

Integrated Resources Plan Draft Environmental Impact Report

SCH No. 2004071091

SCAG No. I20040466



November 2005

City of Los Angeles
Department of Public Works
Bureau of Sanitation
and
Department of Water and Power



Contents

Section	Page
Executive Summary	ES-1
Section 1 Introduction	1-1
1.1 Document Overview	1-1
1.2 Requirements for Environmental Review	1-1
1.2.1 California Environmental Quality Act	1-2
1.2.2 Level of Analysis and Future Environmental Documentation	1-4
1.3 Project Objectives	1-4
1.4 IRP Facilities Plan Background	1-5
1.4.1 Summary of IRP Facilities Plan Process	1-5
1.4.2 Existing Wastewater, Recycled Water, and Runoff Management Infrastructure and Measures	1-7
1.4.2.1 Wastewater System	1-7
1.4.2.2 Recycled Water System	1-11
1.4.2.3 Runoff Management System and Measures	1-11
1.5 Intended Uses of the Document	1-12
1.5.1 IRP Approval and Certification of EIR	1-12
1.5.2 Permit Issuance and Approvals	1-12
1.5.3 State Revolving Fund	1-13
1.6 Public Outreach	1-15
1.6.1 CEQA Notices and Scoping Meetings	1-15
1.6.1.1 Notice of Preparation	1-15
1.6.1.2 Public Scoping	1-16
1.6.1.3 Draft EIR Notification	1-16
1.6.1.4 Public Meeting	1-17
1.6.2 EIR Information Sessions	1-17
1.7 Other Studies and Evaluations	1-18
Section 2 Description of IRP Facilities Plan Components and EIR Alternatives	2-1
2.1 Introduction	2-1
2.2 IRP Facilities Plan Components	2-2
2.2.1 Wastewater Treatment and Conveyance (Components Analyzed at a Project Level)	2-2
2.2.1.1 Hyperion Expansion to 500 mgd	2-5
<i>Wastewater Treatment Improvements</i>	2-5
<i>Biosolids Handling Upgrades</i>	2-9
<i>Digesters</i>	2-9
<i>Truck-Loading Facility</i>	2-10
2.2.1.2 Hyperion Process Upgrades	2-13
2.2.1.3 Tillman Expansion to 100 mgd	2-13
<i>Primary Tanks and Equalization Tanks</i>	2-14



	<i>Aeration Basins</i>	2-17
	<i>Secondary Clarifiers</i>	2-17
	<i>Advanced Treatment Process (Microfiltration and Reverse Osmosis)</i>	2-17
	<i>Ultraviolet Disinfection Process</i>	2-17
2.2.1.4	Tillman Expansion to 80 mgd.....	2-18
	<i>Secondary Clarifiers</i>	2-18
	<i>Advanced Treatment Processes (Microfiltration and Reverse Osmosis)</i>	2-18
	<i>Ultraviolet Disinfection Process</i>	2-19
2.2.1.5	Tillman Process Upgrades	2-19
2.2.1.6	Tillman Wastewater Storage	2-19
2.2.1.7	LAG Expansion to 30 mgd.....	2-20
	<i>Primary Clarifiers</i>	2-20
	<i>Aeration Basins</i>	2-25
	<i>Secondary Clarifiers</i>	2-25
	<i>Advanced Treatment Process (Microfiltration and Reverse Osmosis)</i>	2-25
	<i>Ultraviolet Disinfection Process</i>	2-25
	<i>Operational Storage</i>	2-26
2.2.1.8	LAG Operational Storage.....	2-26
2.2.1.9	Northeast Interceptor Sewer Phase II.....	2-26
	<i>NEIS II West Alignment</i>	2-29
	<i>NEIS II East Alignment</i>	2-38
2.2.1.10	Glendale-Burbank Interceptor Sewer.....	2-39
	<i>GBIS South Alignment</i>	2-40
	<i>GBIS North Alignment</i>	2-44
2.2.2	Wastewater Conveyance, Recycled Water Facilities, and Runoff System (Components Analyzed at a Program-Level)	2-46
2.2.2.1	Valley Spring Lane Interceptor Sewer	2-46
2.2.2.2	Recycled Water.....	2-47
	<i>Nonpotable Reuse</i>	2-47
	<i>Groundwater Recharge</i>	2-48
2.2.2.3	Dry Weather Runoff (Smart Irrigation)	2-51
2.2.2.4	Dry Weather Runoff (Low-Flow Diversions).....	2-52
2.2.2.5	Dry Weather Runoff (Urban Runoff Plants or Treatment Wetlands)	2-55
	<i>Urban Runoff Plants</i>	2-56
	<i>Treatment Wetlands</i>	2-61
2.2.2.6	Wet Weather Runoff – Onsite Management	2-62
	<i>Onsite Capture and Percolation</i>	2-62
	<i>Onsite Storage and Use (Cisterns)</i>	2-63
2.2.2.7	Wet Weather Runoff – Urban Runoff Plant.....	2-63
2.2.2.8	Wet Weather Runoff – Non-Urban Regional Recharge	2-64
2.3	Alternatives Evaluated in the EIR	2-64



2.3.1	Alternatives Development Process.....	2-64
2.3.2	Alternatives Considered but Eliminated	2-69
2.3.2.1	Inflow and Infiltration Reduction	2-70
2.3.2.2	Additional Water Conservation Programs	2-70
2.3.2.3	Ballona and Centinela Creeks Treatment Wetlands Alternative	2-70
2.3.3	EIR Alternatives.....	2-71
2.3.4	Alternative 1: Hyperion Expansion to 500 mgd	2-74
2.3.4.1	Wastewater under Alternative 1	2-74
2.3.4.2	Recycled Water under Alternative 1.....	2-77
2.3.4.3	Runoff under Alternative 1	2-78
	<i>Dry Weather Runoff under Alternative 1.....</i>	<i>2-78</i>
	<i>Wet Weather Runoff under Alternative 1.....</i>	<i>2-79</i>
2.3.5	Alternative 2: Tillman Expansion (to 80 mgd) and Los Angeles-Glendale Expansion (to 30 mgd).....	2-80
2.3.5.1	Wastewater under Alternative 2	2-83
2.3.5.2	Recycled Water under Alternative 2.....	2-84
2.3.5.3	Runoff under Alternative 2	2-85
	<i>Dry Weather Runoff under Alternative 2.....</i>	<i>2-85</i>
	<i>Wet Weather Runoff under Alternative 2.....</i>	<i>2-86</i>
2.3.6	Alternative 3: Tillman Expansion (to 100 mgd) without Cisterns	2-87
2.3.6.1	Wastewater under Alternative 3	2-88
2.3.6.2	Recycled Water under Alternative 3.....	2-91
2.3.6.3	Runoff under IRP Alternative 3.....	2-92
	<i>Dry Weather Runoff under Alternative 3.....</i>	<i>2-92</i>
	<i>Wet Weather Runoff under Alternative 3.....</i>	<i>2-92</i>
2.3.7	Alternative 4: Tillman Expansion (to 100 mgd) with Cisterns.....	2-94
2.3.7.1	Wastewater under Alternative 4	2-94
2.3.7.2	Recycled Water under Alternative 4.....	2-97
2.3.7.3	Runoff under Alternative 4	2-99
	<i>Dry Weather Runoff under Alternative 4.....</i>	<i>2-99</i>
	<i>Wet Weather Runoff under Alternative 4.....</i>	<i>2-100</i>
2.3.8	No Project Alternative	2-100
2.4	Implementation Schedule.....	2-100
2.4.1	Flow Triggers	2-101
2.4.2	Regulatory Triggers	2-102
2.4.3	Other Triggers or Implementation Drivers	2-102
2.4.3.1	Population Projections	2-102
2.4.3.2	Legal Decisions	2-102
2.4.3.3	Public Policy	2-102
2.4.3.4	Financing.....	2-103
Section 3 Setting, Impacts, and Mitigation.....		3.1-1
3.1	Introduction.....	3.1-1
3.1.1	Approach to Environmental Setting and Impact Analysis	3.1-2



3.1.2	Project Level and Program-Level Analysis.....	3.1-2
3.1.3	Approach to Cumulative Impacts	3.1-3
3.1.3.1	Assumptions	3.1-4
3.1.3.2	Related Plans.....	3.1-4
3.1.3.3	Related Projects	3.1-5
	<i>Terminal Island Renewable Energy Project</i>	3.1-5
	<i>River Supply Conduit Project</i>	3.1-5
	<i>Hansen Area Water Recycling Project</i>	3.1-6
	<i>Sepulveda Basin Water Recycling Project</i>	3.1-6
	<i>Rio de Los Angeles State Park Final EIR,</i> <i>SCH 2004091126</i>	3.1-6
	<i>Los Angeles State Historic Park Draft EIR,</i> <i>SCH 2003031096</i>	3.1-6
	<i>Other Water Recycling Projects</i>	3.1-7
3.2	Aesthetics	3.2-1
3.2.1	Introduction.....	3.2-1
3.2.2	Environmental Setting	3.2-1
3.2.2.1	General Setting	3.2-1
3.2.2.2	Components	3.2-2
	<i>Project-Level Components</i>	3.2-2
	<i>Program-Level Components</i>	3.2-105
3.2.3	Environmental Impacts.....	3.2-107
3.2.3.1	Background	3.2-107
	<i>Regulatory Framework</i>	3.2-107
	<i>Methodology</i>	3.2-108
	<i>Thresholds of Significance</i>	3.2-108
3.2.4	Component Impacts	3.2-109
3.2.4.1	Project-Level Component Impacts	3.2-109
	<i>Hyperion Expansion to 500 mgd</i>	3.2-109
	<i>Hyperion Process Upgrades</i>	3.2-115
	<i>Tillman Expansion to 100 mgd</i>	3.2-116
	<i>Tillman Expansion to 80 mgd</i>	3.2-117
	<i>Tillman Process Upgrades</i>	3.2-117
	<i>Tillman Wastewater Storage</i>	3.2-118
	<i>LAG Expansion to 30 mgd</i>	3.2-119
	<i>LAG Operational Storage</i>	3.2-121
	<i>NEIS II West Alignment</i>	3.2-121
	<i>NEIS II East Alignment</i>	3.2-129
	<i>GBIS South Alignment</i>	3.2-133
	<i>GBIS North Alignment</i>	3.2-139
3.2.4.2	Program-Level Component Impacts	3.2-143
	<i>VSLIS</i>	3.2-143
	<i>Recycled Water</i>	3.2-144
	<i>Dry Weather Runoff – Smart Irrigation</i>	3.2-145
	<i>Dry Weather Runoff – Low-Flow Diversions</i>	3.2-145
	<i>Dry Weather Runoff – Urban Runoff Plants or</i> <i>Treatment Wetlands</i>	3.2-146



Wet Weather Runoff – Onsite Management 3.2-147

Wet Weather Runoff – Urban Runoff Plants..... 3.2-147

Wet Weather Runoff – Non-Urban Regional
Recharge 3.2-148

3.2.4.3 Summary of Component Impacts 3.2-148

3.2.4.4 Alternative Impacts 3.2-154

 Alternative 1 3.2-154

 Alternative 2 3.2-162

 Alternative 3 3.2-166

 Alternative 4 3.2-170

 No Project Alternative 3.2-174

3.2.4.5 Cumulative Impacts 3.2-174

3.3 Agriculture 3.3-1

 3.3.1 Introduction 3.3-1

 3.3.2 Environmental Setting 3.3-1

 3.3.2.1 General Setting..... 3.3-1

 Prime Farmland 3.3-1

 Unique Farmland 3.3-1

 Farmland of Statewide Importance 3.3-1

 Farmland of Local Importance 3.3-2

 3.3.2.2 Components 3.3-2

 Project-Level Components..... 3.3-2

 Program-Level Components..... 3.3-7

 3.3.3 Environmental Impacts 3.3-9

 3.3.3.1 Background 3.3-9

 Regulatory Framework..... 3.3-9

 Methodology..... 3.3-9

 Thresholds of Significance..... 3.3-9

 3.3.4 Component Impacts..... 3.3-10

 3.3.4.1 Project-Level Impacts 3.3-10

 Hyperion Expansion to 500 mgd 3.3-10

 Hyperion Process Upgrades 3.3-10

 Tillman Expansion to 100 mgd..... 3.3-10

 Tillman Expansion to 80 mgd..... 3.3-10

 Tillman Process Upgrades 3.3-10

 Tillman Wastewater Storage..... 3.3-10

 LAG Expansion to 30 mgd..... 3.3-10

 LAG Wet Weather Storage Only 3.3-11

 NEIS II West Alignment 3.3-11

 NEIS II East Alignment 3.3-11

 GBIS South Alignment..... 3.3-11

 GBIS North Alignment..... 3.3-11

 Program-Level Impacts 3.3-11

 Summary of Component Impacts..... 3.3-13

 3.3.4.2 Alternative Impacts 3.3-14

 Alternative 1 3.3-14

 Alternative 2 3.3-15

	Alternative 3.....	3.3-16
	Alternative 4.....	3.3-16
	No Project Alternative.....	3.3-17
3.3.4.3	Cumulative Impacts.....	3.3-18
3.4	Air Quality	3.4-1
3.4.1	Introduction.....	3.4-1
3.4.2	Environmental Setting	3.4-1
3.4.2.1	Criteria Pollutants	3.4-1
	Carbon Monoxide	3.4-1
	Ozone.....	3.4-2
	Nitrogen Dioxide	3.4-2
	Sulfur Dioxide	3.4-2
	Particulate Matter	3.4-3
	Lead.....	3.4-3
3.4.2.2	Odors	3.4-4
3.4.2.3	Air Toxics	3.4-4
3.4.2.4	General Setting	3.4-4
	South Coast Air Basin	3.4-4
	Climate.....	3.4-7
	Sensitive Receptors	3.4-8
	Odors	3.4-8
	Air Toxics	3.4-13
3.4.2.5	Component Settings.....	3.4-14
	Project-Level Components	3.4-14
	Program-Level Components	3.4-46
3.4.3	Environmental Impacts.....	3.4-52
3.4.3.1	Background	3.4-52
	Regulatory Framework	3.4-52
	Methodology	3.4-60
	Thresholds of Significance	3.4-63
3.4.3.2	Component Impacts.....	3.4-63
	Project-Level Component Impacts	3.4-63
	Hyperion Process Upgrades	3.4-71
	Program-Level Component Impacts	3.4-116
	Summary of Component Impacts	3.4-121
3.4.3.3	Alternative Impacts	3.4-131
	Alternative 1	3.4-131
	Alternative 2	3.4-142
	Secondary Impacts	3.4-143
	Mitigation.....	3.4-143
	Impacts after Mitigation	3.4-143
	Alternative 3.....	3.4-149
	Alternative 3 Cumulative Impacts	3.4-156
	Alternative 4.....	3.4-157
	No Project Alternative.....	3.4-161
3.4.3.4	Cumulative Impacts.....	3.4-163

3.5 Biological Resources..... 3.5-1

3.5.1 Introduction 3.5-1

3.5.2 Environmental Setting..... 3.5-1

3.5.2.1 General Setting..... 3.5-1

Los Angeles River..... 3.5-8

El Segundo Dunes..... 3.5-14

Ballona Creek and Wetlands 3.5-14

Ballona and Del Rey Lagoons 3.5-14

Baldwin Hills 3.5-15

Santa Monica Bay 3.5-15

3.5.2.2 Project-Level Components 3.5-16

Hyperion 3.5-16

Tillman 3.5-17

Los Angeles-Glendale 3.5-17

NEIS II 3.5-17

GBIS 3.5-19

3.5.2.3 Program-Level Components 3.5-20

VSLIS 3.5-21

Recycled Water Distribution 3.5-21

Dry Weather Runoff – Smart Irrigation 3.5-21

Dry Weather Runoff – Low-Flow Diversions 3.5-21

Dry Weather Runoff – Urban Runoff Plants or Treatment Wetlands..... 3.5-21

Wet Weather Runoff – Onsite Management 3.5-22

Wet Weather Runoff – Urban Runoff Plants..... 3.5-22

Wet Weather Runoff – Non-Urban Regional Recharge 3.5-22

3.5.3 Environmental Impacts 3.5-22

3.5.3.1 Background 3.5-22

Regulatory Framework..... 3.5-22

Methodology..... 3.5-26

Thresholds of Significance..... 3.5-26

3.5.3.2 Component Impacts 3.5-26

Project-level Component Impacts 3.5-26

Program-Level Component Impacts..... 3.5-34

Summary of Component Impacts..... 3.5-38

3.5.3.3 Alternative Impacts 3.5-38

Alternative 1 3.5-38

Alternative 2 3.5-47

Alternative 3 3.5-49

Alternative 4 3.5-52

No Project Alternative 3.5-54

3.5.3.4 Cumulative Impacts 3.5-54

3.6 Coastal Resources 3.6-1

3.6.1 Introduction 3.6-1

3.6.2 Environmental Setting..... 3.6-1

3.6.2.1 General Setting..... 3.6-1



3.6.2.2	Components.....	3.6-2
	<i>Project-Level Components</i>	3.6-2
	<i>Program-Level Components</i>	3.6-2
3.6.3	Environmental Impacts.....	3.6-4
3.6.3.1	Background.....	3.6-4
	<i>Regulatory Framework</i>	3.6-4
	<i>Methodology</i>	3.6-5
	<i>Thresholds of Significance</i>	3.6-5
3.6.3.2	Component Impacts.....	3.6-6
	<i>Project-Level Component Impacts</i>	3.6-6
	<i>Program-Level Component Impacts</i>	3.6-8
3.6.3.3	Alternative Impacts	3.6-11
	<i>Alternative 1</i>	3.6-11
	<i>Alternative 2</i>	3.6-14
	<i>Alternative 3 Impacts</i>	3.6-16
	<i>Alternative 4</i>	3.6-17
	<i>No Project Alternative Impacts</i>	3.6-19
3.6.3.4	Cumulative Impacts.....	3.6-22
3.7	Cultural Resources.....	3.7-1
3.7.1	Introduction.....	3.7-1
3.7.2	Environmental Setting	3.7-1
3.7.2.1	Paleontological Resources Setting	3.7-1
	<i>Quaternary Geologic Units</i>	3.7-2
	<i>Tertiary Geologic Units</i>	3.7-5
3.7.2.2	Archaeological Resources Setting.....	3.7-6
	<i>Prehistoric Setting</i>	3.7-6
	<i>Ethnohistory</i>	3.7-13
3.7.2.3	Historic Archaeological Setting.....	3.7-16
	<i>Project-Specific Historic and Archaeological Data</i>	3.7-18
	<i>Archaeological Sensitivity</i>	3.7-18
3.7.2.4	Historic and Architectural Resources Setting	3.7-21
3.7.2.5	Project-Level Components.....	3.7-22
	<i>Hyperion</i>	3.7-22
	<i>Tillman</i>	3.7-23
	<i>Los Angeles-Glendale Water Reclamation Plant</i>	3.7-24
	<i>NEIS II</i>	3.7-25
	<i>GBIS</i>	3.7-27
3.7.2.6	Program-Level Components	3.7-30
	<i>VSLIS</i>	3.7-30
	<i>Recycled Water</i>	3.7-31
	<i>Dry Weather Runoff – Smart Irrigation</i>	3.7-33
	<i>Dry Weather Runoff – Low-flow Diversions</i>	3.7-33
	<i>Dry Weather Runoff – Urban Runoff Plants or</i> <i>Treatment Wetlands</i>	3.7-34
	<i>Wet Weather Runoff – Onsite Management</i>	3.7-35
	<i>Wet Weather Runoff – Urban Treatment Plants</i>	3.7-36

		<i>Wet Weather Runoff – Non-Urban Regional</i>	
		<i>Recharge</i>	3.7-37
3.7.3	Environmental Impacts	.....	3.7-38
3.7.3.1	Background	.....	3.7-38
	<i>Regulatory Framework</i>		3.7-38
	<i>Methodology</i>		3.7-41
	<i>Thresholds of Significance</i>		3.7-44
3.7.3.2	Component Impacts	.....	3.7-45
	<i>Project-Level Component Impacts</i>		3.7-45
	<i>Program-Level Component Impacts</i>		3.7-55
	<i>Summary of Component Impacts</i>		3.7-63
3.7.3.3	Alternative Impacts	.....	3.7-70
	<i>Alternative 1</i>		3.7-70
	<i>Alternative 2</i>		3.7-78
	<i>Alternative 3</i>		3.7-82
	<i>Alternative 4</i>		3.7-86
	<i>No Project Alternative</i>		3.7-89
	<i>Cumulative Impacts</i>		3.7-89
3.8	Environmental Justice	.....	3.8-1
3.8.1	Introduction	.....	3.8-1
3.8.2	Environmental Setting	.....	3.8-1
3.8.2.1	General Setting	.....	3.8-1
3.8.2.2	Components	.....	3.8-6
	<i>Project-Level Components</i>		3.8-6
	<i>Hyperion</i>		3.8-6
	<i>Tillman</i>		3.8-6
	<i>Program-Level Components</i>		3.8-10
3.8.3	Environmental Impacts	.....	3.8-10
3.8.3.1	Regulatory Framework	.....	3.8-10
	<i>Federal</i>		3.8-10
	<i>State</i>		3.8-11
	<i>Local</i>		3.8-12
3.8.3.2	Methodology	.....	3.8-12
	<i>Identification of Environmental Justice Population</i>		
	<i>Groups</i>		3.8-13
	<i>Identification of Impacts to the General Population</i>		3.8-13
	<i>Identification of Disproportionately High and</i>		
	<i>Adverse Impacts</i>		3.8-13
	<i>Overview of Public Involvement and Community</i>		
	<i>Outreach</i>		3.8-13
3.8.3.3	Thresholds of Significance	.....	3.8-14
3.8.3.4	Component Impacts	.....	3.8-14
	<i>Environmental Justice Population Groups</i>		3.8-14
	<i>Impacts to the General Population</i>		3.8-14
	<i>Disproportionately High and Adverse Impacts</i>		3.8-14
	<i>No Project Alternative</i>		3.8-16

3.9	Geology and Soils.....	3.9-1
3.9.1	Introduction.....	3.9-1
3.9.2	Environmental Setting	3.9-1
3.9.2.1	General Setting	3.9-1
	<i>Geology</i>	3.9-1
3.9.2.2	Components.....	3.9-18
	<i>Project-Level Components</i>	3.9-18
	<i>Program-Level Components</i>	3.9-25
3.9.3	Environmental Impacts.....	3.9-29
3.9.3.1	Background	3.9-29
	<i>Regulatory Framework</i>	3.9-29
	<i>Methodology</i>	3.9-30
	<i>Thresholds of Significance</i>	3.9-30
3.9.3.2	Component Impacts.....	3.9-30
	<i>Project-Level Impacts</i>	3.9-31
	<i>Program-Level Impacts</i>	3.9-36
	<i>Summary of Component Impacts</i>	3.9-38
3.9.3.3	Alternative Impacts	3.9-50
	<i>Alternative 1</i>	3.9-50
	<i>Alternative 2</i>	3.9-54
	<i>Alternative 3</i>	3.9-55
	<i>Alternative 4</i>	3.9-57
	<i>No Project Alternative</i>	3.9-58
3.9.3.4	Cumulative Impacts.....	3.9-60
3.10	Hazards and Hazardous Materials.....	3.10-1
3.10.1	Introduction.....	3.10-1
3.10.2	Environmental Setting	3.10-1
3.10.2.1	General Setting	3.10-1
	<i>Naturally Occurring Contamination</i>	3.10-1
	<i>Man-Made Contamination</i>	3.10-2
3.10.2.2	Components.....	3.10-9
	<i>Project-Level Components</i>	3.10-9
	<i>Program-Level Components</i>	3.10-11
3.10.3	Environmental Impacts.....	3.10-13
3.10.3.1	Background	3.10-13
	<i>Regulatory Framework</i>	3.10-14
	<i>Methodology</i>	3.10-16
	<i>Thresholds of Significance</i>	3.10-16
3.10.3.2	Component Impacts.....	3.10-17
	<i>Project-Level Component Impacts</i>	3.10-17
	<i>Program-Level Component Impacts</i>	3.10-22
	<i>Summary of Component Impacts</i>	3.10-25
3.10.3.3	Alternative Impacts	3.10-38
	<i>Alternative 1</i>	3.10-38
	<i>Alternative 2</i>	3.10-39
	<i>Alternative 3</i>	3.10-41



Alternative 4 3.10-42

No Project Alternative 3.10-43

3.10.3.4 Cumulative Impacts 3.10-46

3.11 Hydrology and Water Quality 3.11-1

3.11.1 Introduction 3.11-1

3.11.2 Environmental Setting 3.11-1

3.11.2.1 General Setting 3.11-1

Surface Water Hydrology 3.11-1

Watersheds and Watershed Management Areas 3.11-1

WMA Runoff Volumes 3.11-7

Los Angeles River WMA Runoff 3.11-8

Ballona Creek/Urban Santa Monica Bay WMA 3.11-9

Dominguez Channel/Los Angeles Harbor WMA 3.11-10

Flood Hazards 3.11-10

Surface Water Quality 3.11-11

Groundwater 3.11-16

3.11.2.2 Components 3.11-23

Project-Level Components 3.11-23

Program-Level Components 3.11-29

3.11.3 Environmental Impacts 3.11-31

3.11.3.1 Background 3.11-31

Regulatory Framework 3.11-31

Methodology 3.11-41

Thresholds of Significance 3.11-42

3.11.3.2 Component Impacts 3.11-42

Project-Level Component Impacts 3.11-42

Program-Level Component Impacts 3.11-66

Summary of Component Impacts 3.11-79

3.11.3.3 Alternative Impacts 3.11-81

Alternative 1 3.11-81

Alternative 2 3.11-89

Alternative 3 3.11-94

Alternative 4 3.11-99

No Project Alternative 3.11-103

3.11.3.4 Cumulative Impacts 3.11-105

3.12 Land Use and Planning 3.12-1

3.12.1 Introduction 3.12-1

3.12.2 Environmental Setting 3.12-1

3.12.2.1 General Setting 3.12-1

3.12.2.2 Components 3.12-2

Site-Specific Components 3.12-2

Program-Level Components 3.12-14

3.12.3 Environmental Impacts 3.12-19

3.12.3.1 Background 3.12-19

Regulatory Framework 3.12-19

Methodology 3.12-25

Thresholds of Significance 3.12-25

3.12.3.2	Component Impacts.....	3.12-25
	<i>Site-Specific Impacts</i>	3.12-25
	<i>Program-Level Impacts</i>	3.12-31
	<i>Summary of Component Impacts</i>	3.12-34
3.12.3.3	Alternative Impacts	3.12-37
	<i>Alternative 1</i>	3.12-37
	<i>Alternative 2</i>	3.12-38
	<i>Alternative 3</i>	3.12-39
	<i>Alternative 4</i>	3.12-40
	<i>No Project Alternative</i>	3.12-41
3.12.3.4	Cumulative Impacts.....	3.12-42
3.13	Noise and Vibration.....	3.13-1
3.13.1	Introduction.....	3.13-1
3.13.2	Environmental Setting	3.13-1
3.13.2.1	Noise	3.13-1
	<i>Community Noise Equivalent Level</i>	3.13-1
	<i>Equivalent Noise Level</i>	3.13-2
	<i>Sound Exposure Level</i>	3.13-2
	<i>Audible Noise Changes</i>	3.13-2
	<i>Sensitive Receptors</i>	3.13-2
3.13.2.2	Vibration.....	3.13-5
3.13.2.3	General Setting	3.13-5
	<i>Noise</i>	3.13-5
	<i>Vibration</i>	3.13-5
3.13.2.4	Component Impacts.....	3.13-6
	<i>Project-Level Components</i>	3.13-6
	<i>Program-Level Components</i>	3.13-35
3.13.3	Environmental Impacts.....	3.13-40
3.13.3.1	Background.....	3.13-40
	<i>Regulatory Framework</i>	3.13-40
	<i>Methodology</i>	3.13-42
	<i>Thresholds of Significance</i>	3.13-46
3.13.3.2	Component Impacts.....	3.13-49
	<i>Project-Level Component Impacts</i>	3.13-49
	<i>Program-Level Component Impacts</i>	3.13-84
	<i>Summary of Component Impacts</i>	3.13-88
3.13.3.3	Alternative Impacts	3.13-91
	<i>Alternative 1</i>	3.13-91
	<i>Alternative 2</i>	3.13-98
	<i>Alternative 3</i>	3.13-101
	<i>Alternative 4</i>	3.13-103
	<i>No Project Alternative</i>	3.13-105
3.13.3.4	Cumulative Impacts.....	3.13-106
3.14	Population, Housing, and Employment.....	3.14-1
3.14.1	Introduction.....	3.14-1
3.14.2	Environmental Setting	3.14-1
3.14.2.1	General Setting	3.14-1



3.14.2.2	Components	3.14-4
	<i>Project-Level Components</i>	3.14-4
	<i>Program-Level Components</i>	3.14-4
3.14.3	Environmental Impacts	3.14-6
3.14.3.1	Background	3.14-6
	<i>Regulatory Framework</i>	3.14-6
	<i>Methodology</i>	3.14-6
	<i>Thresholds of Significance</i>	3.14-7
3.14.3.2	Component Impacts	3.14-8
	<i>Project-Level Impacts</i>	3.14-8
	<i>Program-Level Component Impacts</i>	3.14-15
	<i>Summary of Component Impacts</i>	3.14-19
3.14.3.3	Alternative Impacts	3.14-20
	<i>Alternative 1</i>	3.14-20
	<i>Alternative 2</i>	3.14-23
	<i>Alternative 3 Impacts</i>	3.14-25
	<i>Alternative 4</i>	3.14-26
	<i>No Project Alternative</i>	3.14-28
3.14.3.4	Cumulative Impacts	3.14-30
3.15	Public Services.....	3.15-1
3.15.1	Introduction	3.15-1
3.15.2	Environmental Setting.....	3.15-1
3.15.2.1	General Setting.....	3.15-1
3.15.2.2	Components	3.15-2
	<i>Project-Level Components</i>	3.15-2
	<i>Program-Level Components</i>	3.15-17
	<i>Recycled Water Distribution</i>	3.15-17
	<i>Dry Weather Runoff – Low-Flow Diversions</i>	3.15-18
	<i>Wet Weather Runoff – Onsite Management</i>	3.15-18
	<i>Dry Weather Runoff – Urban Runoff Plants or</i> <i>Treatment Wetlands</i>	3.15-18
	<i>Wet Weather Runoff – Urban Runoff Plants</i>	3.15-18
	<i>Dry Weather Runoff – Smart Irrigation</i>	3.15-18
	<i>Wet Weather Runoff – Non-Urban Regional</i> <i>Recharge</i>	3.15-19
3.15.3	Environmental Impacts	3.15-19
3.15.3.1	Background	3.15-19
	<i>Regulatory Framework</i>	3.15-19
	<i>Methodology</i>	3.15-19
	<i>Thresholds of Significance</i>	3.15-21
3.15.3.2	Component Impacts	3.15-21
	<i>Project-Level Component Impacts</i>	3.15-21
	<i>Program-Level Component Impacts</i>	3.15-25
	<i>Summary of Component Impacts</i>	3.15-27
3.15.3.3	Alternative Impacts	3.15-31
	<i>Alternative 1</i>	3.15-31
	<i>Alternative 2</i>	3.15-35

	Alternative 3.....	3.15-37
	Alternative 4.....	3.15-38
	No Project Alternative.....	3.15-40
	3.15.3.4 Cumulative Impacts.....	3.15-40
3.16	Recreation.....	3.16-1
3.16.1	Introduction.....	3.16-1
3.16.1.1	Environmental Setting.....	3.16-1
3.16.1.2	General Setting.....	3.16-1
3.16.1.3	Components of the IRP.....	3.16-2
	Hyperion.....	3.16-2
	Tillman.....	3.16-2
	LAG.....	3.16-9
	NEIS II.....	3.16-9
	GBIS.....	3.16-13
	VSLIS.....	3.16-13
	Recycled Water.....	3.16-13
	Dry Weather Runoff – Smart Irrigation.....	3.16-13
	Dry Weather Runoff – Low-Flow Diversions.....	3.16-16
	Dry Weather Runoff – Urban Runoff Plants or Treatment Wetlands.....	3.16-16
	Wet Weather Runoff – Urban Runoff Plants.....	3.16-22
	Wet Weather Runoff – Onsite Management.....	3.16-22
	Wet Weather Runoff – Non-Urban Regional Recharge.....	3.16-25
3.16.2	Environmental Impacts.....	3.16-25
3.16.2.1	Background.....	3.16-25
	Regulatory Framework.....	3.16-25
	Methodology.....	3.16-25
	Thresholds of Significance.....	3.16-25
3.16.2.2	Component Impacts.....	3.16-26
	Project-Level Impacts.....	3.16-26
	Program-Level Impacts.....	3.16-31
	Summary of IRP Component Impacts.....	3.16-34
3.16.2.3	Alternative Impacts.....	3.16-36
	Alternative 1.....	3.16-36
	Alternative 2.....	3.16-41
	Alternative 3.....	3.16-45
	Alternative 4.....	3.16-48
	No Project Impacts.....	3.16-51
3.16.2.4	Cumulative Impacts.....	3.16-52
3.17	Transportation and Traffic.....	3.17-1
3.17.1	Introduction.....	3.17-1
3.17.2	Environmental Setting.....	3.17-1
3.17.2.1	General Setting.....	3.17-1
3.17.2.2	Components.....	3.17-2
	Project-Level Components.....	3.17-2
	Program-Level Components.....	3.17-3



3.17.3	Environmental Impacts	3.17-21
3.17.3.1	Background	3.17-21
	<i>Regulatory Framework</i>	3.17-21
	<i>Methodology</i>	3.17-23
	<i>Thresholds of Significance</i>	3.17-26
3.17.3.2	Component Impacts	3.17-26
	<i>Project-Level Components</i>	3.17-26
	<i>Program-Level Component Impacts</i>	3.17-71
	<i>Summary of Component Impacts</i>	3.17-75
3.17.3.3	Alternative Impacts	3.17-78
	<i>Alternative 1</i>	3.17-78
	<i>Alternative 2</i>	3.17-84
	<i>Alternative 3</i>	3.17-86
	<i>Alternative 4</i>	3.17-88
	<i>No Project Alternative</i>	3.17-89
3.17.3.4	Cumulative Impacts	3.17-91
3.18	Utilities and Service Systems	3.18-1
3.18.1	Introduction	3.18-1
3.18.2	Environmental Setting	3.18-1
3.18.2.1	General Setting.....	3.18-1
	<i>Solid Waste</i>	3.18-1
	<i>Electricity</i>	3.18-3
	<i>Natural Gas</i>	3.18-3
3.18.2.2	Components	3.18-3
	<i>Project-Level Components</i>	3.18-3
	<i>Program-Level Components</i>	3.18-6
3.18.3	Environmental Impacts	3.18-7
3.18.3.1	Background	3.18-7
	<i>Regulatory Framework</i>	3.18-7
	<i>Methodology</i>	3.18-9
	<i>Thresholds of Significance</i>	3.18-9
3.18.3.2	Component Impacts	3.18-10
	<i>Project-Level Impacts</i>	3.18-10
	<i>Program-Level Impacts</i>	3.18-15
	<i>Summary of Component Impacts</i>	3.18-18
3.18.3.3	Alternative Impacts	3.18-21
	<i>Alternative 1</i>	3.18-21
	<i>Alternative 2</i>	3.18-23
	<i>Alternative 3</i>	3.18-25
	<i>Alternative 4</i>	3.18-26
	<i>No Project Alternative</i>	3.18-28
3.18.3.4	Cumulative Impacts	3.18-29
Section 4 Other Environmental Considerations		4-1
4.1	Introduction.....	4-1
4.2	Growth-Inducing Impacts	4-1
4.2.1	CEQA Growth-Inducing Guidelines	4-1
4.2.2	Types of Growth.....	4-2



4.2.2.1	Land Use Growth.....	4-2
4.2.2.2	Population Growth.....	4-2
4.2.3	Existing Obstacles to Growth.....	4-3
4.2.4	Growth Evaluation.....	4-3
4.2.4.1	Direct Growth Inducement.....	4-4
4.2.4.2	Indirect Growth Inducement.....	4-4
4.3	Long-Term Versus Short-Term Considerations.....	4-6
4.4	Significant Irreversible Impacts.....	4-7
4.5	Environmentally Superior Alternative.....	4-7
4.6	Unavoidable Significant Adverse Impacts.....	4-8
Section 5 Persons and Organizations Contacted.....		5-1
Section 6 Preparers.....		6-1
Section 7 References.....		7-1

Appendixes

- A Scoping and Public Information
- B Air Quality Calculations
- C Agency Coordination

Tables

1-1 Cross-Reference for CEQA Contents *Integrated Resources Plan EIR* 1-2

1-2 Treatment Plant Parameters *Integrated Resources Plan EIR* 1-8

1-3 Agency Actions and Approvals *Integrated Resources Plan EIR* 1-13

2-1 Comparison of IRP Facilities Plan Components Hyperion Service Area
Treatment Facilities and System Improvements
Integrated Resources Plan EIR 2-6

2-2 NEIS II West Alignment Location and Description of Associated
Structures *Integrated Resources Plan EIR* 2-30

2-3 NEIS II East Alignment Location and Description of Associated
Structures *Integrated Resources Plan EIR* 2-39

2-4 Glendale Burbank Interceptor Sewer South Alignment Location and
Description of Associated Structures *Integrated Resources Plan EIR* 2-43

2-5 Glendale Burbank Interceptor Sewer North Alignment Location and
Description of Associated Structures *Integrated Resources Plan EIR* 2-45

2-6 Range of Recycled Water Pipelines and Storage by Area
Integrated Resources Plan EIR 2-48

2-7 Coastal Storm Drain Dry Weather Diversion to the Wastewater System
Integrated Resources Plan EIR 2-52

2-8 Summary of Inland Dry Weather Diversions to the Wastewater System
by 2020 *Integrated Resources Plan Environmental Impact Report* 2-55

2-9 Volume of Dry Weather Runoff to Urban Runoff Plants or Treatment
Wetlands by 2020 *Integrated Resources Plan EIR* 2-56

2-10 Capture and Percolation Facilities by Category in the Eastern
San Fernando Valley *Integrated Resources Plan EIR* 2-62

2-11 EIR Project Alternatives (Project-Level Components)
Integrated Resources Plan EIR 2-72

2-12 EIR Project Alternatives (Program-Level Components)
Integrated Resources Plan EIR 2-72

2-13 Runoff Managed and Discharge Volumes by Alternative
Integrated Resources Plan EIR 2-73

2-14 Alternative 1: Hyperion Expansion to 500 mgd Potential Use of
Nonpotable Recycled Water *Integrated Resources Plan EIR* 2-78

2-15 Alternative 1: Hyperion Expansion to 500 mgd Potential Dry Weather
Runoff Managed by 2020 *Integrated Resources Plan EIR* 2-79

2-16 Alternative 1: Hyperion Expansion to 500 mgd Wet Weather Runoff
Managed by 2020 *Integrated Resources Plan EIR* 2-80

2-17 Alternative 2: Tillman Expansion (to 80 mgd) and Los Angeles-Glendale
Expansion (to 30 mgd) Potential Use of Nonpotable Recycled Water
Integrated Resources Plan EIR 2-85

2-18 Alternative 2: Tillman Expansion (to 80 mgd) and Los Angeles-Glendale
Expansion (to 30 mgd) Potential Dry Weather Runoff Managed by 2020
Integrated Resources Plan EIR 2-86

2-19 Alternative 2: Tillman Expansion (to 80 mgd) and Los Angeles-Glendale
Expansion (to 30 mgd) Wet Weather Runoff Managed by 2020
Integrated Resources Plan EIR 2-87



2-20	Alternative 3: Tillman Expansion (to 100 mgd) without Cisterns Potential Use of Nonpotable Recycled Water <i>Integrated Resources Plan EIR</i>	2-91
2-21	Alternative 3: Tillman Expansion (to 100 mgd) without Cisterns Dry Weather Runoff Managed by 2020 <i>Integrated Resources Plan EIR</i>	2-92
2-22	Alternative 3: Tillman Expansion (to 100 mgd) without Cisterns Wet Weather Runoff Managed by 2020 <i>Integrated Resources Plan EIR</i>	2-93
2-23	Alternative 4: Tillman Expansion (to 100 mgd) with Cisterns Potential Use of Nonpotable Recycled Water <i>Integrated Resources Plan EIR</i>	2-98
2-24	Alternative 4 - Tillman Expansion (to 100 mgd) with Cisterns Dry Weather Runoff Managed by 2020 <i>Integrated Resources Plan EIR</i>	2-99
2-25	Alternative 4: Tillman Expansion (to 100 mgd) with Cisterns Wet Weather Runoff Managed by 2020 <i>Integrated Resources Plan EIR</i>	2-101
3.2-1	Aesthetic Component Impact Summary Table <i>Integrated Resources Plan EIR</i>	3.2-149
3.3-1	Agriculture Component Impact Summary <i>Integrated Resources Plan EIR</i>	3.3-13
3.4-1	Number of Days Criteria Pollutants Exceed NAAQS and CAAQS <i>Integrated Resources Plan EIR</i>	3.4-11
3.4-2	Existing TAC Emissions from Hyperion (lb/yr) <i>Integrated Resources Plan EIR</i>	3.4-21
3.4-3	Maximum Health Risks Associated with Existing TAC Emissions from Hyperion <i>Integrated Resources Plan EIR</i>	3.4-24
3.4-4	Existing TAC Emissions from Tillman (lb/yr) <i>Integrated Resources Plan EIR</i>	3.4-31
3.4-5	Existing TAC Emissions from LAG (lb/yr) <i>Integrated Resources Plan EIR</i>	3.4-37
3.4-6	State and National Ambient Air Quality Standards <i>Integrated Resources Plan EIR</i>	3.4-54
3.4-7	General Conformity De Minimis Levels <i>Integrated Resources Plan EIR</i>	3.4-57
3.4-8	SCAQMD Daily Construction Emissions Thresholds <i>Integrated Resources Plan EIR</i>	3.4-59
3.4-9	SCAQMD Daily Operational Emissions Thresholds <i>Integrated Resources Plan EIR</i>	3.4-59
3.4-10	Daily Construction Emissions from Expansion of Hyperion to 500 mgd <i>Integrated Resources Plan EIR</i>	3.4-64
3.4-11	Annual Construction Emissions From Expansion of Hyperion to 500 mgd <i>Integrated Resources Plan EIR</i>	3.4-64
3.4-12	Operational Emissions from Hyperion Expansion to 500 mgd <i>Integrated Resources Plan EIR</i>	3.4-65
3.4-13	Assessment of Potential Odor Impacts from Hyperion Expansion to 500-mgd <i>Integrated Resources Plan EIR</i>	3.4-67
3.4-14	Existing TAC Emissions from Hyperion Expansion to 500-mgd (lb/yr) <i>Integrated Resources Plan EIR</i>	3.4-68
3.4-15	Maximum Health Risks Associated with TAC Emissions from Hyperion Expansion to 500-mgd <i>Integrated Resources Plan EIR</i>	3.4-71

3.4-16 Annual Operational Emissions from Hyperion Process Upgrades
Integrated Resources Plan EIR 3.4-72

3.4-17 Assessment of Potential Odor Impacts from Hyperion Process
 Upgrades *Integrated Resources Plan EIR*..... 3.4-74

3.4-18 Existing TAC Emissions from Hyperion Process
 Upgrades (lb/yr) *Integrated Resources Plan EIR*..... 3.4-75

3.4-19 Maximum Health Risks Associated with TAC Emissions from
 Hyperion Process Upgrades *Integrated Resources Plan EIR*..... 3.4-77

3.4-20 Daily Emissions Construction from Tillman Expansion to 100 mgd
Integrated Resources Plan EIR 3.4-79

3.4-21 Annual Construction Emissions from Tillman Expansion to 100-mgd
Integrated Resources Plan EIR 3.4-79

3.4-22 Operational Emissions from Tillman Expansion to 100 mgd
Integrated Resources Plan EIR 3.4-80

3.4-23 Assessment of Potential Odor Impacts from Tillman Expansion
 to 100 mgd *Integrated Resources Plan EIR*..... 3.4-81

3.4-24 Existing TAC Emissions from Tillman Expansion to 100-mgd (lb/yr)
Integrated Resources Plan EIR 3.4-82

3.4-25 Dispersion Model Source Parameters for the Tillman
 Screening-Level HRA *Integrated Resources Plan EIR*..... 3.4-85

3.4-26 Maximum Screening-Level Health Risks Associated with
 TAC Emissions from Tillman Expansion to 100 mgd
Integrated Resources Plan EIR 3.4-86

3.4-27 Daily Construction Emissions from Tillman Expansion to 80-mgd
Integrated Resources Plan EIR 3.4-87

3.4-28 Annual Construction Emissions from Tillman Expansion to 80-mgd
Integrated Resources Plan EIR 3.4-87

3.4-29 Operational Emissions from Tillman Expansion to 80 mgd
Integrated Resources Plan EIR 3.4-88

3.4-30 Assessment of Potential Odor Impacts from Tillman Expansion
 to 80 mgd *Integrated Resources Plan EIR*..... 3.4-89

3.4-31 Existing TAC Emissions from Tillman Expansion to 80 mgd (lb/yr)
Integrated Resources Plan EIR 3.4-90

3.4-32 Daily Construction Emissions from Tillman Process Upgrades
Integrated Resources Plan EIR 3.4-92

3.4-33 Annual Construction Emissions from Tillman Process Upgrades
Integrated Resources Plan EIR 3.4-92

3.4-34 Emissions from Tillman Process Upgrades
Integrated Resources Plan EIR 3.4-92

3.4-35 Daily Construction Emissions from Tillman Wastewater Storage
Integrated Resources Plan EIR 3.4-93

3.4-36 Annual Construction Emissions from Tillman Wastewater Storage
Integrated Resources Plan EIR 3.4-94

3.4-37 Operational Emissions from Tillman Wastewater Storage
Integrated Resources Plan EIR 3.4-94



Contents

3.4-38 Daily Construction Emissions from LAG Expansion to 30 mgd
Integrated Resources Plan EIR.....3.4-96

3.4-39 Annual Construction Emissions from LAG Expansion to 30 mgd
Integrated Resources Plan EIR.....3.4-97

3.4-40 Operational Emissions from LAG Expansion to 30 mgd
Integrated Resources Plan EIR.....3.4-97

3.4-41 Assessment of Potential Odor Impacts from LAG Expansion to 30 mgd
Integrated Resources Plan EIR.....3.4-98

3.4-42 TAC Emissions from LAG Expansion to 30 mgd (lb/yr)
Integrated Resources Plan EIR.....3.4-100

3.4-43 Daily Construction Emissions from LAG Operational Storage Only
Integrated Resources Plan EIR.....3.4-102

3.4-44 Annual Construction Emissions from LAG Operational Storage Only
Integrated Resources Plan EIR.....3.4-102

3.4-45 Operational Emissions from LAG Operational Storage Only
Integrated Resources Plan EIR.....3.4-103

3.4-46 Daily Construction Emissions from NEIS II West Alignment
Integrated Resources Plan EIR.....3.4-104

3.4-47 Annual Construction Emissions from NEIS II West Alignment
Integrated Resources Plan EIR.....3.4-105

3.4-48 TAC Emissions from a Representative Air Treatment Facility
Integrated Resources Plan EIR.....3.4-107

3.4-49 Maximum H₂S Concentrations Associated with ATFs for NEIS II
West Alignment *Integrated Resources Plan EIR*.....3.4-108

3.4-50 Maximum Health Risks Associated with TAC Emissions from a
Representative Air Treatment Facility *Integrated Resources Plan EIR*3.4-109

3.4-51 Maximum H₂S Concentrations Associated with ATFs for NEIS East
Alignment *Integrated Resources Plan EIR*.....3.4-111

3.4-52 Daily Construction Emissions from GBIS South Alignment
Integrated Resources Plan EIR.....3.4-112

3.4-53 Annual Construction Emissions from GBIS South Alignment
Integrated Resources Plan EIR.....3.4-112

3.4-54 Maximum H₂S Concentrations Associated with ATFs for the
GBIS South Alignment *Integrated Resources Plan EIR*3.4-114

3.4-55 Air Quality Component Impact Summary Table
Integrated Resources Plan EIR.....3.4-122

3.4-56 Daily Construction Emissions from Alternative 1
Integrated Resources Plan EIR.....3.4-132

3.4-57 NO_x and PM₁₀ Construction Emissions after Mitigation
Integrated Resources Plan EIR.....3.4-133

3.4-58 Operational Emissions from Alternative 1
Integrated Resources Plan EIR.....3.4-134

3.4-59 Estimated Annual Emissions from Alternative 1
Integrated Resources Plan EIR.....3.4-141

3.4-60 Daily Construction Emissions from Alternative 2
Integrated Resources Plan EIR.....3.4-143

3.4-61 NO_x and PM₁₀ Construction Emissions for Alternative 2
after Mitigation *Integrated Resources Plan EIR* 3.4-144

3.4-62 Operational Emissions from Alternative 2
Integrated Resources Plan EIR 3.4-145

3.4-63 Estimated Annual Emissions from Alternative 2
Integrated Resources Plan EIR 3.4-149

3.4-64 Daily Construction Emissions from Alternative 3
Integrated Resources Plan EIR 3.4-150

3.4-65 NO_x and PM₁₀ Construction Emissions for Alternative 3
after Mitigation ^a *Integrated Resources Plan EIR* 3.4-151

3.4-66 Operational Emissions from Alternative 3
Integrated Resources Plan EIR 3.4-152

3.4-67 Estimated Annual Emissions from Alternative 3
Integrated Resources Plan EIR 3.4-156

3.4-68 Operational Emissions from Alternative 4
Integrated Resources Plan EIR 3.4-158

3.5-1 Special-Status Plant Species Known to Occur in the HSA
Integrated Resources Plan EIR 3.5-2

3.5-2 Special-Status Wildlife Species Known to Occur in the HSA
Integrated Resources Plan EIR 3.5-5

3.5-3 Biological Component Impact Summary Table
Integrated Resources Plan EIR 3.5-39

3.5-4 Minimum and Maximum Estimated Sheet Flow Depth Changes
for Potential Future Alternatives *Integrated Resources Plan EIR* 3.5-46

3.6-1 Coastal Resources Component Impact Summary Table
Integrated Resources Plan EIR 3.6-10

3.7-1 Geologic and Paleontological Summary Relative to Study Area
Integrated Resources Plan EIR 3.7-2

3.7-2 Cultural Resources Component Impact Summary
Integrated Resources Plan EIR 3.7-64

3.8-1 Existing Population Characteristics, Race/Ethnicity (2000)
Integrated Resources Plan EIR 3.8-2

3.8-2 Existing Population Characteristics, Income/Poverty (2000)
Integrated Resources Plan EIR 3.8-7

3.8-3 Impacts of Proposed Project Alternatives
Integrated Resources Plan EIR 3.8-15

3.9-1 Historic Earthquakes *Integrated Resources Plan EIR* 3.9-11

3.9-2 Maximum Moment Magnitudes of Earthquakes on Local Faults
in Southern California *Integrated Resources Plan EIR* 3.9-12

3.9-3 Geology and Soils Component Impact Summary Table
Integrated Resources Plan EIR 3.9-39

3.10-1 Hazards Component Impact Summary Table
Integrated Resources Plan EIR 3.10-26

3.11-1 Land Use Summaries In the City of Los Angeles by Watershed
Management Area *Integrated Resources Plan EIR* 3.11-2



Contents

3.11-2 Estimated Dry Weather Runoff Volume and Rates throughout
City of Los Angeles *Integrated Resources Plan EIR*3.11-8

3.11-3 Estimated Wet Weather Runoff Volume throughout City of
Los Angeles *Integrated Resources Plan EIR*3.11-9

3.11-4 Summary of Runoff Conveyance Facilities in Los Angeles
Integrated Resources Plan EIR.....3.11-11

3.11-5 Impairments for the Los Angeles River WMA
Integrated Resources Plan EIR.....3.11-13

3.11-6 Impairments for the Ballona Creek/ Urban Santa Monica Bay WMA
Integrated Resources Plan EIR.....3.11-15

3.11-7 Impairments for the Dominguez Channel/Los Angeles Harbor WMA
Integrated Resources Plan EIR.....3.11-17

3.11-8 Existing Effluent Discharge from Hyperion
Integrated Resources Plan EIR.....3.11-24

3.11-9 Effluent Performance Summary Vs NPDES Requirements for Hyperion
Integrated Resources Plan EIR.....3.11-24

3.11-10 Effluent Performance Summary Vs NPDES Requirements for Tillman
Integrated Resources Plan EIR.....3.11-24

3.11-11 Effluent Performance Summary Vs NPDES Requirements for LAG
Integrated Resources Plan EIR.....3.11-25

3.11-12 Tillman WRP Average Effluent Reuse from July 2001 to June 2002
Integrated Resources Plan EIR.....3.11-27

3.11-13 Beneficial Uses of Receiving Waters Associated with the IRP Projects
Integrated Resources Plan EIR.....3.11-35

3.11-14 TMDL Schedule for Bodies of Water Affected by the IRP
Integrated Resources Plan EIR.....3.11-38

3.11-15 Adjudication Judgments *Integrated Resources Plan EIR*3.11-39

3.11-16 Water Quality Component Impact Summary Table
Integrated Resources Plan EIR.....3.11-79

3.11-17 Flow to Los Angeles River for Each IRP Alternative (Average
Summer Dry Weather Flow) *Integrated Resources Plan EIR*.....3.11-84

3.12-1 City of Los Angeles General Plan Land Uses
Integrated Resources Plan EIR.....3.12-1

3.12-2 Height Restrictions in Height District 1
Integrated Resources Plan EIR.....3.12-2

3.12-3 Height Restriction in Height District 1 – Extra Limited
Integrated Resources Plan EIR.....3.12-3

3.12-4 General Plan Land Use and Zoning for NEIS II Components
Integrated Resources Plan EIR.....3.12-13

3.12-5 General Plan Land Use and Zoning for GBIS Components
Integrated Resources Plan EIR.....3.12-17

3.12-6 Summary of Local Land Use Plans *Integrated Resources Plan EIR*.....3.12-21

3.12-7 Land Use and Planning Component Impact Summary Table
Integrated Resources Plan EIR.....3.12-35

3.13-1 Existing Noise Levels at Sensitive Receptors Near Hyperion
Integrated Resources Plan EIR.....3.13-11

3.13-2 Noise Levels of Processing Equipment at Hyperion
Integrated Resources Plan EIR 3.13-11

3.13-3 Existing Noise Levels at Sensitive Receptors Near Tillman
Integrated Resources Plan EIR 3.13-15

3.13-4 Noise Levels of Processing Equipment at Tillman
Integrated Resources Plan EIR 3.13-15

3.13-5 Existing Noise Levels at Sensitive Receptors Near LAG
Integrated Resources Plan EIR 3.13-16

3.13-6 Noise Levels of Processing Equipment at LAG
Integrated Resources Plan EIR 3.13-16

3.13-7 Summary of Noise Measurements – NEIS II
Integrated Resources Plan EIR 3.13-20

3.13-8 Summary of Noise Measurements – GBIS
Integrated Resources Plan EIR 3.13-29

3.13-9 Land Use Compatibility for Community Noise Environments
Integrated Resources Plan EIR 3.13-42

3.13-10 Noise Levels of Construction Equipment
Integrated Resources Plan EIR 3.13-43

3.13-11 Estimated Noise Level from Major Construction Activities
Integrated Resources Plan EIR 3.13-44

3.13-12 Hyperion: Expansion to 500 mgd Construction Noise Impact at
 Sensitive Receptor Locations *Integrated Resources Plan EIR*..... 3.13-50

3.13-13 Hyperion: Expansion to 500 mgd Construction Noise Impact
 with Mufflers at Sensitive Receptor Locations
Integrated Resources Plan EIR 3.13-51

3.13-14 Hyperion: Process Upgrades Construction Noise Impact at
 Sensitive Receptor Locations *Integrated Resources Plan EIR*..... 3.13-53

3.13-15 Hyperion Process Upgrades Construction Noise Impact at
 Sensitive Receptor Locations with Mufflers
Integrated Resources Plan EIR 3.13-54

3.13-16 Tillman Expansion to 100 mgd Construction Noise Impact
Integrated Resources Plan EIR 3.13-56

3.13-17 Tillman Expansion to 100 mgd Construction Noise Impact
 with Mufflers ^{a*} *Integrated Resources Plan EIR* 3.13-57

3.13-18 Tillman Expansion to 80 mgd Construction Noise Impact
Integrated Resources Plan EIR 3.13-59

3.13-19 Tillman Expansion to 80 mgd Construction Noise Impact
 with Mufflers *Integrated Resources Plan EIR*..... 3.13-60

3.13-20 Tillman Process Upgrades Construction Noise Impact
Integrated Resources Plan EIR 3.13-61

3.13-21 Tillman Process Upgrades Construction Noise Impact
Integrated Resources Plan EIR 3.13-62

3.13-22 Tillman Wastewater Storage Construction Noise Impact
Integrated Resources Plan EIR 3.13-63

3.13-23 Tillman Wastewater Storage Construction Noise Impact
Integrated Resources Plan EIR 3.13-63



Contents

3.13-24 LAG: Process Upgrades With Storage Noise Impact
Integrated Resources Plan EIR.....3.13-64

3.13-25 LAG: Process Upgrades with Storage Noise Impact with Mufflers
Integrated Resources Plan EIR.....3.13-65

3.13-26 LAG: Operational Storage Construction Noise Impact
Integrated Resources Plan EIR.....3.13-66

3.13-27 LAG: Operational Storage Construction Noise Impact
Integrated Resources Plan EIR.....3.13-66

3.13-28 Construction Noise Level – NEIS II West Alignment
Integrated Resources Plan EIR.....3.13-67

3.13-29 Sensitive Receptors that Would Experience Noise Level Increases
 by 5 dBA or More During Construction – NEIS II West Alignment
Integrated Resources Plan EIR.....3.13-68

3.13-30 Construction Noise Level – NEIS II East Alignment
Integrated Resources Plan EIR.....3.13-73

3.13-31 Number of Sensitive Receptors that Would Experience Noise Level
 of 5 dBA or More During Construction – NEIS II East Alignment
Integrated Resources Plan EIR.....3.13-74

3.13-32 Construction Noise Level – GBIS South Alignment
Integrated Resources Plan EIR.....3.13-76

3.13-33 Sensitive Receptors that Would Experience Noise Level of 5 dBA
 or More during Construction – GBIS South Alignment
Integrated Resources Plan EIR.....3.13-77

3.13-34 Construction Noise Level – GBIS North Alignment
Integrated Resources Plan EIR.....3.13-80

3.13-35 Sensitive Receptors that Would Experience Noise Level of 5 dBA
 or More During Construction – GBIS North Alignment
Integrated Resources Plan EIR.....3.13-81

3.13-36 Noise and Vibration Component Impact Summary Table
Integrated Resources Plan EIR.....3.13-88

3.13-37 NV-MM-7: Threshold and Limiting Vibration Levels
Integrated Resources Plan EIR.....3.13-96

3.14-1 Existing Population *Integrated Resources Plan EIR*.....3.14-1

3.14-2 Existing Housing Characteristics *Integrated Resources Plan EIR*.....3.14-2

3.14-3 Summary of Population Projections (2000 – 2020)
Integrated Resources Plan EIR.....3.14-3

3.14-4 Summary of Employment Projections (2000 – 2020)
Integrated Resources Plan EIR.....3.14-3

3.14-5 Population, Housing, and Employment Component Impact
 Summary Table *Integrated Resources Plan EIR*.....3.14-19

3.15-1 Fire Stations in the Vicinity of Hyperion *Integrated Resources Plan EIR*3.15-5

3.15-2 Fire Stations in the Vicinity of Tillman *Integrated Resources Plan EIR*.....3.15-6

3.15-3 Fire Stations within the Vicinity of LAG *Integrated Resources Plan EIR*.....3.15-9

3.15-4 Public Services Component Impact Summary Table
Integrated Resources Plan EIR.....3.15-28



3.16-1 Recreational Resources within a 2-Mile Radius of Hyperion
Integrated Resources Plan EIR 3.16-3

3.16-2 Recreational Resources within a 2-Mile Radius of Tillman
Integrated Resources Plan EIR 3.16-4

3.16-3 Recreational Resources within a 2-Mile Radius of LAG
Integrated Resources Plan EIR 3.16-10

3.16-4 Recreational Resources within a 2-Mile Radius of NEIS II
Integrated Resources Plan EIR 3.16-14

3.16-5 Recreational Resources within a 2-Mile Radius of GBIS
Integrated Resources Plan EIR 3.16-19

3.16-6 Recreation Component Impact Summary
Integrated Resources Plan EIR 3.16-34

3.17-1 Existing Surface Street Characteristics in the Vicinity of NEIS II
 and GBIS *Integrated Resources Plan EIR* 3.17-9

3.17-2 Existing Bus Transit Service in the Vicinity of NEIS II and GBIS
Integrated Resources Plan Environmental Impact Report 3.17-14

3.17-3 Existing Peak-Hour Traffic Volumes in the Vicinity of NEIS II
 and GBIS *Integrated Resources Plan EIR* 3.17-16

3.17-4 Roadway Segment Level of Service Definitions
Integrated Resources Plan EIR 3.17-18

3.17-5 Existing Street Segment Levels of Service in the Vicinity of
 NEIS II and GBIS *Integrated Resources Plan EIR*..... 3.17-19

3.17-6 Development Growth Projects
 Estimated Trip Generation *Integrated Resources Plan EIR* 3.17-25

3.17-7 Trip Generation Estimates – Operational Phase
Integrated Resources Plan EIR 3.17-27

3.17-8 Estimated Construction Trips – Hyperion Expansion
 to 500 mgd *Integrated Resources Plan EIR*..... 3.17-28

3.17-9 Estimated Construction Trips – Hyperion Process Upgrades
Integrated Resources Plan EIR 3.17-31

3.17-10 Estimated Construction Trips – Tillman Expansion to 100 mgd
Integrated Resources Plan EIR 3.17-32

3.17-11 Estimated Construction Trips – Tillman Expansion to 80 mgd
Integrated Resources Plan EIR 3.17-34

3.17-12 Estimated Construction Trips – Tillman Process Upgrades
Integrated Resources Plan EIR 3.17-36

3.17-13 Estimated Construction Trips –Tillman Operational Storage
Integrated Resources Plan EIR 3.17-37

3.17-14 Estimated Construction Trips – LAG Expansion to 30 mgd
Integrated Resources Plan EIR 3.17-39

3.17-15 Estimated Construction Trips – LAG Operational Storage
Integrated Resources Plan EIR 3.17-41

3.17-16 Estimated Construction Trips – NEIS II West Alignment
Integrated Resources Plan EIR 3.17-43



Contents

3.17-17	Future Cumulative Base (No Project) Operating Conditions (2012/2014) in the Vicinity of NEIS II and GBIS <i>Integrated Resources Plan EIR</i>	3.17-47
3.17-18a	Construction-Period Operating Conditions (2012/2014) in the Vicinity of NEIS II and GBIS Terminating in Vicinity of Los Angeles Zoo <i>Integrated Resources Plan EIR</i>	3.17-49
3.17-18b	Construction-Period Operating Conditions (2012/2014) in the Vicinity of NEIS II and GBIS Terminating at Brazil Street <i>Integrated Resources Plan EIR</i>	3.17-51
3.17-19a	Project-Related Changes in V/C and LOS in the Vicinity of NEIS II and GBIS Terminating in Vicinity of Los Angeles Zoo - During Construction (2012/2014) <i>Integrated Resources Plan EIR</i>	3.17-53
3.17-19b	Project-Related Changes in V/C and LOS in the Vicinity of NEIS II and GBIS Terminating at Brazil Street - During Construction (2012/2014) <i>Integrated Resources Plan EIR</i>	3.17-55
3.17-20	Estimated Construction Trips - NEIS II East Alignment <i>Integrated Resources Plan EIR</i>	3.17-58
3.17-21	Estimated Construction Trips - GBIS South Alignment <i>Integrated Resources Plan EIR</i>	3.17-62
3.17-22	Estimated Construction Trips - GBIS North Alignment <i>Integrated Resources Plan EIR</i>	3.17-67
3.17-23	Transportation Component Impact Summary Table (Prior to Mitigation) <i>Integrated Resources Plan EIR</i>	3.17-76
3.18-1	Nonhazardous Landfills Used by the City of Los Angeles <i>Integrated Resources Plan EIR</i>	3.18-1
3.18-2	Landfills That Accept Soil <i>Integrated Resources Plan EIR</i>	3.18-2
3.18-3	Utilities and Service Systems Component Impact Summary Table <i>Integrated Resources Plan EIR</i>	3.18-19

Figures

1-1 Existing Service Infrastructure 1-9

2-1 IRP Component: Wastewater 2-3

2-2 Hyperion Expansion to 500 mgd 2-7

2-3 Truck-Loading Facility Profile..... 2-11

2-4 Tillman Expansion to 100 mgd..... 2-15

2-5 Tillman Wastewater Storage..... 2-21

2-6 LAG Expansion to 30 mgd..... 2-23

2-7 NEIS II Alignments 2-27

2-8 Sewer Tunnel Cross-Section 2-33

2-9 Typical Tunneling Process 2-35

2-10 GBIS Alignments 2-41

2-11 IRP Components: Recycled Water 2-49

2-12 IRP Component: Urban Runoff 2-53

2-13 Typical Low-Flow Diversion 2-57

2-14 Typical URP Treatment Process 2-59

2-15 Capture and Percolation System..... 2-65

2-16 Simple Cistern Design 2-67

2-17 IRP Alternative 1 – Hyperion Expansion..... 2-75

2-18 IRP Alternative 2 – Tillman and LAG Expansions 2-81

2-19 IRP Alternative 3 – Tillman Expansion without Cisterns..... 2-89

2-20 IRP Alternative 4 – Tillman Expansion 2-95

3.2-1 Hyperion Treatment Plant Photo Key 3.2-3

3.2-2 Tillman Water Reclamation Plant Photo Key..... 3.2-19

3.2-3 Los Angeles-Glendale Water Reclamation Plant Photo Key..... 3.2-25

3.2-4 Division Street Shaft Site Existing Conditions 3.2-31

3.2-5 Griffith Park Crystal Springs Picnic Area Proposed Shaft Site
and Air Treatment Facility Photo Key 3.2-35

3.2-6 Los Angeles Zoo Proposed Shaft Site and Air Treatment Facility
Photo Key 3.2-39

3.2-7 Pecan Grove Picnic Area Proposed Shaft Site and Air Treatment
Facility Photo Key 3.2-45

3.2-8 Observatory Annex Proposed Shaft Site and Air Treatment Facility
Photo Key 3.2-51

3.2-9 Verdant Street Proposed Shaft Site and Air Treatment Facility
Photo Key 3.2-57

3.2-10 Brazil Street Air Treatment Facility Existing Uses..... 3.2-63

3.2-11 Riverside East Proposed Shaft Site Photo Key 3.2-69

3.2-12 Travel Town Proposed Shaft Site Photo Key 3.2-75

3.2-13 Valley Heart Drive Proposed Shaft Site Photo Key..... 3.2-79

3.2-14 Riverside West Proposed Shaft Site Photo Key 3.2-85

3.2-15 Barham Boulevard Proposed Shaft Site Photo Key..... 3.2-93

3.2-16 Woodbridge Park Proposed Shaft Site and Air Treatment Facility
Photo Key 3.2-97

3.2-17 Caltrans North Hollywood Proposed Shaft Site and Air Treatment
Facility Photo Key 3.2-101



3.2-18	View of Hyperion from the North Bluff Area (July 12, 2005).....	3.2-111
3.2-19	View of Hyperion from the South Bluff Area (July 12, 2005)	3.2-113
3.3-1	Los Angeles County Important Farmland 2002	3.3-3
3.3-2	Kern County Important Farmland 2002	3.3-5
3.4-1	South Coast Air Basin	3.4-5
3.4-2	Air Monitoring Areas in the City of Los Angeles	3.4-9
3.4-3	Sensitive Receptor Locations Adjacent to Hyperion	3.4-15
3.4-4	History of Odor Complaints at Hyperion	3.4-19
3.4-5	Sensitive Receptor Locations Adjacent to Tillman.....	3.4-27
3.4-6	History of Odor Complaints at Tillman	3.4-29
3.4-7	Sensitive Receptor Locations Adjacent to LAG.....	3.4-35
3.4-8	Sensitive Receptor Locations Adjacent to NEIS II.....	3.4-41
3.4-9	Locations of Odor Complaints near NEIS II and GBIS	3.4-43
3.4-10	Sensitive Receptor Locations Adjacent to GBIS.....	3.4-47
3.4-11	History of Odor Complaints Near VSLIS.....	3.4-49
3.5-1	Areas of Biological Interest.....	3.5-9
3.7-1	Paleontologic Sensitivities in the IRP Service Area.....	3.7-3
3.7-2	Ethnographic Villages in Gabrielino Territory	3.7-9
3.9-1	Faults in the Los Angeles Area	3.9-7
3.9-2	Seismic Hazard Zones in the Los Angeles Area.....	3.9-15
3.9-3	City of Los Angeles Hillside Ordinance	3.9-19
3.9-4	Seismic Hazard Zones at Hyperion	3.9-23
3.10-1	Oil Fields in the City of Los Angeles.....	3.10-3
3.10-2	Methane and Methane Buffer Zones.....	3.10-5
3.10-3	Superfund Sites	3.10-7
3.11-1	Runoff Watersheds	3.11-3
3.11-2	Los Angeles River and Tributaries.....	3.11-5
3.11-3	Superfund	3.11-21
3.12-1	Existing and Adjacent Land Uses at Hyperion	3.12-5
3.12-2	Existing and Adjacent Land Uses at Tillman.....	3.12-7
3.12-3	Existing and Adjacent Land Uses at LAG	3.12-9
3.12-4	Existing and Adjacent Land Uses for NEIS II Alignments	3.12-11
3.12-5	Existing and Adjacent Land Uses for GBIS Alignments	3.12-15
3.13-1	A-Weighted Decibel Scale	3.13-3
3.13-2	Typical Vibration Sources.....	3.13-7
3.13-3	Noise Monitoring Locations at Hyperion	3.13-9
3.13-4	Noise Monitoring Locations at Tillman.....	3.13-13
3.13-5	Noise Monitoring Locations at LAG.....	3.13-17
3.13-6	NEIS Noise Monitoring Locations Near NEIS.....	3.13-21
3.13-7	Noise Measurements, NEIS II Shaft Sites	3.13-23
3.13-8	Noise Monitoring Locations Near GBIS	3.13-27
3.13-9	Noise Measurements, GBIS Shaft Sites	3.13-31
3.13-10	Noise Measurements, GBIS Shaft Sites.....	3.13-33
3.13-11	Noise Measurements, GBIS Shaft Sites.....	3.13-37
3.13-12	Groundborne Vibration and Noise Data.....	3.13-47
3.13-13	Impact Distance from Tunneling Activities	3.13-71

3.15-1 Public Services Serving the Hyperion Area..... 3.15-3
3.15-2 Public Services Serving the Tillman Area..... 3.15-7
3.15-3 Public Services Serving the LAG Area 3.15-11
3.15-4 Public Services Serving the NEIS II Area..... 3.15-13
3.15-5 Public Services Serving the GBIS Area..... 3.15-15
3.16-1 Recreational Resources Near HTP 3.16-5
3.16-2 Recreational Resources Near Tillman 3.16-7
3.16-3 Recreational Resources Near LAG..... 3.16-11
3.16-4 Recreational Resources Near NEIS II 3.16-17
3.16-5 Parks and Recreational Facilities near GBIS..... 3.16-23
3.17-1 Potential Alignments of NEIS II..... 3.17-5
3.17-2 Potential Alignments of GBIS..... 3.17-7



Acronyms

µg/m ³	micrograms per cubic meter
°F	degrees Fahrenheit
acfm	actual cubic feet per minute
A.D.	anno Domini
ADWF	average dry weather flow
afy	acre-feet per year
AOA	air operations area
APE	area of potential effects
AQMP	Air Quality Management Plan
ARP	Accidental Release Prevention
ASTM	American Society for Testing and Materials
ATF	air treatment facility
ATSAC	Automated Traffic Surveillance and Control
B.P.	before present
BACT	best available control technology
BEP	Business Emergency Plan
BMP	best management practices
Bureau of Sanitation	City of Los Angeles Bureau of Sanitation
BUSD	Burbank Unified School District
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalARP	California Accidental Release Prevention Program
CalEPA	California Environmental Protection Agency
Cal-OSHA	California Occupational Safety and Health Act
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCA	California Coastal Act



Acronyms

CCAA	California Clean Air Act
CCC	California Coastal Commission
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDMG	California Department of Conservation, Division of Mines and Geology
CELSOC	Consulting Engineers and Land Surveyors of California
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
Cfs	cubic feet per second
CGS	California Geologic Survey
CIP	Capital Improvements Program
City of LA	City of Los Angeles
CMP	Congestion Management Program
CNPS	California Native Plant Society
CO	carbon monoxide
CoIWMP	Countywide Integrated Waste Management Plan
COP	California Ocean Plan
CPA	Community Plan Area
CPUC	California Public Utilities Commission
CRHR	California Register of Historic Resources
CTR	California Toxics Rule
CZMA	Coastal Zone Management Act
dB	decibel
dBA	A-weighted decibel
DHS	California Department of Health Services
DSF/DICE	Digester Screening Facility/Dewatering Centrifuge
ECIS	East Central Interceptor Sewer
EDR	Environmental Database Resources

EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
EPB	earth-pressure balance
EQ	Exceptional Quality
ESA	Endangered Species Act
ESFD	El Segundo Fire Department
ESPD	El Segundo Police Department
ESUSD	El Segundo Unified School District
EVRS	East Valley Relief Sewer
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FTA	Federal Transit Administration
GBIS	Glendale-Burbank Interceptor Sewer
GUSD	Glendale Unified School District
H ₂ S	hydrogen sulfide
HARP	Hotspots Analysis and Reporting Program
HAS	Hyperion Service Area
HAZWOPER	Hazardous Waste Operations and Response
HHW	household hazardous waste program
HHWE	Household Hazardous Waste Element
HSS	U.S. Department of Human Health Services
HUD	U.S. Department of Housing and Urban Development
Hyperion	Hyperion Treatment Plant
Hz	hertz
I-	Interstate
IBC	International Building Code
IRP	Integrated Resources Plan
IRP Facilities Plan	<i>Integrated Resources Plan Facilities Plan</i> (City of Los Angeles, 2004)



Acronyms

IWG	interagency working group
K-12	kindergarten through Grade 12
K-12	kindergarten through grade 12
km	kilometers
Kwh	kilowatt hours
LA	Los Angeles
LACM	Los Angeles County Museum of Natural History
LACSD	Los Angeles County Sanitation District
LADBS	Los Angeles Department of Building and Safety
LADOT	Los Angeles Department of Transportation
LADWP	Los Angeles Department of Water and Power
LADWP	City of Los Angeles Department of Water and Power
LAFC	Los Angeles Fire Code
LAFD	Los Angeles Fire Department
LAG	Los Angeles-Glendale Water Reclamation Plant
LAPD	Los Angeles Police Department
LAPL	Los Angeles Public Library
LARFS	<i>Los Angeles River Flow Study</i>
LASGRWC	Los Angeles and San Gabriel Rivers Watershed Council
LAUSD	Los Angeles Unified School District
LAX	Los Angeles International Airport
lb/day	pounds per day
lb/yr	pounds per year
LCP	local coastal program
Leq	equivalent noise level
LEV	low emissions vehicle
LIM	Land Inventory and Monitoring
LoCAT	Digester Gas Sulfur Removal
LOS	level of service

LUST	Leaking Underground Storage Tank
M	meter
Ma	million years before present
MATES II	Multiple Air Toxics Exposure Study
MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant level
Metropolitan	Metropolitan Water District of Southern California
MF	microfiltration
MG	million-gallon
mgd	million gallons per day
MHB	Materials Handling Building
MOU	Memorandum of Understanding
mph	miles per hour
msl	mean sea level
MTA	Metropolitan Transportation Authority
MTBE	methyl-tert-butyl-ether
Mw	moment magnitude
MWD	Municipal Water District
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NDFE	Nondisposal Facility Element
NdN	nitrification/ denitrification
NEIS I	Northeast Interceptor Sewer Phase I
NEIS II	Northeast Interceptor Sewer Phase II
NEPA	National Environment Preservation Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NH ₃	ammonia
NHPA	National Historic Preservation Act
NO	nitric oxide



Acronyms

NO ₂	nitrogen dioxide
NOP	Notice of Preparation
NORS	North Outfall Replacement Sewer
NOS	North Outfall Sewer
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRHP	National Register of Historic Places
O&M	operations and maintenance
O ₃	ozone
OSHA	Occupational Safety and Health Act
Pb	lead
PCE	perchloroethylene
PEL	permissible exposure limit
PM ₁₀	respirable particulate matter
PM _{2.5}	fine particulate matter
POTW	publicly owned treatment works
ppb	parts per billion
ppd	pounds per day
ppm	parts per million
ppmv	parts per million by volume
PPV	peak particle velocity
PRC	Public Resources Code
Proposed Project	Preferred Alternative
PWWF	peak wet weather flow
RCPG	Regional Comprehensive Plan and Guide
RCRA	Resource Conservation and Recovery Act
Regional Board	Regional Water Quality Control Board
RMP	Risk Management Plan

rms	root mean square
RO	reverse osmosis
ROG	reactive organic gas
RO _x	oxygen reactors
RPA	Registered Professional Archaeologist
RPS	Renewable Portfolio Standard
RTP	Regional Transportation Plan
RV	recreational vehicle
SAFE	solvents, automotive, flammables, and electronics
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SEA	Significant Ecological Areas
SEL	sound exposure level
SFB	San Fernando Basin
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SLIC	Spills Leaks Investigations and Cleanup
SO ₂	sulfur dioxide
SR	State Route
SRF	State Revolving Fund
SRRE	Source Reduction and Recycling Element
State Board	State Water Resources Control Board
SUSMP	Standard Urban Stormwater Mitigation Plan
SVP	Society of Vertebrate Paleontology
SWMPP	Solid Waste Management Policy Plan
TAC	toxic air contaminant
TBM	tunnel-boring machine
TCE	trichloroethylene



Acronyms

The Gas Company	Southern California Gas Company
Tillman	Donald C. Tillman Water Reclamation Plant
TISA	Terminal Island Service Area
TITP	Terminal Island Treatment Plant
TLF	Truck Loading Facility
TMDL	total maximum daily load
tpy	tons per year
U.S.	United States
U.S. 101	U.S. Highway 101
U.S.C.	United States Code
UBC	Uniform Building Code
ULARA	Upper Los Angeles River Area
URP	Urban Runoff Plant
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
UV	ultraviolet
V/C	volume to capacity
VdB	vibration decibels
VOC	volatile organic compound
VORS	Valley Outfall Relief Sewer
vp1ph	vehicles per lane per hour
VSLIS	Valley Spring Lane Interceptor Sewer
WAST	Waste Activated Sludge Thickening
WLA	waste load allocation
wtpd	wet tons per day
yd ³	cubic yard