MINUTES OF THE BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

Sachi A. Hamai, Executive Officer-
Clerk of the Board of Supervisors
383 Kenneth Hahn Hall of Administration
Los Angeles, California 90012

At its meeting held October 31, 2006, the Board took the following action:

64

The following item was called up for consideration:

Hearing on proposed amendment to the Antelope Valley Final Report on the Comprehensive Plan of Flood Control and Water Conservation, to increase the fees for drainage facilities to be paid by subdividers in the Antelope Valley Drainage Area (5), and provide for the annual review and adjustment of such fees corresponding to future increases in the Construction Cost Index for the Los Angeles area, as further described in the attached letter dated August 31, 2006 from the Director of Public Works.

Bruce Hamamoto, representing the Department of Public Works testified. Opportunity was given for interested persons to address the Board. No interested persons addressed the Board. No correspondence was presented.

On motion of Supervisor Knabe, seconded by Supervisor Burke, unanimously carried (Supervisors Molina and Antonovich being absent), the Board closed the hearing and took the following actions:

1. Approved the attached Amendment to the Antelope Valley Final Report on the Comprehensive Plan of Flood Control and Water Conservation which increases the fees for drainage facilities to be paid by subdividers, in the Antelope Valley Drainage area; and

(Continued on Page 2)

64 (Continued)

2. Instructed the Director of Public Works to provide for the annual review and adjustment of such fees corresponding to future increases in the Construction Cost Index for the Los Angeles area, beginning July 1, 2007, and thereafter on each succeeding July 1, and make a recommendation to the Board to adjust the fees, if necessary.

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Attachment

Copies distributed:
Each Supervisor
Auditor-Controller
Chief Administrative Office
County Counsel
Director of Public Works

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

DONALD L. WOLFE, Director

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ALHAMBRA, CALIFORNIA 91803-1331
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P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

IN REPLY PLEASE
REFER TO FILE: WM-6

August 31, 2006

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

Dear Supervisors:

AMENDMENT TO THE ANTELOPE VALLEY FINAL REPORT ON THE COMPREHENSIVE PLAN OF FLOOD CONTROL AND WATER CONSERVATION
SUPERVISORIAL DISTRICT 5
3 VOTES

IT IS RECOMMENDED THAT YOUR BOARD, AFTER A PUBLIC HEARING:

Approve the enclosed Amendment to the Antelope Valley Final Report on the Comprehensive Plan of Flood Control and Water Conservation (Plan), which increases the fees for drainage facilities to be paid by subdividers in the Antelope Valley Drainage Area, pursuant to County Code, Section 21.32.400, and provides for the annual review and adjustment of such fees corresponding to future increases in the Construction Cost Index for the Los Angeles area.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

In 1987 your Board approved the Plan prepared by the County of Los Angeles Department of Public Works. The goal of the Plan is to address drainage issues created by development in the absence of a coordinated regional flood control district. The Plan requires developers of new subdivisions in County unincorporated areas of the Antelope Valley Drainage Area to pay an impact fee that would eventually fund the planning, design, and construction of the Plan's proposed infrastructure. To date, these fees have paid for regional coordination and planning efforts and the acquisition of right of way for future drainage facilities.

The Plan contains provisions for updating costs and drainage fee calculations, but to date there have been no fee increases. Since 1987 the Construction Cost Index shows that costs have significantly increased. At the same time, development of the Antelope Valley has increased and is expected to continue. Annexation and zoning have altered the type and amount of development in the Antelope Valley Drainage Area. Therefore, we propose that the existing fees be revised to reflect the updated cost of construction and the current type and amount of development occurring within the Antelope Valley Drainage Area. The supporting data for the proposed fee increase, including detailed engineering quantity, costs, and analysis is enclosed (Attachments 1-11).

The fees set forth herein shall be reviewed annually by the Director of Public Works. Beginning on July 1, 2007, and thereafter on each succeeding July 1, the amount of each fee shall be adjusted as follows: calculate the percentage movement between March of the previous year and March of the current year in the Construction Cost Index for all urban construction in the Los Angeles area, as published by the Engineering News Record statistics, adjust each fee by the said percentage amount and round up to the nearest dollar. However, no adjustment shall decrease any fee and no fee shall exceed the reasonable cost of providing services. When it is determined that the amount reasonably necessary to recover the cost of providing services is in excess of this adjustment, the Director may present fee revision proposals to the Board of Supervisors for approval.

Implementation of Strategic Plan Goals

This action meets the County Strategic Plan Goal of Fiscal Responsibility by providing a sufficient fund for future planning, design, and construction of drainage facilities in the Antelope Valley.

FISCAL IMPACT/FINANCING

There is no impact to the County General Fund. The fee increase will increase the revenue for the Antelope Valley Drainage Fee District Fund.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

The Antelope Valley Drainage Area fees are imposed on developers pursuant to Section 66483, et seq., of the Government Code. Section 66483 authorizes the County to impose, by ordinance, a requirement for the payment of fees to defray the actual or

estimated costs of constructing planned drainage facilities for the removal of surface and stormwater from local or neighborhood drainage areas.

The County's ordinance implementing this authorization, generally, is codified in Section 21.32.400 of the Los Angeles County Code.

The Antelope Valley Drainage Area in particular was adopted in 1987 by Ordinance 87-0083, based on the Plan.

Part V., Section E of the Plan provides as follows:

> Development of the land located within the Antelope Valley Drainage Area is not constant nor is the cost of construction. Therefore, in order to equitably assess future development as well as collect sufficient funds to construct those facilities attributable to future development, it is necessary to periodically evaluate the Construction Cost Index and the type and amount of development being constructed within the Antelope Valley Drainage Area. With this information, the drainage fee may be increased or decreased as appropriate.

Pursuant to Section 66018 of the Government Code, prior to adopting an ordinance, resolution, or other legislative enactment approving an increase in an existing fee, the County must hold a public hearing at which oral or written presentations can be made. Notice of the time and place of the meeting, including a general explanation of the matter to be considered, must be published in accordance with Section 6062(a) of the Government Code. Section 6062(a) requires that the notice be published for ten days in a newspaper regularly published once a week or more often, or in two publications with at least five days intervening between the dates of first and last publication not counting such publication dates being sufficient.

The enclosed Amendment has been reviewed by County Counsel and approved as to form.

ENVIRONMENTAL DOCUMENTATION

A Negative Declaration for the Plan was approved by your Board in connection with the adoption of the Antelope Valley Drainage Area on June 23, 1987.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

There would be no adverse impact on current services.

CONCLUSION

Please return three adopted copies of this letter to Public Works.

Respectfully submitted,

DONALD L. WOLFE
Director of Public Works

BH:ad
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Enc.

cc: Auditor-Controller
Chief Administrative Office
County Counsel

AMENDMENT TO ANTELOPE VALLEY FINAL REPORT ON THE COMPREHENSIVE PLAN OF FLOOD CONTROL AND WATER CONSERVATION, JUNE 1987

The Los Angeles County Department of Public Works hereby proposes the following amendments to the Antelope Valley Final Report on the Comprehensive Plan of Flood Control and Water Conservation dated June 1987 (Plan).

Section IV.E, paragraphs 1 and 2, page 6, of the Plan are hereby amended to read as follows:

> The comprehensive plan proposes flood plain management in the hillside areas of the valley, nonstructural management approaches in the rural areas, and structural improvements in the urbanizing area. The structural improvements proposed for the urbanizing areas of the valley include 8 basins ranging in size from 30 to 150 acres, 119 miles of open channels, and 72 miles of storm drains.
>
> The estimated total cost of the Plan for both the unincorporated and incorporated areas, including acquisition of necessary rights of way is:

Basins	$222,018,617.80
Channels	869,037,246.00
Storm Drains	311,945,040.00
Total Cost	$1,403,000,903.80

Section V.D on pages 8 and 9 of the Plan is hereby amended to read as follows:

> Future development in the Antelope Valley will increase storm runoff and will contribute to the need for management of storm runoff. Without the comprehensive plan, the threat of flood damage could impede the approval of additional development due to the health and safety risks involved. In order to ensure the equitable involvement of the private sector in financing the drainage facilities attributable to future development in the unincorporated County territory, the proposed drainage fee is based on the extent future development occurs in the unincorporated County territory and either benefits from construction of the drainage facilities funded by the comprehensive plan or contributes to the need for the comprehensive plan.
>
> The cost of that portion of the comprehensive plan attributable to future development in the unincorporated areas of the Antelope Valley is determined as follows:

Total Cost of plan	$1,403,000,903.80
Cost attributable to incorporated territory	-851,975,058.00
Cost attributable to existing development in unincorporated areas	-67,649,261.05
Cost attributable to future development in unincorporated areas	$483,376,584.75

The benefits realized by existing entities and development will be funded from local and Federal sources, such as the Cities of Lancaster and Palmdale, the City of Los Angeles Department of Airports, Edwards Air Force Base, U.S.A.F. Plan 42, and the County of Los Angeles.

The three categories used in calculating the drainage fee are related to intensity of land use and the proportionate contribution to the increase in runoff. These categories are single-family development, multifamily development, and commercial/industrial development. A multifamily development contributes approximately one-half as much runoff as a single-family development, and one acre of commercial/industrial development contributes runoff approximately equivalent to five single-family units on the same acre.

It is anticipated that future divisions of land within the Antelope Valley Drainage Area will create approximately 54,087 single-family lots, 5,207 multifamily dwelling units, and 6,333 acres of commercial development. These divisions were calculated by the County of Los Angeles Department of Public Works based on data in the Department of Regional Planning's Zoning Ordinance Summary and current and projected development trends.

An equation can be written to calculate the drainage fee based on the cost of the plan attributable to future development, the relative contribution of runoff from each category of land use, and anticipated future divisions of land.

SFDF = Single-family drainage fee
MFDF = Multifamily drainage fee = ½ SFDF
CDDF = Commercial/Industrial development drainage fee = 5 SFDF

Anticipated Future Development X Drainage Fee per Development = Cost of the Project Attributable to Future Development.

(54,087 units) (SFDF) + (5,207 units) (1/2 SFDF) + (6,333 acres) (5SFDF) = $483,376,584.75

(88,355 SFDF) = $483,376,584.75 SFDF = $ 5,471

Therefore, the proposed drainage fee for 2006 should be:

Single-family Unit	$ 5,500*
Multifamily Unit	$ 2,750*
Acre Commercial/ Industrial Land	$27,500*

* Figures are rounded up per the Los Angeles County Auditor-Controller.

In order to lessen the short-term impact to the development community, drainage fees will be phased in pursuant to the schedule depicted in the following table. On July 1, 2009, there will be a one-time adjustment to bring the 2006 fees to current 2009 values per the CCI.

Schedule	$ Per SFR Unit	$ Per Multifamily Unit	$ Per Comm./Indus. Acre
Effective 60 days after adoption	3,200	1,600	16,000
Effective July 1, 2007	4,400	2,200	22,000
Effective July 1, 2008	5,500	2,750	27,500
Effective July 1, 2009	2006 fees would be brought to 2009 values per a CCI adjustment and adjusted annually thereafter as proposed in Section V.E.		

Section V. E., commencing on page 9 of the Plan is hereby amended to read as follows:

Development of the land located within the Antelope Valley Drainage Area is not constant nor is the cost of construction. Therefore, in order to equitably assess future development as well as collect sufficient funds to construct those facilities attributable to future development, it is necessary to periodically evaluate the Construction Cost Index and the type and amount of development being constructed within the Antelope Valley Drainage Area. With this information, the drainage fee may be increased or decreased as appropriate.

Additionally, beginning on July 1, 2010, and thereafter on July 1 of each succeeding year, the fees set forth herein shall be reviewed by the Director of Public Works and the amount of each fee shall be adjusted as follows: calculate the percentage movement between March of the previous year and March of the current year in the Construction Cost Index for all urban construction in the Los Angeles area, as published by the Engineering News Record statistics, and adjust each fee by said percentage amount and round up to the nearest dollar. No adjustment shall decrease any fee. The foregoing notwithstanding, the fees set forth herein shall not exceed the estimated reasonable cost of providing the services and facilities described in this Plan. If it is determined that the reasonable amount necessary to recover the costs of providing the services and facilities described in this Plan exceeds this adjustment, the Director of Public Works may present fee proposals to the Board of Supervisors for approval.

Date 10/19/06

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

By _____
Fa Deputy

APPROVED AS TO FORM:

RAYMOND G. FORTNER, JR.
County Counsel

By _____
Deputy County Counsel

BH:sv
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DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN'S DRAINAGE FEES
REVENUE AND EXPENDITURE COMPARISON
FY 2002-03 THROUGH FY 2004-05

Description	FY 2002-03	FY 2003-04	FY 2004-05	Total
Revenues [1]:				
Revenue Source 8322 - Excavation Permit-Act Cost	0.00	535.01	0.00	535.01
Revenue Source 8605 - Interest from Treasury Pool Deposi	10,880.59	7,741.09	17,111.21	35,732.89
Revenue Source 9358 - Road Maint. Services	0.00	0.00	11,732.03	11,732.03
Revenue Source 9360 - Contract Cities - Traffic Control	0.00	1,678.93	0.00	1,678.93
Revenue Source 9883 - Developer Fees	136,000.00	214,000.00	59,500.00	409,500.00
Total	**146,880.59**	**223,955.03**	**88,343.24**	**459,178.86**
Expenditures [2]:				
C6140367 - Exc - Jando Drive 1690	0.00	535.01	0.00	535.01
H0300167 - M&R Rainga Sta N of Fcd Boudy	9,011.37	6,963.53	6,047.03	22,021.93
T91034000 - Signal Plan Review - JAS	127.00	0.00	0.00	127.00
E0389504 - Ant Valley Mstr Pln Study-N	0.00	765.86	1,011.81	1,777.67
F3053580 - Slurry Squirrel Holes	0.00	805.52	0.00	805.52
H0300205 - Public Safe N of Fcd Boundry	0.00	89.75	0.00	89.75
R9LCF13722 - 13722 Curb/Walk Perm. Repairs 04/05	0.00	0.00	0.01	0.01
Total	**9,138.37**	**9,159.67**	**7,058.85**	**25,356.89**
Over/(Under) Recovered	**137,742.22**	**214,795.36**	**81,284.39**	**433,821.97**
Percentage of Expenditure Over/Underrecovered [3]	**1507.30%**	**2345.01%**	**1151.52%**	**1710.86%**

Footnotes:

(1) Revenue data was acquired by Fund 106 Antelope Valley Drainage Fee - V42 from the Revenue Financial Analysis Inquiry window in the Financial Accounting System.

(2) Expenditure data was acquired by Fund 106 Angelope Valey Drainage Fee - V42 from the Expenditure Financial Analysis Inquiry window in FAS.

(3) The Percentage of Expenditure Over/Underrecovered was computed by dividing the amount of Over/(Under) Recovered by the Total Expenditures.

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
PROPOSED ANTELOPE VALLEY COMPREHENSIVE PLAN DRAINAGE FEES

	A	B=A*5280	C	D=B*C	E=D*25%	F=D+E
Infrastructure Type	**Miles or Each[1]**	**Linear Feet**	**Unit Cost [2]**	**Construction Cost**	**25% Design Cost [3]**	**Total Cost**
Open Channel	32	168,960	$ 1,106.49	$ 186,952,550.40	$ 46,738,137.60	$ 233,690,688.00
Closed Conduit	22	116,160	$ 656.45	$ 76,253,232.00	$ 19,063,308.00	$ 95,316,540.00
Detention/Retention Basin	8		$ 22,201,861.78	$ 177,614,894.24	$ 44,403,723.56	$ 222,018,617.80
Total				**$ 440,820,676.64**	**$ 110,205,169.16**	**$ 551,025,845.80**

	A	B	C	D = (A+B) * C
Type of Lot	**Number of Undeveloped Units or Acres [4]**	**Number of Developed Units or Acres [5]**	**Single-Family Drainage Fee Equivalent**	**Total Number of Single-Family Drainage Fees**
Single-Family	54,087	7,107	1.00	61,194.00
Multi-Family	5,207	715	0.50	2,961.00
Commercial/Industrial	6,333	980	5.00	36,565.00
Total	**65,626.97**	**8,802.00**		**100,720.00**

Single-Family Drainage Fee = Total Infrastructure Cost / Total Number of SFDF	**$5,470.87**
Multi-Family Drainage Fee = 1/2 Single-Family Drainage Fee	**$2,735.44**
Commercial/Industrial Development Drainage Fee = 5 * Single-Family Drainage Fee	**$27,354.35**

Proposed Single-Family Drainage Fee Per Lot	**$5,471**
Proposed Multi-Family Drainage Fee Per Lot	**$2,736**
Proposed Commercial/Industrial Development Drainage Fee Per Acre	**$27,355**

Footnotes:

(1) Public Works' Mapping and Property Management Division produced a digital version of the 1987 Antelope Valley Drainage Study map to determine the amount of open channel, closed conduit, and detention/retention basins required within the unincorporated portion of the Antelope Valley.

(2) See Attachments 3, 4, and 5 for calculation of unit costs of open channel, closed conduit, and detention/retention basin, respectively.

(3) This includes Preliminary Engineering, Project Management, and Inspection costs.

(4) See Attachment 6 for the total number of potential single-family lots, multi-family lots, and the commercial/industrial acreage available within the the unincorporated areas of the region.

(5) See Attachment 11 for the total number of developed single-family lots, multi-family lots, and the commercial/industrial acreage available within the the unincorporated areas of the region.

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY 12-FOOT WIDE BY 8-FOOT HIGH OPEN CHANNEL COST ESTIMATE
FISCAL YEAR 2005-06

	Item Description	Quantity	Unit Cost	Unit of Measure	Extension	Total Cost
1	Construction Schedule [1]	10	$ 1,575.91	Man Total Hour	$ 15,759.10	
2	Implementation of Best Management Pratices [1]	100%	$ 13,319.81	Lump Sum	$ 13,319.81	
3	Storm Water Pollution Prevention Plan [1]	100%	$ 11,717.35	Lump Sum	$ 11,717.35	
4	Restoration of Existing Improvements [1]	100%	$ 45,070.42	Lump Sum	$ 45,070.42	
5	Shoring of Open Excavations [2]	25,520	$ 35.38	Cubic Yard	$ 902,897.60	
6	Office Facilities [1]	100%	$ 15,466.70	Lump Sum	$ 15,466.70	
7	Mobilization [1]	100%	$ 167,499.22	Lump Sum	$ 167,499.22	
8	Structure Excavation [1 & 3]	24,341	$ 14.26	Cubic Yard	$ 347,102.66	
9	Asphalt Concrete Pavement [1 & 4]	1,569	$ 100.00	Ton	$ 156,900.00	
10	Crushed Aggregate Base [1 & 5]	1,174	$ 90.00	Cubic Yard	$ 105,660.00	
11	12'-0" W x 8'-0" H Rectangular Channel, Sect 1 [6]	5,280	$ 572.59	Linear Foot	$ 3,023,275.20	
12	Chain Link Right of Way Fence, 5' High [7]	10,560	$ 13.40	Linear Foot	$ 141,504.00	
13	Chain Link Channel Wall Fence, 5' High [8]	10,560	$ 12.42	Linear Foot	$ 131,155.20	
14	4' High walk Gate [1]	2	$ 425.53	Each	$ 851.06	
15	12' Double Drive Gate [1]	2	$ 1,034.28	Each	$ 2,068.56	
	Total cost estimate based on one mile stretch					**$ 5,080,246.88**
	Plus 15% contingency					**$ 762,037.03**
	Total cost estimate based on one mile stretch plus 15% contingency				**(a)**	**$ 5,842,283.91**
	Estimated cost per linear foot = (a) / 5,280					**$ 1,106.49**

Assumptions made in the calculation of 12' x 8' typical rectangular channel cost per linear foot:

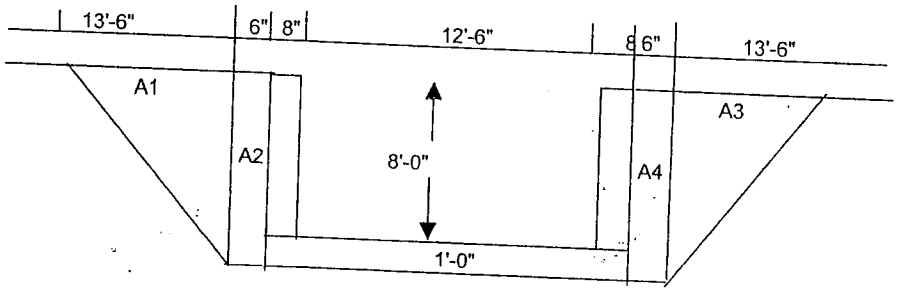
- General slope = 1%.
- 32 miles of open channel with 1% slope capacity
- Flow of water is 1,590 cubic foot per second.
- No utility interference.
- No ground water, health & safety issue included in this estimate

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY 12-FOOT WIDE BY 8-FOOT HIGH OPEN CHANNEL COST ESTIMATE
FISCAL YEAR 2005-06

Footnotes:

(1) See Schedule J for the unit costs of Construction Schedule, Implementation of BMPs, Stormwater Pollution Prevention plan, Restoration of Exist Improvements, Office Facilities, Mobilization, Structure Excavation, AC Pavement, Crushed Aggregate Base, Chain Link ROW Fence, Chain Link Channel Wall Fences, 4' High Walk Gate, and 12' Double Drive Gate.

(2) See figure below for the calculation of Total cubic yards for Shoring of Open Excavation:



Area of A1 = (13.5*9)*1/2 = 60.75 square feet
Area of A2 = (0.5*9)* = 4.50 square feet
Total area of A1 and A2 = 60.75 + 4.50 square feet = 65.25 square feet
Total area of A1, A2, A3, and A4 = 65.25 *2 square feet = 130.50 square feet

Total cubic yard = (130.50 square feet * 5,280 feet) / 27 feet = 25,520.00

Unit cost of the Shoring of Open Excavation was based on the average tem bid of the Little Dalton Debris Dam Seismic Modifications project:

Item Description	Engineer's Estimate	Low Bidder Item Bid	Average Item Bid	Adjustment Factor	CCI Adjusted Item Bid
Structure Excavation	$ 10.00	$ 10.00	$ 31.87	1.11	**$ 35.38**

Bid Date	Feb-04	(a)
ENR's CCI for Los Angeles for February 2004	7690.52	(b)
ENR's CCI for Los Angeles for June 2006	8546.72	©
Adjustment Factor	1.11	(d) = c / b

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY 12-FOOT WIDE BY 8-FOOT HIGH OPEN CHANNEL COST ESTIMATE
FISCAL YEAR 2005-06

(3) Total cubic yards for Structure Excavation:

Total cubic yard = (13.83 feet * 9 feet * 5,280 feet) / 27 = 24,340.80

(4) Asphalt Concrete Pavement is assumed 4-inch thick and 12 feet wide.

Total cubic feet for 1 mile of asphalt concrete pavement = (0.33 foot * 12 feet * 5,280 feet) = 20,908.80

One cubic foot of aspahlt concrete pavement required 150 pounds of concrete

Total tonnage of concrete required for 1 mile of asphalt concrete pavement = (20,908.80 cubic feet * 150 pounds) / 2,000 = 1,568.16

(5) Crushed Aggregate Base (CAB) is assumed 6-inch thick and 12 feet wide

Total cubic yard for 1 mile of CAB = (0.50 foot * 12 feet * 5,280 feet) / 27 = 1,173.33

(6) See Schedule I for Rectangular Channel cost.

(7) Total linear feet for chain link right of way fence = 5,280 *2 = 10,560

(8) Total linear feet for chain link channel fence wall = 5,280 *2 = 10,560

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY CLOSED CONDUIT COST ESTIMATE
FISCAL YEAR 2005-06

	Item Description	Quantity	Unit Cost	Unit of Measure	Extension	Total Cost
1	Construction Schedule [1]	5	$ 1,575.91	Man Total Hour	$ 7,879.55	
2	Implementation of Best Management Pratices [1]	100%	$ 13,319.81	Lump Sum	$ 13,319.81	
3	Storm Water Pollution Prevention Plan [1]	100%	$ 11,717.35	Lump Sum	$ 11,717.35	
4	Restoration of Existing Improvements [1]	100%	$ 45,070.42	Lump Sum	$ 45,070.42	
5	Shoring of Open Excavations [2]	5,280	$ 61.48	Linear Foot	$ 324,614.40	
6	Office Facilities [1]	100%	$ 15,466.70	Lump Sum	$ 15,466.70	
7	Mobilization [1]	100%	$ 167,499.22	Lump Sum	$ 167,499.22	
8	Asphalt Concrete Pavement [1 & 3]	1,177	$ 100.00	Ton	$ 117,700.00	
9	Crushed Aggregate Base [1 & 4]	880	$ 90.00	Cubic Yard	$ 79,200.00	
10	72" RCP, 1350D [5]	5,236	$ 395.92	Linear Foot	$ 2,073,037.12	
11	Catch Basin System [6]	100%	$ 111,168.88	Lump Sum	$ 111,168.88	
12	Manhole Per Standard Plan 321 [7]	11	$ 4,301.00	Each	$ 47,311.00	
	Total cost estimate based on one mile stretch					**$ 3,013,984.45**
	Plus 15% contingency					**$ 452,097.67**
	Total cost estimate based on one mile stretch plus 15% contingency					**$ 3,466,082.12**
	Estimated cost per linear foot = (a) / 5,280				**(a)**	**$ 656.45**

Assumptions made in the calculation of one mile stretch cost of the storm drain are:
- Slope used for Hydraulic Calculation ~ 1%
- Flow of water is 450 cubic feet per second based on 1% slope and project is 22 miles long
- No compacted fill, minor clearing & grubbing
- Permanent resurfacing to be 4" Aspahlt Concrete on 6" Crushed Aggregate Base
- No utility interference
- No Right of Way Cost, no Right of Way fences
- No ground water encountered; No contaminate soil encountered

Footnotes:

(1) See Schedule J for the unit costs of Construction Scheule, Implementation of BMPs, Stormwater Pollution Prevention plan, Restoration of Existing Improvements, Office Facilities, Mobilization, AC Pavement, and Crushed Aggregate Base.

(2) See Schedule H for the unit cost of shoring per linear foot.

(3) Asphalt concrete pavement is assumed 4-inch thick and 9 feet wide.
Total cubic feet for 1 mile of asphalt concrete pavement = (0.33 foot * 9 feet * 5,280 feet) = 15,681.60
One cubic foot of aspahlt concrete pavement required 150 pounds of concrete
Total tonnage of concrete required for 1 mile of asphalt concrete pavement = (15,681.60 cubic feet * 150 pounds) / 2,000 = 1,176.12

(4) Crushed Aggregate Base (CAB) is assumed 6-inch thick and 9 feet wide
Total cubic yards for 1 mile of CAB = (0.50 foot * 9 feet * 5,280 feet) / 27 = 880.00

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY CLOSED CONDUIT COST ESTIMATE
FISCAL YEAR 2005-06

Notes:

(5) See Schedule G for the unit cost 72" RCP per linear foot.

(6) See Schedule J for the unit costs of Catch Basin Screeen, Manhole per Std Plan 322, Junction Structure, 18" RCP, 21" RCP and 42" RCP which are the components of the Catch Basin System.

Item Description	Quantity	Unit Cost	Unit of Measure	Extension	Total Cost
Catch Basin Screen	6	$ 5,061.10	Each	$30,366.60	
Manhole per standard plan 322	2	$ 7,039.10	Each	14,078.20	
Junction Structure	4	$ 1,391.02	Each	5,564.08	
18" Reinforced Concrete Pipe	100	$ 109.19	Linear Foot	10,919.00	
21" Reinforced Concrete Pipe	200	$ 109.92	Linear Foot	21,984.00	
42" Reinforced Concrete Pipe	150	$ 188.38	Linear Foot	28,257.00	
Total					**$111,168.88**

(7) Unit cost of the Manhole per Std Plan 321 was based on the low bidder item bid of the Ninth Avenue Drain

Item Description	Engineer's Estimate	Low Bidder Item Bid	Average Item Bid	Adjustment Factor	CCI Adjusted Item Bid
Manhole per Std Plan 321	$ 3,738.00	$ 3,910.00	$ 3,686.00	1.10	$ 4,301.00

Bid Date of Nine Avenue Drain	May-04	(a)
ENR's CCI for Los Angeles for May 2004	7803.52	(b)
ENR's CCI for Los Angeles for June 2006	8546.72	©
Adjustment Factor	1.10	(d) = c / b

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY DETENTION/RETENTION BASIN COST ESTIMATE
FISCAL YEAR 2005-06

A Right of Way Acquisition Cost [1]

Item Description	Quantity	Unit of Measure	Unit Cost	Extension	Total Cost
Area required per basin	50	Acre	$ 55,000.00	$ 2,750,000.00	
					$ 2,750,000.00

B Excavation Cost [2]

Item Description	Volume (cubic feet)	Volume (cubic yd)	Unit Cost per Cubic Yard	Extension	Total Cost
Excavation cost for basin with dimension =20' x 1,800' x 800	28,800,000	1,066,666.67	$ 11.83	$ 12,618,666.67	
					$ 12,618,666.67

C Infrastructure Costs [3]

Item Description	Quantity	Unit of Measure	Unit Cost	Extension	Total Cost
Access road/ramp [a]	5,126	Ton	$ 100.00	$ 512,600.00	
Perimeter Wall [b]	36,000	Square foot	$ 52.37	$ 1,885,320.00	
Associated piping, valves, pumping [c]	1,000	Linear foot	$ 656.45	$ 656,450.00	
Landscaping [d]	1	Lump Sum	$ 380,236.98	$ 380,236.98	
Irrigation [e]	1	Lump Sum	$ 241,740.07	$ 241,740.07	
					$ 3,676,347.05

D Other Costs [4]

Item Description	Quantity	Unit of Measure	Unit Cost	Extension	Total Cost
Construction Schedule	5	Man Total Hours	$ 1,575.91	$ 7,879.55	
Implementation of Best Management Pratices	100%	Lump Sum	13,319.81	$ 13,319.81	
Storm Water Pollution Prevention Plan	100%	Lump Sum	11,717.35	$ 11,717.35	
Restoration of Existing Improvements	100%	Lump Sum	45,070.42	$ 45,070.42	
Office Facility	100%	Lump Sum	15,466.70	$ 15,466.70	
Mobilization	100%	Lump Sum	167,499.22	$ 167,499.22	
					$ 260,953.05

Total estimated cost for one detention/retention basin	**$ 19,305,966.77**
Plus 15% contingency	**$ 2,895,895.02**
Total estimated cost for one detention/retention basin plus 15% contingency	**$ 22,201,861.78**

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY DETENTION/RETENTION BASIN COST ESTIMATE
FISCAL YEAR 2005-06

Footnotes:

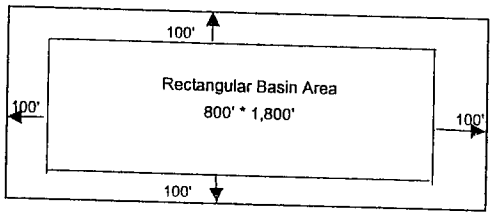
(1) A search in the Palmdale/Lancaster area for open land plots at least 40 acres in size produced a high end cost of $55,000/acre. Geologic conditions and drainage needs constrain the location of the right of way acquisitions.

(2) Excavation cost is for basin with depth = 20 feet, length = 1,800 feet, and width = 800 feet. Volume Removed = Basin Width*Basin Length*Basin Depth
The excavation unit cost is based on the average item bid for Vernon Channel - Fieldbrook Debris Basin adjusted with Engineering News Record's (ENR's) Construction Cost Index (CCI) for Los Angeles for June 2006. Below shown the calculation of excavation unit cost:

Bid date	May 2001	(a)
ENR's CCI for Los Angeles for December 2001 [5] =	7226.92	(b)
ENR's CCI for Los Angeles for June 2006 =	8546.72	(d)
Engineer's Estimate for unclassified excavation cost per cubic yard =	$0.00	
Low Bidder Item Bid for unclassifed excavation cost per cubic yard [6] =	$10.00	(e)
Average Item Bid for unclassifed excavation cost per cubic yard =	$8.35	
Adjustment Factor =	1.18	(f) = d / b
CCI adjusted item bid for unclassifiec excavation cost per cubic yard =	**$11.83**	(g) = e * f

(3) The following assumptions are used in the calculation for various infrastructure costs:

(a) The access roads within the 2,000 feet by 1,000 feet basin are assumed to be 6-inch thick and 20 feet wide and the access ramp is assumed at 200 * 100 square feet. See Schedule J for the unit cost of the AC Pavement .



Total cubic feet for the access roads and ramp = (((2,000' * 20')+(2,000' *20')+(960' * 20')+(960' * 20')+(100' * 200'))*0.5')
Total cubic feet for the access roads and ramp = 69,200
Total cubic yard for the access roads and ramp = 2,563
Total tonnage of asphalt concrete needed * = 5,126
* one cubic yard required 2 tons of asphalt concrete

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WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY DETENTION/RETENTION BASIN COST ESTIMATE
FISCAL YEAR 2005-06

Footnotes:

(b) The perimeter wall unit cost is based on the average item bid for 126th Street Et Al. adjusted with Engineering News Record's (ENR's) Construction Cost Index (CCI) for Los Angeles for June 2006. Below shown the calculation of perimeter wall unit cost:

Bid date	April 2002	(a)
ENR's CCI for Los Angeles for December 2002 [5] =	7402.75	(b)
ENR's CCI for Los Angeles for June 2006 =	8546.72	(d)
Engineer's Estimate for unclassifed perimeter wall per square foot =	$8.00	
Low Bidder Item Bid for unclassifed perimeter wall per square foot =	$14.00	
Average Item Bid for unclassifed perimeter wall per square foot [6] =	$45.36	(e)
Adjustment Factor =	1.15	(f) = d / b
Adjusted average item bid for unclassifiec excavation cost per cubic yard =	**$52.37**	(g) = e * f

The wall around the basin is assumed with height of 6 feet.
Total area for the perimeter wall (square feet) ((2,000' * 2' +1,000' * 2'))*6'
Total area for the perimeter wall (square feet) = 36,000

(c) A basin with dimension of 1,000 by 2,000 feet will require 1,000 feet of pipe to bring water in and out of the basin. Unit cost @ $657.01 is the weighted average item bids of the following six projects adjusted with ENR's CCI for Los Angeles as of June 2006. See Schedule D for the calculation of unit cost.

Fairplex Drain
Ward Channel Invert & Connector Pipe Repairs
Altadena System Lincoln Debris Basin Enlargement
Beverly Pico Drain, Unit 2
Vernon Channel - Fieldbrook Debris Basin
Busby Drain & Cash Contract 7643

(d) Average item bid of $377,500 for Paseo Del Rio San Gabriel Coastal Basin Spreading Gorunds, Phase 2, Multiuse Improvement adjusted with ENR's CCI for Los Angeles for June 2006 is used due to the said project had similar size of the proposed basin. Below shown the calculation of the adjusted landscapin cost:

Bid Date	September 2005	(a)
ENR's CCI for Los Angeles for September 2005 =	8485.20	(b)
ENR's CCI for Los Angeles for June 2006 =	8546.72	(d)
Engineer's Estimate for landscaping =	$257,780	
Low Bidder Item Bid for landscaping =	$325,000	
Average Item Bid for landscaping [6] =	$377,500	(e)
Adjustment Factor =	1.01	(f) = d / b
Adjusted average item bid for landscaping =	**$380,236.98**	(g) = e * f

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY DETENTION/RETENTION BASIN COST ESTIMATE
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Footnotes:

(e) Average item bid of $240,000 for Paseo Del Rio San Gabriel Coastal Basin Spreading Gorunds, Phase 2, Multiuse Improvement adjusted with ENR's CCI for Los Angeles for June 2006 is used due to the said project had similar size of the proposed basin. Below shown the calculation of the adjusted irrigation cost:

Bid Date	September 2005	(a)
ENR's CCI for Los Angeles for September 2005 =	8485.20	(b)
ENR's CCI for Los Angeles for June 2006 =	8546.72	(d)
Engineer's Estimate for irrigation =	$156,612	
Low Bidder Item Bid for irrigation =	$225,000	
Average Item Bid for irrigation [6] =	$240,000	(e)
Adjustment Factor =	1.01	(f) = d / b
Adjusted average item bid for irrigation =	**$241,740.07**	(g) = e * f

(4) See Schedule J for the unit costs of Construction Schedule, Implementation of BMPS, Stormwater Pollution Plan, Restoration of Existing Improvement, Office Facilities, and Mobilization.

(5) Used Engineering News Record (ENR) published Construction Cost Index (CCI) for Los Angeles to adjust the base price. ENR traditionally published the CCI in December on a year to year basis. Due to construction costs increased significantly in recent year, ENR began published CCI on a month to month basis since January 2004. CCI for December will be used for projects with bid date prior 2004.

(6) Antelope Valley is a region in which various assumptions are required at this stage, including the location, size, and costs of various drainage need for the associated future developments. As such, the greatest amount among the Engineer's Estimate, Low Bidder Item Bid, and Low Bidder Item Bid is used as the base price to determine the CCI adjusted unit cost.

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN
NUMBER OF POTENTIAL SINGLE-FAMILY LOTS, MULTI-FAMILY LOTS, AND
THE COMMERCIAL/INDUSTRIAL ACREAGE WITHIN THE UNINCORPORATED AREAS

SINGLE-FAMILY [1]

NUMBER	ZONE	(A) Sum_AREA (ft^2)	(B) = A / 43,560 Sum_AREA (acre)	(C) Min_Z_DESC	(D) Permitted Uses	(E) MIN	(F) = A / E SA_MIN (ft^2/ft^2)
33	R-A-1	128610514	2952	Residential agriculture	single family residences	5000	25722
34	R-A-10000	115489926	2651	Residential agriculture	single family residences	10000	11548
35	R-A-12000	29384858	675	Residential agriculture	single family residences	12000	2448
36	R-A-15000	6569008	151	Residential agriculture	single family residences	15000	437
37	R-A-2	3332940	77	Residential agriculture	single family residences	5000	666
38	R-A-2.5	5571686	128	Residential agriculture	single family residences	5000	1114
39	R-A-20000	24048310	552	Residential agriculture	single family residences	20000	1202
40	R-A-30000	9319160	214	Residential agriculture	single family residences	30000	310
41	R-A-40000	12269279	282	Residential agriculture	single family residences	40000	306
42	R-A-7000	3315092	76	Residential agriculture	single family residences	7000	473
43	R-A-7500	55903000	1283	Residential agriculture	single family residences	7500	7453
44	RPD-10000-13U	706002	16	Residential planned development		10000	70
45	RPD-20000-3U	300238	7	Residential planned development		20000	15
46	RPD-20000-7.5U	223933	5	Residential planned development		20000	11
55	R-1-10000	2578608	59	Single-family residence		10000	257
56	R-1-12000	767665	18	Single-family residence		12000	63
57	R-1-15000	936394	21	Single-family residence		15000	62
58	R-1-20000	7095404	163	Single-family residence		20000	354
59	R-1-7500	11820244	271	Single-family residence		7500	1576

Single-Family Totals (ft^2)	**418,242,260**
Totals (acre)	**9,602**
Totals (mi^2)	**15**

Number of Single-Family Residences **54,087**

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN
NUMBER OF POTENTIAL SINGLE-FAMILY LOTS, MULTI-FAMILY LOTS, AND
THE COMMERCIAL/INDUSTRIAL ACREAGE WITHIN THE UNINCORPORATED AREAS

MULTI-FAMILY (RESIDENTIAL) UNITS (1)

NUMBER	ZONE	(A) Sum_AREA (ft^2)	(B) = A / 43,560 Sum_AREA (acre)	(C) Min_Z_DESC	(D) Permitted Uses	(E) MIN	(F) = A / E SA_MIN (ft^2/ft^2)
27	R-3	3836498	88	Limited multiple residence	Apartment Houses	1450	2645
28	R-3-20U	3131608	72	Limited multiple residence	Apartment Houses	1450	2159
29	R-3-P	517589	12	Limited multiple residence	Apartment Houses	1450	356
60	R-2	6318	0	Two-family residence	Duplex	2500	2
61	R-2-15000	191273	4	Two-family residence	Duplex	15000	12
62	R-2-20000	668478	15	Two-family residence	Duplex	20000	33

Multi-Family Units
Totals (ft^2) **8,351,763**
Totals (acre) **192**
Totals (mi^2) **0.30**

Number of Multi-Family Residences **5,207**

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WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN
NUMBER OF POTENTIAL SINGLE-FAMILY LOTS, MULTI-FAMILY LOTS, AND
THE COMMERCIAL/INDUSTRIAL ACREAGE WITHIN THE UNINCORPORATED AREAS

COMMERCIAL/INDUSTRIAL [1]

NUMBER	ZONE	(A) Sum_AREA (ft^2)	(B) = A / 43,560 Sum_AREA (acre)	(C) Min_Z_DESC	(D) Permitted Uses	(E) MIN	(F) = A / E SA_MIN (ft^2/ft^2)
2	C-H	466698	11	Commercial highway		1	466698
3	CPD	473136	11	Commercial planned development		5000	94
4	C-R	14010178	322	Commercial recreation		217800	64
13	M-2	29251291	672	Heavy manufacturing		1	29251291
14	M-2-DP	722392	17	Heavy manufacturing		1	722392
15	M-2.5	73530145	1688	Heavy manufacturing		1	73530145
25	M-1	9778818	224	Light manufacturing		1	9778818
26	M-1-DP	198206	5	Light manufacturing		1	198206
30	C-2	3364280	77	Neighborhood commercial		1	3364280
31	C-2-DP	1376720	32	Neighborhood commercial		1	1376720
51	C-1	797112	18	Restricted business		1	797112
52	C-1-DP	51011	1	Restricted business		1	51011
53	M-1.5	121101693	2780	Restricted heavy manufacturing		1	121101693
63	C-3	20099994	461	Unlimited commercial		1	20099994
64	C-3-DP	244182	6	Unlimited commercial		1	244182
65	C-3-U/C	398382	9	Unlimited commercial		1	398382
	Commercial/Industrial Totals (ft^2)	**275,864,236**					
	Totals (acre)	**6,333**					
	Totals ($miles^2$)	**10**					

Footnote:

(1) Public Works' Mapping and Property Management Division produced a digital version of the 1987 Antelope Valley Drainage Study map, and used the Los Angeles County Department of Regional Planning's Zoning Ordinance Summary to develop the above tables depicting undeveloped unincorporated area and the planned zoning for single-family lots, multi-family lots, and commercial/industrial acreages.

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY 72-INCH REINFORCED CONCRETE PIPE ESTIMATE
FISCAL YEAR 2005-06

Construction Cost Index (CCI) Adjusted Item Bid Calculation

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(H)	(H)	(H)	(I)	(J) = I / H	(J) = Greatest of D or E or F * J
								Construction Cost Index [2]						
Project Name	Description	Trench Depth [1]	Length	Engineer's Estimate	Low Bidder Item Bid	Average Item Bid	Bid Date	Dec-01	Dec-02	Dec-03	Jun-04	Jun-06	Adjustment Factor	Adjusted Item Bid [2]
Fairplex Drain	72" RCP, 1450 D	16.00	455.00	$ 398.00	$ 250.00	$ 381.25	Jun-04				7843.85	8546.72	1.09	$ 433.66
Ward Channel Invert & Connector Pipe Repairs	72" RCP, 0800 D	10.50	16.00	$ 525.00	$ 965.00	$ 2,045.00	Apr-03			7531.77		8546.72	1.13	$ 2,320.58
Altadena System Lincoln Debris Basin Enlargement	72" RCP, 2000 D	16.00	157.00	$ 299.00	$ 165.00	$ 298.95	Apr-02		7402.75			8546.72	1.15	$ 345.21
Beverly Pico Drain, Unit 2	72" RCP, 0850 D	8.00	1,614.00	$ -	$ 224.97	$ 288.10	Jun-01	7226.92				8546.72	1.18	$ 340.71
Vernon Channel - Fieldbrook Debris Basin	72" RCP, 1550 D	22.00	84.00	$ -	$ 250.00	$ 349.00	May-01	7226.92				8546.72	1.18	$ 412.74
Busby Drain & Cash Contract 7643	72" RCP, 1400 D	20.00	726.00	$ -	$ 295.00	$ 347.08	Jun-01	7226.92				8546.72	1.18	$ 410.46

Weighted Average (CCI) Adjusted Item Bid Calculation

	(A)	(B)	(C)	(D)	(E) = B*C	(F)	(G) = E*F	(H) = G / E
Project Name	Description	Trench Depth	Length	Unit of Measure	Trench Depth * Length	Adjusted Item Bid	Total Cost	Weighted Average Item Bid
Fairplex Drain	72" RCP, 1450 D	16.00	455.00	Linear Foot	7,280.00	$ 433.66	$ 3,157,073.17	
Ward Channel Invert & Connector Pipe Repairs	72" RCP, 0800 D	10.50	16.00	Linear Foot	168.00	$ 2,320.58	$ 389,856.72	
Altadena System Lincoln Debris Basin Enlargement	72" RCP, 2000 D	16.00	157.00	Linear Foot	2,512.00	$ 345.21	$ 867,155.97	
Beverly Pico Drain, Unit 2	72" RCP, 0850 D	8.00	1,614.00	Linear Foot	12,912.00	$ 340.71	$ 4,399,294.19	
Vernon Channel - Fieldbrook Debris Basin	72" RCP, 1550 D	22.00	84.00	Linear Foot	1,848.00	$ 412.74	$ 762,734.91	
Busby Drain & Cash Contract 7643	72" RCP, 1400 D	20.00	726.00	Linear Foot	14,520.00	$ 410.46	$ 5,959,947.50	
Total					39,240.00		$ 15,536,062.45	$ 395.92

Assumptions

(1) Trench depth determined by "D Load Table" per Los Angeles County Flood Control District "Structural Design Manual" DWG No. 2-D213.3.

(2) Used Engineering News Record (ENR) published Construction Cost Index (CCI) for Los Angeles to adjust the base price. ENR traditionally published the CCI on a year to year basis. Due to construction costs significantly increased in recent year, ENR began published CCI on a month to month basis since January 2004. CCI for December will be used for project with bid date prior 2004.

(3) Antelope Valley is a region in which various assumptions are required at this stage, including the location, size, and costs of various drainage need for the associated future developments. As such, the greatest amount among the Engineer's Estimate, Low Bidder Item Bid, and Low Bidder Item Bid is used as the base price to determine 72" RCP cost

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ANTELOPE VALLEY SHORING COST ESTIMATE
FISCAL YEAR 2005-06

	(A)	(B)	(C)	(D)	(E) = B*C	(F) = 2*E
Project Name	Description	Trench Depth [1]	Length	Unit of Measure	Trench Depth * Length	Trench Depth * Length * 2
Fairplex Drain	24" RCP, 2000 D	11.00	511.00	Linear Foot	5,621.00	11,242.00
Fairplex Drain	18" RCP, 2000 D	10.50	111.00	Linear Foot	1,165.50	2,331.00
Fairplex Drain	36" RCP, 2000 D	13.00	579.00	Linear Foot	7,527.00	15,054.00
Fairplex Drain	42" RCP, 1700 D	13.50	937.00	Linear Foot	12,649.50	25,299.00
Fairplex Drain	48" RCP, 1700 D	14.00	509.00	Linear Foot	7,126.00	14,252.00
Fairplex Drain	54" RCP, 1600 D	14.50	1,498.00	Linear Foot	21,721.00	43,442.00
Fairplex Drain	60" RCP, 1600 D	15.00	10.00	Linear Foot	150.00	300.00
Fairplex Drain	66" RCP, 1500 D	15.50	487.00	Linear Foot	7,548.50	15,097.00
Fairplex Drain	72" RCP, 1450 D	16.00	455.00	Linear Foot	7,280.00	14,560.00
Fairplex Drain	30" RCP, 2000 D	12.50	668.00	Linear Foot	8,350.00	16,700.00
Fairplex Drain	90" Rubber Gasketed RCP, 1400 D	17.50	230.00	Linear Foot	4,025.00	8,050.00
Fairplex Drain	78" Rubber Gasketed RCP, 1450 D	16.50	959.00	Linear Foot	15,823.50	31,647.00
Fairplex Drain	60" Rubber Gasketed RCP, 1600 D	15.00	138.00	Linear Foot	2,070.00	4,140.00
Total					101,057.00	202,114.00

Calculation of Average Shoring per Linear Foot for Fairplex Drain Project

Shoring of Open Excavations [2]		
Engineer's Estimate		
Low Bidder Item Bid		$222,000.00
Average Item Bid		$494,800.00
Total Shoring Area	(a)	$716,716.70
Average Shoring per Square Foot	(b)	202,114.00
Bid Date	(d) = a/b	$3.55
Engineering News Record (ENR's) Construction Cost Index (CCI) for Los Angeles for June 2004		Jun-04
ENR's CCI for Los Angeles for June 2006	(e)	7843.85
Adjustment Factor	(f)	8546.72
CCI Adjusted Average Shoring per Linear Foot	(g) = f/e	1.09
	(h) = d*g	$3.86

	(A)	(B)	(C)	(D)	(E) = B*C	(F) = 2*E
Project Name	Description	Trench Depth	Length	Unit of Measure	Trench Depth * Length	Trench Depth * Length * 2
Ward Channel Invert & Connector Pipe Repairs	72" RCP, 0800 D	10.50	16.00	Linear Foot	168.00	336.00

Calculation of Average Shoring per Linear Foot for Ward Channel Invert & Connector Pipe Repairs Project

Shoring of Open Excavations [2]		
Engineer's Estimate		
Low Bidder Item Bid		$1,620.00
Average Item Bid		$1,650.00
Total Shoring Area	(a)	$6,825.00
Average Shoring per Square Foot	(b)	336.00
Bid Date	(d) = a/b	$20.31
ENR's CCI for Los Angeles for December 2003 [3]		Apr-03
ENR's CCI for Los Angeles for June 2006	(e)	7531.77
Adjustment Factor	(f)	8546.72
CCI Adjusted Average Shoring per Linear Foot	(g) = f/e	1.13
	(h) = d*g	$23.05

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WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY SHORING COST ESTIMATE
FISCAL YEAR 2005-06

	(A)	(B)	(C)	(D)	(E) = B*C	(F) = 2*E
Project Name	Description	Trench Depth	Length	Unit of Measure	Trench Depth * Length	Trench Depth * Length * 2
Altadena System Lincoln Debris Basin Enlargement	72" RCP, 2000 D	16.00	157.00	Linear Foot	2,512.00	5,024.00
Altadena System Lincoln Debris Basin Enlargement	36" RCP, 2000 D	13.00	108.00	Linear Foot	1,404.00	2,808.00
Altadena System Lincoln Debris Basin Enlargement	24" RCP, 2000 D	12.00	127.00	Linear Foot	1,524.00	3,048.00
Total					5,440.00	10,880.00

Calculation of Average Shoring per Linear Foot for Altadena System Lincoln Debris Basin Enlargement Project

Shoring of Open Excavations [2]		
Engineer's Estimate		
Low Bidder Item Bid	(a)	$9,000.00
Average Item Bid		$1,000.00
Total Shoring Area		$4,475.10
Average Shoring per Square Foot	(b)	10,880.00
Bid Date	(d) = a/b	$0.83
ENR's CCI for Los Angeles for December 2002 [3]		Apr-02
ENR's CCI for Los Angeles for June 2006	(e)	7402.75
Adjustment Factor	(f)	8546.72
CCI Adjusted Average Shoring per Linear Foot	(g) = f/e	1.15
	(h) = d*g	$0.96

	(A)	(B)	(C)	(D)	(E) = B*C	(F) = 2*E
Project Name	Description	Trench Depth	Length	Unit of Measure	Trench Depth * Length	Trench Depth * Length * 2
Beverly Pico Drain, Unit 2	18" RCP, 2000 D	10.50	146.00	Linear Foot	1,533.00	3,066.00
Beverly Pico Drain, Unit 2	54" RCP, 1100 D	8.75	43.00	Linear Foot	376.25	752.50
Beverly Pico Drain, Unit 2	72" RCP, 0850 D	8.00	1,614.00	Linear Foot	12,912.00	25,824.00
Total					14,821.25	29,642.50

Calculation of Average Shoring per Linear Foot for Beverly Pico Drain, Unit 2 Project

Shoring of Open Excavations [2]		
Engineer's Estimate		
Low Bidder Item Bid		$0.00
Average Item Bid		$39,997.35
Total Shoring Area	(a)	$65,344.48
Average Shoring per Square Foot	(b)	29,642.50
Bid Date	(d) = a/b	$2.20
ENR's CCI for Los Angeles for December 2001 [3]		Jun-01
ENR's CCI for Los Angeles for June 2006	(e)	7226.92
Adjustment Factor	(f)	8546.72
CCI Adjusted Average Shoring per Linear Foot	(g) = f/e	1.18
	(h) = d*g	$2.61

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY SHORING COST ESTIMATE
FISCAL YEAR 2005-06

	(A)	(B)	(C)	(D)	(E) = B*C	(F) = 2*E
Project Name	**Description**	**Trench Depth**	**Length**	**Unit of Measure**	**Trench Depth * Length**	**Trench Depth * Length * 2**
Vernon Channel - Fieldbrook Debris Basin	18" RCP, 2000 D	10.50	40.00	Linear Foot	420.00	840.00
Vernon Channel - Fieldbrook Debris Basin	42" RCP, 1500 D	8.50	44.00	Linear Foot	374.00	748.00
Vernon Channel - Fieldbrook Debris Basin	72" RCP, 1550 D	22.00	84.00	Linear Foot	1,848.00	3,696.00
Total					2,642.00	5,284.00

Calculation of Average Shoring per Linear Foot for Vernon Channel - Fieldbrook Debris Basin Project

Shoring of Open Excavations [2]		
Engineer's Estimate		$0.00
Low Bidder Item Bid		$14,800.00
Average Item Bid	(a)	$12,560.00
Total Shoring Area		5,284.00
Average Shoring per Square Foot	(b)	$2.80
Bid Date	(d) = a/b	May-01
ENR's CCI for Los Angeles for December 2001 [3]		7226.92
ENR's CCI for Los Angeles for June 2006	(e)	8546.72
Adjustment Factor	(f)	1.18
CCI Adjusted Average Shoring per Linear Foot	(g) = f/e	$3.31
	(h) = d*g	

	(A)	(B)	(C)	(D)	(E) = B*C	(F) = 2*E
Project Name	**Description**	**Trench Depth**	**Length**	**Unit of Measure**	**Trench Depth * Length**	**Trench Depth * Length * 2**
Busby Drain and Cash Contract 7643	24" RCP, 2250 D and Less	12.00	238.00	Linear Foot	2,856.00	5,712.00
Busby Drain and Cash Contract 7643	18" RCP, 2250 D and Less	11.50	1,204.00	Linear Foot	13,846.00	27,692.00
Busby Drain and Cash Contract 7643	36" RCP, 2000 D	13.00	211.00	Linear Foot	2,743.00	5,486.00
Busby Drain and Cash Contract 7643	48" RCP, 1700 D	14.00	85.00	Linear Foot	1,190.00	2,380.00
Busby Drain and Cash Contract 7643	48" RCP, 1500 D	13.00	784.00	Linear Foot	10,192.00	20,384.00
Busby Drain and Cash Contract 7643	48" RCP, 1400 D	17.00	991.00	Linear Foot	16,847.00	33,694.00
Busby Drain and Cash Contract 7643	42" RCP, 1700 D	13.50	486.00	Linear Foot	6,561.00	13,122.00
Busby Drain and Cash Contract 7643	78" RCP, 1550 D	22.50	495.00	Linear Foot	11,137.50	22,275.00
Busby Drain and Cash Contract 7643	78" RCP, 1250 D	18.50	1,064.00	Linear Foot	19,684.00	39,368.00
Busby Drain and Cash Contract 7643	78" RCP, 0900 D	10.50	495.00	Linear Foot	5,197.50	10,395.00
Busby Drain and Cash Contract 7643	72" RCP, 1400 D	20.00	726.00	Linear Foot	14,520.00	29,040.00
Total					104,774.00	209,548.00

Calculation of Average Shoring per Linear Foot for Busby Drain and Cash Contract 7643 Project

Shoring of Open Excavations [2]		
Engineer's Estimate		$0.00
Low Bidder Item Bid		$100,000.00
Average Item Bid	(a)	$169,662.62
Total Shoring Area	(b)	209,548.00
Average Shoring per Square Foot	(d) = a/b	$0.81
Bid Date		Jun-01
ENR's CCI for Los Angeles for December 2001 [3]	(e)	7226.92
ENR's CCI for Los Angeles for June 2006	(f)	8546.72
Adjustment Factor	(g) = f/e	1.18
CCI Adjusted Average Shoring per Linear Foot	(h) = d*g	$0.96

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY SHORING COST ESTIMATE
FISCAL YEAR 2005-06

	(A)	(B)	(D) = A*B	(E) = D/A
Project Name	Total Trench Depth * Length * 2	CCI Adjusted Average Shoring Cost per Linear Foot	Total CCI Adjusted Shoring Cost	CCI Adjusted Average Shoring Cost per Linear Foot
Fairplex Drain	202,114.00	$3.86	$780,940.09	
Ward Channel Invert & Connector Pipe Repairs	336.00	$23.05	$7,744.71	
Altadena System Lincoln Debris Basin Enlargement	10,880.00	$0.96	$10,390.80	
Beverly Pico Drain, Unit 2	29,642.50	$2.61	$77,277.87	
Vernon Channel - Fieldbrook Debris Basin	5,284.00	$3.31	$17,502.82	
Busby Drain and Cash Contract 7643	209,548.00	$0.96	$200,646.87	
Total	457,804.50		$1,094,503.16	$2.39

Average Trench Depth Calculation

	(A)	(B)	(C)	(D)	(E) = B*C	(F) = E / C
Project Name	Description	Trench Depth	Length	Unit of Measure	Trench Depth * Length	Average Trench Depth
Fairplex Drain	72" RCP, 1450 D	16.00	455.00	Linear Foot	7,280.00	
Ward Channel Invert & Connector Pipe Repairs	72" RCP, 0800 D	10.50	16.00	Linear Foot	168.00	
Altadena System Lincoln Debris Basin Enlargement	72" RCP, 2000 D	16.00	157.00	Linear Foot	2,512.00	
Beverly Pico Drain, Unit 2	72" RCP, 0850 D	8.00	1,614.00	Linear Foot	12,912.00	
Vernon Channel - Fieldbrook Debris Basin	72" RCP, 1550.D	22.00	84.00	Linear Foot	1,848.00	
Busby Drain & Cash Contract 7643	72" RCP, 1400 D	20.00	726.00	Linear Foot	14,520.00	
Total			3,052		39,240.00	12.86

Shoring Cost per Linear Foot =	CCI Adjusted Shoring Cost per Square Foot * Average Trench Depth * 2
Shoring Cost per Linear Foot =	$2.39 * 12.86 LF * 2
Shoring Cost per Linear Foot =	**$61.48**

Footnotes:

(1) Trench depth determined by "D Load Table" per Los Angeles County Flood Control District "Structural Design Manual" DWG No. 2-D213.3.

(2) Antelope Valley is a region in which various assumptions are required at this stage, including the location, size, and costs of various drainage need for the associated future developments. As such, the greatest amount among the Engineer's Estimate, Low Bidder Item Bid, and Low Bidder Item Bid is used as the base price to determine shoring cost.

(3) Used Engineering News Record (ENR) published Construction Cost Index (CCI) for Los Angeles to adjust the base price. ENR traditionally published the CCI on a year to year basis. Due to construction costs increased significantly in recent year, ENR began published CCI on a month to month basis since January 2004. CCI for December will be used for project projects with bid date prior 2004.

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY RECTANGULAR CHANNEL COST ESTIMATE
FISCAL YEAR 2005-06

	(A)	(B)	(C)	(D)	(E) = B*C	(F)	(F)	(F)	(G)	(H) = ((C *Greatest of F) / E)* G
Project Name	Description	Cubic Yard Per Linear Foot	Quantity	Unit of Measure	Total Quantity of Concrete (Cubic Yard)	Engineer's Estimate Per Linear Foot	Low Bidder Item Bid Per Linear Foot	Average Item Bid Per Linear Foot	Adjustment Factor	Rectangular Channel Concrete Cost Per Cubic Yard (1)
Buena Vista Channel	08'-00" W * 09'-06" H RCB, SECT 07	0.92	35.00	Linear Foot	32.20	$ 526.00	$ 690.00	$ 690.83	1.13	$ 848.52
Buena Vista Channel	07'-03" W * 04'-06" H RCB, SECT 06	0.70	32.00	Linear Foot	22.40	$ 358.00	$ 470.00	$ 552.17	1.13	$ 891.36
Buena Vista Channel	09'-00" W * 10'-00" H DBL RCB, SECT 09	1.70	12.00	Linear Foot	20.40	$ 1,000.00	$ 1,100.00	$ 1,399.50	1.13	$ 930.26
Buena Vista Channel (2)	09'-00" W * 08'-00" H DBL RCB, SECT 08	2.15	935.00	Linear Foot	2,010.25	$ 1,154.00	$ 560.00	$ 1,359.00	1.13	$ 714.27

Calculation of Adjustement Factor for Buena Vista Channel

Bid Date	May-03	(a)
Engineering News Record (ENR's) Construction Cost Index (CCI) for Los Angeles for June 2004	7531.77	(b)
ENR's CCI for Los Angeles for June 2006	8546.72	(c)
Adjustment Factor	1.13	(d) = c/b

	(A)	(B)	(C)	(D)	(E) = B*C	(F)	(F)	(F)	(G)	(H) = ((C *Greatest of F) / E)* G
Project Name	Description	Cubic Yard Per Linear Foot	Quantity	Unit of Measure	Total Quantity of Concrete, (Cubic Yard)	Engineer's Estimate Per Linear Foot	Low Bidder Item Bid Per Linear Foot	Average Item Bid Per Linear Foot	Adjustment Factor	Rectangular Channel Concrete Cost Per Cubic Yard (1)
Ninth Avenue Drain	08'-00" W * 02'-00" H RCB, SECT 02	0.68	381.00	Linear Foot	259.08	$ 418.00	$ 301.69	$ 430.67	1.10	$696.67
Ninth Avenue Drain	06'-00" W * 03'-00" H RCB, SECT 01	0.56	20.00	Linear Foot	11.20	$ 520.00	$ 604.35	$ 700.44	1.10	$1,375.86

Calculation of Adjustement Factor for Ninth Avenue Drain

Bid Date	May-04	(a)
ENR's CCI for Los Angeles for May 2004	7803.52	(b)
ENR's CCI for Los Angeles for June 2006	8546.72	(c)
Adjustment Factor	1.10	(d) = c/b

	(A)	(B)	(C)	(D)	(E) = B*C	(F)	(F)	(F)	(G)	(H) = ((C *Greatest of F) / E)* G
Project Name	Description	Cubic Yard Per Linear Foot	Quantity	Unit of Measure	Total Quantity of Concrete (Cubic Yard)	Engineer's Estimate Per Linear Foot	Low Bidder Item Bid Per Linear Foot	Average Item Bid Per Linear Foot	Adjustment Factor	Rectangular Channel Concrete Cost Per Cubic Yard (1)
Project No. 64, Eastern Avenue Storm Drain	07'-10" W * 05'-00" H RCB	0.99	58.00	Linear Foot	57.42	$ 332.00	$ 600.00	$ 906.63	1.03	$ 943.26
Project No. 64, Eastern Avenue Storm Drain	08'-06" W * 05'-00" H RCB	1.04	2,053.00	Linear Foot	2,135.12	$ 350.00	$ 500.00	$ 585.63	1.03	$ 580.00

Calculation of Adjustement Factor for Project No. 64, Eastern Avenue Storm Drain

Bid Date	Jun-05	(a)
ENR's CCI for Los Angeles for June 2005	8299.28	(b)
ENR's CCI for Los Angeles for June 2006	8546.72	(c)
Adjustment Factor	1.03	(d) = c/b

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WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY RECTANGULAR CHANNEL COST ESTIMATE
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Project Name	(A) Description	(B) Cubic Yard Per Linear Foot	(C) Quantity	(D) Unit of Measure	(E) = B*C Total Quantity of Concrete (Cubic Yard)	(F) Engineer's Estimate Per Linear Foot	(F) Low Bidder Item Bid Per Linear Foot	(F) Average Item Bid Per Linear Foot	(G) Adjustment Factor [3]	(H) = ((C *Greatest of F) / E)* G Rectangular Channel Concrete Cost Per Cubic Yard [1]
Beverly Pico Drain, Unit 2	10'-00" W * 02'-06" H RCB, SECT 10	0.85	10.00	Linear Foot	8.50	$ -	$ 1,000.00	$ 868.59	1.18	$ 1,388.24

Calculation of Adjustement Factor for Beverly Pico Drain, Unit 2

Bid Date	Jun-01	(a)
ENR's CCI for Los Angeles for December 2001	7226.92	(b)
ENR's CCI for Los Angeles for June 2006	8546.72	(c)
Adjustment Factor	1.18	(d) = c/b

Calculation of Concrete Cost per Cubic Yard Weighted by Volume

Project Name	Description	Total Quantity of Concrete (Cubic Yard)	Concrete Cost Per Cubic Yard	Total Rectangular Channel Concrete Cost	Weighted By Volume Concrete Cost Per Cubic Yard
Buena Vista Channel	08'-00" W * 09'-06" H RCB, SECT 07	32.20	$848.52	$27,322.33	
Buena Vista Channel	07'-03" W * 04'-06" H RCB, SECT 06	22.40	891.36	19,966.47	
Buena Vista Channel	09'-00" W * 10'-00" H DBL RCB, SECT 09	20.40	930.26	18,977.22	
Ninth Avenue Drain	09'-00" W * 08'-00" H DBL RCB, SECT 08	2,010.25	714.27	1,435,851.45	
Ninth Avenue Drain	08'-00" W * 02'-00" H RCB, SECT 02	259.08	696.67	180,493.80	
Project No. 64, Eastern Avenue Storm Drain	06'-00" W * 03'-00" H RCB, SECT 01	11.20	1,375.86	15,409.68	
Project No. 64, Eastern Avenue Storm Drain	07'-10" W * 05'-00" H RCB	57.42	943.26	54,162.08	
Beverly Pico Drain, Unit 2	08'-06" W * 05'-00" H RCB	2,135.12	580.00	1,238,367.34	
Total	10'-00" W * 02'-06" H RCB, SECT 10	8.50	1,388.24	11,800.00	
		4,556.57		$3,002,350.36	$658.91

Per Design Division, one linear foot require 0.79 cubic yard of concrete

Concrete Cost per linear foot =	$658.91 * 0.79
Concrete Cost per linear foot =	$520.54
Assume 10% Increase	
Concrete Cost per linear foot with 10 % increment =	$520.54 * 1.1
Concrete Cost per linear foot with 10 % increment [4] =	**$572.59**

Footnotes:

(1) Antelope Valley is a region in which various assumptions are required at this stage, including the location, size, and costs of various drainage need for the associated future developments. As such, the greatest amount among the Engineer's Estimate, Low Bidder Item Bid, and Low Bidder Item Bid is used as the base price to determine rectangular channel concrete cost per cubic yard.

(2) The Average Item Bid for some reason was bid at half the typical costs. Thus, Design multiplied the cost by 2 to be within cost proximities.

(3) Used Engineering News Record (ENR) published Construction Cost Index (CCI) for Los Angeles to adjust the base price. ENR traditionally published the CCI on a year to year basis. Due to construction costs significantly increased in recent y ENR began published CCI on a month to month basis since January 2004. CCI for December will be used for project with bid date prior 2004.

(4) Past bid history projects had different amounts of concrete amounts per linear feet. Such different amounts mean there are different volumes of concrete in cubic yard per linear foot. Hence, a weighted average volume is required to determine average cost per cubic yard for the past bid history projects, and then be converted into an average cost per linear foot.

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN UNIT COST ESTIMATE

Cost Estimate Type	Name of Project (A)	Bid Date (B)	Average Item Bid (C) [1]	Engineer's Estimate (D) [1]	Low Bidder Item Bid (E) [1]	Quantity (F)	CCI @ Bid Date (G) [2]	CCI @ June 2006 (H)	Adjustment Factor (I) = H / G	Greatest of Item Cost C, D or E Adjusted With Adjustment Factor (J) = C or D or E * I	Amount (K) = F * J	Weighted Average Unit Cost (L) = K / F
Construction Schedule	Buena Vista Channel	May-03	$ 816.67	$ 900.00	$ 2,300.00	10	7531.77	8546.72	1.13	$ 2,609.94	$ 26,099.38	
	Ninth Avenue Drain	May-04	$ 698.03	$ 925.00	$ 498.33	9	7803.52	8546.72	1.10	$ 1,013.10	$ 9,117.87	
	Project No. 64, Eastern Avenue Storm Drain	Jun-05	$ 890.00	$ 500.00	$ 500.00	8	8299.28	8546.72	1.03	$ 916.54	$ 7,332.28	
Total						27					**$ 42,549.53**	**$ 1,575.91**
Implementation of BMPs	Buena Vista Channel	May-03	$ 15,150.00	$ 10,000.00	$ 30,900.00	1	7531.77	8546.72	1.13	$ 35,063.96	$ 35,063.96	
	Gratian Street Drain	Dec-02	$ 1,641.67	$ 3,000.00	$ 500.00	1	7402.75	8546.72	1.15	$ 3,463.60	$ 3,463.60	
	Puddingstone Channel Invert Access Ramp	Apr-03	$ 3,639.29	$ 4,000.00	$ 8,050.00	1	7531.77	8546.72	1.13	$ 9,134.78	$ 9,134.78	
	Liberty Canyon Channel Access Ramp @ PD 572	Jun-04	$ 4,172.77	$ 2,000.00	$ 1,000.00	1	7843.85	8546.72	1.09	$ 4,546.68	$ 4,546.68	
	Ninth Avenue Drain	May-04	$ 14,323.80	$ 13,000.00	$ 15,238.00	1	7803.52	8546.72	1.10	$ 16,689.25	$ 16,689.25	
	Project No. 64, Eastern Avenue Storm Drain	Jun-05	$ 18,250.00	$ 10,000.00	$ 3,000.00	1	8299.28	8546.72	1.03	$ 18,794.12	$ 18,794.12	
	Beverly Pico Drain, Unit 2	Jun-01	$ 4,689.82	$ -	$ 1,000.00	1	7226.92	8546.72	1.18	$ 5,546.29	$ 5,546.29	
Total						7					**$ 93,238.68**	**$ 13,319.81**
Stormwater Pollution Prevention Plan	Buena Vista Channel	May-03	$ 5,000.00	$ 5,000.00	$ 11,000.00	1	7531.77	8546.72	1.13	$ 12,482.31	$ 12,482.31	
	Ninth Avenue Drain	May-04	$ 8,402.50	$ 10,000.00	$ 4,025.00	1	7803.52	8546.72	1.10	$ 10,952.39	$ 10,952.39	
Total						2					**$ 23,434.70**	**$ 11,717.35**
Restoration of Existing Improvements	Buena Vista Channel	May-03	$ 22,316.67	$ 30,000.00	$ 55,900.00	1	7531.77	8546.72	1.13	$ 63,432.85	$ 63,432.85	
	Gratian Street Drain	Dec-02	$ 3,127.33	$ 1,880.00	$ 4,100.00	1	7402.75	8546.72	1.15	$ 4,733.59	$ 4,733.59	
	Puddingstone Channel Invert Access Ramp	Apr-03	$ 4,114.64	$ 4,000.00	$ 10,005.00	1	7531.77	8546.72	1.13	$ 11,353.23	$ 11,353.23	
	Ninth Avenue Drain	May-04	$ 49,897.90	$ 92,000.00	$ 38,479.00	1	7803.52	8546.72	1.10	$ 100,761.99	$100,761.99	
Total						4					**$180,281.66**	**$ 45,070.42**

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN UNIT COST ESTIMATE

Cost Estimate Type	Name of Project (A)	Bid Date (B)	Average Item Bid (C) [1]	Engineer's Estimate (D) [1]	Low Bidder Item Bid (E) [1]	Quantity (F)	CCI @ Bid Date (G) [2]	CCI @ June 2006 (H)	Adjustment Factor (I) = H / G	Greatest of Item Cost C, D or E Adjusted With Adjustment Factor (J) = C or D or E * I	Amount (K) = F * J	Weighted Average Unit Cost (L) = K / F
Office Facilities	Buena Vista Channel	May-03	$ 18,650.00	$ 13,600.00	$ 25,900.00	1	7531.77	8546.72	1.13	$ 29,390.18	$ 29,390.18	
	Gratian Street Drain	Dec-02	$ 3,402.33	$ 2,550.00	$ 3,250.00	1	7402.75	8546.72	1.15	$ 3,928.10	$ 3,928.10	
	Ninth Avenue Drain	May-04	$ 13,429.90	$ 12,750.00	$ 11,299.00	1	7803.52	8546.72	1.10	$ 14,708.95	$ 14,708.95	
	Project No. 64, Eastern Avenue Storm Drain	Jun-05	$ 20,562.50	$ 5,000.00	$ 5,000.00	1	8299.28	8546.72	1.03	$ 21,175.56	$ 21,175.56	
	Beverly Pico Drain, Unit 2	Jun-01	$ 6,875.14	$ -	$ 3,000.00	1	7226.92	8546.72	1.18	$ 8,130.70	$ 8,130.70	
Total						**5**					**$ 77,333.49**	**$ 15,466.70**
Mobilization	Channel	May-03	$ 340,535.70	$ 300,000.00	$ 413,214.20	1	7531.77	8546.72	1.13	$ 468,897.23	$468,897.23	
	Gratian Street Drain	Dec-02	$ 7,961.67	$ 4,700.00	$ 8,000.00	1	7402.75	8546.72	1.15	$ 9,236.26	$ 9,236.26	
	Ninth Avenue Drain	May-04	$ 188,197.30	$ 200,000.00	$ 147,973.00	1	7803.52	8546.72	1.10	$ 219,047.81	$219,047.81	
	Project No. 64, Eastern Avenue Storm Drain	Jun-05	$ 68,126.25	$ 30,000.00	$ 5,000.00	2	8299.28	8546.72	1.03	$ 70,157.41	$140,314.82	
Total						**5**					**$837,496.12**	**$ 167,499.22**
Structural Excavation	Vernon Channel-Fieldbrook Debris Basin	May-01	$ 8.35	$ -	$ 10.00	15,100	7226.92	8546.72	1.18	$ 11.83	$178,576.04	
	126TH Street El Al.	Apr-02	$ 30.71	$ 50.00	$ 23.00	672	7402.75	8546.72	1.15	$ 57.73	$ 38,792.31	
	Paseo Del Rio San Gabriel Coastal Basin Spreading Grounds, Phase 2, Multiuse Improvements	Sep-05	$ 512.50	$ 150.00	$ 100.00	15	8485.2	8546.72	1.01	$ 516.22	$ 7,743.24	
Total						**15,787**					**$225,111.58**	**$ 14.26**
AC Pavement Crushed Aggregate	Design Division consulted with its Highway Unit for today's unit costs for AC pavement and crushed aggregate.											
Chain Link ROW Wall Fences	Buena Vista Channel Puddingstone Channel Invert	May-03	$ 8.58	$ 10.85	$ 8.00	5,074	7531.77	8546.72	1.13	$ 12.31	$ 62,471.60	
	Access Ramp Ninth Avenue Drain	Apr-03	$ 23.15	$ 26.00	$ 8.53	89	7531.77	8546.72	1.13	$ 29.50	$ 2,625.83	
		May-04	$ 21.51	$ 20.00	$ 16.10	400	7803.52	8546.72	1.10	$ 23.56	$ 9,423.44	
Total						**5,563**					**$ 74,520.86**	**$ 13.40**

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ANTELOPE VALLEY COMPREHENSIVE PLAN UNIT COST ESTIMATE

Cost Estimate Type	Name of Project (A)	Bid Date (B)	Average Item Bid (C) [1]	Engineer's Estimate (D) [1]	Low Bidder Item Bid (E) [1]	Quantity (F)	CCI @ Bid Date (G) [2]	CCI @ June 2006 (H)	Adjustment Factor (I) = H / G	Greatest of Item Cost C, D or E Adjusted With Adjustment Factor (J) = C or D or E * I	Amount (K) = F * J	Weighted Average Unit Cost (L) = K / F
Chain Link Channel Wall Fences	Buena Vista Channel Ninth Avenue Drain	May-03	$ 7.58	$ 9.94	$ 6.00	3,893	7531.77	8546.72	1.13	$ 11.28	$ 43,910.99	
		May-04	$ 21.51	$ 20.00	$ 16.10	400	7803.52	8546.72	1.10	$ 23.56	$ 9,423.44	
Total						**4,293**					**$ 53,334.43**	**$ 12.42**
4' High Walk Gate	Buena Vista Channel	May-03	$ 323.00	$ 375.00	$ 330.00	1	7531.77	8546.72	1.13	$ 425.53	$ 425.53	
Total						**1**					**$ 425.53**	**$ 425.53**
24' Double Drive Gate	Buena Vista Channel	May-03	$ 800.00	$ 1,500.00	$ 1,050.00	1	7531.77	8546.72	1.13	$ 1,702.13	$ 1,702.13	
Total						**1**					**$ 1,702.13**	**$ 1,702.13**
16' Double Drive Gate	Buena Vista Channel Puddingstone Channel Invert	May-03	$ 774.83	$ 1,200.00	$ 660.00	2	7531.77	8546.72	1.13	$ 1,361.71	$ 2,723.41	
16' Double Drive Gate	Access Ramp Ninth Avenue Drain	Apr-03	$ 1,747.21	$ 1,200.00	$ 811.00	1	7531.77	8546.72	1.13	$ 1,982.66	$ 1,982.66	
16' Double Drive Gate		May-04	$ 2,024.30	$ 1,250.00	$ 863.00	1	7803.52	8546.72	1.10	$ 2,217.09	$ 2,217.09	
Total						**4**					**$ 6,923.16**	**$ 1,730.79**
15' Double Drive Gate	Liberty Canyon Channel Access Ramp @ PD 572	Jun-04	$ 839.67	$ 1,200.00	$ 500.00	1	7843.85	8546.72	1.09	$ 1,307.53	$ 1,307.53	
Total						**1**					**$ 1,307.53**	**$ 1,307.53**
Catch Basin Per Std Plan 300, W=07	Ninth Avenue Drain	May-04	$ 3,613.90	$ 3,362.00	$ 3,879.00	8	7803.52	8546.72	1.10	$ 4,248.43	$ 33,987.46	
Catch Basin Per Std Plan 307, W=07	Ninth Avenue Drain	May-04	$ 4,018.80	$ 7,589.00	$ 4,488.00	2	7803.52	8546.72	1.10	$ 8,311.77	$ 16,623.54	
Total						**10**					**$ 50,611.00**	**$ 5,061.10**
Manhole Per Std 322	Ninth Avenue Drain	May-04	$ 4,780.00	$ 6,427.00	$ 4,600.00	8	7803.52	8546.72	1.10	$ 7,039.10	$ 56,312.81	
Total						**8**					**$ 56,312.81**	**$ 7,039.10**
Junction Structure Per Std Plan 331	Ninth Avenue Drain	May-04	$ 1,255.00	$ 1,200.00	$ 1,150.00	50	7803.52	8546.72	1.10	$ 1,374.53	$ 68,726.25	
Junction Structure Per Std Plan 333	Ninth Avenue Drain	May-04	$ 1,521.00	$ 1,375.00	$ 1,380.00	3	7803.52	8546.72	1.10	$ 1,665.86	$ 4,997.58	
Total						**53**					**$ 73,723.83**	**$ 1,391.02**
18" RCP (2000 D)	Ninth Avenue Drain Beverly Pico Drain, Unit 2	May-04	$ 97.61	$ 75.00	$ 57.10	1,904	7803.52	8546.72	1.10	$ 106.91	$203,549.57	
		Jun-01	$ 117.56	$ -	$ 96.97	146	7226.92	8546.72	1.18	$ 139.03	$ 20,298.25	
Total						**2,050**					**$223,847.82**	**$ 109.19**
24" RCP (2000 D)	Gratian Street Drain Ninth Avenue Drain	Dec-02	$ 177.67	$ 145.00	$ 94.00	138	7402.75	8546.72	1.15	$ 205.13	$ 28,307.37	
		May-04	$ 107.32	$ 95.00	$ 69.16	192	7803.52	8546.72	1.10	$ 117.54	$ 22,567.88	
Total						**330**					**$ 50,875.26**	**$ 154.17**

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN UNIT COST ESTIMATE

Cost Estimate Type	Name of Project (A)	Bid Date (B)	Average Item Bid (C) [1]	Engineer's Estimate (D) [1]	Low Bidder Item Bid (E) [1]	Quantity (F)	CCI @ Bid Date (G) [2]	CCI @ June 2006 (H)	Adjustment Factor (I) = H / G	Greatest of Item Cost C, D or E Adjusted With Adjustment Factor (J) = C or D or E * I	Amount (K) = F * J	Weighted Average Unit Cost (L) = K / F
30" RCP (2000 D)	Buena Vista Channel Ninth Avenue Drain	May-03	$ 257.00	$ 131.00	$ 310.00	8	7531.77	8546.72	1.13	$ 351.77	$ 2,814.19	
		May-04	$ 127.38	$ 130.00	$ 82.83	643	7803.52	8546.72	1.10	$ 142.38	$ 91,551.03	
Total						**651**					**$ 94,365.23**	**$ 144.95**
42" RCP (2000 D)	Ninth Avenue Drain	May-04	$ 168.18	$ 172.00	$ 126.83	202	7803.52	8546.72	1.10	$ 188.38	$ 38,052.99	
Total						**202**					**$ 38,052.99**	**$ 188.38**

Cost Estimate Type	Name of Project (A)	Width (Feet) (B)	Weighted Average Unit Cost (C)	Weighted Average Cost Per Foot (D) = C / B	Weighted Average Cost For 12' (E) = D*12
15' Double Drive Gate	Liberty Canyon Channel Access Ramp @ PD 572 Buena Vista Channel, Puddingstone Channel Invert Access Ramp, Ninth Avenue Drain	15	$ 1,307.53	$ 87.17	
16' Double Drive Gate		16	$ 1,730.79	$ 108.17	
24' Double Drive Gate	Buena Vista Channel	24	$ 1,702.13	$ 70.92	
Average for 12' Double Drive Gate [4]		**55**	**$ 4,740.45**	**$ 86.19**	**$ 1,034.28**

Cost Estimate Type	Name of Project (A)	Diameter (Inch) (B)	Weighted Average Unit Cost (C)	Weighted Average Unit Cost Per Inch (D) = C / B	Weighted Average Item Bid For 21" (E) = D*21
18" RCP (2000 D)	Ninth Avenue Drain, Beverly Pico Drain Unit 2 Gratian Street Drain, Ninth Avenue Drain Buena Vista Channel, Ninth Avenue Drain Ninth Avenue Drain	18	$ 109.19	$ 6.07	
24" RCP (2000 D)		24	$ 154.17	$ 6.42	
30" RCP (2000 D)		30	$ 144.95	$ 4.83	
42" RCP (2000 D)		42	$ 188.38	$ 4.49	
Average for 21" RCP (2000 D) [5]		**114**	**$ 596.70**	**$ 5.23**	**$ 109.92**

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN UNIT COST ESTIMATE

Cost Estimate Type	Name of Project (A)	Bid Date (B)	Average Item Bid (C) [1]	Engineer's Estimate (D) [1]	Low Bidder Item Bid (E) [1]	Quantity (F)	CCI @ Bid Date (G) [2]	CCI @ June 2006 (H)	Adjustment Factor (I) = H / G	Greatest of Item Cost C, D or E Adjusted With Adjustment Factor (J) = C or D or E * I	Amount (K) = F * J	Weighted Average Unit Cost (L) = K / F

Footnotes:

(1) Antelope Valley is a region in which various assumptions are required at this stage, including the location, size, and costs of various drainage need for the associated future developments. As such, the greatest amount among the Average Item Bid, Engineer's Estimate, and Low Bidder Item Bid is used as the base price to determine the CCI adjusted weighted average unit cost.

(2) Used Engineering News Record (ENR) published Construction Cost Index (CCI) for Los Angeles to adjust the base price. ENR traditionally published the CCI on a year to year basis. Due to construction costs significantly increased in recent year, ENR began published CCI on a month to month basis since January 2004. CCI for December will be used for project with bid date prior 2004.

(3) Uses the weighted average method to determine the CCI adjusted weighted average unit cost.

(4) There was no bid history found for 12' Double Drive Gate, hence, it was determined by using the average of the Weighted Average Cost per foot of 24' Double Drive Gate, 16' Double Drive Gate and 15' Double Drive Gate multiplied by 12.

(5) There was no bid history found for 21" RCP (2000 D), hence, it was determined by using the average of the Weighted Average Cost per inch of 18" RCP (2000 D), 24" RCP (2000 D), 30" RCP (2000 D) and 42" RCP (2000 D) multiplied by 21.

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN
NUMBER OF DEVELOPED SINGLE-FAMILY LOTS, MULTI-FAMILY LOTS, AND THE COMMERCIAL/INDUSTRIAL ACREAGE WITHIN THE UNINCORPORATED AREAS

SINGLE-FAMILY (1)

No. of Unit	MAIL_NUMBER	MAIL_STREE	IMPROVED VALUE (2)	MAIL_CITY	MAIL_ZIP_C	AREA_SQFT	ZONE	Z_NAME	Z_DESC
7106	42226	MARBELLA ST	$198,900	QUARTZ HILL CA	935360000	8049.32	R-1-7500	Zone R-1	Single-family residence
7107	42216	MARBELLA ST	$189,006	QUARTZ HILL CA	935360000	8049.40	R-1-7500	Zone R-1	Single-family residence
					Area (ft^2)	227,525,155.67			
					Area (ac)	5,223.26			
					No. of Units	7,107			

MULTI-FAMILY (RESIDENTIAL) (1)

No. of Unit	MAIL_NUMBER	MAIL_STREE	IMPROVED VALUE (2)	MAIL_CITY	MAIL_ZIP_C	AREA_SQFT	ZONE	Z_NAME	Z_DESC
1	529	DE LA VINA ST	$31,171	SANTA BARBARA CA	931010000	40944.56	R-3	Zone R-3-()U	Limited multiple residence
2	47821	90TH ST W	$74,622	LANCASTER CA	935360000	47692.69	R-3	Zone R-3-()U	Limited multiple residence
3	47809	90TH ST W	$84,456	LANCASTER CA	935360000	47729.45	R-3	Zone R-3-()U	Limited multiple residence
4	2213	KNOXVILLE ST	$39,694	BROKEN ARROW OK	740120000	12017.41	R-3	Zone R-3-()U	Limited multiple residence
5	927	AVENUE Q9	$41,549	PALMDALE CA	935500000	11939.07	R-3	Zone R-3-()U	Limited multiple residence
6	927	AVENUE Q9	$41,549	PALMDALE CA	935500000	12217.59	R-3	Zone R-3-()U	Limited multiple residence
7	39027	10TH ST W	$51,780	PALMDALE CA	935510000	11834.34	R-3	Zone R-3-()U	Limited multiple residence
8	36547	ROZALEE RD	$77,335	PALMDALE CA	935500000	12058.58	R-3	Zone R-3-()U	Limited multiple residence
9	609	DESERT WEST DR	$142,100	RANCHO MIRAGE CA	922700000	12018.41	R-3	Zone R-3-()U	Limited multiple residence
10	17822	ELIZABETH LAKE RD	$95,239	LAKE HUGHES CA	935320000	4813.17	R-3	Zone R-3-()U	Limited multiple residence
11	43792	TRAIL B	$68,682	LAKE HUGHES CA	935320000	3757.74	R-3	Zone R-3-()U	Limited multiple residence
12		PO BOX 213	$14,405	LAKE HUGHES CA	935320000	2564.06	R-3	Zone R-3-()U	Limited multiple residence
13	17854	ELIZABETH LAKE RD	$102,000	LAKE HUGHES CA	935320000	2883.09	R-3	Zone R-3-()U	Limited multiple residence
14	13484	SUNSET DR	$26,796	APPLE VALLEY CA	923080000	2457.63	R-3	Zone R-3-()U	Limited multiple residence
15	40318	173RD ST E	$95,568	PALMDALE CA	935910000	22011.44	R-3-20U	Zone R-3-()U	Limited multiple residence
16	17287	PARKVALLEY AVE	$95,705	LAKE LOS ANGELES CA	935910000	20375.55	R-3-20U	Zone R-3-()U	Limited multiple residence
17	42412	056 ST W	$114,240	LANCASTER CA	935360000	22203.07	R-3-20U	Zone R-3-()U	Limited multiple residence
18	17225	PARKVALLEY AVE	$70,087	PALMDALE CA	935910000	21792.20	R-3-20U	Zone R-3-()U	Limited multiple residence
19	17104	AVE K 4	$69,153	LANCASTER CA	935350000	20146.37	R-3-20U	Zone R-3-()U	Limited multiple residence
20	40107	172ND ST E	$98,916	PALMDALE CA	935910000	26024.78	R-3-20U	Zone R-3-()U	Limited multiple residence
21	40119	173RD ST E	$105,774	LAKE LOS ANGELES CA	935910000	19976.09	R-3-20U	Zone R-3-()U	Limited multiple residence
22	17165	SCHOLLVIEW AVE	$100,138	LAKE LOS ANGELES CA	935910000	27060.82	R-3-20U	Zone R-3-()U	Limited multiple residence
23	40341	FIELDSPRING ST	$107,900	PALMDALE CA	935910000	30151.64	R-3-20U	Zone R-3-()U	Limited multiple residence
24	40326	FIELDSPRING ST	$82,284	LAKE LOS ANGELES CA	935910000	21809.58	R-3-20U	Zone R-3-()U	Limited multiple residence
25	40327	FIELDSPRING ST	$110,000	PALMDALE CA	935910000	24614.04	R-3-20U	Zone R-3-()U	Limited multiple residence
26	40012	17TH ST	$110,364	LAKE LOS ANGELES CA	935910000	24877.15	R-3-20U	Zone R-3-()U	Limited multiple residence

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN
NUMBER OF DEVELOPED SINGLE-FAMILY LOTS, MULTI-FAMILY LOTS, AND THE COMMERCIAL/INDUSTRIAL ACREAGE WITHIN THE UNINCORPORATED AREAS

MULTI-FAMILY (RESIDENTIAL) [1]

No. of Unit	MAIL_NUMBER	MAIL_STREE	IMPROVED VALUE [2]	MAIL_CITY	MAIL_ZIP_C	AREA_SQFT	ZONE	Z_NAME	Z_DESC
692	821	AVENUE P12	$109,718	PALMDALE CA	935500000	5935.63	R-2	Zone R-2	Two-family residence
693	801	AVENUE P12	$51,104	PALMDALE CA	935500000	6679.47	R-2	Zone R-2	Two-family residence
694		P O BOX 8509	$35,050	NORTHRIDGE CA	913270000	6510.85	R-2	Zone R-2	Two-family residence
695	44714	20TH ST W	$18,275	LANCASTER CA	935340000	6317.02	R-2	Zone R-2	Two-family residence
696	1300	SARATOGA AVE	$74,481	VENTURA CA	930030000	6292.07	R-2	Zone R-2	Two-family residence
697	38414	DIVISION ST	$20,000	PALMDALE CA	935500000	6040.61	R-2	Zone R-2	Two-family residence
698	36620	GEIGER AVE	$252,611	PALMDALE CA	935510000	6295.52	R-2	Zone R-2	Two-family residence
699	23539	HIGHLAND GLEN DR	$71,537	NEWHALL CA	913210000	6367.64	R-2	Zone R-2	Two-family residence
700	38920	9TH ST E	$130,560	PALMDALE CA	935500000	7266.78	R-2	Zone R-2	Two-family residence
701	38920	RAMBLER AVE	$114,750	PALMDALE CA	935500000	6242.99	R-2	Zone R-2	Two-family residence
702	38921	9TH ST E	$39,327	PALMDALE CA	935500000	6310.78	R-2	Zone R-2	Two-family residence
703	849	AVENUE P12	$98,708	PALMDALE CA	935500000	11451.86	R-2	Zone R-2	Two-family residence
704	838	AVENUE P12	$49,821	PALMDALE CA	935500000	6118.30	R-2	Zone R-2	Two-family residence
705	828	AVENUE P12	$33,303	PALMDALE CA	935500000	6136.87	R-2	Zone R-2	Two-family residence
706	839	AVENUE P12	$43,935	PALMDALE CA	935500000	6099.71	R-2	Zone R-2	Two-family residence
707	38932	RAMBLER AVE	$68,103	PALMDALE CA	935500000	6242.82	R-2	Zone R-2	Two-family residence
708	38932	9TH ST E	$121,380	PALMDALE CA	935500000	6992.40	R-2	Zone R-2	Two-family residence
709	829	AVENUE P12	$85,680	PALMDALE CA	935500000	6001.27	R-2	Zone R-2	Two-family residence
710	37419	DREXEL ST	$36,715	PALMDALE CA	935500000	5906.42	R-2	Zone R-2	Two-family residence
711	1300	SARATOGA AVE	$74,481	VENTURA CA	930030000	6835.38	R-2	Zone R-2	Two-family residence
712	22442	BERDON ST	$160,000	WOODLAND HLS CA	913670000	6362.61	R-2	Zone R-2	Two-family residence
713	38928	RAMBLER AVE	$40,891	PALMDALE CA	935500000	6167.88	R-2	Zone R-2	Two-family residence
714	707	MACLAY AVE	$122,400	SAN FERNANDO CA	913400000	6092.71	R-2	Zone R-2	Two-family residence
715	38940	9TH ST E	$62,223	PALMDALE CA	935500000	6871.70	R-2	Zone R-2	Two-family residence
					Area (ft^2)	**17,046,742.49**			
					Area (ac)	**391.34**			
					No. of Units	**715**			

COMMERCIAL/INDUSTRIAL [1]

No. of Unit	MAIL_NUMBER	MAIL_STREE	IMPROVED VALUE [2]	MAIL_CITY	MAIL_ZIP_C	AREA_SQFT	ZONE	Z_NAME	Z_DESC
1	40432	11TH ST W	$344,637	PALMDALE CA	935510000	46927.44	C-M-DP	Zone C-M	Commercial manufacturing
2	918	PALMDALE BLVD	$659,233	PALMDALE CA	935500000	89148.73	CPD	Zone CPD	Commercial planned development
3	10735	AQUA VISTA ST	$123,583	N HOLLYWOOD CA	916020000	19995.37	C-2	Zone C-2	Neighborhood commercial

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN
NUMBER OF DEVELOPED SINGLE-FAMILY LOTS, MULTI-FAMILY LOTS, AND THE COMMERCIAL/INDUSTRIAL ACREAGE WITHIN THE UNINCORPORATED AREAS

COMMERCIAL/INDUSTRIAL [1]

No. of Unit	MAIL_NUMBER	MAIL_STREE	IMPROVED VALUE [2]	MAIL_CITY	MAIL_ZIP_C	AREA_SQFT	ZONE	Z_NAME	Z_DESC
284	42422	20TH ST W	$120,836	LANCASTER CA	935340000	10372.00	M-1	Zone M-1	Light manufacturing
285	42816	BLUEHILLS DR	$113,730	LAKE HUGHES CA	935320000	43737.90	M-1	Zone M-1	Light manufacturing
286		PO BOX 58104	$509,154	VERNON CA	900580000	36669.16	M-1	Zone M-1	Light manufacturing
287	4826	SANTA FE AVE	$13,247	VERNON CA	900580000	137616.21	M-1	Zone M-1	Light manufacturing
288		PO BOX 1	$13,724	LITTLEROCK CA	935430000	12795.01	M-1	Zone M-1	Light manufacturing
289	48051	90TH ST W	$10,840	LANCASTER CA	935360000	41426.68	M-1	Zone M-1	Light manufacturing
290	32202	JOAQUIN DR	$97,362	ACTON CA	935100000	6271.14	M-1	Zone M-1	Light manufacturing
291	1050	AVENUE M	$18,897	LANCASTER CA	935340000	27318.84	M-1	Zone M-1	Light manufacturing
292		PO BOX 3275	$74,745	QUARTZ HILL CA	935860000	30771.62	M-1	Zone M-1	Light manufacturing
293		P O BOX 900640	$8,130	PALMDALE CA	935900000	19324.21	M-1	Zone M-1	Light manufacturing
294		P O BOX 900640	$8,130	PALMDALE CA	935900000	6001.76	M-1	Zone M-1	Light manufacturing
295	605	LAGUNA DR	$29,674	SIMI VALLEY CA	930650000	80842.38	M-1	Zone M-1	Light manufacturing
296	38507	15TH ST E	$58,987	PALMDALE CA	935500000	142119.93	M-1	Zone M-1	Light manufacturing
297		PO BOX 118	$17,748	LITTLEROCK CA	935430000	79507.68	M-1	Zone M-1	Light manufacturing
298	14021	MARQUESAS WAY	$18,852	MARINA DL REY CA	902920000	15494.55	M-1	Zone M-1	Light manufacturing
299	35022	82ND ST E	$50,988	LITTLEROCK CA	935430000	12863.12	M-1	Zone M-1	Light manufacturing
300	35022	82ND ST E	$50,988	LITTLEROCK CA	935430000	39824.49	M-1	Zone M-1	Light manufacturing
301		PO BOX 118	$17,748	LITTLEROCK CA	935430000	8579.04	M-1	Zone M-1	Light manufacturing
302	34446	125TH ST E	$24,939	PEARBLOSSOM CA	935530000	16561.59	M-1	Zone M-1	Light manufacturing
303	2127	AVENUE Q2	$91,912	PALMDALE CA	935500000	132810.41	M-1	Zone M-1	Light manufacturing
304	9832	CALVIN AVE	$281,467	NORTHRIDGE CA	913240000	55327.13	M-1-DP	Zone M-1	Light manufacturing
305	39015	8TH ST E	$49,760	PALMDALE CA	935500000	116449.32	M-1	Zone M-1	Light manufacturing
306	9513	GOODBEE ST	$39,743	PICO RIVERA CA	906600000	4798.81	M-1	Zone M-1	Light manufacturing
307	38963	SIERRA HWY	$38,591	PALMDALE CA	935500000	23925.05	M-1	Zone M-1	Light manufacturing
308	38963	SIERRA HWY	$38,591	PALMDALE CA	935500000	171336.07	M-1	Zone M-1	Light manufacturing
					Area (ft^2)	42,697,178.03			
					Area (ac)	980.19			

Footnote:

(1) Mapping and Property Management Division produced a digital version of the 1987 Antelope Valley Drainage Area. Within the Drainage Area, parcels with improvement values greater than $5,000 were considered developed. Utilizing the ArcMap software and given the attributed land use designations, the total developed square footage and the number of developed parcels were derived, excluding totals within the cities of Palmdale and Lancaster and Edwards Air Force Base.

(2) Improved value is the estimated value of the structure or attribute within a given lot.

NOTICE OF PUBLIC HEARING
PROPOSED FEE INCREASE

Notice is hereby given that a public hearing will be held by the Board of Supervisors regarding revisions to the drainage impact fee as described in the Antelope Valley Final Report on the Comprehensive Plan of Flood Control and Water Conservation.

Said hearing will be held on September 26, 2006, at 9:30 a.m., in the hearing room of the Board of Supervisors, Room 381, Hall of Administration, 500 West Temple Street (corner of Temple Street and Grand Avenue) Los Angeles, California 90012.

The Board of Supervisors will consider and may adopt the proposed fee increase. Further, notice is given that the Board of Supervisors may continue this hearing from time to time.

Written comments may be sent to the Executive Office of the Board of Supervisors at the above address. If you do not understand this notice or need more information please call (310) 939-7214.

Si no entiende esta noticia o si necesita más información favor de llamar al número (310) 939-7214.

BH:ad
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July 25, 2006

RUSH

TO: Mark Pestrella
Watershed Management Division

FROM: Dennis Denby
Fiscal Division

PROPOSAL FOR ANTELOPE VALLEY COMPREHENSIVE PLAN DRAINAGE FEES

Attached for your review are proposed Antelope Valley Comprehensive Plan (AVCP) Drainage fees based on the pertinent data provided. Attachment 1 shows a revenue and expenditure comparison based on the Revenue Source Codes (RSCs) and Program Cost Accounts (PCAs) provided by your staff. Attachment 2 shows the proposed AVCP Drainage fees for a single-family lot, a multi-family lot, and commercial/industrial acreage based on the total infrastructure costs of 32 miles of open channel, 22 miles of closed conduit, and 8 detention/retention basins. This required infrastructure level reflects anticipated development within unincorporated areas of the Antelope Valley.

The proposed AVCP Drainage fees are based on cost estimates for the open channels, closed conduits, and detention/retention basins depicted on Attachments 3-5. The unit costs for each component of the infrastructure are shown on Attachments 7-10. These component unit costs, except for the Asphalt Concrete Pavement and the Crushed Aggregate Base, are different from those originally provided for our review by Watershed Management and Design Divisions' staff.

Design Division staff worked with limited information and made various assumptions regarding increases in construction and material costs. Detailed information for some of the unit costs provided by them also involved professional judgment. To be conservative in estimating, costs shown on Attachments 7-10 were selected based on the greatest amount among the Engineer's Estimate, Low Bidder Item Bid, and Average Item Bid provided by Design Division. The cost amount was then adjusted by the Construction Cost Index (CCI) published by Engineering News Record for the Los Angeles Area for June 2006. The average weighted method by volume was used in determining the unit cost if there was more than one price history available.

Attachment 6 shows the total number of potential residential lots, multi-family lots, and commercial/industrial acreage within the unincorporated areas of the Antelope Valley estimated by Mapping and Property Management Division.

To ensure adequate cost recovery with respect to AVCP drainage infrastructure and to keep pace with probable rapid changes in construction costs, we recommend that fees be kept current and that an annual CCI or Construction Price Index (CPI) be added annually. In addition, a complete study should be conducted every 3-5 years to account for any major changes.

If you concur with Fiscal Division's proposed fees, please send written approval in the form of a memorandum or e-mail to the attention of Leanne Hall. Include a complete justification for the proposed fees that we in turn can provide to Auditor-Controller staff for their review and approval.

We are available to discuss the proposed fees at your convenience. If you have any questions, please contact Bak Sim of our Expenditure Management Section at Extension 6553.

BS:rm
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Attach.

cc: Watershed Management (Cruz, Hamamoto)
Fiscal (Denby, Hall)
Section File (Antelope Valley Comprehensive Plan Drainage Fees)

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN DRAINAGE FEES
REVENUE AND EXPENDITURE COMPARISON
FY 2002-03 THROUGH FY 2004-05

Description	FY 2002-03	FY 2003-04	FY 2004-05	Total
Revenues[1]:				
Revenue Source 8322 - Excavation Permit-Act Cost	0.00	535.01	0.00	535.01
Revenue Source 8605 - Interest from Treasury Pool Deposits	10,880.59	7,741.09	17,111.21	35,732.89
Revenue Source 9358 - Road Maint. Services	0.00	0.00	11,732.03	11,732.03
Revenue Source 9360 - Contract Cities - Traffic Control	0.00	1,678.93	0.00	1,678.93
Revenue Source 9883 - Developer Fees	136,000.00	214,000.00	59,500.00	409,500.00
Total	**146,880.59**	**223,955.03**	**88,343.24**	**459,178.86**
Expenditures[2]:				
C6140367 - Exc - Jando Drive 1690	0.00	535.01	0.00	535.01
H0300167 - M&R Rainga Sta N of FCD Boudy	9,011.37	6,963.53	6,047.03	22,021.93
T91034000 - Signal Plan Review - JAS	127.00	0.00	0.00	127.00
E0389504 - Ant Valley Mstr Pln Study-N	0.00	765.86	1,011.81	1,777.67
F3053580 - Slurry Squirrel Holes	0.00	805.52	0.00	805.52
H0300205 - Public Safe N of FCD Boundry	0.00	89.75	0.00	89.75
R9LCF13722 - 13722 Curb/Walk Perm. Repairs 04/05	0.00	0.00	0.01	0.01
Total	**9,138.37**	**9,159.67**	**7,058.85**	**25,356.89**
Over/(Under) Recovered	**137,742.22**	**214,795.36**	**81,284.39**	**433,821.97**
Percentage of Expenditure Over/(Under) Recovered [3]	**1507.30%**	**2345.01%**	**1151.52%**	**1710.86%**

Footnotes:

(1) Revenue data was acquired from Fund 106 Antelope Valley Drainage Fee - V42 by Revenue Source from the Revenue Financial Analysis Inquiry window in the Financial Accounting System (FAS).

(2) Expenditure data was acquired from Fund 106 Antelope Valley Drainage Fee - V42 by PCA from the Expenditure Financial Analysis Inquiry window in FAS.

(3) The Percentage of Expenditure Over/(Under) Recovered was computed by dividing the amount of Over/(Under) Recovered by the Total Expenditures.

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN DRAINAGE FEES
ANTELOPE VALLEY DRAINAGE FEES ESTIMATE
FISCAL YEAR 2005-06

	A	B=A*5,280	C	D=B*C	E=D*25%	F=D+E
Infrastructure Type	**Miles or Each [1]**	**Linear Feet [2]**	**Unit Cost [3]**	**Construction Cost**	**25% Design Cost**	**Total Infrastructure Cost**
Open Channel	32	168,960	$ 1,106.49	$ 186,952,550.40	$ 46,738,137.60	$ 233,690,688.00
Closed Conduit	22	116,160	$ 656.45	$ 76,253,232.00	$ 19,063,308.00	$ 95,316,540.00
Detention/Retention Basin	8		$ 22,201,861.78	$ 177,614,894.24	$ 44,403,723.56	$ 222,018,617.80
Total				**$ 440,820,676.64**	**$ 110,205,169.16**	**$ 551,025,845.80**

	A	B	C = A * B	D = Roundup of C
Type of Lot	**Number of Units [4]**	**Single-Family Drainage Fee Equivalent**	**Total Number of Single-Family Drainage Fee Units (SFDFU)**	**Total Number of Single-Family Drainage Fee Units**
Single-Family	54,087	1.00	54,087	54,087
Multi-Family	5,207	0.50	2,603	2,604
Commercial/Industrial	6,333	5.00	31,664	31,665
Total	**65,627**		**88,355**	**88,356**

Single-Family Drainage Fee = Total Infrastructure Cost / Total Number of SFDF	**$6,236.43**
Multi-Family Drainage Fee = 1/2 Single-Family Drainage Fee	**$3,118.21**
Commercial/Industrial Development Drainage Fee = 5 * Single Family Drainage Fee	**$31,182.14**

Proposed Single-Family (Residential) Drainage Fee Per Lot	**$6,237**
Proposed Multi-Family Drainage Fee Per Lot	**$3,119**
Proposed Commercial/Industrial Development Drainage Fee Per Acre	**$31,183**

Footnotes:

(1) Mapping and Property Management Division produced a digital version of the 1987 Antelope Valley Drainage Study map to determine the amount of open channel, closed conduit, and detention/retention basins required within the unincorporated portions of the Antelope Valley (32 miles of open channel, 22 miles of closed conduit, and 8 detention/retention basins).

(2) There are 5,280 linear feet in 1 mile.

(3) See Schedules 3-5 for the calculation of unit costs of open channel, closed conduit, and detention/retention basin, respectively.

(4) See Schedule 6 for the total number of potential residential lots, multi-family lots, and commercial/industrial acreage available within the the unincorporated areas of the region.

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN DRAINAGE FEES
ANTELOPE VALLEY 12-FOOT WIDE BY 8-FOOT HIGH OPEN CHANNEL COST ESTIMATE
FISCAL YEAR 2005-06

	Item Description	Quantity	Unit Cost	Unit of Measure	Extension	Total Cost
1	Construction Schedule [1]	10	$ 1,575.91	Man Total Hour	$ 15,759.10	
2	Implementation of Best Management Practices (BMPs) [1]	100%	$ 13,319.81	Lump Sum	$ 13,319.81	
3	Storm Water Pollution Prevention Plan [1]	100%	$ 11,717.35	Lump Sum	$ 11,717.35	
4	Restoration of Existing Improvements [1]	100%	$ 45,070.42	Lump Sum	$ 45,070.42	
5	Shoring of Open Excavations [2]	25,520	$ 35.38	Cubic Yard	$ 902,897.60	
6	Office Facilities [1]	100%	$ 15,466.70	Lump Sum	$ 15,466.70	
7	Mobilization [1]	100%	$ 167,499.22	Lump Sum	$ 167,499.22	
8	Structure Excavation [1 & 3]	24,341	$ 14.26	Cubic Yard	$ 347,102.66	
9	Asphalt Concrete Pavement [1 & 4]	1,569	$ 100.00	Ton	$ 156,900.00	
10	Crushed Aggregate Base [1 & 5]	1,174	$ 90.00	Cubic Yard	$ 105,660.00	
11	12'-0" W x 8'-0" H Rectangular Channel, Sect 1 [6]	5,280	$ 572.59	Linear Foot	$ 3,023,275.20	
12	Chain Link Right of Way Fence, 5' High [7]	10,560	$ 13.40	Linear Foot	$ 141,504.00	
13	Chain Link Channel Wall Fence, 5' High [8]	10,560	$ 12.42	Linear Foot	$ 131,155.20	
14	4' High Walk Gate [1]	2	$ 425.53	Each	$ 851.06	
15	12' Double-Drive Gate [1]	2	$ 1,034.28	Each	$ 2,068.56	
	Total cost estimate based on one-mile stretch					**$ 5,080,246.88**
	Plus 15% contingency					**$ 762,037.03**
	Total cost estimate based on one-mile stretch plus 15% contingency				**(a)**	**$ 5,842,283.91**
	Estimated cost per linear foot = (a) / 5,280					**$ 1,106.49**

Notes:

(A) Kelvin Cruz, Associate Civil Engineer of Watershed Management Division provided the items needed to construct the open channel.

(B) **The following assumptions were made in the calculation of 12' x 8' typical rectangular channel cost per linear foot:**

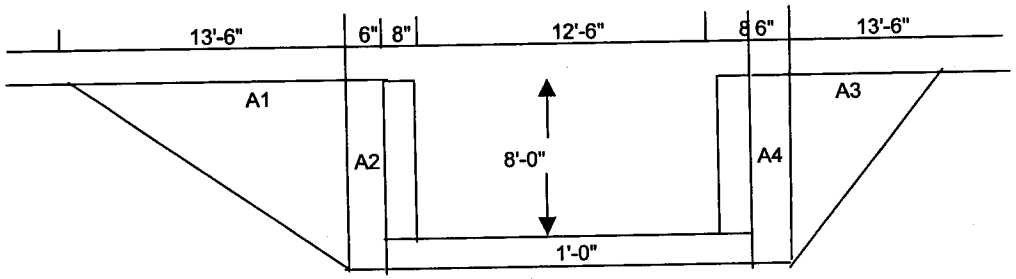
General slope = 1%
32 miles of open channel with 1% slope capacity
Flow of water is 1,590 cubic foot per second
No utility interference
No groundwater or health & safety issues included in this estimate

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN DRAINAGE FEES
ANTELOPE VALLEY 12-FOOT WIDE BY 8-FOOT HIGH OPEN CHANNEL COST ESTIMATE
FISCAL YEAR 2005-06

Footnotes:

(1) See Attachment 10 for the unit costs of Construction Schedule, Implementation of BMPs, Stormwater Pollution Prevention plan, Restoration of Existing Improvements, Office Facilities, Mobilization, Structure Excavation, AC Pavement, Crushed Aggregate Base, Chain Link ROW Fence, Chain Link Channel Wall Fences, 4' High Walk Gate, and 12' Double-Drive Gate.

(2) See figure below for the calculation of total cubic yards for Shoring of Open Excavation:



Area of A1 = (13.5*9)*1/2 = 60.75 square feet
Area of A2 = (0.5*9)* = 4.50 square feet
Total area of A1 and A2 = 60.75 + 4.50 square feet = 65.25 square feet
Total area of A1, A2, A3, and A4 = 65.25 *2 square feet = 130.50 square feet
(There are 27 cubic feet in 1 cubic yard)

Total cubic yards = (130.50 square feet * 5,280 feet) / 27 feet = 25,520.00

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN DRAINAGE FEES
ANTELOPE VALLEY 12-FOOT WIDE BY 8-FOOT HIGH OPEN CHANNEL COST ESTIMATE
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Unit cost of the Shoring of Open Excavation was based on the average item bid of the Little Dalton Debris Dam Seismic Modifications project:

Item Description	Engineer's Estimate	Low Bidder Item Bid	Average Item Bid	CCI Adjustment Factor	CCI Adjusted Item Bid
Structure Excavation	$ 10.00	$ 10.00	$ 31.87	1.11	$ 35.38

Bid Date	Feb-04	(a)
Construction Cost Index (CCI) for Los Angeles for February 2004	7690.52	(b)
CCI for Los Angeles for June 2006	8546.72	(c)
Adjustment Factor	1.11	(d) = c / b

(3) Total cubic yards for structure excavation:
Width = 8" + 12' 6" + 8" = 13.83', Depth = 8' + 1'

Total cubic yards = (13.83 feet * 9 feet * 5,280 feet) / 27 = 24,340.80/mile

(4) Asphalt Concrete Pavement is assumed to be 4 inches thick and 12 feet wide.
Total cubic feet for 1 mile of asphalt concrete pavement = (0.33 foot * 12 feet * 5,280 feet) = 20,908.80.
One cubic foot of asphalt concrete pavement requires 150 pounds of concrete.
(There are 2,000 pounds in 1 ton).

Total tonnage of concrete required for 1 mile of asphalt concrete pavement = (20,908.80 cubic feet * 150 pounds) / 2,000 = 1,568.16

(5) Crushed Aggregate Base (CAB) is assumed to be 6 inches thick and 12 feet wide.

Total cubic yards for 1 mile of CAB = (0.50 foot * 12 feet * 5,280 feet) / 27 = 1,173.33

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ANTELOPE VALLEY COMPREHENSIVE PLAN DRAINAGE FEES
ANTELOPE VALLEY 12-FOOT WIDE BY 8-FOOT HIGH OPEN CHANNEL COST ESTIMATE
FISCAL YEAR 2005-06

(6) See Attachment 9 for Rectangular Channel cost.

(7) Total linear feet for chain link right of way fence = 5,280 *2 = 10,560

(8) Total linear feet for chain link channel fence wall = 5,280 *2 = 10,560

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN DRAINAGE FEES
ANTELOPE VALLEY CLOSED CONDUIT COST ESTIMATE
FISCAL YEAR 2005-06

	Item Description	Quantity	Unit Cost	Unit of Measure	Extension	Total Cost
1	Construction Schedule [1]	5	$ 1,575.91	Man Total Hour	$ 7,879.55	
2	Implementation of Best Management Practices [1]	100%	$ 13,319.81	Lump Sum	$ 13,319.81	
3	Storm Water Pollution Prevention Plan [1]	100%	$ 11,717.35	Lump Sum	$ 11,717.35	
4	Restoration of Existing Improvements [1]	100%	$ 45,070.42	Lump Sum	$ 45,070.42	
5	Shoring of Open Excavations [2]	5,280	$ 61.48	Linear Foot	$ 324,614.40	
6	Office Facilities [1]	100%	$ 15,466.70	Lump Sum	$ 15,466.70	
7	Mobilization [1]	100%	$ 167,499.22	Lump Sum	$ 167,499.22	
8	Asphalt Concrete Pavement [1 & 3]	1,177	$ 100.00	Ton	$ 117,700.00	
9	Crushed Aggregate Base [1 & 4]	880	$ 90.00	Cubic Yard	$ 79,200.00	
10	72" Reinforced Concrete Pipe (RCP), 1350D [5]	5,236	$ 395.92	Linear Foot	$ 2,073,037.12	
11	Catch Basin System [6]	100%	$ 111,168.88	Lump Sum	$ 111,168.88	
12	Manhole Per Standard Plan 321 [7]	11	$ 4,301.00	Each	$ 47,311.00	
	Total cost estimate based on one mile stretch					**$ 3,013,984.45**
	Plus 15% contingency					**$ 452,097.67**
	Total cost estimate based on one mile stretch plus 15% contingency				**(a)**	**$ 3,466,082.12**
	Estimated cost per linear foot = (a) / 5,280					**$ 656.45**

Notes:

(A) Design Division provided the items needed to construct the open channel.

(B) **The following assumptions were made in the calculation of the cost of a one-mile stretch of storm drain:**
Slope used for Hydraulic Calculation ~ 1%
Flow of water is 450 cubic feet per second based on 1% slope and project is 22 miles long
No compacted fill; minor clearing and grubbing
Permanent resurfacing to be 4" Asphalt Concrete on 6" Crushed Aggregate Base
No utility interference
No right-of-way cost; no right-of-way fences
No groundwater encountered; no contaminated soil encountered

Footnotes:

(1) See Attachment 10 for the unit costs of Construction Schedule, Implementation of BMPs, Stormwater Pollution Prevention plan, Restoration of Existing Improvements, Office Facilities, Mobilization, AC Pavement, and Crushed Aggregate Base.

(2) See Attachment 8 for the unit cost of shoring per linear foot.

(3) Asphalt concrete pavement is assumed 4 inches thick and 9 feet wide.
Total cubic feet for 1 mile of asphalt concrete pavement = (0.33 foot * 9 feet * 5,280 feet) = 15,681.60
One cubic foot of asphalt concrete pavement requires 150 pounds of concrete.

Total tonnage of concrete required for 1 mile of asphalt concrete pavement = (15,681.60 cubic feet * 150 pounds) / 2,000 = 1,176.12

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN DRAINAGE FEES
ANTELOPE VALLEY CLOSED CONDUIT COST ESTIMATE
FISCAL YEAR 2005-06

(4) Crushed Aggregate Base (CAB) is assumed 6 inches thick and 9 feet wide.

Total cubic yards for 1 mile of CAB = (0.50 foot * 9 feet * 5,280 feet) / 27 = 880.00

(5) See Attachment 7 for the cost of 72" RCP per linear foot.

(6) See Attachment 10 for the unit costs of Catch Basin Screen, Manhole per Std Plan 322, Junction Structure, 18" RCP, 21" RCP and 42" RCP which are the components of the Catch Basin System.

Item Description	Quantity	Unit Cost	Unit of Measure	Extension	Total Cost
Catch Basin Screen	6	$ 5,061.10	Each	$30,366.60	
Manhole per Standard Plan 322	2	$ 7,039.10	Each	14,078.20	
Junction Structure	4	$ 1,391.02	Each	5,564.08	
18" Reinforced Concrete Pipe	100	$ 109.19	Linear Foot	10,919.00	
21" Reinforced Concrete Pipe	200	$ 109.92	Linear Foot	21,984.00	
42" Reinforced Concrete Pipe	150	$ 188.38	Linear Foot	28,257.00	
Total					**$111,168.88**

(7) Unit cost of the Manhole per Std. Plan 321 was based on the low bidder item bid of the Ninth Avenue Drain.

Item Description	Engineer's Estimate	Low Bidder Item Bid	Average Item Bid	CCI Adjustment Factor	CCI Adjusted Item Bid
Manhole per Std. Plan 321	$ 3,738.00	$ 3,910.00	$ 3,686.00	1.10	**$ 4,301.00**

Bid Date of Ninth Avenue Drain	May-04	(a)
CCI for Los Angeles for May 2004	7803.52	(b)
CCI for Los Angeles for June 2006	8546.72	(c)
Adjustment Factor	1.10	(d) = c / b

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN DRAINAGE FEES
ANTELOPE VALLEY DETENTION/RETENTION BASIN COST ESTIMATE
FISCAL YEAR 2005-06

A Right-of-Way Acquisition Cost [1]

Item Description	Quantity	Unit of Measure	Unit Cost	Extension	Total Cost
Area Required Per Basin	50	Acre	$ 55,000.00	$ 2,750,000.00	
					$ 2,750,000.00

B Excavation Cost [2]

Item Description	Volume (cubic feet)	Volume (cubic yd)	Cost per Cubic Yard	Extension	Total Cost
Excavation Cost For Basin With Dimension =20' x 1,800' x 800	28,800,000	1,066,666.67	$ 11.83	$ 12,618,666.67	
					$ 12,618,666.67

C Infrastructure Costs [3]

Item Description	Quantity	Unit of Measure	Unit Cost	Extension	Total Cost
Access Road/Ramp [a]	5,126	Ton	$ 100.00	$ 512,600.00	
Perimeter Wall [b]	36,000	Square foot	$ 52.37	$ 1,885,320.00	
Associated Piping, Valves, Pumping [c]	1,000	Linear foot	$ 656.45	$ 656,450.00	
Landscaping [d]	1	Lump Sum	$ 380,236.98	$ 380,236.98	
Irrigation [e]	1	Lump Sum	$ 241,740.07	$ 241,740.07	
					$ 3,676,347.05

D Other Costs [4]

Item Description	Quantity	Unit of Measure	Unit Cost	Extension	Total Cost
Construction Schedule	5	Man Total Hours	$ 1,575.91	$ 7,879.55	
Implementation of Best Management Practices	100%	Lump Sum	13,319.81	$ 13,319.81	
Storm Water Pollution Prevention Plan	100%	Lump Sum	11,717.35	$ 11,717.35	
Restoration of Existing Improvements	100%	Lump Sum	45,070.42	$ 45,070.42	
Office Facility	100%	Lump Sum	15,466.70	$ 15,466.70	
Mobilization	100%	Lump Sum	167,499.22	$ 167,499.22	
					$ 260,953.05

Total estimated cost for one detention/retention basin	**$ 19,305,966.77**
Plus 15% contingency	**$ 2,895,895.02**
Total estimated cost for one detention/retention basin plus 15% contingency	**$ 22,201,861.78**

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN DRAINAGE FEES
ANTELOPE VALLEY DETENTION/RETENTION BASIN COST ESTIMATE
FISCAL YEAR 2005-06

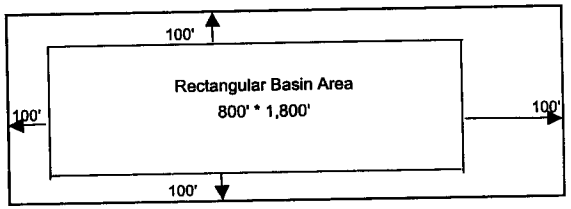
Footnotes:

(1) A search in the Palmdale/Lancaster area for open land plots of at least 40 acres in size produced a high-end cost of $55,000/acre. Geologic conditions and drainage needs constrain the location of the right-of-way acquisitions.

(2) Excavation cost is for a basin in which depth = 20 feet, length = 1,800 feet, and width = 800 feet. Volume Removed = Basin Width*Basin Length*Basin Depth. The excavation unit cost is based on the average item bid for Vernon Channel - Fieldbrook Debris Basin adjusted with Engineering News Record's (ENR's) Construction Cost Index (CCI) for Los Angeles for June 2006. Shown below is the calculation of excavation unit cost:

Bid date	May 2001	(a)
ENR's CCI for Los Angeles for December 2001 [5] =	7226.92	(b)
ENR's CCI for Los Angeles for June 2006 =	8546.72	(c)
Engineer's Estimate for unclassified excavation cost per cubic yard =	$0.00	
Low Bidder Item Bid for unclassifed excavation cost per cubic yard [6] =	$10.00	(d)
Average Item Bid for unclassified excavation cost per cubic yard =	$8.35	
Adjustment Factor =	1.18	(e) = c / b
CCI adjusted item bid for unclassified excavation cost per cubic yard =	**$11.83**	(f) = d * e

(3) The following assumptions are used in the calculation for various infrastructure costs:
(a) The access roads within the 2,000 foot by 1,000 foot basin are assumed to be 6 inches thick and 20 feet wide and the access ramp is assumed at 200 * 100 square feet. See Attachment 10 for the unit cost of the AC Pavement.



Total cubic feet for the access roads and ramp = (((2,000' * 20')+(2,000' *20')+(960' * 20')+(960' * 20')+(100' * 200'))*0.5') = 69,200
Total cubic yards for the access roads and ramp = 69,200 / 27 = 2,563

Total tonnage of asphalt concrete needed * = 5,126

* One cubic yard requires 2 tons of asphalt concrete

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN DRAINAGE FEES
ANTELOPE VALLEY DETENTION/RETENTION BASIN COST ESTIMATE
FISCAL YEAR 2005-06

Footnotes:

(b) The perimeter wall unit cost is based on the average item bid for 126th Street, et al., adjusted with Engineering News Record's (ENR's) Construction Cost Index (CCI) for Los Angeles for June 2006. Shown below is the calculation of the perimeter wall unit cost:

Bid date	April 2002	(a)
CCI for Los Angeles for December 2002 [5] =	7402.75	(b)
CCI for Los Angeles for June 2006 =	8546.72	(c)
Engineer's Estimate for unclassified perimeter wall per square foot =	$8.00	
Low Bidder Item Bid for unclassified perimeter wall per square foot =	$14.00	(d)
Average Item Bid for unclassified perimeter wall per square foot [6] =	$45.36	
Adjustment Factor =	1.15	(e) = c / b
Adjusted average item bid for unclassified excavation cost per cubic yard =	**$52.37**	(f) = d * e

The wall around the basin is assumed to be a height of 6 feet.
Total area for the perimeter wall (square feet) ((2,000' * 2' +1,000' * 2'))*6'

Total area for the perimeter wall (square feet) = 36,000

(c) A basin with dimension of 1,000 by 2,000 feet will require 1,000 feet of pipe to bring water in and out of the basin. Unit cost @ $657.01 is the weighted average item bids of the following six projects adjusted with CCI for Los Angeles for June 2006. See Attachment 4 for the calculation of unit cost.

Fairplex Drain
Ward Channel Invert and Connector Pipe Repairs
Altadena System Lincoln Debris Basin Enlargement
Beverly Pico Drain, Unit 2
Vernon Channel - Fieldbrook Debris Basin
Busby Drain and Cash Contract 7643

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN DRAINAGE FEES
ANTELOPE VALLEY DETENTION/RETENTION BASIN COST ESTIMATE
FISCAL YEAR 2005-06

(d) Average item bid of $377,500 for Paseo del Rio San Gabriel Coastal Basin Spreading Grounds, Phase 2, Multiuse Improvement adjusted with CCI for Los Angeles for June 2006 is used because it is similar to the size of the proposed basin. Shown below is the calculation of the adjusted landscaping cost:

Bid Date	September 2005	(a)
CCI for Los Angeles for September 2005 =	8485.20	(b)
CCI for Los Angeles for June 2006 =	8546.72	(c)
Engineer's Estimate for landscaping =	$257,780	
Low Bidder Item Bid for landscaping =	$325,000	(d)
Average Item Bid for landscaping [6] =	$377,500	
Adjustment Factor =	1.01	(e) = c / b
Adjusted average item bid for landscaping =	**$380,236.98**	(f) = d * e

Footnotes:

(e) Average item bid of $240,000 for Paseo del Rio San Gabriel Coastal Basin Spreading Grounds, Phase 2, Multiuse Improvement adjusted with ENR's CCI for Los Angeles for June 2006 is used because it is similar to the size of the proposed basin. Shown below is the calculation of the adjusted irrigation cost:

Bid Date	September 2005	(a)
CCI for Los Angeles for September 2005 =	8485.20	(b)
CCI for Los Angeles for June 2006 =	8546.72	(c)
Engineer's Estimate for irrigation =	$156,612	
Low Bidder Item Bid for irrigation =	$225,000	(d)
Average Item Bid for irrigation [6] =	$240,000	
Adjustment Factor =	1.01	(e) = c / b
Adjusted average item bid for irrigation =	**$241,740.07**	(f) = d * e

(4) See Attachment 10 for the unit costs of Construction Schedule, Implementation of BMPs, Stormwater Pollution Plan, Restoration of Existing Improvement, Office Facilities, and Mobilization.

(5) Used ENR published CCI for Los Angeles to adjust the base price. ENR traditionally published the CCI in December on a year-to-year basis. Due to significant increased construction costs in recent years, ENR began publishing CCI on a month-to-month basis beginning January 2004. CCI for December will be used for projects with a bid date prior to 2004.

(6) Antelope Valley is a region in which various assumptions are required at this stage, including the location, size, and costs of various drainage needs for future developments. The greatest amount among the Engineer's Estimate, Low Bidder Item Bid, and Low Bidder Item Bid was used as the base price to determine the CCI adjusted unit cost.

DEPARTMENT OF PUBLIC WORKS
WATERSHED MANAGEMENT DIVISION
ANTELOPE VALLEY COMPREHENSIVE PLAN DRAINAGE FEES
ANTELOPE VALLEY COMPREHENSIVE PLAN
TOTAL AMOUNT OF POTENTIAL RESIDENTIAL LOTS,
MULTI-FAMILY LOTS, AND COMMERCIAL/INDUSTRIAL ACREAGE
WITHIN THE UNINCORPORATED AREAS
FISCAL YEAR 2005-06

RESIDENTIAL [1]

		(A)	(B) = A / 43,560	(C)	(D)	(E)	(F) = A / E
NUMBER	ZONE	Sum_AREA (ft^2)	Sum_AREA (acre)	Min_Z_DESC	Permitted Uses	MIN	SA_MIN (ft^2/ft^2)
33	R-A-1	128,610,514	2,952	Residential agriculture	single-family residences	5,000	25,722
34	R-A-10000	115,489,926	2,651	Residential agriculture	single-family residences	10,000	11,548
35	R-A-12000	29,384,858	675	Residential agriculture	single-family residences	12,000	2,448
36	R-A-15000	6,569,008	151	Residential agriculture	single-family residences	15,000	437
37	R-A-2	3,332,940	77	Residential agriculture	single-family residences	5,000	666
38	R-A-2.5	5,571,686	128	Residential agriculture	single-family residences	5,000	1,114
39	R-A-20000	24,048,310	552	Residential agriculture	single-family residences	20,000	1,202
40	R-A-30000	9,319,160	214	Residential agriculture	single-family residences	30,000	310
41	R-A-40000	12,269,279	282	Residential agriculture	single-family residences	40,000	306
42	R-A-7000	3,315,092	76	Residential agriculture	single-family residences	7,000	473
43	R-A-7500	55,903,000	1,283	Residential agriculture	single-family residences	7,500	7,453
44	RPD-10000-13U	706,002	16	Residential planned development		10,000	70
45	RPD-20000-3U	300,238	7	Residential planned development		20,000	15
46	RPD-20000-7.5U	223,933	5	Residential planned development		20,000	11
55	R-1-10000	2,578,608	59	Single-family residence		10,000	257
56	R-1-12000	767,665	18	Single-family residence		12,000	63
57	R-1-15000	936,394	21	Single-family residence		15,000	62
58	R-1-20000	7,095,404	163	Single-family residence		20,000	354
59	R-1-7500	11,820,244	271	Single-family residence		7,500	1,576

Residential Totals (ft^2)	**418,242,260**
Totals (acre)	**9,602**
Totals (mi^2)	**15**

Number of Residences	**54,087**

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ANTELOPE VALLEY COMPREHENSIVE PLAN
TOTAL AMOUNT OF POTENTIAL RESIDENTIAL LOTS,
MULTI-FAMILY LOTS, AND COMMERCIAL/INDUSTRIAL ACREAGE
WITHIN THE UNINCORPORATED AREAS
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MULTI-FAMILY (RESIDENTIAL) UNITS [1]

		(A)	(B) = A / 43,560	(C)	(D)	(E)	(F) = A / E
NUMBER	ZONE	Sum_AREA (ft^2)	Sum_AREA (acre)	Min_Z_DESC	Permitted Uses	MIN	SA_MIN (ft^2/ft^2)
27	R-3	3,836,498	88	Limited multiple residence	Apartment Houses	1,450	2,645
28	R-3-20U	3,131,608	72	Limited multiple residence	Apartment Houses	1,450	2,159
29	R-3-P	517,589	12	Limited multiple residence	Apartment Houses	1,450	356
60	R-2	6,318	0	Two-family residence	Duplex	2,500	2
61	R-2-15000	191,273	4	Two-family residence	Duplex	15,000	12
62	R-2-20000	668,478	15	Two-family residence	Duplex	20,000	33

Multi-Family Units	
Totals (ft^2)	**8,351,763**
Totals (acre)	**192**
Totals (mi^2)	**0.30**

Number of Residences	**5,207**

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ANTELOPE VALLEY COMPREHENSIVE PLAN
TOTAL AMOUNT OF POTENTIAL RESIDENTIAL LOTS,
MULTI-FAMILY LOTS, AND COMMERCIAL/INDUSTRIAL ACREAGE
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COMMERCIAL/INDUSTRIAL (1)

		(A)	(B) = A / 43,560	(C)	(D)	(E)	(F) = A / E
NUMBER	**ZONE**	**Sum_AREA (ft^2)**	**Sum_AREA (acre)**	**Min_Z_DESC**	**Permitted Uses**	**MIN**	**SA_MIN (ft^2/ft^2)**
2	C-H	466,698	11	Commercial highway		1	466,698
3	CPD	473,136	11	Commercial planned development		5,000	94
4	C-R	14,010,178	322	Commercial recreation		217,800	64
13	M-2	29,251,291	672	Heavy manufacturing		1	29,251,291
14	M-2-DP	722,392	17	Heavy manufacturing		1	722,392
15	M-2.5	73,530,145	1,688	Heavy manufacturing		1	73,530,145
25	M-1	9,778,818	224	Light manufacturing		1	9,778,818
26	M-1-DP	198,206	5	Light manufacturing		1	198,206
30	C-2	3,364,280	77	Neighborhood commercial		1	3,364,280
31	C-2-DP	1,376,720	32	Neighborhood commercial		1	1,376,720
51	C-1	797,112	18	Restricted business		1	797,112
52	C-1-DP	51,011	1	Restricted business		1	51,011
53	M-1.5	121,101,693	2,780	Restricted heavy manufacturing		1	121,101,693
63	C-3	20,099,994	461	Unlimited commercial		1	20,099,994
64	C-3-DP	244,182	6	Unlimited commercial		1	244,182
65	C-3-U/C	398,382	9	Unlimited commercial		1	398,382

Commercial/Industrial Totals (ft^2)	**275,864,236**
Totals (acre)	**6,333**
Totals ($miles^2$)	**10**

Footnote:

(1) Mapping and Property Management Division produced a digital version of the 1987 Antelope Valley Drainage Study map and used the County of Los Angeles Department of Regional Planning's Zoning Ordinance Summary to develop the above tables depicting undeveloped unincorporated area and the planned zoning for residential lots, multi-family lots, and commercial/industrial acreage.

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ANTELOPE VALLEY 72-INCH REINFORCED CONCRETE PIPE ESTIMATE
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Construction Cost Index (CCI) Adjusted Item Bid Calculation

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(H)	(H)	(H)	(I)	(J) = I / H	(K) = (Greatest of D or E or F) * J
								Construction Cost Index [2]						
Project Name	Description	Trench Depth [1]	Length	Engineer's Estimate	Low Bidder Item Bid	Average Item Bid	Bid Date	Dec-01	Dec-02	Dec-03	Jun-04	Jun-06	Adjustment Factor	Adjusted Item Bid [2]
Fairplex Drain	72" RCP, 1450 D	16.00	455.00	$ 398.00	$ 250.00	$ 381.25	Jun-04				7843.85	8546.72	1.09	$ 433.66
Ward Channel Invert & Connector Pipe Repairs	72" RCP, 0800 D	10.50	16.00	$ 525.00	$ 965.00	$ 2,045.00	Apr-03			7531.77		8546.72	1.13	$ 2,320.58
Altadena System Lincoln Debris Basin Enlargement	72" RCP, 2000 D	16.00	157.00	$ 299.00	$ 165.00	$ 298.95	Apr-02		7402.75			8546.72	1.15	$ 345.21
Beverly Pico Drain, Unit 2	72" RCP, 0850 D	8.00	1,614.00	$ -	$ 224.97	$ 288.10	Jun-01	7226.92				8546.72	1.18	$ 340.71
Vernon Channel - Fieldbrook Debris Basin	72" RCP, 1550 D	22.00	84.00	$ -	$ 250.00	$ 349.00	May-01	7226.92				8546.72	1.18	$ 412.74
Busby Drain & Cash Contract 7643	72" RCP, 1400 D	20.00	726.00	$ -	$ 295.00	$ 347.08	Jun-01	7226.92				8546.72	1.18	$ 410.46

Weighted Average (CCI) Adjusted Item Bid Calculation

	(A)	(B)	(C)	(D)	(E) = B*C	(F)	(G) = E*F	(H) = G / E
Project Name	Description	Trench Depth	Length	Unit of Measure	Trench Depth * Length	Adjusted Item Bid	Total Cost	Weighted Average Item Bid
Fairplex Drain	72" RCP, 1450 D	16.00	455.00	Linear Foot	7,280.00	$ 433.66	$ 3,157,073.17	
Ward Channel Invert & Connector Pipe Repairs	72" RCP, 0800 D	10.50	16.00	Linear Foot	168.00	$ 2,320.58	$ 389,856.72	
Altadena System Lincoln Debris Basin Enlargement	72" RCP, 2000 D	16.00	157.00	Linear Foot	2,512.00	$ 345.21	$ 867,155.97	
Beverly Pico Drain, Unit 2	72" RCP, 0850 D	8.00	1,614.00	Linear Foot	12,912.00	$ 340.71	$ 4,399,294.19	
Vernon Channel - Fieldbrook Debris Basin	72" RCP, 1550 D	22.00	84.00	Linear Foot	1,848.00	$ 412.74	$ 762,734.91	
Busby Drain & Cash Contract 7643	72" RCP, 1400 D	20.00	726.00	Linear Foot	14,520.00	$ 410.46	$ 5,959,947.50	
Total					39,240.00		$ 15,536,062.45	$ 395.92

Assumptions:

(1) Trench depth determined by "D Load Table" per Los Angeles County Flood Control District "Structural Design Manual" DWG No. 2-D213.3.
(2) Used ENR published CCI for Los Angeles to adjust the base price. ENR traditionally published the CCI in December on a year-to-year basis. Due to significant increased construction costs in recent years, ENR began publishing CCI on a month-to-month basis beginning January 2004. CCI for December will be used for projects with a bid date prior to 2004.
(3) The Antelope Valley region requires various assumptions as to the location, size, and costs of drainage needs associated with future developments. The greatest amount among the Engineer's Estimate, Low Bidder Item Bid, and Low Bidder Item Bid was used as the base price to determine 72" RCP cost.

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ANTELOPE VALLEY SHORING COST ESTIMATE
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	(A)	(B)	(C)	(D)	(E) = B*C	(F) = 2*E
Project Name	**Description**	**Trench Depth [1]**	**Length**	**Unit of Measure**	**Trench Depth * Length**	**Trench Depth * Length * 2**
Fairplex Drain	24" RCP, 2000 D	11.00	511.00	Linear Foot	5,621.00	11,242.00
Fairplex Drain	18" RCP, 2000 D	10.50	111.00	Linear Foot	1,165.50	2,331.00
Fairplex Drain	36" RCP, 2000 D	13.00	579.00	Linear Foot	7,527.00	15,054.00
Fairplex Drain	42" RCP, 1700 D	13.50	937.00	Linear Foot	12,649.50	25,299.00
Fairplex Drain	48" RCP, 1700 D	14.00	509.00	Linear Foot	7,126.00	14,252.00
Fairplex Drain	54" RCP, 1600 D	14.50	1,498.00	Linear Foot	21,721.00	43,442.00
Fairplex Drain	60" RCP, 1600 D	15.00	10.00	Linear Foot	150.00	300.00
Fairplex Drain	66" RCP, 1500 D	15.50	487.00	Linear Foot	7,548.50	15,097.00
Fairplex Drain	72" RCP, 1450 D	16.00	455.00	Linear Foot	7,280.00	14,560.00
Fairplex Drain	30" RCP, 2000 D	12.50	668.00	Linear Foot	8,350.00	16,700.00
Fairplex Drain	90" Rubber Gasketed RCP, 1400 D	17.50	230.00	Linear Foot	4,025.00	8,050.00
Fairplex Drain	78" Rubber Gasketed RCP, 1450 D	16.50	959.00	Linear Foot	15,823.50	31,647.00
Fairplex Drain	60" Rubber Gasketed RCP, 1600 D	15.00	138.00	Linear Foot	2,070.00	4,140.00
Fairplex Drain					**101,057.00**	**202,114.00**
Total						

Calculation of Average Shoring per Linear Foot for Fairplex Drain Project

Shoring of Open Excavations [2]		$222,000.00
Engineer's Estimate		$494,800.00
Low Bidder Item Bid	(a)	$716,716.70
Average Item Bid	(b)	202,114.00
Total Shoring Area	(d) = a/b	$3.55
Average Shoring per Square Foot		Jun-04
Bid Date	(e)	7843.85
CCI for Los Angeles for June 2004	(f)	8546.72
CCI for Los Angeles for June 2006	(g) = f/e	1.09
Adjustment Factor	(h) = d*g	$3.86
CCI Adjusted Average Shoring per Linear Foot		

	(A)	(B)	(C)	(D)	(E) = B*C	(F) = 2*E
Project Name	**Description**	**Trench Depth**	**Length**	**Unit of Measure**	**Trench Depth * Length**	**Trench Depth * Length * 2**
Ward Channel Invert & Connector Pipe Repairs	72" RCP, 0800 D	10.50	16.00	Linear Foot	168.00	336.00

Calculation of Average Shoring per Linear Foot for Ward Channel Invert and Connector Pipe Repairs Project

Shoring of Open Excavations [2]		$1,620.00
Engineer's Estimate		$1,650.00
Low Bidder Item Bid	(a)	$6,825.00
Average Item Bid	(b)	336.00
Total Shoring Area	(d) = a/b	$20.31
Average Shoring per Square Foot		Apr-03
Bid Date	(e)	7531.77
CCI for Los Angeles for December 2003 [3]	(f)	8546.72
CCI for Los Angeles for June 2006	(g) = f/e	1.13
Adjustment Factor	(h) = d*g	$23.05
CCI Adjusted Average Shoring per Linear Foot		

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	(A)	(B)	(C)	(D)	(E) = B*C	(F) = 2*E
Project Name	**Description**	**Trench Depth**	**Length**	**Unit of Measure**	**Trench Depth * Length**	**Trench Depth * Length * 2**
Altadena System Lincoln Debris Basin Enlargement	72" RCP, 2000 D	16.00	157.00	Linear Foot	2,512.00	5,024.00
Altadena System Lincoln Debris Basin Enlargement	36" RCP, 2000 D	13.00	108.00	Linear Foot	1,404.00	2,808.00
Altadena System Lincoln Debris Basin Enlargement	24" RCP, 2000 D	12.00	127.00	Linear Foot	1,524.00	3,048.00
Total					**5,440.00**	**10,880.00**

Calculation of Average Shoring per Linear Foot for Altadena System Lincoln Debris Basin Enlargement Project

Shoring of Open Excavations [2]		
Engineer's Estimate	(a)	$9,000.00
Low Bidder Item Bid		$1,000.00
Average Item Bid		$4,475.10
Total Shoring Area	(b)	10,880.00
Average Shoring per Square Foot	(d) = a/b	$0.83
Bid Date		Apr-02
CCI for Los Angeles for December 2002 [3]	(e)	7402.75
CCI for Los Angeles for June 2006	(f)	8546.72
Adjustment Factor	(g) = f/e	1.15
CCI Adjusted Average Shoring per Linear Foot	(h) = d*g	$0.96

	(A)	(B)	(C)	(D)	(E) = B*C	(F) = 2*E
Project Name	**Description**	**Trench Depth**	**Length**	**Unit of Measure**	**Trench Depth * Length**	**Trench Depth * Length * 2**
Beverly Pico Drain, Unit 2	18" RCP, 2000 D	10.50	146.00	Linear Foot	1,533.00	3,066.00
Beverly Pico Drain, Unit 2	54" RCP, 1100 D	8.75	43.00	Linear Foot	376.25	752.50
Beverly Pico Drain, Unit 2	72" RCP, 0850 D	8.00	1,614.00	Linear Foot	12,912.00	25,824.00
Total					**14,821.25**	**29,642.50**

Calculation of Average Shoring per Linear Foot for Beverly Pico Drain, Unit 2 Project

Shoring of Open Excavations [2]		$0.00
Engineer's Estimate		$39,997.35
Low Bidder Item Bid	(a)	$65,344.48
Average Item Bid	(b)	29,642.50
Total Shoring Area	(d) = a/b	$2.20
Average Shoring per Square Foot		Jun-01
Bid Date	(e)	7226.92
CCI for Los Angeles for December 2001 [3]	(f)	8546.72
CCI for Los Angeles for June 2006	(g) = f/e	1.18
Adjustment Factor	(h) = d*g	$2.61
CCI Adjusted Average Shoring per Linear Foot		

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	(A)	(B)	(C)	(D)	(E) = B*C	(F) = 2*E
Project Name	**Description**	**Trench Depth**	**Length**	**Unit of Measure**	**Trench Depth * Length**	**Trench Depth * Length * 2**
Vernon Channel - Fieldbrook Debris Basin	18" RCP, 2000 D	10.50	40.00	Linear Foot	420.00	840.00
Vernon Channel - Fieldbrook Debris Basin	42" RCP, 1500 D	8.50	44.00	Linear Foot	374.00	748.00
Vernon Channel - Fieldbrook Debris Basin	72" RCP, 1550 D	22.00	84.00	Linear Foot	1,848.00	3,696.00
Total					**2,642.00**	**5,284.00**

Calculation of Average Shoring per Linear Foot for Vernon Channel - Fieldbrook Debris Basin Project

Shoring of Open Excavations [2]		$0.00
Engineer's Estimate	(a)	$14,800.00
Low Bidder Item Bid		$12,560.00
Average Item Bid	(b)	5,284.00
Total Shoring Area	(d) = a/b	$2.80
Average Shoring per Square Foot		May-01
Bid Date	(e)	7226.92
CCI for Los Angeles for December 2001 [3]	(f)	8546.72
CCI for Los Angeles for June 2006	(g) = f/e	1.18
Adjustment Factor	(h) = d*g	$3.31
CCI Adjusted Average Shoring per Linear Foot		

	(A)	(B)	(C)	(D)	(E) = B*C	(F) = 2*E
Project Name	**Description**	**Trench Depth**	**Length**	**Unit of Measure**	**Trench Depth * Length**	**Trench Depth * Length * 2**
Busby Drain and Cash Contract 7643	24" RCP, 2250 D and Less	12.00	238.00	Linear Foot	2,856.00	5,712.00
Busby Drain and Cash Contract 7643	18" RCP, 2250 D and Less	11.50	1,204.00	Linear Foot	13,846.00	27,692.00
Busby Drain and Cash Contract 7643	36" RCP, 2000 D	13.00	211.00	Linear Foot	2,743.00	5,486.00
Busby Drain and Cash Contract 7643	48" RCP, 1700 D	14.00	85.00	Linear Foot	1,190.00	2,380.00
Busby Drain and Cash Contract 7643	48" RCP, 1500 D	13.00	784.00	Linear Foot	10,192.00	20,384.00
Busby Drain and Cash Contract 7643	48" RCP, 1400 D	17.00	991.00	Linear Foot	16,847.00	33,694.00
Busby Drain and Cash Contract 7643	42" RCP, 1700 D	13.50	486.00	Linear Foot	6,561.00	13,122.00
Busby Drain and Cash Contract 7643	78" RCP, 1550 D	22.50	495.00	Linear Foot	11,137.50	22,275.00
Busby Drain and Cash Contract 7643	78" RCP, 1250 D	18.50	1,064.00	Linear Foot	19,684.00	39,368.00
Busby Drain and Cash Contract 7643	78" RCP, 0900 D	10.50	495.00	Linear Foot	5,197.50	10,395.00
Busby Drain and Cash Contract 7643	72" RCP, 1400 D	20.00	726.00	Linear Foot	14,520.00	29,040.00
Total					**104,774.00**	**209,548.00**

Calculation of Average Shoring per Linear Foot for Busby Drain and Cash Contract 7643 Project

Shoring of Open Excavations [2]		$0.00
Engineer's Estimate		$100,000.00
Low Bidder Item Bid	(a)	$169,662.62
Average Item Bid	(b)	209,548.00
Total Shoring Area	(d) = a/b	$0.81
Average Shoring per Square Foot		Jun-01
Bid Date	(e)	7226.92
CCI for Los Angeles for December 2001 [3]	(f)	8546.72
CCI for Los Angeles for June 2006	(g) = f/e	1.18
Adjustment Factor	(h) = d*g	$0.96
CCI Adjusted Average Shoring per Linear Foot		

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	(A)	(B)	(C) = A*B	(D) = C/A
Project Name	**Total Trench Depth * Length * 2**	**CCI Adjusted Average Shoring Cost per Linear Foot**	**Total CCI Adjusted Shoring Cost**	**CCI Adjusted Average Shoring Cost per Linear Foot**
Fairplex Drain	202,114.00	$3.86	$780,940.09	
Ward Channel Invert & Connector Pipe Repairs	336.00	$23.05	$7,744.71	
Altadena System Lincoln Debris Basin Enlargement	10,880.00	$0.96	$10,390.80	
Beverly Pico Drain, Unit 2	29,642.50	$2.61	$77,277.87	
Vernon Channel - Fieldbrook Debris Basin	5,284.00	$3.31	$17,502.82	
Busby Drain and Cash Contract 7643	209,548.00	$0.96	$200,646.87	
Total	**457,804.50**		**$1,094,503.16**	**$2.39**

Average Trench Depth Calculation of 72" RCP

	(A)	(B)	(C)	(D)	(E) = B*C	(F) = E / C
Project Name	**Description**	**Trench Depth**	**Length**	**Unit of Measure**	**Trench Depth * Length**	**Average Trench Depth**
Fairplex Drain	72" RCP, 1450 D	16.00	455.00	Linear Foot	7,280.00	
Ward Channel Invert & Connector Pipe Repairs	72" RCP, 0800 D	10.50	16.00	Linear Foot	168.00	
Altadena System Lincoln Debris Basin Enlargement	72" RCP, 2000 D	16.00	157.00	Linear Foot	2,512.00	
Beverly Pico Drain, Unit 2	72" RCP, 0850 D	8.00	1,614.00	Linear Foot	12,912.00	
Vernon Channel - Fieldbrook Debris Basin	72" RCP, 1550 D	22.00	84.00	Linear Foot	1,848.00	
Busby Drain & Cash Contract 7643	72" RCP, 1400 D	20.00	726.00	Linear Foot	14,520.00	
Total			**3,052**		**39,240.00**	**12.86**

Shoring Cost per Linear Foot =	CCI Adjusted Shoring Cost per Square Foot * Average Trench Depth * 2
Shoring Cost per Linear Foot =	$2.39 * 12.86 LF * 2
Shoring Cost per Linear Foot =	**$61.48**

Footnotes:

(1) Trench depth determined by "D Load Table" per Los Angeles County Flood Control District "Structural Design Manual" DWG No. 2-D213.3.
(2) The Antelope Valley region requires various assumptions as to the location, size, and costs of drainage needs associated with future developments. The greatest amount among the Engineer's Estimate, Low Bidder Item Bid, and Low Bidder Item Bid was used as the base price to determine shoring cost.
(3) Used ENR published CCI for Los Angeles to adjust the base price. ENR traditionally published the CCI in December on a year-to-year basis. Due to significant increased construction costs in recent years, ENR began publishing CCI on a month-to-month basis beginning January 2004. CCI for December will be used for projects with a bid date prior to 2004.

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ANTELOPE VALLEY RECTANGULAR CHANNEL COST ESTIMATE
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	(A)	(B)	(C)	(D)	(E) = B*C	(F)	(F)	(F)	(G)	(H) = ((C *Greatest of F) / E)* G
Project Name	Description	Cubic Yard Per Linear Foot	Quantity	Unit of Measure	Total Quantity of Concrete (Cubic Yard)	Engineer's Estimate Per Linear Foot	Low Bidder Item Bid Per Linear Foot	Average Item Bid Per Linear Foot	Adjustment Factor	Rectangular Channel Concrete Cost Per Cubic Yard (1)
Buena Vista Channel	08'-00" W * 09'-06" H RCB, SECT 07	0.92	35.00	Linear Foot	32.20	$ 526.00	$ 690.00	$ 690.83	1.13	$ 848.52
Buena Vista Channel	07'-03" W * 04'-06" H RCB, SECT 06	0.70	32.00	Linear Foot	22.40	$ 358.00	$ 470.00	$ 552.17	1.13	$ 891.36
Buena Vista Channel	09'-00" W * 10'-00" H DBL RCB, SECT 09	1.70	12.00	Linear Foot	20.40	$ 1,000.00	$ 1,100.00	$ 1,399.50	1.13	$ 930.26
Buena Vista Channel (2)	09'-00" W * 08'-00" H DBL RCB, SECT 08	2.15	935.00	Linear Foot	2,010.25	$ 1,154.00	$ 560.00	$ 1,359.00	1.13	$ 714.27

Calculation of Adjustment Factor for Buena Vista Channel

Bid Date	May-03	(a)
Engineering News Record (ENR's) Construction Cost Index (CCI) for Los Angeles for December 2003	7531.77	(b)
CCI for Los Angeles for June 2006	8546.72	(c)
Adjustment Factor	1.13	(d) = c/b

	(A)	(B)	(C)	(D)	(E) = B*C	(F)	(F)	(F)	(G)	(H) = ((C *Greatest of F) / E)* G
Project Name	Description	Cubic Yard Per Linear Foot	Quantity	Unit of Measure	Total Quantity of Concrete (Cubic Yard)	Engineer's Estimate Per Linear Foot	Low Bidder Item Bid Per Linear Foot	Average Item Bid Per Linear Foot	Adjustment Factor	Rectangular Channel Concrete Cost Per Cubic Yard (1)
Ninth Avenue Drain	08'-00" W * 02'-00" H RCB, SECT 02	0.68	381.00	Linear Foot	259.08	$ 418.00	$ 301.69	$ 430.67	1.10	$696.67
Ninth Avenue Drain	06'-00" W * 03'-00" H RCB, SECT 01	0.56	20.00	Linear Foot	11.20	$ 520.00	$ 604.35	$ 700.44	1.10	$1,375.86

Calculation of Adjustment Factor for Ninth Avenue Drain

Bid Date	May-04	(a)
CCI for Los Angeles for May 2004	7803.52	(b)
CCI for Los Angeles for June 2006	8546.72	(c)
Adjustment Factor	1.10	(d) = c/b

	(A)	(B)	(C)	(D)	(E) = B*C	(F)	(F)	(F)	(G)	(H) = ((C *Greatest of F) / E)* G
Project Name	Description	Cubic Yard Per Linear Foot	Quantity	Unit of Measure	Total Quantity of Concrete (Cubic Yard)	Engineer's Estimate Per Linear Foot	Low Bidder Item Bid Per Linear Foot	Average Item Bid Per Linear Foot	Adjustment Factor	Rectangular Channel Concrete Cost Per Cubic Yard (1)
Project No. 64, Eastern Avenue Storm Drain	07'-10" W * 05'-00" H RCB	0.99	58.00	Linear Foot	57.42	$ 332.00	$ 600.00	$ 906.63	1.03	$ 943.26
Project No. 64, Eastern Avenue Storm Drain	08'-06" W * 05'-00" H RCB	1.04	2,053.00	Linear Foot	2,135.12	$ 350.00	$ 500.00	$ 585.63	1.03	$ 580.00

Calculation of Adjustment Factor for Project No. 64, Eastern Avenue Storm Drain

Bid Date	Jun-05	(a)
CCI for Los Angeles for June 2005	8299.28	(b)
CCI for Los Angeles for June 2006	8546.72	(c)
Adjustment Factor	1.03	(d) = c/b

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	(A)	(B)	(C)	(D)	(E) = B*C	(F)	(F)	(F)	(G)	(H) = ((C *Greatest of F) / E)* G
Project Name	Description	Cubic Yard Per Linear Foot	Quantity	Unit of Measure	Total Quantity of Concrete (Cubic Yard)	Engineer's Estimate Per Linear Foot	Low Bidder Item Bid Per Linear Foot	Average Item Bid Per Linear Foot	Adjustment Factor [3]	Rectangular Channel Concrete Cost Per Cubic Yard [1]
Beverly Pico Drain, Unit 2	10'-00" W * 02'-06" H RCB, SECT 10	0.85	10.00	Linear Foot	8.50	$ -	$ 1,000.00	$ 868.59	1.18	$ 1,388.24

Calculation of Adjustment Factor for Beverly Pico Drain, Unit 2

Bid Date	Jun-01	(a)
CCI for Los Angeles for December 2001	7226.92	(b)
CCI for Los Angeles for June 2006	8546.72	(c)
Adjustment Factor	1.18	(d) = c/b

Calculation of Concrete Cost per Cubic Yard Weighted by Volume

		(A)	(B)	(C) = A*B	
Project Name	Description	Total Quantity of Concrete (Cubic Yard)	Concrete Cost Per Cubic Yard	Total Rectangular Channel Concrete Cost	Weighted By Volume Concrete Cost Per Cubic Yard
Buena Vista Channel	08'-00" W * 09'-06" H RCB, SECT 07	32.20	$848.52	$27,322.33	
Buena Vista Channel	07'-03" W * 04'-06" H RCB, SECT 06	22.40	891.36	19,966.47	
Buena Vista Channel	09'-00" W * 10'-00" H DBL RCB, SECT 09	20.40	930.26	18,977.22	
Buena Vista Channel	09'-00" W * 08'-00" H DBL RCB, SECT 08	2,010.25	714.27	1,435,851.45	
Ninth Avenue Drain	08'-00" W * 02'-00" H RCB, SECT 02	259.08	696.67	180,493.80	
Ninth Avenue Drain	06'-00" W * 03'-00" H RCB, SECT 01	11.20	1,375.86	15,409.68	
Project No. 64, Eastern Avenue Storm Drain	07'-10" W * 05'-00" H RCB	57.42	943.26	54,162.08	
Project No. 64, Eastern Avenue Storm Drain	08'-06" W * 05'-00" H RCB	2,135.12	580.00	1,238,367.34	
Beverly Pico Drain, Unit 2	10'-00" W * 02'-06" H RCB, SECT 10	8.50	1,388.24	11,800.00	
Total		**4,556.57**		**$3,002,350.36**	**$658.91**

Per Design Division, one linear foot requires 0.79 cubic yard of concrete

Concrete Cost per linear foot =	$658.91 * 0.79
Concrete Cost per linear foot =	$520.54
Assume 10% Increase[5]	
Concrete Cost per linear foot with 10 % increment =	$520.54 * 1.1
Concrete Cost per linear foot with 10 % increment [4] =	**$572.59**

Footnotes:

(1) The Antelope Valley region requires various assumptions as to the location, size, and costs of drainage needs associated with future developments. The greatest amount among the Engineer's Estimate, Low Bidder Item Bid, and Low Bidder Item Bid was used as the base price to determine the rectangular channel concrete cost per cubic yard.

(2) The Average Item Bid for some reason was bid at half the typical costs. Thus, Design Division multiplied the cost by 2 to be within cost proximities.

(3) Used ENR published CCI for Los Angeles to adjust the base price. ENR traditionally published the CCI in December on a year-to-year basis. Due to significant increased construction costs in recent years, ENR began publishing CCI on a month-to-month basis beginning January 2004. CCI for December will be used for projects with a bid date prior to 2004.

(4) Past bid history projects had different amounts of concrete per linear feet. Such different amounts mean there are different volumes of concrete in cubic yard per linear foot. Hence, a weighted average volume is required to determine average cost per cubic yard for the past bid history projects and then convert into an average cost per linear foot.

(5) According to Mike Hong of Design Division, add 10% for possible increased construction costs.

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Cost Estimate Type	Name of Project (A)	Bid Date (B)	Average Item Bid (C) [1]	Engineer's Estimate (D) [1]	Low Bidder Item Bid (E) [1]	Quantity (F)	CCI @ Bid Date (G) [2]	CCI @ June 2006 (H)	Adjustment Factor (I) = H / G	Greatest of Item Cost C, D or E Adjusted With Adjustment Factor	Amount (K) = F * J	Weighted Average Unit Cost (L) = K / F
Construction Schedule	Buena Vista Channel	May-03	$ 816.67	$ 900.00	$ 2,300.00	10	7531.77	8546.72	1.13	$ 2,609.94	$ 26,099.38	
	Ninth Avenue Drain	May-04	$ 698.03	$ 925.00	$ 498.33	9	7803.52	8546.72	1.10	$ 1,013.10	$ 9,117.87	
	Project No. 64, Eastern Avenue Storm Drain	Jun-05	$ 890.00	$ 500.00	$ 500.00	8	8299.28	8546.72	1.03	$ 916.54	$ 7,332.28	
Total						**27**					**$ 42,549.53**	**$ 1,575.91**
Implementation of BMPs	Buena Vista Channel	May-03	$ 15,150.00	$ 10,000.00	$ 30,900.00	1	7531.77	8546.72	1.13	$ 35,063.96	$ 35,063.96	
	Gratian Street Drain	Dec-02	$ 1,641.67	$ 3,000.00	$ 500.00	1	7402.75	8546.72	1.15	$ 3,463.60	$ 3,463.60	
	Puddingstone Channel Invert Access Ramp	Apr-03	$ 3,639.29	$ 4,000.00	$ 8,050.00	1	7531.77	8546.72	1.13	$ 9,134.78	$ 9,134.78	
	Liberty Canyon Channel Access Ramp @ PD 572	Jun-04	$ 4,172.77	$ 2,000.00	$ 1,000.00	1	7843.85	8546.72	1.09	$ 4,546.68	$ 4,546.68	
	Ninth Avenue Drain	May-04	$ 14,323.80	$ 13,000.00	$ 15,238.00	1	7803.52	8546.72	1.10	$ 16,689.25	$ 16,689.25	
	Project No. 64, Eastern Avenue Storm Drain	Jun-05	$ 18,250.00	$ 10,000.00	$ 3,000.00	1	8299.28	8546.72	1.03	$ 18,794.12	$ 18,794.12	
	Beverly Pico Drain, Unit 2	Jun-01	$ 4,689.82	$ -	$ 1,000.00	1	7226.92	8546.72	1.18	$ 5,546.29	$ 5,546.29	
Total						**7**					**$ 93,238.68**	**$ 13,319.81**
Stormwater Pollution Prevention Plan	Buena Vista Channel	May-03	$ 5,000.00	$ 5,000.00	$ 11,000.00	1	7531.77	8546.72	1.13	$ 12,482.31	$ 12,482.31	
	Ninth Avenue Drain	May-04	$ 8,402.50	$ 10,000.00	$ 4,025.00	1	7803.52	8546.72	1.10	$ 10,952.39	$ 10,952.39	
Total						**2**					**$ 23,434.70**	**$ 11,717.35**
Restoration of Existing Improvements	Buena Vista Channel	May-03	$ 22,316.67	$ 30,000.00	$ 55,900.00	1	7531.77	8546.72	1.13	$ 63,432.85	$ 63,432.85	
	Gratian Street Drain	Dec-02	$ 3,127.33	$ 1,880.00	$ 4,100.00	1	7402.75	8546.72	1.15	$ 4,733.59	$ 4,733.59	
	Puddingstone Channel Invert Access Ramp	Apr-03	$ 4,114.64	$ 4,000.00	$ 10,005.00	1	7531.77	8546.72	1.13	$ 11,353.23	$ 11,353.23	
	Ninth Avenue Drain	May-04	$ 49,897.90	$ 92,000.00	$ 38,479.00	1	7803.52	8546.72	1.10	$ 100,761.99	$100,761.99	
Total						**4**					**$180,281.66**	**$ 45,070.42**

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Cost Estimate Type	Name of Project (A)	Bid Date (B)	Average Item Bid (C) [1]	Engineer's Estimate (D) [1]	Low Bidder Item Bid (E) [1]	Quantity (F)	CCI @ Bid Date (G) [2]	CCI @ June 2006 (H)	Adjustment Factor (I) = H / G	Greatest of Item Cost C, D or E Adjusted With Adjustment Factor	Amount (K) = F * J	Weighted Average Unit Cost (L) = K / F
Office Facilities	Buena Vista Channel	May-03	$ 18,650.00	$ 13,600.00	$ 25,900.00	1	7531.77	8546.72	1.13	$ 29,390.18	$ 29,390.18	
	Gratian Street Drain	Dec-02	$ 3,402.33	$ 2,550.00	$ 3,250.00	1	7402.75	8546.72	1.15	$ 3,928.10	$ 3,928.10	
	Ninth Avenue Drain	May-04	$ 13,429.90	$ 12,750.00	$ 11,299.00	1	7803.52	8546.72	1.10	$ 14,708.95	$ 14,708.95	
	Project No. 64, Eastern Avenue Storm Drain	Jun-05	$ 20,562.50	$ 5,000.00	$ 5,000.00	1	8299.28	8546.72	1.03	$ 21,175.56	$ 21,175.56	
	Beverly Pico Drain, Unit 2	Jun-01	$ 6,875.14	$ -	$ 3,000.00	1	7226.92	8546.72	1.18	$ 8,130.70	$ 8,130.70	
Total						**5**					**$ 77,333.49**	**$ 15,466.70**
Mobilization	Channel	May-03	$ 340,535.70	$ 300,000.00	$ 413,214.20	1	7531.77	8546.72	1.13	$ 468,897.23	$468,897.23	
	Gratian Street Drain	Dec-02	$ 7,961.67	$ 4,700.00	$ 8,000.00	1	7402.75	8546.72	1.15	$ 9,236.26	$ 9,236.26	
	Ninth Avenue Drain	May-04	$ 188,197.30	$ 200,000.00	$ 147,973.00	1	7803.52	8546.72	1.10	$ 219,047.81	$219,047.81	
	Project No. 64, Eastern Avenue Storm Drain	Jun-05	$ 68,126.25	$ 30,000.00	$ 5,000.00	2	8299.28	8546.72	1.03	$ 70,157.41	$140,314.82	
Total						**5**					**$837,496.12**	**$ 167,499.22**
Structural Excavation	Vernon Channel-Fieldbrook Debris Basin	May-01	$ 8.35	$ -	$ 10.00	15,100	7226.92	8546.72	1.18	$ 11.83	$178,576.04	
	126TH Street El Al.	Apr-02	$ 30.71	$ 50.00	$ 23.00	672	7402.75	8546.72	1.15	$ 57.73	$ 38,792.31	
	Paseo Del Rio San Gabriel Coastal Basin Spreading Grounds, Phase 2, Multiuse Improvements	Sep-05	$ 512.50	$ 150.00	$ 100.00	15	8485.2	8546.72	1.01	$ 516.22	$ 7,743.24	
Total						**15,787**					**$225,111.58**	**$ 14.26**
AC Pavement Crushed Aggregate	Design Division consulted with its Highway Unit for today's unit costs for AC pavement and crushed aggregate.											
Chain Link ROW Wall Fences	Buena Vista Channel	May-03	$ 8.58	$ 10.85	$ 8.00	5,074	7531.77	8546.72	1.13	$ 12.31	$ 62,471.60	
	Puddingstone Channel Invert Access Ramp	Apr-03	$ 23.15	$ 26.00	$ 8.53	89	7531.77	8546.72	1.13	$ 29.50	$ 2,625.83	
	Ninth Avenue Drain	May-04	$ 21.51	$ 20.00	$ 16.10	400	7803.52	8546.72	1.10	$ 23.56	$ 9,423.44	
Total						**5,563**					**$ 74,520.86**	**$ 13.40**

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Cost Estimate Type	Name of Project (A)	Bid Date (B)	Average Item Bid (C) [1]	Engineer's Estimate (D) [1]	Low Bidder Item Bid (E) [1]	Quantity (F)	CCI @ Bid Date (G) [2]	CCI @ June 2006 (H)	Adjustment Factor (I) = H / G	Greatest of Item Cost C, D or E Adjusted With Adjustment Factor	Amount (K) = F * J	Weighted Average Unit Cost (L) = K / F
Chain Link Channel Wall Fences	Buena Vista Channel	May-03	$ 7.58	$ 9.94	$ 6.00	3,893	7531.77	8546.72	1.13	$ 11.28	$ 43,910.99	
	Ninth Avenue Drain	May-04	$ 21.51	$ 20.00	$ 16.10	400	7803.52	8546.72	1.10	$ 23.56	$ 9,423.44	
Total						**4,293**					**$ 53,334.43**	**$ 12.42**
4' High Walk Gate	Buena Vista Channel	May-03	$ 323.00	$ 375.00	$ 330.00	1	7531.77	8546.72	1.13	$ 425.53	$ 425.53	
Total						**1**					**$ 425.53**	**$ 425.53**
24' Double-Drive Gate	Buena Vista Channel	May-03	$ 800.00	$ 1,500.00	$ 1,050.00	1	7531.77	8546.72	1.13	$ 1,702.13	$ 1,702.13	
Total						**1**					**$ 1,702.13**	**$ 1,702.13**
16' Double-Drive Gate	Buena Vista Channel	May-03	$ 774.83	$ 1,200.00	$ 660.00	2	7531.77	8546.72	1.13	$ 1,361.71	$ 2,723.41	
16' Double-Drive Gate	Puddingstone Channel Invert Access Ramp	Apr-03	$ 1,747.21	$ 1,200.00	$ 811.00	1	7531.77	8546.72	1.13	$ 1,982.66	$ 1,982.66	
16' Double-Drive Gate	Ninth Avenue Drain	May-04	$ 2,024.30	$ 1,250.00	$ 863.00	1	7803.52	8546.72	1.10	$ 2,217.09	$ 2,217.09	
Total						**4**					**$ 6,923.16**	**$ 1,730.79**
15' Double-Drive Gate	Liberty Canyon Channel Access Ramp @ PD 572	Jun-04	$ 839.67	$ 1,200.00	$ 500.00	1	7843.85	8546.72	1.09	$ 1,307.53	$ 1,307.53	
Total						**1**					**$ 1,307.53**	**$ 1,307.53**
Catch Basin Per Std Plan 300, W=07	Ninth Avenue Drain	May-04	$ 3,613.90	$ 3,362.00	$ 3,879.00	8	7803.52	8546.72	1.10	$ 4,248.43	$ 33,987.46	
Catch Basin Per Std Plan 307, W=07	Ninth Avenue Drain	May-04	$ 4,018.80	$ 7,589.00	$ 4,488.00	2	7803.52	8546.72	1.10	$ 8,311.77	$ 16,623.54	
Total						**10**					**$ 50,611.00**	**$ 5,061.10**
Manhole Per Std 322	Ninth Avenue Drain	May-04	$ 4,780.00	$ 6,427.00	$ 4,600.00	8	7803.52	8546.72	1.10	$ 7,039.10	$ 56,312.81	
Total						**8**					**$ 56,312.81**	**$ 7,039.10**
Junction Structure Per Std Plan 331	Ninth Avenue Drain	May-04	$ 1,255.00	$ 1,200.00	$ 1,150.00	50	7803.52	8546.72	1.10	$ 1,374.53	$ 68,726.25	
Junction Structure Per Std Plan 333	Ninth Avenue Drain	May-04	$ 1,521.00	$ 1,375.00	$ 1,380.00	3	7803.52	8546.72	1.10	$ 1,665.86	$ 4,997.58	
Total						**53**					**$ 73,723.83**	**$ 1,391.02**
18" RCP (2000 D)	Ninth Avenue Drain	May-04	$ 97.61	$ 75.00	$ 57.10	1,904	7803.52	8546.72	1.10	$ 106.91	$203,549.57	
	Beverly Pico Drain, Unit 2	Jun-01	$ 117.56	$ -	$ 96.97	146	7226.92	8546.72	1.18	$ 139.03	$ 20,298.25	
Total						**2,050**					**$223,847.82**	**$ 109.19**
24" RCP (2000 D)	Gratian Street Drain	Dec-02	$ 177.67	$ 145.00	$ 94.00	138	7402.75	8546.72	1.15	$ 205.13	$ 28,307.37	
	Ninth Avenue Drain	May-04	$ 107.32	$ 95.00	$ 69.16	192	7803.52	8546.72	1.10	$ 117.54	$ 22,567.88	
Total						**330**					**$ 50,875.26**	**$ 154.17**

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Cost Estimate Type	Name of Project (A)	Bid Date (B)	Average Item Bid (C) [1]	Engineer's Estimate (D) [1]	Low Bidder Item Bid (E) [1]	Quantity (F)	CCI @ Bid Date (G) [2]	CCI @ June 2006 (H)	Adjustment Factor (I) = H / G	Greatest of Item Cost C, D or E Adjusted With Adjustment Factor	Amount (K) = F * J	Weighted Average Unit Cost (L) = K / F
30" RCP (2000 D)	Buena Vista Channel Ninth Avenue Drain	May-03	$ 257.00	$ 131.00	$ 310.00	8	7531.77	8546.72	1.13	$ 351.77	$ 2,814.19	
		May-04	$ 127.38	$ 130.00	$ 82.83	643	7803.52	8546.72	1.10	$ 142.38	$ 91,551.03	
Total						**651**					**$ 94,365.23**	**$ 144.95**
42" RCP (2000 D)	Ninth Avenue Drain	May-04	$ 168.18	$ 172.00	$ 126.83	202	7803.52	8546.72	1.10	$ 188.38	$ 38,052.99	
Total						**202**					**$ 38,052.99**	**$ 188.38**

Cost Estimate Type	Name of Project (A)	Width (Feet) (B)	Weighted Average Unit Cost (C)	Weighted Average Cost Per Foot (D) = C / B	Weighted Average Cost For 12' (E) = D*12
15' Double-Drive Gate	Liberty Canyon Channel Access Ramp @ PD 572	15	$ 1,307.53	$ 87.17	
16' Double-Drive Gate	Buena Vista Channel, Puddingstone Channel Invert Access Ramp, Ninth Avenue Drain	16	$ 1,730.79	$ 108.17	
24' Double-Drive Gate	Buena Vista Channel	24	$ 1,702.13	$ 70.92	
Average for 12' Double-Drive Gate [4]		**55**	**$ 4,740.45**	**$ 86.19**	**$ 1,034.28**

Cost Estimate Type	Name of Project (A)	Diameter (Inch) (B)	Weighted Average Unit Cost (C)	Weighted Average Unit Cost Per Inch (D) = C / B	Weighted Average Item Bid For 21" (E) = D*21
18" RCP (2000 D)	Ninth Avenue Drain, Beverly Pico Drain Unit 2	18	$ 109.19	$ 6.07	
24" RCP (2000 D)	Gratian Street Drain, Ninth Avenue Drain	24	$ 154.17	$ 6.42	
30" RCP (2000 D)	Buena Vista Channel, Ninth Avenue Drain	30	$ 144.95	$ 4.83	
42" RCP (2000 D)	Ninth Avenue Drain	42	$ 188.38	$ 4.49	
Average for 21" RCP (2000 D) [5]		**114**	**$ 596.70**	**$ 5.23**	**$ 109.92**

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Cost Estimate Type	Name of Project (A)	Bid Date (B)	Average Item Bid (C) [1]	Engineer's Estimate (D) [1]	Low Bidder Item Bid (E) [1]	Quantity (F)	CCI @ Bid Date (G) [2]	CCI @ June 2006 (H)	Adjustment Factor (I) = H / G	Greatest of Item Cost C, D or E Adjusted With Adjustment Factor	Amount (K) = F * J	Weighted Average Unit Cost (L) = K / F

Footnotes:

(1) The Antelope Valley region requires various assumptions as to the location, size, and costs of drainage needs associated with future developments. The greatest amount among the Average Item Bid, Engineer's Estimate, and Low Bidder Item Bid was used as the base price to determine the CCI adjusted weighted average unit cost.

(2) Used ENR published CCI for Los Angeles to adjust the base price. ENR traditionally published the CCI in December on a year-to-year basis. Due to significant increased construction costs in recent years, ENR began publishing CCI on a month-to-month basis beginning January 2004. CCI for December will be used for projects with a bid date prior to 2004.

(3) Uses the weighted average method to determine the CCI adjusted weighted average unit cost.

(4) There was no bid history found for 12' Double-Drive Gate, hence, it was determined by using the average of the Weighted Average Cost per foot of 24' Double-Drive Gate, 16' Double-Drive Gate, and 15' Double-Drive Gate multiplied by 12.

(5) There was no bid history found for 21" RCP (2000 D), hence, it was determined by using the average of the Weighted Average Cost per inch of 18" RCP (2000 D), 24" RCP (2000 D), 30" RCP (2000 D), and 42" RCP (2000 D) multiplied by 21.