

DRAFT MASTER ENVIRONMENTAL IMPACT REPORT  
ARROYO SECO MASTER PLAN PROJECT

VOLUME I  
DRAFT MASTER ENVIRONMENTAL IMPACT REPORT  
CLEARINGHOUSE NUMBER 2000091062

PREPARED FOR:  
CITY OF PASADENA  
DEPARTMENT OF PLANNING AND DEVELOPMENT  
175 NORTH GARFIELD  
PASADENA, CALIFORNIA 91109

PREPARED BY:  
SAPPHOS ENVIRONMENTAL, INC.  
133 MARTIN ALLEY  
PASADENA, CA 91105



MAY 16, 2002

## **TABLE OF CONTENTS**

### **VOLUME I    MASTER ENVIRONMENTAL IMPACT REPORT**

<b>SECTIONS</b>	<b>PAGE</b>
S.0    EXECUTIVE SUMMARY	
S.1    Proposed Action .....	S-1
S.2    Areas of Controversy Known to the City.....	S-3
S.3    Issues to be Resolved .....	S-4
S.4    Potential Impacts Found Not to be Significant.....	S-4
S.4    Summary of Impacts .....	S-4
1.0    INTRODUCTION	
1.1    Project History .....	1-1
1.2    Project Purpose and Need .....	1-2
1.3    Purpose of the EIR .....	1-3
1.4    Organization and Content .....	1-4
2.0    PROJECT DESCRIPTION	
2.1    Statement of Objectives .....	2-2
2.2    Existing Facilities.....	2-3
2.2.1    Upper Arroyo Seco (including Hahamonga Watershed Park) .....	2-3
2.2.2    Central Arroyo Seco .....	2-4
2.2.3    Lower Arroyo Seco .....	2-4
2.3    Master Plan Elements .....	2-6
2.3.1    Hahamonga Watershed Park .....	2-6
2.3.2    Central Arroyo Seco .....	2-44
2.3.3    Rose Bowl Use Plan .....	2-51
2.3.5    Design Guidelines.....	2-66
2.4    Intended Uses of the Master EIR .....	2-67
2.5    Related Projects .....	2-67
2.6    Project Alternatives .....	2-70
3.0    EXISTING CONDITIONS, IMPACTS, MITIGATION MEASURES, AND LEVEL OF SIGNIFICANCE AFTER MITIGATION	
3.1    Aesthetics .....	3.1-1

3.1.1	Regulatory Framework .....	3.1-1
3.1.2	Existing Conditions .....	3.1-4
3.1.3	Significance Thresholds .....	3.1-5
3.1.4	Impact Analysis .....	3.1-5
3.1.5	Mitigation Measures .....	3.1-10
3.1.6	Level of Significance After Mitigation.....	3.1-11
3.2	Air Quality .....	3.2-1
3.2.1	Regulatory Framework .....	3.2-1
3.2.2	Existing Conditions .....	3.2-8
3.2.3	Significance Thresholds .....	3.2-10
3.2.4	Impact Analysis .....	3.2-11
3.2.5	Mitigation Measures .....	3.2-19
3.2.6	Level of Significance After Mitigation.....	3.2-22
3.3	Biological Resources .....	3.3-1
3.3.1	Regulatory Framework .....	3.3-1
3.3.2	Existing Conditions .....	3.3-5
3.3.3	Significance Thresholds .....	3.3-28
3.3.4	Impact Analysis .....	3.3-29
3.3.5	Mitigation Measures .....	3.3-31
3.3.6	Level of Significance After Mitigation.....	3.3-33
3.4	Cultural Resources .....	3.4-1
3.4.1	Regulatory Framework .....	3.4-1
3.4.2	Existing Conditions .....	3.4-6
3.4.3	Significance Thresholds .....	3.4-15
3.4.4	Impact Analysis .....	3.4-17
3.4.5	Mitigation Measures .....	3.4-21
3.4.6	Level of Significance After Mitigation.....	3.4-25
3.5	Geology and Soils .....	3.5-1
3.5.1	Regulatory Framework .....	3.5-1
3.5.2	Existing Conditions .....	3.5-3
3.5.3	Significance Thresholds .....	3.5-17
3.5.4	Impact Analysis .....	3.5-17
3.5.5	Mitigation Measures .....	3.5-23
3.5.6	Level of Significance After Mitigation.....	3.5-27
3.6	Hazards and Hazardous Materials .....	3.6-1
3.6.1	Regulatory Framework .....	3.6-1
3.6.2	Existing Conditions .....	3.6-3
3.6.3	Significance Thresholds .....	3.6-6
3.6.4	Impact Analysis .....	3.6-6
3.6.5	Mitigation Measures .....	3.6-11
3.6.6	Level of Significance After Mitigation.....	3.6-11
3.7	Hydrology and Water Quality .....	3.7-1

3.7.1	Regulatory Framework .....	3.7-1
3.7.2	Existing Conditions .....	3.7-5
3.7.3	Significance Thresholds .....	3.7-8
3.7.4	Impact Analysis .....	3.7-8
3.7.5	Mitigation Measures .....	3.7-11
3.7.6	Level of Significance After Mitigation.....	3.7-11
3.8	Mineral Resources .....	3.8-1
3.8.1	Regulatory Framework .....	3.8-1
3.8.2	Existing Conditions .....	3.8-2
3.8.3	Significance Thresholds .....	3.8-3
3.8.4	Impact Analysis .....	3.8-3
3.8.5	Mitigation Measures .....	3.8-4
3.8.6	Level of Significance After Mitigation.....	3.8-5
3.9	Noise .....	3.9-1
3.9.1	Regulatory Framework .....	3.9-2
3.9.2	Existing Conditions .....	3.9-6
3.9.3	Significance Thresholds .....	3.9-7
3.9.4	Impact Analysis .....	3.9-8
3.9.5	Mitigation Measures .....	3.9-23
3.9.6	Level of Significance After Mitigation.....	3.9-24
3.10	Public Services .....	3.10-1
3.10.1	Regulatory Framework .....	3.10-1
3.10.2	Existing Conditions .....	3.10-2
3.10.3	Significance Thresholds .....	3.10-7
3.10.4	Impact Analysis .....	3.10-7
3.10.5	Mitigation Measures .....	3.10-10
3.10.6	Level of Significance After Mitigation.....	3.10-10
3.11	Recreation .....	3.11-1
3.11.1	Regulatory Framework .....	3.11-1
3.11.2	Existing Conditions .....	3.11-2
3.11.3	Significance Thresholds .....	3.11-4
3.11.4	Impact Analysis .....	3.11-4
3.11.5	Mitigation Measures .....	3.11-8
3.11.6	Level of Significance After Mitigation.....	3.11-9
3.12	Transportation/Traffic .....	3.12-1
3.12.1	Regulatory Framework .....	3.12-1
3.12.2	Existing Conditions .....	3.12-2
3.12.3	Significance Thresholds .....	3.12-24
3.12.4	Impact Analysis .....	3.12-25
3.12.5	Mitigation Measures .....	3.12-49
3.12.6	Level of Significance After Mitigation.....	3.12-51
3.13	Utilities and Service Systems .....	3.13-1

3.13.1	Regulatory Framework .....	3.13-1
3.13.2	Existing Conditions .....	3.13-2
3.13.3	Significance Thresholds .....	3.13-5
3.13.4	Impact Analysis .....	3.13-6
3.13.5	Mitigation Measures .....	3.13-8
3.13.6	Level of Significance After Mitigation.....	3.13-9

#### 4.0 ALTERNATIVES TO THE PROPOSED PROJECT

4.1	Alternative 1: No Project.....	4-4
4.2	Alternative 2: Oak Grove Multi-Use Play Field .....	4-6
4.3	Alternative 3: East/West Parking Solution .....	4-9
4.4	Alternative 4: Two East Side Parking Structures.....	4-12
4.5	Alternative 5: No Impact on Designated Critical Habitat.....	4-15
4.6	Environmentally Superior Alternative .....	4-19
5.0	SIGNIFICANT ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED IF THE .. PROPOSED PROJECT IS IMPLEMENTED.....	5-1
6.0	SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES RELATED TO .. IMPLEMENTATION OF THE PROPOSED PROJECT .....	6-1
7.0	GROWTH-INDUCING IMPACTS .....	7-1
8.0	ORGANIZATIONS AND PERSONS CONSULTED .....	8-1
9.0	REPORT PREPARATION PERSONNEL .....	9-1
10.0	REFERENCES .....	10-1
11.0	DISTRIBUTION LIST FOR ENVIRONMENTAL IMPACT REPORT .....	11-1

	<b>TABLES</b>	<b>PAGE</b>
S.6-1	Summary of Impacts .....	S-5
2.3.2.18.2-1	Existing and Proposed Natural Plant Communities and Landscaped/Developed Areas Within Hahamongna Watershed Park .....	2-31
2.3.1.18.2-2	Habitat Establishment and Restoration of Coast Live Oak Woodland.....	2-31
2.3.1.18.2-3	Southern Willow Scrub .....	2-32
2.3.1.18.2-4	Sage Scrub .....	2-35
2.3.1.18.2-5	Mule Fat Scrub .....	2-37
2.3.1.18.2-6	Southern Sycamore Riparian Woodland .....	2-39
2.3.1.18.2-7	Streambed Riparian .....	2-40
2.3.1.18.2-8	Aquatic and Wetland.....	2-41
2.3.1.18.2-9	Water Conservation Pool.....	2-41
2.5-1	Related Projects .....	2-67
3.2.1-1	Ambient Air Quality Standards .....	3.2-4

3.2.1-2	Sensitive Receptors of Air Contaminants.....	3.2-7
3.2.2-1	Summary of Air Quality Data West San Gabriel Valley (SRA 8)	
	Air Monitoring Station.....	3.2-9
3.2.3-1	Emission Thresholds of Significance .....	3.2-10
3.2.4-1	Maximum Daily Construction Emissions .....	3.2-14
3.2.4-2	Peak Quarter Construction Emissions .....	3.2-15
3.2.4-3	Net Increase in Operation Emission.....	3.2-17
3.2.5-1	Maximum Daily Construction Emissions After Mitigation .....	3.2-23
3.2.5-2	Peak Quarter Construction Emissions After Mitigation .....	3.2-24
3.3.2.2-1	Listed and Sensitive Plant Species Potentially Occurring in the Arroyo Seco	3.3-10
3.3.2.2-2	Listed and Sensitive Wildlife Species Potentially Occurring in the Arroyo Seco Area.....	3.3-19
3.5-1	Deterministic Earthquake Site Parameters .....	3.5-5
3.5-2	Modified Mercalli Intensity Scale .....	3.5-9
3.5-3	Summary of Project Components Having Potentially Significant Geology and Soils-Related Issues .....	3.5-13
3.5-4	Summary of Necessary Compliance with Codes and Standards for Project .....	
	Components Having Potentially Significant Geology and Soils-Related Issues	3.5-18
3.9.1-1	Guidelines for Determining Acceptable CNEL Values .....	3.9-4
3.9.2-1	Sound Level "A" Decibels.....	3.9-6
3.9.2-2	Measured Ambient CNEL Noise Levels in dB.....	3.9-7
3.9.3-1	Significance Thresholds for CNEL of Less Than 5 dBA .....	3.9-8
3.9.4-1	Construction Equipment Noise Levels at 50 Feet.....	3.9-9
3.9.4.1.2-1	Calculated A-Weighted Noise Levels in dB from Vehicle Door Slams.....	3.9-11
3.9.4.1.2-2	Calculated A-Weighted Noise Levels in dB from Engine Start-Ups.....	3.9-11
3.9.4.1.2-3	Calculated A-Weighted Noise Levels in dB from Car Alarms .....	3.9-12
3.9.4.1.2-4	Calculated A-Weighted Noise Levels in dB from Johnson Field Soccer Fields	3.9-13
3.9.4.1.2-5	Calculated A-Weighted Noise Levels in dB from Johnson Field Softball Fields	3.9-13
3.9.4.2.2-1	Measured Average and Maximum Noise Levels in dB During .....	
	Weekend Event No.1 (UCLA-Stanford Football Game) .....	3.9-15
3.9.4.2.2-2	Calculated Annual CNEL Values in dB for 16 Major Events Versus .....	
	25 Major Events .....	3.9-15
3.9.4.2.2-3	Average Daily Traffic (ADT) Volumes for Weekday Conditions.....	3.9-17
3.9.4.2.2-4	Average Daily Traffic (ADT) Volumes for Weekend Event No. 1.....	3.9-18
3.9.4.2.2-5	Average Daily Traffic (ADT) Volumes for Weekend Event No. 2.....	3.9-19
3.9.4.2.2-6	CNEL Increases due to Project for Weekday Conditions .....	3.9-20
3.9.4.2.2-7	CNEL Increases for to Project for Weekend Event No. 1 .....	3.9-21
3.9.4.2.2-8	CNEL Increases due to Project for Weekend Event No. 2 .....	3.9-22
3.10-1	Fire Stations in the City of Pasadena .....	3.10-3
3.12.2-1	Summary of Volume to Capacity Ratios/Delay and Levels of Service Year 2000 Existing Conditions .....	3.12-12
3.12.2-2	List of Related Projects and Trip Generation Arroyo Seco Master Plan Project.....	3.12-16
3.12.3-1	City of Pasadena Intersection Impact Threshold Criteria .....	3.12-24
3.12.3-2	City of Pasadena ADT Impact Thresholds for Street Segments .....	3.12-25
3.12.4-1	Weekday Trip Generation Summary .....	3.12-27
3.12.4-2	Weekend Trip Generation Summary.....	3.12-28
3.12.4-3	Summary of Volume to Capacity Ratios/Delay and Levels of Service	

	Year 2010 Pre-Project Conditions .....	3.12-31
3.12.4-4	Summary of Volume to Capacity Ratios/Delay and Levels of Service Year 2010 With Project Conditions.....	3.12-37
3.12.4-5	Summary of Volume to Capacity Ratios and Levels of Service AM and PM Peak Hours Weekday .....	3.12-36
3.12.4-6	Summary of Volume to Capacity Ratios and Levels of Service AM Arrival and PM	
	Departure Peak Hours Weekend Special Event No. 1 .....	3.12-36
3.12.4-7	Summary of Volume to Capacity Ratios and Levels of Service PM Arrival and Departure Peak Hours Weekend Special Event No. 2 .....	3.12-36
3.12.4-8	Summary of Street Segment Analysis.....	3.12-44
3.13.2-1	Existing Trunk Sewer Lines.....	3.13-4
4.0-1	Summary of Proposed Project and Alternatives' Ability to Attain Project Objectives .....	4-2

## **FIGURES**

## **FOLLOWS PAGE**

2.1-1	Regional Map .....	2-1
2.1-2	Topographic Map .....	2-1
2.1-3	Vicinity Map.....	2-1
2.3.1-1	Hahamongna Watershed Park Master Plan.....	2-6
2.3.2-1	Central Arroyo Seco Master Plan.....	2-44
2.3.4-1	Lower Arroyo Seco Master Plan .....	2-52
2.5-1	Location of Related Projects .....	2-67
3.1.2-1	Jet Propulsion Laboratory from Ventura Street.....	3.1-4
3.1.2-2	Devil's Gate Dam .....	3.1-4
3.1.2-3	Johnson Field.....	3.1-4
3.1.2-4	Hahamongna Park and Disc Golf Course .....	3.1-4
3.1.2-5	Hahamongna Park and Trails .....	3.1-4
3.1.2-6	Rose Bowl from Glen Oaks Boulevard.....	3.1-5
3.1.2-7	Rose Bowl Aquatic Center from Glen Oaks Boulevard .....	3.1-5
3.1.2-8	Jackie Robinson Baseball Field .....	3.1-5
3.1.2-9	Brookside Golf Course from Yocum Street .....	3.1-5
3.1.2-10	Casting Pond and Clubhouse .....	3.1-5
3.1.2-11	Archery Range and Clubhouse.....	3.1-5
3.1.2-12	Equestrian Center .....	3.1-5
3.3.2-1	Designated Final Critical Habitat for the Southwestern Arroyo Toad .....	3.3-6
3.3.2.1-1	Existing Terrestrial Natural Plant Communities at Hahamongna Watershed Park Master Plan Area .....	3.3-7
3.3.2.1-2	Existing Terrestrial Natural Plant Communities at Central Arroyo Seco Master Plan Area .....	3.3-7
3.3.2.1-3	Existing Terrestrial Natural Plant Communities at Lower Arroyo Seco Master Plan Area .....	3.3-7
3.3.2.1-4	Survey Area for Listed and Sensitive Plant Species and Observed Locations3.3-7	
3.3.2.2-1	Sensitive and Listed Wildlife Survey Areas .....	3.3-18
3.3.2.2-2	2001 Focused Herpetological Surveys for Western Spadefoot, San Diego Horned Lizard, California Red-Legged Frog, Southwestern Pond Turtle, .....	

	Mountain Yellow-Legged Frog and Southwestern Arroyo Toad .....	3.3-18
3.3.4.1.2-1	Proposed Terrestrial Natural Plant Communities at Hahamongna Watershed Park Master Plan Area .....	3.3-29
3.5.2-1A	Geologic Map .....	3.5-6
3.5.2-1B	Geologic Map .....	3.5-6
3.7.2-1	Arroyo Seco Tributary .....	3.7-5
3.7.2-2	Raymond Basin Aquifer .....	3.7-7
3.9.2-1	Ambient Noise Monitoring Locations.....	3.9-6
3.10.2-1	City of Pasadena Fire Stations in the Project Vicinity .....	3.10-2
3.10.2-2	Schools in the Project Vicinity .....	3.10-3
3.10.2-3	Parks in the Project Vicinity .....	3.10-4
3.12.2-1	Existing Circulation Elements.....	3.12-2
3.12.2-2a	Existing Public Transit Routes .....	3.12-5
3.12.2-2b	Special Event Shuttle Routes .....	3.12-6
3.12.2-3	Existing Bicycle Routes .....	3.12-7
3.12.2-4	Existing Lane Configuration Non-Event Conditions.....	3.12-8
3.12.2-5	Existing Traffic Volumes Weekday AM Peak Hour.....	3.12-8
3.12.2-6	Existing Traffic Volumes Weekday PM Peak Hour.....	3.12-8
3.12.2-7	Existing Traffic Volumes Special Event 1- AM Arrival Peak Hour.....	3.12-10
3.12.2-8	Existing Traffic Volumes Special Event 1- PM Departure Peak Hour.....	3.12-10
3.12.2-9	Existing Traffic Volumes Special Event 2- AM Arrival Peak Hour.....	3.12-10
3.12.2-10	Existing Traffic Volumes Special event 2- PM Departure Peak Hour .....	3.12-10
3.12.2-11	Existing Daily Traffic Volumes- Weekday .....	3.12-10
3.12.2-12	Existing Daily Traffic Volumes- Weekend Special Event No.1 .....	3.12-10
3.12.2-13	Existing Daily Traffic Volumes- Weekend Special Event No.2 .....	3.12-10
3.12.2-14	Location of Related Projects.....	3.12-15
3.12.4-1	Project Traffic Volumes- Weekday AM Peak Hour.....	3.12-29
3.12.4-2	Project Traffic Volumes- Weekday PM Peak Hour.....	3.12-29
3.12.4-3	Project Traffic Volumes- Weekend Special Event No.1 AM Arrival Peak Hour.....	3.12-29
3.12.4-4	Project Traffic Volumes- Weekend Special Event No.1 PM Departure Peak Hour.....	3.12-29
3.12.4-5	Project Traffic Volumes- Weekend Special Event No.2 AM Arrival Peak Hour.....	3.12-29
3.12.4-6	Project Traffic Volumes- Weekend Special Event No.2 PM Departure Peak Hour.....	3.12-29
3.12.4-7	Year 2010 Pre-Project Traffic Volumes- Weekday AM Peak Hour .....	3.12-30
3.12.4-8	Year 2010 Pre-Project Traffic Volumes - Weekday PM Peak Hour .....	3.12-30
3.12.4-9	Year 2010 Pre-Project Traffic Volumes- Weekend Special Event No.1 AM Arrival Peak Hour .....	3.12-30
3.12.4-10	Year 2010 Pre-Project Traffic Volumes- Weekend Special Event No.1 PM Departure Peak Hour.....	3.12-30
3.12.4-11	Year 2010 Pre-Project Traffic Volumes- Weekend Special Event No.2 AM Arrival Peak Hour .....	3.12-30
3.12.4-12	Year 2010 Pre-Project Traffic Volumes- Weekend Special Event No.2 PM Departure Peak Hour.....	3.12-30
3.12.4-13	Year 2010 With Project Traffic Volumes- Weekday AM Peak Hour .....	3.12-41
3.12.4-14	Year 2010 With Project Traffic Volumes- Weekday PM Peak Hour .....	3.12-41

3.12.4-15	Year 2010 With Project Traffic Volumes- Weekend Special Event No.1 AM Arrival Peak Hour .....	3.12-41
3.12.4-16	Year 2010 With Project Traffic Volumes- Weekend Special Event No.1 PM Departure Peak Hour.....	3.12-41
3.12.4-17	Year 2010 With Project Traffic Volumes-Weekend Special Event No. 2 PM Arrival Peak Hour .....	3.12-42
3.12.4-18	Year 2010 With Project Traffic Volumes- Weekend Special Event No.2 PM Departure Peak Hour.....	3.12-42
3.12.4-19	Existing With Project Daily Traffic Volumes-Weekday .....	3.12-43
3.12.4-20	Existing With Project Daily Traffic Volumes- Weekend Special Event No.1	3.12-43
3.12.4-21	Existing With Project Daily Traffic Volumes- Weekend Special Event No.2	3.12-43
3.13.2-1	Existing Wells in Hahamongna Watershed Park .....	3.13-2
3.13.2-2	Existing Water Mains in Hahamongna Watershed Park.....	3.13-3
3.13.2-3	Existing Water Lines in the Central Arroyo Seco.....	3.13-3
3.13.2-4	Existing Overhead Transmission Lines in Hahamongna Watershed Park ....	3.13-3
3.13.2-5	Existing Natural Gas & Sewer Lines in Hahamongna Watershed Park.....	3.13-3
3.13.2-6	Existing Sewer Lines in the Central Arroyo Seco .....	3.13-3
3.13.2-7	Existing Storm Drains in Hahamongna Watershed Park .....	3.13-3
3.13.2-8	Existing Storm Drains in the Central Arroyo Seco .....	3.13-3
4.1-1a	Alternative 1: Hahamongna Watershed Park Master Plan- No Project.....	4-4
4.1-1b	Alternative 1: Central Arroyo Seco Master Plan- No Project.....	4-4
4.1-1c	Alternative 1: Lower Arroyo Seco Master Plan- No Project.....	4-4
4.2-1	Alternative 2: Oak Grove Multi-Use Play Field Alternative.....	4-6
4.3-1	Alternative 3: East/West Parking Solution.....	4-9
4.4-1	Alternative 4: East Side Parking Structures .....	4-12
4.5-1	Alternative 5: No Impact on Designated Critical Habitat .....	4-15

<b>VOLUME II TECHNICAL APPENDICES (UNDER SEPARATE COVER)</b>	<b>PAGE</b>
Appendix A, Notice of Preparation and Comment Letters .....	A-1
Appendix B, Arroyo Seco Master Plan Air Quality Report .....	B-1
Appendix C, Biological Resources Reports .....	C-1
Appendix D, Phase I Environmental Assessment.....	D-1
Appendix E, Acoustics Analysis.....	E-1
Appendix F, Traffic Impact Study.....	F-1