hwy, just W of its intersection with Old Topanga Canyon Road S. The project area is a deeply channelled segment of creek with riprap side slopes at roughly 2:1 slope, 20' long. It is flanked by a horse riding arena on one side and a dirt parking area on the other. In-stream habitat consists of very good growth of narrow-leaved cattails, willows, etc. However, some growth of castor beans, exotic vine species on west side. Area appears to be stable. The site would benefit from increased plantings and a planted buffer to intercept sediments and pollutants from adjacent uses.

Recommendations
 1) Protect existing native plant material
 2) Plant riparian forest species in riprap voids.
 3) Establish a minimum 20' planted buffer at top of slope.
 4) Actively maintain and monitor the site for 3-5 years.

Assumptions
 1) Construction drawings and specifications will not be necessary.
 2) Access is possible from Old Topanga Road. Staging is possible in the dirt parking area.
 3) Supplemental watering will not be necessary.
 4) Monitoring will include water quality measurements to evaluate effectiveness of buffer

Project Benefits

Water Quality	High
Habitat Improvement	Moderate
Flood conveyance	-
Groundwater recharge	-
Aesthetics	Moderate
Public Safety	-
Permitting Difficulty	Low

Site Map and Photos
 Photos\DCC16\DCC16ChannelBottom.JPG
 Photos\DCC16\DCC16CulvertWZE.JPG
 Photos\DCC16\DCC16WZE.JPG
 Graphics & Figures\Site Locations\DCC-14-16.pdf

Bid Item	Unit Cost	Units	Quant	Cost
Construction Costs				
Preconstruction Surveys (sensitive species)	\$ 600.00	LS	1	\$ 600.00
Mobilization / Demobilization	\$ 3,000.00	LS	1	\$ 3,000.00
Large Tree removal	\$ 650.00	each		-
Clearing and Grubbing	\$ 2,330.00	acre	0.15	\$ 2,250.00
Invasive Weed Kill (Arundo, Tamarisk, etc.)	\$ 15,000.00	acre		-
Traffic Control	\$ 400.00	day		-
Earthwork (balanced)	\$ 20.00	cyd		-
Earthwork (imported fill)	\$ 33.00	cyd		-
Earthwork (disposal of cut)	\$ 16.00	cyd		-
In-stream structures (boulders, logs, etc)	\$ 600.00	each		-
Site/Plant Protection (flagging/fencing)	\$ 1,500.00	acre	0.15	\$ 225.00
Seeding: Hydroseeding	\$ 0.10	S.F.	2178	\$ 217.80
Seeding: Imprinting	\$ 0.05	S.F.		-
Seeding: Hand Broadcast	\$ 0.20	S.F.		-
Plant Salvage & Replant: Tree Spade	\$ 50.00	each		-
Plant Salvage & Replant: By Hand	\$ 7.00	each	60	\$ 420.00
Potted Plantings (1 gal)	\$ 1.00	each	50	\$ 50.00
Cuttings Installation	\$ 30.00	LF		-
Bioengineering Practices	\$ 1,000.00	LS	1	\$ 1,000.00
Erosion Control Installation	\$ 3,100.00	week	1	\$ 3,100.00
Construction Monitoring				
Construction Total				\$ 10,862.80
Maintenance & Monitoring Costs				
Invasive Weed Eradication maint	\$ 5,000.00	acre/year		-
Standard Maint (trash, weeds, erosion, etc)	\$ 4,000.00	acre/year	0.75	\$ 3,000.00
Hand/Truck watering	\$ 800.00	acre/visit	5	\$ 4,000.00
LA/Bio monitoring of progress (qual & quan)	\$ 2,500.00	year	5	\$ 12,500.00
Reporting	\$ 800.00	year	5	\$ 4,000.00
M&M Total				\$ 19,500.00
Project Total				\$ 38,272.80



Cost Estimation for DCC-17

Standard Rough Order of Magnitude Costs

Bid Item	Unit Cost	Units	Quant	Cost
Design Costs				
Field Investigations/Bio Surveying/Mapping	\$ 500.00 LS		1	\$ 500.00
Field Equipment	\$ 110.00 day		1	\$ 110.00
Topographic Survey	\$ 450.00 acre			
Base Plan Preparation	\$ 650.00 LS			
Conceptual Restoration Plan (map + narrative)	\$ 2,000.00 LS		1	\$ 2,000.00
Renderings, models or photosimulations	\$ 650.00 each			
Grading Plan	\$ 2,500.00 acre			
Planting Plan	\$ 1,600.00 acre			
Irrigation Plan	\$ 3,000.00 acre			
Erosion Control Plan	\$ 400.00 LS			
Specifications	\$ 2,000.00 LS			
Client review and coordination	\$ 800.00 year		1	\$ 800.00
ACOE Nationwide permit	\$ 6,000.00 LS			
Water Quality Certification	\$ 3,000.00 LS			
DFG 1600 agreement	\$ 1,000.00 LS		1	\$ 1,000.00
Design Total				\$ 4,410.00

Construction Costs

Preconstruction Surveys (sensitive species)	\$ 600.00 LS		1	\$ 600.00
Mobilization / Demobilization	\$ 3,000.00 LS		1	\$ 3,000.00
Large Tree removal	\$ 650.00 each			
Clearing and Grubbing	\$ 2,330.00 acre			
Invasive Weed Kill (Arundo, Tamarisk, etc.)	\$ 15,000.00 acre		0.5	\$ 7,500.00
Traffic Control	\$ 400.00 day			
Earthwork (balanced)	\$ 20.00 cyd			
Earthwork (Imported fill)	\$ 33.00 cyd			
Earthwork (disposal of cut)	\$ 16.00 cyd			
In-stream structures (boulders, logs, etc)	\$ 500.00 each			
Site/Plant Protection (flagging/fencing)	\$ 1,500.00 acre		0.5	\$ 750.00
Seeding: Hydruseeding	\$ 0.10 S.F.			
Seeding: Imprinting	\$ 0.05 S.F.			
Seeding: Hand Broadcast	\$ 0.20 S.F.			
Plant Salvage & Replant: Tree Spade	\$ 50.00 each			
Plant Salvage & Replant: By Hand	\$ 7.00 each			
Potted Plantings (1 gal)	\$ 1.00 each			
Cuttings Installation	\$ 30.00 LF			
Bioengineering Practices	\$ 1,000.00 LS		1	\$ 1,000.00
Erosion Control Installation	\$ 500.00 week		1	\$ 500.00
Construction Monitoring				
Construction Total				\$ 13,350.00

Maintenance & Monitoring Costs

Invasive Weed Eradication maint	\$ 5,000.00 acre/year		2.5	\$ 12,500.00
Standard Maint (trash, weeds, erosion, etc)	\$ 1,000.00 acre/year		2.5	\$ 2,500.00
Hand/truck watering	\$ 800.00 acre/visit			
LA/Bio monitoring of progress (qual & quan)	\$ 2,500.00 year		5	\$ 12,500.00
Reporting	\$ 800.00 year		5	\$ 4,000.00
M&M Total				\$ 31,500.00
Project Total				\$ 49,260.00

Project Description
 Site 17 is roughly .5 acre (400'x50') in size, on the W side of Old Topanga Road, 1/4 mile S of its intersection with Mulholland Hwy. Streambed width approx. 10 feet. Flow rather stagnant. East bank covered with Vinca major. Excellent stream-side shading of willow, coast live oak, walnut. Debris on southwest area of the bank, including an old out-building.

Recommendations
 1) Protect existing native plant material
 2) Eradicate Vinca (roughly .5 acre)
 3) Remove debris and structure.
 4) Actively maintain and monitor the site for 3-5 years.

Assumptions
 1) Construction drawings and specifications will not be necessary.
 2) Access is possible from Old Topanga Road. Parking along side of the road, but is dangerous.
 3) Planting will not be necessary.

Project Benefits

Water Quality	-
Habitat Improvement	Moderate
Flood conveyance	-
Groundwater recharge	-
Aesthetics	Low
Public Safety	-
Permitting Difficulty	Low

Site Map and Photos
 Photos\DCC17\DCC17LowerEngS2N.JPG
 Photos\DCC17\DCC17MiddleN2S.JPG
 Photos\DCC17\DCC17MiddleS2N.JPG
 Photos\DCC17\DSC02818.JPG
 Graphics & Figures\Site_Locations\DCC-17.pdf



CITY of CALABASAS

Cost Estimation for DCC-19

Standard Rough Order of Magnitude Costs

Bid Item	Unit Cost	Units	Quant	Cost
Design Costs				
Field Investigation/Bio Surveying/Mapping	\$ 3,000.00	LS	1	\$ 3,000.00
Field Equipment	\$ 110.00	day	2	\$ 220.00
Topographic Survey	\$ 450.00	acre	3	\$ 1,350.00
Base Plan Preparation	\$ 650.00	LS	1	\$ 650.00
Conceptual Restoration Plan (map + narrative)	\$ 5,000.00	LS	1	\$ 5,000.00
Renderings, models or photosimulations	\$ 650.00	each		-
Grading Plan	\$ 2,500.00	acre		-
Planting Plan	\$ 1,600.00	acre		-
Irrigation Plan	\$ 3,000.00	acre		-
Erosion Control Plan	\$ 400.00	LS		-
Specifications	\$ 2,000.00	LS		-
Client review and coordination	\$ 800.00	year	1	\$ 800.00
ACOE Nationwide permit	\$ 6,000.00	LS		-
Water Quality Certification	\$ 3,000.00	LS		-
DFG 1600 agreement	\$ 1,000.00	LS		-
Design Total				\$ 11,020.00
Construction Costs				
Preconstruction Surveys (sensitive species)	\$ 600.00	LS		-
Mobilization / Demobilization	\$ 3,000.00	LS		-
Large Tree removal	\$ 650.00	each		-
Clearing and Grubbing	\$ 2,330.00	acre		-
Invasive Weed Kill (Arundo, Tamarisk, etc.)	\$ 15,000.00	acre		-
Traffic Control	\$ 400.00	day		-
Earthwork (balanced)	\$ 20.00	cyd		-
Earthwork (Imported fill)	\$ 33.00	cyd		-
Earthwork (disposal of cut)	\$ 16.00	cyd		-
In-stream structures (boulders, logs, etc)	\$ 500.00	each		-
Site/Plant Protection (flagging/fencing)	\$ 1,500.00	acre		-
Seeding: Hydroseeding	\$ 0.10	S.F.		-
Seeding: Imprinting	\$ 0.05	S.F.		-
Seeding: Hand Broadcast	\$ 0.20	S.F.		-
Plant Salvage & Replant: Tree Spade	\$ 50.00	each		-
Plant Salvage & Replant: By Hand	\$ 7.00	each		-
Potted Plantings (1 gal)	\$ 1.00	each		-
Cuttings Installation	\$ 30.00	LF		-
Bioengineering Practices	\$ 1,000.00	LS		-
Erosion Control Installation	\$ 500.00	week		-
Construction Monitoring				-
Construction Total				\$ -
Maintenance & Monitoring Costs				
Invasive Weed Eradication maint	\$ 5,000.00	acre/year		\$ -
Standard Maint (trash, weeds, erosion, etc)	\$ 1,000.00	acre/year		\$ -
Hand/truck watering	\$ 800.00	acre/visit		\$ -
LA/Bio monitoring of progress (qual & quan)	\$ 2,500.00	year		\$ -
Reporting	\$ 800.00	year		\$ -
M&M Total				\$ -
Project Total				\$ 11,020.00

Project Description
 We were unable to locate DCC19 during our field investigations. The reach of stream noted in the masterplan mapping is a straight, channelized section pinched between the road and some rural/residential landuses to the west. Dense stream associated vegetation- willow riparian with a few walnut. Stream channel width approx. 15 feet (bed). Left bank approx. 10 feet high, rith bank approx. 5 feet high. Rip rap on west bank, flow less than approx. 2 cfs. The entire reach would benefit from increased riparian width, increased bank stability, and re-establishing meanders. This reach would require substantially more field investigation to get a realistic view of the project feasibility.

Recommendations
 Investigate the area further to better document existing conditions and needs, and to investigate opportunities and constraints, particularly with regard to adjacent land uses.

Assumptions
 1) Costs shown only for further investigation and conceptual design.

Project Benefits

Water Quality	unknown
Habitat Improvement	unknown
Flood conveyance	unknown
Groundwater recharge	unknown
Aesthetics	unknown
Public Safety	unknown
Permitting Difficulty	unknown

Site Map and Photos
 Photos\DCC19\DCC19E2W.JPG
 Graphics & Figures\Site Locations\DCC-19.pdf



CITY of CALABASAS

Cost Estimation for Other Dry Canyon Creek Sites

Construction Code	Project Codes	Project Description	Study & Design Cost	Construction & Inspection Cost	Total Design & Construction	Projected O & M Costs	Comments	Priority
QD-01	DCC-01	Stabilize headcut (behind Prof. Office bldg & above shopping center, Mulholland across from Motion Picture prop. vacant lot)	7,500	20,750	28,250	3,000	Construct 01&02 together	Low
	DCC-02	Stabilize banks (near LDS church and 3 private homes)	11,250	37,500	48,750	5,000	on private property	Low
			18,750	58,250	77,000	8,000		Low
QD-02	DCC-07	Stabilize banks and Channels (below Park Ora Rd. XCing)	7,500	17,000	24,500	5,000	oppConcr crib wall	Low
	DCC-09	Reduce Flow Velocity (above and below Wrencrest Dr. Culvert)	3,000	10,200	13,200	3,000	construct 09-10A as 1 project	
	DCC-10A	Remove barriers to fish movement (Wrencrest Culvert)	7,500	30,000	37,500	5,000	in gated communit	
			18,000	57,200	75,200	13,000		
QD-03	DCC-10B	Remove barriers to fish movement (Mtn. Restoration Headwaters Corner)	5,000	20,000	25,000	5,000	Construct 10B-12 as 1 project	
	DCC-011	Stabilize Headcut (above Old Topanga Cyn. XCing)	5,000	14,000	19,000	15,000		
	DCC-012	Redesign Culverted Crossing (Topanga Cyn. crossing)	10,000	32,500	42,500	5,000	cost based on sim. Q project	High
	DCC-018	Remove Concrete Channel Segments and Restore Wetlands (Mulholland corner blw Old Topanga Cyn. Intersect.)	5,000	18,000	23,000	5,000	Mtn. Rst. Trust headwtr	Medium
	DCC-020	Monitor Channel for Further Incision (channel segment between headwtrs corner and Viewpoint School)	500	8,000	8,500	5,000	survey every 2 yrs, after major 25+ storm	High
			25,500	92,500	118,000	35,000		
QD-04	DCC-021	Remove Concrete Bottom (Viewpoint School)	10,000	66,000	76,000	5,000	highly constnd	
	DCC-022	Stabilize Headcut (steep cyn below Calabasas Highlands and Mtn Park Dr.)	5,000	19,000	24,000	5,000	feasible?? steep wooded cyn. poor access	Low
			15,000	85,000	100,000	10,000		
QD-05	DCC-023	Revegetate Exposed Soil- (roadside area below Calabasas Highlands)	500	8,000	8,500	2,000	reveg. costs @ \$45k/acre	Low



Dry Canyon Creek (DCC) – Notes/Assumptions

	<p>DC - 01 Stabilize headcut – private property – Located behind 23251 Mulholland, professional office Bldg. ± 75-100 l.f. of bank failure immediately downstream of concrete channel section. Bank height ± 6 – 8' – very shady, with large mature oaks. Lay bank back, with willow rock toe, coir upper bank, Level 2 bank construction 75 l.f. x \$250/l.f. = \$18,750 plus \$2,000 for inspection is \$20,750. O&M costs – coir restaking and plant maintenance – allow \$3,000. Low priority.</p>
<p>DC - 02 – Stabilize banks - private property – ± 150 l.f. of intermittent/ localized bank failure behind private homes on Mulholland backing up to LDS Church parcel. Bank height 6-8 feet, very shady, willows, sycamores, oaks, standing water. Lay bank slopes back and install rock toe – level 2 costs 150 l.f. @ \$250 = \$37,500, \$5,000 O&M.</p>	<p>Construct DC1 & DC-01 & DC - 02 as 1 project projects DC-1, 2 in City of Woodland Hills, not City of Calabasas.</p>
<p>DC-07 – Stabilize banks and channel – City of Calabasas channel. Local bank failure problem upstream of Park Ora Rd. 50 ft. level 3 – channel has concrete crib wall on east side, above Park Ora Rd., natural channel bank west side – 50 ft. level 3 at \$300/ft = \$15,000. Inspection allow \$2,000 for total design and construction cost of \$17,000. City responsibility as some City maintenance crew doing willow clearing – allow \$5,000 O&M –</p>	<p>DC- 9 – Reduce flow velocity City of Calabasas Channel Some evidence of high velocity and channel downcutting. Add planted rock channel boulders and drop structure. 80 l.f. + 30 l.f. = 110 l.f. x5' of rock depth = 550 cubic feet of rock. 20.3 cu yds. X 15% expansion = 23 cu. Yds x 2.5 tons/cubic yd. = 60 tons rock, planted at \$120/ton = \$7,200.00 Allow \$3,000 field design/inspection for total \$10,200.</p>
<p>DC-10a – Fish passage barrier –Grouted bottom and high velocity barrier at Vicoso Drive, above Park Ora – Wrencrest Dr. – Private bridge crossing. Remove grouted structure and construct series of step pools, fix failing apron base culvert – allow \$10,000 for rock work, work on culvert & apron plus 3 drop structures/ rock weirs/ step pools @ \$5,000 = \$15,000 = \$25,000. Allow \$5,000 for inspection and field direction. Total \$30,000</p>	<p>DC-10B – Remove fish passage barrier – Mtn. Restoration Trust - Allow \$20,000 for design and inspection of minor barrier.</p>
<p>DCC – 11 – Stabilize headcut – Did not clearly see channel failure, channel fairly small in this area. Failure appears to be 50 feet in length. So assume 50 l.f. of Level 2 bank restoration @ \$250/l.f. = \$12,500. \$12,500 + \$1,500 field inspection = \$14,000 total. Planted rock toe. O&M – Site maintenance = \$5,000/year – 3 years = \$15,000</p>	<p>DC12 – Redesign culverted crossing – Private, non-profit Mountain Restoration Trust property at headwaters corner. 'Partially collapsed 54" CMP culvert, protected by stacked concrete slabs, partial flow blockage. Replace with 10' wide x 30' pre-fabricated steel bridge. Typical bridge, including abutments, and installation is \$1,000/ft. so \$30,000 - allow \$2,500 inspection. Total \$32,500.</p>



<p>DC-18 – Remove concrete channel segments and restore wetlands --- This is private channel behind Equestrian Facility at 23200 Mulholland Rd. Several small bridges cross creek in this area. The channel has been straightened and partially lined with loose rock walls, rock slope, and in some areas. Channel is about 500-600' long, with about 15-20% hardened or about 160 feet. Total hard structures. Channel side slopes poorly vegetated/shaded. Work would involve breaking up grouted rock areas and installing pvc pipe container openings/or joint planting willows, planting willow stakes in and around rock, and adding coir fiber rolls. Most of the work could be done by a CCC crew. Work would take 1 crew week or 5 crew days. A crew day is about \$2,000, so \$10,000, plus equipment rental and materials of \$5,000. Allow \$15,000 plus \$3,000 for field engineering and inspection = \$18,000. Allow \$2,000/yr x 2 yrs. for O&M = \$4,000.</p>
<p>DC – 20 Monitor channel for further incision –Min. Restoration Trust & City/State Parks land – some field evidence of incision, complete topographic bed profile and cross-section survey – 150' transect spacings-digital photos, compare to old records - \$8,000 survey effort, including periodic surveys at cross sections. - \$5,000 O&M for resurvey.</p>
<p>DC – 21 – Remove concrete bottom - ± 200 l.f. of concrete grouted channel within Viewpoint Primary School <u>Tough job – high risk of flooding and channel incision if concrete is removed.</u> Questionable Feasibility -- would need to convince school a stable channel can be built, and do work over summer. 200 l.f. x \$300/l.f. = \$60,000. Plus 4 days obserbation at \$1500/day = \$6,000 for total of \$66,000. Probably replace concrete with open cell planting blocks, and add flood wall at top of bank. High design, communication, and permitting costs.</p>
<p>DC-22 – Stabilize headcut – private property, but City probably has maintenance easement. Low priority, heavily wooded section w/very poor construction access – did not see site, saw eroded area w/ binoculars from Mulholland Drive. Because of poor construction access, try to stabilize headcut w/fiber rolls and willow cutting. Assume 200 l.f. of 2 fiber rolls @ = 400 l.f. at \$40/l.f. = \$16,000 plus \$3,000 observation = \$19,000.</p>
<p>DC – 23 – Revegetate exposed soils –probably private property, but City may have flood control maintenance easement. Small area of base soil on channel upper bank – dry site plant xeric plants and re-seed, straw or coir wattles Allow \$8,000 – This area low priority, instability probably associated with head of canyon fill -- opposite Oakridge Terrace</p>