Salton Sea Authority

AGENDA: **BOARD OF DIRECTORS MEETING**
DATE: **January 22, 2015**
TIME: **10:00 a.m.**
LOCATION: **Imperial Irrigation District**
Bill Condit Auditorium
1285 Broadway Avenue
El Centro, CA 92243
(760) 482-9618

I. CALL TO ORDER

PLEDGE OF ALLEGIANCE

ROLL CALL

TELECONFERENCE: Director Marion Ashley will be participating via teleconferencing from 29490 Warmsprings Drive, Menifee, CA 92584; Telephone (951) 490-7679

II. PUBLIC COMMENTS

Any member of the public may address, and ask questions of, the Board relating to any matter within the Authority's jurisdiction. This time is reserved for matters not already on the Agenda. Remarks shall be limited to a maximum of three (3) minutes unless additional time is authorized by the Board. To gain permission to speak, fill out a Request-to-Speak form and turn it in to the Recording Secretary.

III. BOARD MEMBER COMMENTS

This is the time set aside for any Board Member to ask questions or address any issue posed by a member of the public.

IV. CONSENT CALENDAR – (Attached) – Approve, Receive and File

A. Minutes of December 18, 2014

B. Warrant Register Ratification for November 25, 2014 – December 31, 2014

C. Internal Financial Report for July 1, 2014 – January 12, 2015

V. PRESENTATIONS

A. Presentation by Mr. Bruce Wilcox (IID) Air Quality Mitigation Program for IID Water Conservation and Transfer **(See attached)**

VI. REPORTS

A. General Manager Activity Report (Roger Shintaku, *et al*.)

1. Desert Cahuilla Wetlands Project Torres Martinez (Roger Shintaku)

2. Infrastructure Finance District and Salton Sea Action Committee - Salton Sea Authority Activities (Roger Shintaku)

3. Geotube Proposal

B. Update on Activities: Funding and Feasibility Action Plan Report (Roger Shintaku and Tetra Tech)

C. Salton Sea Action Committee Report (Juan DeLara / Paul Quill)

D. Update on State Activities (Kent Nelson)

E. Legislative Update Report and 2015-2016 Legislative Platform Approval (Phil Rosentrater) **(See attached)**

VII. CURRENT BUSINESS

A. Reschedule February Board Meeting **(See attached)**

B. Discussion item for Salton Sea Authority to take a formal position of support for IID petition and possibly add Salton Sea Authority to formal petition document **(See attached)**

VIII. NEW BUSINESS

A. Selection of Salton Sea Authority Treasurer and approve proposed Resolution No. 15-01, entitled, "Resolution of the Board of Directors of the Salton Sea Authority Designating Officials Authorized to Sign Warrants and Checks, Transfer Funds, and Access Safe Deposit Box" **(See attached)**

IX. BOARD COMMITTEE REPORTS

(None)

X. INFORMATION OF INTEREST

(None)

XI. ADJOURNMENT

NEXT MEETING TIME & LOCATION:
February 26, 2015
10:00 a.m.
Coachella Valley Water District
Steve Robbins Administration Building
75515 Hovley Lane East
Palm Desert, CA 92260
(760) 398-2651

Any public record, relating to an open session agenda item, that is distributed within 72 hours prior to the meeting is available for public inspection in the lobby at the front desk of the Work Force Development center located at 44-199 Monroe Street, Indio, CA 92201 or online at www.saltonsea.ca.gov.

OFFICIAL PROCEEDINGS
SALTON SEA AUTHORITY
BOARD OF DIRECTORS SPECIAL MEETING
December 18, 2014

The special meeting of the Salton Sea Authority (Authority) Board of Directors (Board) was called to order by Matt Dessert, Secretary, at 10:06 a.m., December 18, 2014, at the Coachella Valley Water District, Steve Robbins Administration Building, 75515 Hovley Lane East, Palm Desert, CA 92260, (760) 398-2651.

I. CALL TO ORDER

PLEDGE OF ALLEGIANCE

BOARD OF DIRECTORS PRESENT	AGENCY
Matt Dessert, Secretary	Imperial Irrigation District
Marion Ashley, Director	Riverside County
G. Patrick O'Dowd, Director	Coachella Valley Water District
James C. Hanks, Director	Imperial Irrigation District

In keeping with the Salton Sea Authority Bylaws, there being three of the five member agencies represented, and a single Director carrying the vote of both Directors when the second Director of the same agency is absent, a Quorum was declared, and the meeting proceeded.

BOARD OF DIRECTORS ABSENT	AGENCY
John J. Benoit, President	Riverside County
Ryan E. Kelley, Vice President	Imperial County
Michelle Morreo, Director	Torres Martinez Desert Cahuilla
John Renison, Director	Imperial County
Thomas Tortez, Director	Torres Martinez Desert Cahuilla
Cástulo R. Estrada	Coachella Valley Water District

BOARD OF DIRECTORS PRESENT VIA TELECONFERENCE	AGENCY
None	

SALTON SEA AUTHORITY STAFF PRESENT
Roger Shintaku, General Manager
Bob Hargreaves, Legal Counsel
J. Andrew Schlange, Consultant
Linda Seroy, Administrative Assistant, Recording Secretary

ALSO IN ATTENDANCE WERE:	AGENCY
Peter Nelson	
Linda Beal	Salton Sea History Museum
Nicole Ochoa	CEERT
Vickie Doyle	Imperial Irrigation District
Shawn Muir	29 Palms Tribal EPA
Juan DeLara	SSAC Federated Insurance
Louis Davis	Southern California Edison
Paul Quill	Quill Enterprises, LLC, and SSAC
Patricia Cooper	Supervisor John Benoit

II. PUBLIC COMMENTS

A. Peter Nelson, outgoing Director from CVWD, introduced CVWD Director G. Patrick O'Dowd, his replacement on the Salton Sea Authority Board. Director O'Dowd and incoming Director Cástulo R. Estrada (who replaces outgoing Director Franz DeKlotz) were appointed by CVWD to represent CVWD on the Salton Sea Authority Board of Directors.
B. Linda Beal, Salton Sea History Museum, expressed concerns about the Salton Sea's rapid deterioration, and expressed her support of efforts to improve its condition.
C. Emmanuel Martinez, on behalf of newly-elected Assemblyman Eduardo Garcia, expressed the desire to continue working closely with the Salton Sea Board of Directors.

III. BOARD MEMBER COMMENTS

A. Director Jim Hanks: Merry Christmas. Drew attention to the summary of the petition IID filed, included in the minutes, and encouraged everyone to read the entire text of the petition – important to become familiar with it.
B. Director Marion Ashley: Happy Hanukah, Merry Christmas, and Happy New Year. Looking forward to working with the new Authority members. Will be able to be at this year's meetings; doesn't have the scheduling conflicts he did this last year.
C. Director G. Patrick O'Dowd: Thanked Peter Nelson for his kind words, looks forward to working with the new team.
D. Director Matt Dessert: Reported on CRWUA meeting last week in Las Vegas, which Phil Rosentrater, Roger Shintaku, and Peter Nelson also attended. The Salton Sea was highlighted in the December photo of the CRWUA calendar, acknowledging the Salton Sea as part of the Colorado River system.

IV. CONSENT CALENDAR

A. Minutes:
   1. May 22, 2014
   2. October 23, 2014

B. Warrant Register Ratification for October 1, 2014 through November 30, 2014

C. Internal Financial Report for: July 1, 2014 through December 5, 2014

Director Jim Hanks moved that the Consent Calendar be approved. Three "ayes"(Directors Matt Dessert, Jim Hanks, and Marion Ashley); Director Patrick O'Dowd abstained. Motion carried.

V. PRESENTATIONS

None.

VI. REPORTS

A. General Manager Roger Shintaku reported on the Desert Cahuilla Wetlands Project Torres Martinez,

B. Javier Weckman, of Tetra Tech, presented the Funding and Feasibility Action Plan Report.

C. Paul Quill, of Salton Sea Action Committee (SSAC) reported on the Infrastructure Finance District (IFD) and SSAC-SSA Activities.

D. Juan DeLara, of SSAC, gave the Salton Sea Action Committee Report.

VII. CURRENT BUSINESS

Phil Rosentrater presented the Legislative Update and Proposed Legislative Activities for 2015.

VIII. NEW BUSINESS

A. The proposed 2015 schedule of Salton Sea Authority Board Meetings was presented and discussed.

   Director Jim Hanks moved to approve the schedule as presented, subject to amendment from time to time as needed. Unanimously approved.

B. Resolution Number 14-02 (Authorized Signatures) was presented and discussed. The signatories being authorized included outgoing Director/Treasurer Peter Nelson. The Resolution is to be revised to substitute incoming Director G. Patrick O'Dowd. January's agenda is to include selection of a new Treasurer.

   Director Jim Hanks moved to strike Peter Nelson's name and position from the Resolution, and use G. Patrick O'Dowd's name. Unanimously approved.

C. The Petition for Modification of Revised Water Rights Order 2002-0013 was discussed. The petition opens the door to have the Salton Sea Authority, and Riverside County and Imperial County, sit at the table and be included in discussion. Director Hanks urged all the Directors to read the petition from cover to cover.

Peter Nelson added a public comment, expressing concern over some items in the petition. He and Director Hanks discussed the petition briefly. Mr. Nelson will review the document again before pursuing further discussion.

IX. BOARD COMMITTEE REPORTS

None. Address formation of committees at January meeting after selection of Treasurer.

X. INFORMATION OF INTEREST

None.

XI. ADJOURNMENT

There being no further business, Board Secretary Matt Dessert adjourned the meeting at 11:44 a.m.

NEXT MEETING TIME & LOCATION:

January 22, 2014
10:00 a.m.
Imperial Irrigation District
Bill Condit Auditorium
1285 Broadway Avenue
El Centro, CA 92243
760-482-9618

Warrant Register
November 25, 2014 through December 31, 2014

Warrant Date	Warrant Number	Vendor Name		Amount
11/25/14	EFT	Verizon Wireless	$	193.57
12/05/14	15572	OfficeMax		222.46
12/05/14	15573	Sampson, Gloria J Accounting		6,293.59
12/05/14	15574	Schlange, J Andrew		7,200.00
12/05/14	15575	Sampson, Gloria J Accounting 214		4,027.50
12/08/14	EFT	Verizon California (inet)		112.89
12/09/14	EFT	Rabobank Visa		2,208.67
12/15/14	15576	Best, Best & Krieger		2,088.00
12/15/14	15577	Perez, Juan Murillo		1,092.00
12/15/14	15578	Shintaku, Roger		1,347.42
12/30/14	EFT	FedEx		29.50
12/30/14	EFT	Verizon Wireless		193.57
12/30/14	EFT	Pitney Bowes		87.49
		Total	**$**	**25,096.66**

10:06 AM

01/12/15

Accrual Basis

Salton Sea Authority
Balance Sheet by Fund
As of January 12, 2015

	101 General	214 Wetlands Grant	215 Funding Feasibility Review	702 Fish Clean Up Trust	TOTAL
ASSETS					
Current Assets					
Checking/Savings					
0001010 · Cash - Checking	56,624.21	-43,060.55	-6,456.57	0.00	7,107.09
0001011 · Cash - Money Market	332,387.25	47,569.19	0.00	20,991.43	400,947.87
0001012 · Cash - RivCo Fund	100,533.17	0.00	0.00	0.00	100,533.17
0001015 · Cash - Petty Cash	200.00	0.00	0.00	0.00	200.00
Total Checking/Savings	489,744.63	4,508.64	-6,456.57	20,991.43	508,788.13
Accounts Receivable					
0001210 · Accounts Receivable	15,000.00	67,670.21	259,257.14	0.00	341,927.35
Total Accounts Receivable	15,000.00	67,670.21	259,257.14	0.00	341,927.35
Other Current Assets					
0001330 · Travel Advances	13.00	0.00	0.00	0.00	13.00
Total Other Current Assets	13.00	0.00	0.00	0.00	13.00
Total Current Assets	504,757.63	72,178.85	252,800.57	20,991.43	850,728.48
TOTAL ASSETS	**504,757.63**	**72,178.85**	**252,800.57**	**20,991.43**	**850,728.48**
LIABILITIES & EQUITY					
Liabilities					
Current Liabilities					
Accounts Payable					
0002010 · Accounts Payable	6,325.79	85,453.18	258,934.92	0.00	350,713.89
Total Accounts Payable	6,325.79	85,453.18	258,934.92	0.00	350,713.89
Total Current Liabilities	6,325.79	85,453.18	258,934.92	0.00	350,713.89
Total Liabilities	6,325.79	85,453.18	258,934.92	0.00	350,713.89
Equity					
0003009 · Fund Balance	112,692.83	-6,143.15	-190,423.32	20,991.43	-62,882.21
Net Income	385,739.01	-7,131.18	184,288.97	0.00	562,896.80
Total Equity	498,431.84	-13,274.33	-6,134.35	20,991.43	500,014.59
TOTAL LIABILITIES & EQUITY	**504,757.63**	**72,178.85**	**252,800.57**	**20,991.43**	**850,728.48**

10:05 AM

01/12/15

Accrual Basis

Salton Sea Authority
Revenue & Expenditure by Fund
July 1, 2014 through January 12, 2015

	101 General	214 Wetlands Grant	215 Funding Feasibility Review	TOTAL
Ordinary Income/Expense				
Income				
0004660 · State of California Grants	0.00	0.00	479,730.14	479,730.14
0004662 · Local Gov/Member Assessments	615,000.00	0.00	0.00	615,000.00
0004710 · Pooled Cash Allocated Interest	592.86	0.00	0.00	592.86
0004930 · Transfer In	2,090.00	0.00	0.00	2,090.00
Total Income	617,682.86	0.00	479,730.14	1,097,413.00
Expense				
1020000 · SSA ADMINISTRATION				
1025010 · Salaries				
Salaries - GM	43,703.57	0.00	0.00	43,703.57
Salaries - Admin Support	14,316.69	0.00	0.00	14,316.69
Total 1025010 · Salaries	58,020.26	0.00	0.00	58,020.26
1025500 · Employee Benefits	24,290.38	0.00	0.00	24,290.38
1026010 · Contract Svc/Attorney				
Contract Svcs/Attorney - Genera	10,677.42	0.00	0.00	10,677.42
Contract Svcs/Attorney - Legisl	2,252.60	0.00	0.00	2,252.60
1026010 · Contract Svc/Attorney - Other	488.40	0.00	0.00	488.40
Total 1026010 · Contract Svc/Attorney	13,418.42	0.00	0.00	13,418.42
1026050 · Contract Svc/Professional				
Contract Svc/Prof - Finance	22,105.00	0.00	0.00	22,105.00
Contract Svc/Prof - Adm Sup B	14,030.55	0.00	0.00	14,030.55
Total 1026050 · Contract Svc/Professional	36,135.55	0.00	0.00	36,135.55
1026060 · Contract Svcs/WRI,Archive Mgmt	5,007.00	0.00	0.00	5,007.00
1026090 · Contract Svc/Technical	33,612.50	0.00	0.00	33,612.50
1026095 · Contract Svc/Equipment Maint	4,162.50	0.00	0.00	4,162.50
1026096 · Contract Svc/Equipment Lease	174.98	0.00	0.00	174.98
1026120 · Insurance	9,621.22	0.00	0.00	9,621.22
1026350 · Communications	1,706.46	0.00	0.00	1,706.46
1026370 · Travel/Meetings	7,186.74	0.00	0.00	7,186.74
1026410 · Mileage Reimbursement	155.12	0.00	0.00	155.12
1026439 · Publications, Subscrip, Dues	3,392.82	0.00	0.00	3,392.82
1026450 · Postage, Mail	440.19	0.00	0.00	440.19
1026470 · Printing Services	3,212.58	0.00	0.00	3,212.58
1027030 · Office Exp/Operating Supplies	965.60	0.00	0.00	965.60
1027035 · Office Exp/Online Services	1,393.06	0.00	0.00	1,393.06
1028551 · Capital Equipment <$5,000	6,566.04	0.00	0.00	6,566.04
Total 1020000 · SSA ADMINISTRATION	209,461.42	0.00	0.00	209,461.42
1030000 · COMMUNITY & PUBLIC OUTREACH				
1036010 · Attorney Services	1,380.00	0.00	0.00	1,380.00
1036054 · Government Relations	0.00	0.00	0.00	0.00
Total 1030000 · COMMUNITY & PUBLIC OUTREACH	1,380.00	0.00	0.00	1,380.00

Salton Sea Authority
Revenue & Expenditure by Fund
July 1, 2014 through January 12, 2015

	101 General	214 Wetlands Grant	215 Funding Feasibility Review	TOTAL
6020000 · WETLANDS GRANT ADMINISTRATION				
6025010 · Salaries	5,059.72	0.00	0.00	5,059.72
6025500 · Employee Benefits	1,270.94	0.00	0.00	1,270.94
6026010 · Contract Svcs/Attorney	2,288.80	0.00	0.00	2,288.80
6026011 · Contract Svcs/J Schlange	656.25	0.00	0.00	656.25
6026013 · Contract Svcs/Accountant	8,010.00	0.00	0.00	8,010.00
6026370 · Travel/Meetings	2,334.13	0.00	0.00	2,334.13
Total 6020000 · WETLANDS GRANT ADMINISTRATION	19,619.84	0.00	0.00	19,619.84
6040000 · WETLANDS GRANT TECHNICAL				
6046015 · Contract Svcs/AMEC - Permitting	0.00	971.50	0.00	971.50
6046040 · Contract Svcs/Design	966.59	6,159.68	0.00	7,126.27
Total 6040000 · WETLANDS GRANT TECHNICAL	966.59	7,131.18	0.00	8,097.77
6050000 · FUNDING/FEASIBILITY ADMIN				
6056010 · Contract Svcs/Attorney	0.00	0.00	3,900.60	3,900.60
6056011 · Contract Svcs/J Schlange	0.00	0.00	656.25	656.25
6056013 · Contract Svcs/Accountant	0.00	0.00	3,150.00	3,150.00
6059510 · Transfer Out	0.00	0.00	2,090.00	2,090.00
Total 6050000 · FUNDING/FEASIBILITY ADMIN	0.00	0.00	9,796.85	9,796.85
6060000 · FUNDING/FEASIBILITY TECHNICAL				
6066016 · Contract Svcs/TetraTech $1.7	0.00	0.00	285,644.32	285,644.32
Total 6060000 · FUNDING/FEASIBILITY TECHNICAL	0.00	0.00	285,644.32	285,644.32
6070000 · INFRASTRUCTURE FINANCE DISTRICT				
6076010 · Contract Services/Attorney	516.00	0.00	0.00	516.00
Total 6070000 · INFRASTRUCTURE FINANCE DISTRICT	516.00	0.00	0.00	516.00
Total Expense	231,943.85	7,131.18	295,441.17	534,516.20
Net Ordinary Income	385,739.01	-7,131.18	184,288.97	562,896.80
Net Income	**385,739.01**	**-7,131.18**	**184,288.97**	**562,896.80**

Salton Sea Authority

Commission Memorandum

To: Salton Sea Authority Board of Directors

From: Roger Shintaku, General Manager

Date: January 22, 2015

Subject: IID Air Quality Mitigation Program for IID Water Conservation and Transfer Project

CM No. V.A – 1-22-15

GENERAL:

Mr. Bruce Wilcox of the Imperial Irrigation District will make a presentation to the Salton Sea Authority Board of Directors regarding the Air Quality Mitigation Program for IID Water Conservation and Transfer Project.

Respectfully,

Roger Shintaku
General Manager

Air Quality Mitigation Program for the Imperial Irrigation District Water Conservation and Transfer Project

Prepared for

Imperial Irrigation District

Prepared by

IID / Salton Sea Air Quality Management Team

Revised **NOVEMBER 2014**

TABLE OF CONTENTS

1 Introduction 3

1.1 Air Quality Mitigation Requirements 3

1.1.1 Water Transfer Project EIR/EIS 4

1.1.2 State Water Resources Control Board Order WRO-2002-0013 4

1.2 Summary of Air Quality Mitigation Program 5

2 Air Quality and Playa Characterization 7

2.1 Ambient Air Quality 8

2.1.1 Baseline Ambient Air Quality 8

2.1.1.1 Research 8

2.1.1.2 Monitoring 8

2.1.2 Future Ambient Air Quality 9

2.1.2.1 Research 9

2.1.2.2 Monitoring 9

2.2 Salton Sea Playa Exposure and Characteristics 10

2.2.1 Playa Exposure 10

2.2.1.1 Research 10

2.2.1.2 Monitoring 11

2.2.2 Playa Surface Characteristics 11

2.2.2.1 Surface Characteristics 12

2.2.2.2 Emission Characteristics 14

2.2.3 Dust Emission Triggers 15

3 Dust Control Measure Research and Monitoring 16

3.1 Dust Control Measure Research 16

3.2 Dust Control Measures 18

3.2.1 Surface Stabilizers 18

3.2.2 Vegetated Swales 19

3.2.3 Plant Community Enhancement 20

3.2.4 Moat and Row 20

3.2.5 Water-efficient Vegetation 21

3.2.6 Tillage 21

3.2.7 Alternative Land Use 22

3.2.8 Species Conservation Habitat and other Habitat-Based Uses 23

3.3 Dust Control Measure Monitoring 23

4 Dust Prevention and Mitigation 24

4.1 Dust Prevention 24

4.2 Dust Mitigation 26

4.2.1 Create or Purchase Offsetting Emission Reduction Credits 26

4.2.2 Direct Emission Reductions at the Sea 27

5 Implementation of the Air Quality Program 27

5.1 Agency Coordination 27

5.2 Reporting 28

5.3 Summary of Progress To Date 28

6 List of Preparers 30

7 References Cited 30

1 INTRODUCTION

The Imperial Irrigation District (IID) Water Conservation and Transfer Project (Water Transfer Project) includes a long-term transfer of up to 303,000 acre-feet of water annually from IID to the San Diego County Water Authority, Coachella Valley Water District, and Metropolitan Water District of Southern California. The Environmental Impact Report and Environmental Impact Statement (EIR/EIS) for the Water Transfer Project was certified by IID, as the lead agency under the California Environmental Quality Act (CEQA), in June 2002.

The Water Transfer Project, along with other factors affecting Salton Sea (Sea) inflows and water balance, will result in accelerated exposure of the Salton Sea floor. As the Sea continues to recede, there is potential for windblown dust emissions from the exposed dry lakebed (the playa). A significant portion of this windblown dust is PM_{10} (particulate matter with an aerodynamic diameter of 10 micrometers or less), which are approximately 1/7th the thickness of a human hair, are small enough to be inhaled, and represent a potential human health risk.

Imperial County is designated as a serious non-attainment area for PM_{10} (i.e., the area does not attain federal and state air quality standards). As such, the potential for additional sources of PM_{10} is a public health concern. At the time the EIR/EIS was prepared, it was not possible to predict the scale or intensity of potential dust emissions due to the Water Transfer Project. Information was not available regarding spatial variations in sediment characteristics and soil erodibility or temporal variations in factors contributing to the formation and erodibility of salt crusts. Due to this lack of information, the EIR/EIS identified a significant and unavoidable air quality impact due to the potential for windblown dust from exposed playa as a result of the Water Transfer Project. Authorizations for the Water Transfer Project, including certification of the EIR and the State Water Resources Control Board Order to approve the transfer, require IID to develop and implement an air quality mitigation plan to detect, locate, assess and mitigate emissions associated with the Water Transfer Project.

This Air Quality Mitigation Program (Air Quality Program) was developed to describe methods for meeting mitigation requirements and developing an understanding of emission potential due to the Water Transfer Project. The Air Quality Program focuses on development of a science-based, adaptive air quality management strategy to pro-actively detect, locate, assess and mitigate PM_{10} emissions as playa is incrementally exposed over the next 40 years. Methodologies and actions for each component of the Air Quality Program will continue to be developed and documented in more detail throughout implementation of the Air Quality Program.

1.1 AIR QUALITY MITIGATION REQUIREMENTS

Air quality mitigation requirements are detailed in the Master Response on Salton Sea Air Quality Monitoring and Mitigation Plan in the Final EIR/EIS and the State Water Resources

Control Board Order authorizing the project. Each requirement is summarized below. The Master Response is included as Appendix A.

1.1.1 WATER TRANSFER PROJECT EIR/EIS

The CEQA guidelines require that an agency adopt a program for reporting or monitoring mitigation measures that were adopted or made conditions of approval for a project (CEQA Guidelines Sections 15091 [d] and 15097). The purpose of the monitoring and reporting is to ensure that the mitigation measures identified in an EIR are implemented. The IID prepared a mitigation, monitoring, and reporting plan (MMRP) for the Water Transfer Project in 2003. The MMRP provides a way to track implementation of the mitigation measures identified in the Water Transfer Project EIR.

The Water Transfer Project EIR and the MMRP used an alpha-numeric system to identify impacts and mitigation measures. This Air Quality Program is in response to Impact AQ-7 and fulfills Mitigation Measure AQ-7. Mitigation Measure AQ-7 entails four specific measures to address potential emissions from the playa due to the Water Transfer Project:

> (1) Restrict Access: Public access, especially off-highway vehicle access, would be limited, to the extent legally and practicably feasible, to minimize disturbance of natural crusts and soils surfaces in future exposed shoreline areas.
>
> (2) Research and Monitoring: A research and monitoring program would be implemented incrementally as the Sea recedes. The research phase would focus on the development of information to define the potential for problems to occur in the future as the Sea's elevation decreases over time.
>
> (3) Create or Purchase Offsetting Emission Reduction Credits: This step would require negotiations with the local air pollution control districts to develop a long-term program for creating or purchasing off-setting PM-10 emission reduction credits. Credits would be used to offset emissions caused by the project, as determined by the monitoring discussed in Measure 2, above.
>
> (4) Direct Emission Reductions at the Salton Sea: If sufficient offsetting emission reduction credits are not available or feasible, this step would be implemented. It would include a subset or a combination of: (a) implementing feasible dust mitigation measures; and/or (b) if feasible, supplying water to the Sea to re-wet emissive areas exposed by the Water Transfer Project. Specific methods of (a) and (b) would be based on the research and monitoring program discussed in Measure 2, above.

1.1.2 STATE WATER RESOURCES CONTROL BOARD ORDER WRO-2002-0013

In addition to CEQA-required mitigation, implementation of the Water Transfer Project is subject to compliance with the terms and conditions of several state and federal permits and approvals. This includes the State Water Resources Control Board (SWRCB) Order approving the water transfer (Order WRO-2002-0013). This Order requires air quality mitigation measures

that parallel the EIR mitigation measures, including the four specific measures listed in Section 1.1.1. The Order also requires IID to evaluate dust control measures to determine their feasibility and delegates to the Division Chief the authority to determine, in consultation with the Imperial County Air Pollution Control District, the South Coast Air Pollution Control District, and the California Air Resources Board, whether any dust mitigation measure identified as part of Measure 4 (Direct Emission Reductions at the Salton Sea) is feasible.

1.2 SUMMARY OF AIR QUALITY MITIGATION PROGRAM

The overall approach to the Air Quality Program is to implement a robust, science-based, pro-active, and adaptive plan to detect, locate, assess and mitigate PM_{10} emissions associated with the Water Transfer Project. The key components of the Air Quality Program are research and monitoring of ambient air quality, playa exposure, and playa characteristics; and the development and implementation of effective dust control measures. Information learned through the Air Quality Program will provide the scientific basis for land management decisions on the playa.

The Air Quality Program includes four main components: air quality and playa characterization, dust control measure research and monitoring, dust prevention and mitigation, and implementation. Each component and the questions it will address are summarized as follows:

Section 2, Air Quality and Playa Characterization

- What emissions are associated with the Water Transfer Project (versus other background sources)?
  An ambient air quality monitoring network was installed to compare baseline ambient air quality to future ambient air quality in the region. Analysis will be completed to separate and characterize on-sea (playa) sources from off-sea dust emissions. This is important because emissions from existing sources will mingle with emissions due to newly exposed playa, which could make it difficult to determine the extent of dust emissions due to the Water Transfer Project.

- When and where will exposed playa occur?
  Hydrologic modeling will be used to estimate playa exposure over time. This will provide planning-level information about the location of anticipated playa exposure. In addition, playa exposure will be mapped as it occurs (daily, monthly, yearly) using remote-sensing techniques. This will provide air quality managers with a real-time understanding of actual playa exposure. This analysis also will incorporate land ownership of the exposed playa.

- What will the surface characteristics of the exposed playa be?
  Research and monitoring will identify the playa surface characteristics and surface mineralogy dynamics that create salt crust conditions vulnerable to erosion. These activities will be designed to provide a better understanding of salt crust formation and erosion at the Sea. Exposed playa surfaces will be dynamically mapped using remotely sensed imagery (analogous to a soil survey). This will provide air quality managers with

an efficient and repeatable method to map exposed playa and understand its salt crust properties (e.g., crust type, thickness, hardness) related to emissions.

- What will the emission characteristics of the exposed playa be?
  Research and monitoring activities will identify which playa surfaces are actually emissive and identify source areas associated with erosion events. This will focus on quantifying areas that are actually eroding and may require dust control activities.

- What combination of environmental conditions and climatic events will trigger emissions from the exposed playa?
  Meteorological conditions collected as a part of the ambient air quality monitoring network will be evaluated with playa emission monitoring to determine the meteorological conditions that affect emission potential. This includes (but is not limited to) windspeed, turbulence, and direction thresholds (i.e. some directions will have longer fetch distances than others). This analysis will be used to predict the time and space of potential dust events. Overall, this analysis will be used to determine the time periods (i.e., seasons) and conditions when the playa will be most vulnerable to wind erosion and potentially trigger exceedances of air quality standards.

Section 3, Dust Control Measure (DCM) Research and Monitoring

- What DCMs will be feasible and cost-effective for the varying characteristics of the playa?
  Research will include evaluation of dust control efficiency and development of performance specifications for various measures. For DCMs approaches that are untested anywhere, pilot field testing will be conducted to gain experience and understanding of novel, locally-adapted methods of dust control and the site-specific factors that could affect their feasibility and cost. Where appropriate, research data, findings, and decisions will be published in scientific peer-reviewed journals.

- How will DCM performance be monitored?
  Pilot projects will be monitored to evaluate overall performance, dust control efficiency, surface conditions, and other parameters that may relate to feasibility, such as habitat quality or biological impacts. Impacts and maintenance requirements also will be monitored to determine how full-scale facilities could be efficiently and effectively configured and managed, how dust control is sustained over time, and to better understand other potential impacts on the environment. After DCMs are implemented at a larger scale, the main objective of monitoring will be to ensure that the desired benefits (e.g., dust control efficiency) are achieved.

Section 4, Dust Prevention and Mitigation

- How can dust emissions from off-road vehicle use on the playa be prevented or mitigated?
  Dust prevention will focus on limiting public access, especially off-highway vehicles, to the extent legally and reasonably feasible. Approaches include public outreach, education, sign posting, strategic fencing, gate installation, and selectively closing or maintaining roads and trails.

- How can dust emissions from the playa be mitigated?
  Dust emissions will be primarily mitigated by implementation of feasible dust control measures, and by purchasing offsetting emission reduction credits, if available and cost-effective. Dust control measures deemed feasible through research and monitoring, as described in Section 3, will be implemented.

Section 5, Plan Implementation

The Air Quality Program will be implemented throughout the duration of the Water Transfer Project. Research and monitoring of some components, such as ambient air quality and dust control measure pilot projects, are already underway. Other components will be implemented in a step-wise fashion as the Sea recedes, such as identification of emission source areas and implementation of dust control measures. Throughout implementation of the Air Quality Program, IID will coordinate with regulatory agencies and provide periodic updates on the implementation of the Air Quality Program.

2 AIR QUALITY AND PLAYA CHARACTERIZATION

This section describes the components of the Air Quality Program related to ambient air quality, playa characterization, and triggers for dust emissions. These components are the cornerstones of the Air Quality Program because further research and monitoring in these areas will lead to an understanding of emission potential and provide a guide for the overall direction of dust control activities. Specifically, these Air Quality Program components will seek to address the following five questions:

1. What emissions are associated with the Water Transfer Project (versus other areas in the region)?
2. When and where will exposed playa occur?
3. What are the surface characteristics of the exposed playa?
4. What are the emission characteristics of the exposed playa?
5. What combination of environmental conditions and climatic events will trigger emissions from the exposed playa?

The following subsections describe research and monitoring activities to address these questions. Section 2.1, Ambient Air Quality, describes methods to understand baseline ambient air quality and future ambient air quality. Section 2.2, Salton Sea Playa Exposure and Characteristics, describes methods to understand when and where playa will be exposed, as well as methods to determine the characteristics (surface characteristics and the associated emission potential) of the exposed playa. Section 2.2.4, Dust Emission Triggers, describes methods to determine how different playa surfaces respond to climatic triggers, such as wind, precipitation, temperature, and relative humidity.

2.1 AMBIENT AIR QUALITY

This section describes research and monitoring to understand baseline and future ambient air quality around the Sea. This is important because emissions from existing sources will mix with emissions due to newly exposed playa, which could make it difficult to determine the extent of dust emissions due to the Water Transfer Project. Baseline ambient air quality is air quality in the region prior to the Sea receding as a result the Water Transfer Project (the Sea has already begun receding as a result of decreased inflows and evaporation). Future ambient air quality is air quality in the region after the Sea begins receding as a result of the Water Transfer Project. Pollutants of concern include PM_{10}, $PM_{2.5}$, ozone, hydrogen sulfide, and several other air pollutants, such as arsenic and selenium.

2.1.1 BASELINE AMBIENT AIR QUALITY

This section describes research and monitoring regarding baseline ambient air quality.

2.1.1.1 RESEARCH

Ambient air quality research includes the development of an air quality and meteorological database to identify baseline emission levels. This database will help identify the periods and conditions that lead to high pollutant concentrations from on- and off-Sea sources. Initial research includes the collection of meteorological and ambient air quality data around the Sea. These data are needed to quantify the climatological conditions around the Sea, establish background conditions, identify the frequency and severity of high wind events (generally 17 miles per hour or greater), and identify existing on- and off-Sea emission sources.

Existing emission sources will be inventoried and methods for characterizing various existing sources also will be developed. Literature on existing emission factor references will be compiled and reviewed to characterize sources. For example, EPA's Compilation of Air Pollutant Emission Factor - AP-42 can be used to characterize sources, such as vehicles and burning. Other sources, such as agricultural operations or naturally occurring toxic emissions (e.g. hydrogen sulfide emissions from mud pots), may need to be characterized with the help of other types of existing literature.

Field research will be completed to help characterize the spatial and seasonal aspects of episodic sources, such as dust due to high wind events. For example, the emissive dune field west of the Sea could be mapped by aerial and ground surveys, and emission sources could be profiled with field instruments (e.g., a Portable In-situ Wind Erosion Laboratory, or PI-SWERL) that characterize wind-suspended dust emission potential. In addition, other off-Sea source areas, such as dry washes, have been identified as the largest emitting landform, significantly larger than any exposed playa surface (King et al., 2011).

2.1.1.2 MONITORING

An air quality monitoring network was installed in 2009 to measure meteorological conditions and ambient air quality around the Sea. The network will provide sufficient meteorological

parameters to calculate surface roughness at each site and to support the standard regulatory air dispersion models (e.g., AERMOD and CALPUFF). Meteorological measurements will include 10-meter wind speed and direction, air temperature, vertical temperature difference, relative humidity, solar radiation, and barometric pressure. Additional parameters, such as vertical wind speed and its standard deviation, will be measured with mechanical and sonic anemometers.

Six stations have been installed around the Sea, with two in the northern section (Torres Martinez and Salton Sea Recreational Area), two in the middle section (Salton City and Bombay Beach) and two in the southern sections (Sonny Bono and the Naval Test Base). All stations measure PM_{10}, $PM_{2.5,}$ and meteorological conditions. Ozone should be measured at a northern site and at a southern site for at least two years to characterize the temporal and spatial ozone trends across the Sea, as compared to the existing ozone sites further north and south. The existing ozone sites include Niland, Westmoreland, and El Centro in the south and Indio and Palm Springs in the north. Hydrogen sulfide should be measured at the southern site (Sonny Bono), which is near a known geothermal area and associated mud pots.

Dust events are intermittent and often brief, so PM_{10} and $PM_{2.5}$ will be measured using continuous monitors; for example, with a Tapered Element Oscillating Microbalance monitor (TEOM) or a Beta Attenuation Monitor (BAM). Filter-based, federal reference method monitors (e.g., BGI or Partisol) also should be included for verification purposes. The filters could be initially analyzed for metals in the windblown dust (e.g. arsenic and selenium) at regular intervals and concentration levels using X-ray fluorescence or other appropriate methods. Some of these parameters, such as chemical analysis of filters, could be decreased in frequency or eliminated from the Air Quality Program after levels and patterns have been adequately characterized.

2.1.2 FUTURE AMBIENT AIR QUALITY

This section describes research and monitoring regarding future ambient air quality.

2.1.2.1 RESEARCH

Ambient air quality research includes the continued collection of meteorological and ambient air quality data to assess the occurrence and magnitude of emissions from newly exposed playa, as well as emissions from existing sources. This information will inform development of methodology to identify playa emission source areas, estimate emission characteristics, and determine downwind impacts. The dust identification methodology will draw from new methodologies to address unique conditions at the Sea. The dust identification system also will incorporate information generated from research and monitoring described in Section 2.2, Salton Sea Playa Exposure and Characteristics.

2.1.2.2 MONITORING

The baseline ambient air quality monitoring network should continue to operate and record changes in the airshed as the Sea recedes. Additional monitoring sites may be added to characterize sources more adequately, if necessary. In addition, portable air quality monitoring

stations could be set up around the Sea to document sources that are not measured by a stationary site. Portable monitoring stations would primarily focus on particulate matter, and perhaps contain hydrogen sulfide monitors. Given the regional nature of ozone and other gaseous pollutants, portable monitoring for other gaseous pollutants is not anticipated.

Several types of portable monitoring could be used. One instrument configuration would co-locate an anemometer with a video camera. This system documents wind speeds, dust emissions, and human activity during daylight hours. The next type includes a PM_{10} monitor, such as a filter-based Federal Reference Method (FRM) sampler (e.g. BGI), to measure 24-hour PM_{10} or $PM_{2.5}$ concentrations. A continuous sampler (e.g., Met One E-sampler or TSI Dust Trak) could be co-located (with the PM_{10} monitor) to time resolve the FRM concentration.

A van or trailer with a portable continuous monitor (e.g. TEOM or BAM) also could be setup to run several days at locations of known elevated emissions. Based on the portable monitoring findings, installation of semi-permanent shelters may be warranted on a case-by-case basis to protect the monitoring stations.

As part of the Air Quality Program, IID will coordinate with the Joint Powers Authority (JPA) and regulatory agencies and determine the implementation strategy for portable monitoring.

2.2 SALTON SEA PLAYA EXPOSURE AND CHARACTERISTICS

Playa exposure as a result of the Water Transfer Project and its associated characteristics are a major focus of the Air Quality Program. Research and monitoring will focus on understanding the location and timing of playa exposure; and on salt crust surface characteristics and their associated emission potentials. Research results will be used to provide insight into the range of conditions that may be reasonably expected as future playa becomes exposed. Monitoring will ultimately guide if, when, and/or where pro-active, temporary and/or permanent dust control methods are warranted.

2.2.1 PLAYA EXPOSURE

This section describes research and monitoring regarding playa exposure.

2.2.1.1 RESEARCH

Research of playa exposure will focus on developing a playa exposure model based on the expected decline in Sea elevation over the life of the Water Transfer Project. Salton Sea shoreline levels have been receding since approximately 2000 and the decline will be accelerated by the Water Transfer Project. A hydrologic analysis was completed as a part of the Water Transfer Project EIS/EIR. Sea elevation data from the hydrologic analysis will be used in combination with high-resolution bathymetric data. This will provide planning-level information about the location of anticipated playa exposure on a five-year increment for the term of the Water Transfer Project.

The incremental playa exposure data also will be overlain with property ownership information. This will provide planning level information on land ownership as it relates to the projected timeline of playa exposure. This is important because landowners typically bear the responsibility for dust control activities required by the ICAPCD Fugitive Dust Rules (ICAPCD 2009).

2.2.1.2 MONITORING

Playa exposure will be mapped as it occurs (daily, monthly, yearly) using remote-sensing techniques. This will provide a real-time understanding of actual playa exposure (as compared to the predicted playa exposure described above). Monitoring results also could be used to assess the rate of playa exposure with respect to unforeseen climatic and or/ programmatic changes in water deliveries to the Sea.

2.2.2 PLAYA SURFACE CHARACTERISTICS

This section provides a summary of playa surface characteristics and emissions characteristics. Playa salt crusts, sand sheets, beach deposits, and soil surfaces (surfaces) are a major focus of the Air Quality Program because they represent potential sources of PM_{10}. The mechanisms for production of PM_{10} from playas are relatively well understood. In general, large sustained emissions from playas occur when sand, or sand–sized particles, are moved by high wind (generally 17 miles per hour or greater) such that they begin to bounce or "saltate" across the playa surface. As the moving particles repeatedly impact the fragile salt crust, they can dislodge smaller particles into the air and generate dust. This also can expose underlying and sometimes more erodible soil layers. While the mechanism of saltation is well understood, the vulnerability of different playa surfaces to erosion is not well understood and is known to be highly variable (both spatially and temporally). For instance, some playa surfaces have characteristics that make them more susceptible to erosion (i.e., fluffy, loose salt crust) whereas other surfaces are rigid and sturdy and strongly resist erosion.

Overall, playa surfaces dominated by coarser-textured (sandy) soils have more predictable emissions because emissions are largely a factor of saltating sand. In contrast, emissions from playa surfaces with finer-textured, clay soils have less predictable emissions because of sensitivity to environmental influences (e.g., climatic, hydrologic, and anthropogenic). For example, annual weather patterns, including timing of precipitation events, high wind speeds, diurnal temperatures changes, depth to groundwater and relative humidity can cause playa surface mineralogy dynamics to change, and increase (or decrease) the potential risk of erosion.

The Air Quality Program includes two broad categories of research and monitoring to better understand these important playa characteristics. The categories include:

1. Playa surface characteristics: Research and monitoring will identify the playa surface characteristics and surface mineralogy dynamics that create salt crust conditions vulnerable to erosion. These activities will be designed to provide a better understanding of salt crust formation and erosion at the Sea. Exposed playa surfaces will be dynamically mapped using remotely sensed imagery (analogous to a soil survey).

This will provide air quality managers with an efficient and repeatable method to map exposed playa and understand its salt crust properties (e.g., crust type, thickness, hardness) related to emissions.

2. Playa emission characteristics: Research and monitoring activities will identify which playa surfaces and conditions are actually emissive and identify source areas associated with erosion events. This effort will focus on quantifying areas that are actually eroding and may require dust control.

2.2.2.1 SURFACE CHARACTERISTICS

The vast majority of future playa is currently inundated and is expected to be highly variable. This makes quantifying playa surface characteristics problematic until more playa gradually becomes exposed. Despite this challenge, research can provide broad, planning-level information about currently inundated soils and their potential range of future conditions. Although this information is valuable, it is not detailed enough to support land management decisions (e.g., selection of suitable dust control measures for various playa surfaces). Air quality managers will need site-specific information to implement an efficient and effective dust control program. Research and monitoring of playa surface characteristics are divided into two broad categories: inundated playa surfaces and exposed playa surfaces. Each is described below.

Inundated Playa Soils

Information on inundated playa soils will be obtained through datasets and analyses related to sea floor sediments, bathymetry, sediment depth, soil texture, surface roughness/complexity, and barnacle bed locations. Relevant datasets collected by the IID, the Bureau of Reclamation, and the Salton Sea Authority that may provide the basis for this evaluation include:

- Sonar acoustic sounding data collected by the Bureau of Reclamation in 2005. These data were collected at two sonar frequencies (50 khz and 200khz) and may provide insight on sea floor bathymetry, sediment depth, soil texture, surface roughness/complexity, and barnacle bed locations.
- Soil samples collected by the Salton Sea Authority in 2004. These data were collected by the Salton Sea Authority and include extensive soil sampling information related to soil texture, barnacle bed distribution, and sediment depth

If additional datasets and analyses are required to provide greater detail on currently inundated playa soils, then they will be developed as part of the Air Quality Program. This may include optical sea floor mapping products designed to quantify sediment characteristics. This can be accomplished using various techniques, but the most promising technique is Sediment Profile Imaging (SPI). SPI is an optical remote monitoring technique used to image, measure, and analyze the physical, chemical, and biological parameters in aquatic environments to a depth of eight inches or more.

Exposed Playa Soils and Surfaces

Although most of the Sea bed is inundated, minor amounts of playa already occur in certain locations around the Sea. These intermittent patches of playa will be evaluated to understand their physical characteristics and to provide insight into the range of conditions that may be reasonably expected as additional playa becomes exposed. Specifically, properties controlled by evaporate (water soluble salt) mineral dynamics (e.g., surface type, surface crust thickness, and surface crust hardness) will be mapped because they are directly related to the spatial and temporal nature of PM_{10} dust emissions (Buck et al., 2011). Therefore, this mapping will provide a basis for quantifying the various dynamic salt crust properties that are directly related to emissions.

Protocols and methodologies will be developed to map surface characteristics related to emissions in a surface survey (analogous to a soil survey) using remotely sensed imagery. Extensive playa surface survey monitoring methodology originally developed for Owens Lake can be adapted for use at the Sea. This will provide air quality managers with an efficient and repeatable method to map exposed playa and understand its salt crust properties (e.g., crust type, thickness, hardness) related to emissions.

Properties that will be mapped will include the following:

- **Crust Type:** Crust categories may include: smooth, botryoidal, weak botryoidal, hummocky, and networked. The dominant crust type of the observation area will be characterized and if other types are present in smaller amounts they will be noted as inclusions. Additional crust categories may be developed specifically for the Salton Sea Playa.

- **Crust Thickness:** Crust thickness is measured from the top of salt crust to the top of soil. In some places, the salt crust will be divided into two distinctly different layers: top crust and sub crust. Top crust is usually a harder, salt-cemented crust that forms a shell over the surface. Sub crust usually has weak structure (i.e., soft or crumbly) and extends from the bottom of the top crust to the underlying, often looser soil. In some cases a top crust will exist without a sub crust and will be directly overlaying the soil. Total crust thickness is considered the sum of top crust and sub crust.

- **Soil Moisture:** Soil moisture will be qualitatively assessed for the first one to two inches of soil directly below the crust. Soil moisture can be classified based on USDA-NRCS classification parameters (Schoenenberger et al., 2002). Soils will usually range from slightly moist to saturated where crust exists, and dry to saturated where no crust exists.

- **Crust Relief:** Crust relief is measured to provide a more refined understanding of surface roughness. Roughness affects wind resistance and surface wind velocities, and is therefore useful in wind-erosion modeling. Crust relief is determined by measuring the distance from the bottom of a crust depression to the top of a typical crust ridge. Networked, botryoidal, and hummocky crusts usually have the greatest relief.

- **Crust Hardness:** Crust hardness indicates the degree of erosion resistance. Crust hardness can be characterized by the amount of force necessary to crush the salt crust by hand according to USDA-NRCS guidelines (Schoenenberger et al., 2002). On average, smooth and weak botryoidal crust types are the softest, while networked and hummocky crusts are

harder. Hardness of both top crust and sub crust will be assessed if distinct surface and sub crusts are present.

- **Penetration Resistance:** Penetration resistance can be measured with a penetrometer. A penetrometer is inserted through the total crust depth to assess crust resistance. Local penetration resistance can vary substantially and will be measured at several points to calculate an average penetration resistance for a crust type.

- **Surface Erosion:** Surface erosion is generally characterized as a percentage of total crust area that appears to have been eroded by wind. This can be done with visual or remote-sensing techniques.

- **Free Surface Sand:** Free surface sand is visually determined by estimating the percentage of free, sand sized particles in a square meter of playa surface. The amount of free sand can vary seasonally with crust development, because forming crusts can encapsulate surface sand as they harden. Free sand particles on the surface are often very fine and settle into very small depressions in crust surfaces.

- **Percentage Vegetation, Overflow and Other Features:** Percent surface area of vegetative cover, dune area, berm area, overflow area, and representative playa area will be estimated. These estimates will provide a distribution of small inclusions relative to the dominant mapped surface condition. These features also have implications for the formation of crusts and erodibility; percent overflow area and vegetative cover are probably the most influential of these features. The surface area assessment can be performed visually (from the ground) or using remote-sensing techniques.

The research and monitoring methodology will be further adapted as playa exposure progresses and a wider diversity of playa surface categories may become apparent.

2.2.2.2 EMISSION CHARACTERISTICS

This section describes research activities and the development of monitoring methodologies to assess the emission potential of different playa surface types (i.e., playa emission monitoring). Information obtained will be used in combination with baseline ambient air quality data (see Section 2.1, Ambient Air Quality) to locate source areas that may contribute to exceedances of air quality standards. Ultimately, playa emission monitoring will identify source areas that require dust control and will inform how dust control measures should be selected and designed.

Monitoring methods include, but are not limited to:

- Qualitative visual or quantitative analytical methods to identify evidence of real-time erosion source areas. Methods to be considered include direct observation of plumes by direct visual observation, and/or photo/video evidence of emission events. Alternative techniques that utilize remotely sensed data and analysis have shown promise at Owens Lake and will be investigated as a potential cost-effective alternative to visual observations.

- Qualitative visual or quantitative analytical methods to identify evidence of previous/historical erosion source areas, including abrasion of playa surfaces, mass wasting

(removal of salt crust material and sometimes underlying material). Deposition can also indicate nearby source areas. Methods to be considered and researched include direct observation of playa surfaces through visual inspection as well as through remotely sensed data and analysis.

- Quantitative real-time measurements of sand motion on the playa surface with in-situ instruments such as Sensits, optical gate sensors, or sand catch devices. Two-meter anemometers could be deployed to provide local wind conditions in conjunction to the sand flux measures. Monitoring methods that combine Sensits and sand catchers have been extensively used on Owens Lake and will be adapted for use at the Sea. Optical gate sensors may provide a potential cost-effective alternative to Sensits and sand catch devices, but will require additional field testing.

- Concurrent and co-located measurement of playa surface emissions, sand motion, and wind speed on specific areas in controlled "laboratory like" tests. Monitoring methods may include the PI-SWERL (small scale sites) or intensively monitored test sites (large scale sites).

As discussed above, some of the playa emission monitoring methods have been fairly well developed and used for years at other locations, and can be adapted for use at the Sea. These include: Sensits, sand catchers, video of dust storms, visual surface assessments, PI-SWERL and concurrent measurement methods. Other methods are more conceptual and have not been field tested, such as using remotely sensed data (i.e., satellite imagery) or dust storm videos to assess source areas. However, these methods may provide a more accurate and cost effective means for assessing source areas. These methods will be researched and developed as a part of the Air Quality Program to determine the best technologies and approach for use at the Sea.

2.2.3 Dust Emission Triggers

Meteorological conditions, such as wind, precipitation, temperature, and relative humidity, influence emission potential on the playa. For example, it is generally understood that playas dominated by sulfate and carbonate salts tend to soften during low temperatures and high relative humidity, thereby increasing the vulnerability to erosion. It is important for air quality managers to understand the timing of periods (i.e., seasons) when the playa will be most vulnerable to wind erosion that could cause exceedances of air quality standards.

Meteorological data collected as a part of the ambient air quality monitoring network (see Section 2.1, Ambient Air Quality) will be evaluated with playa emission monitoring (see Section 2.2.3, Emission Characteristics) to determine the meteorological conditions that control emission potential.

Additional evaluations will include updating previous work regarding dust emission triggers related to playa surface stability (Eswaran, 1984, Teller and Last 1990; Buck et al., 2011; King et al., 2011; DWR 2005). Meteorological and air quality data from Owens Lake will also be evaluated to provide a broader range of climatic variations and potential vulnerability.

3 DUST CONTROL MEASURE RESEARCH AND MONITORING

This section describes the components of the Air Quality Program related to dust control measure (DCM) research and monitoring. These are important components because they will lead to an understanding of the efficacy of locally-adapted DCMs. Additionally, research and monitoring will inform the selection, performance specifications, design, construction, and operation of DCMs. Specifically, these Air Quality Program components will address the following questions:

1. What DCMs will be feasible and cost-effective for the varying characteristics of the playa?
2. How will DCM performance be monitored?

The following subsections describe research and monitoring activities to address these questions. Section 3.1, Dust Control Research, describes methods to evaluate dust control efficacy and develop performance specifications. Section 3.2, Dust Control Monitoring, describes methods to monitor pilot projects and longer-term DCMs on the playa.

3.1 DUST CONTROL MEASURE RESEARCH

Research related to DCMs will include evaluation of dust control efficiency and development of performance specifications for various measures. Research and associated activities may include the following:

- Literature review, particularly of performance measurements made at other locations.
- Modeling studies, in which soil erodibility, surface roughness, and other features are specified, and then the stress of and response to wind events is simulated numerically. For example, the SWEEP[1] model could be used for an area around the Sea to estimate potential emissivity. This modeling can lead to advanced siting for various DCM's across newly exposed playa and indicate strategies for working with large and varying sections of playa.
- Screening-level tests, such as alternative surface stabilization techniques in small field plots.

For the more novel and untested approaches, pilot field testing (pilot projects) would occur as another element of DCM research. Pilot projects will allow IID to gain experience and understanding of novel, locally-adapted methods of dust control and the site-specific factors that could affect their feasibility and cost. Pilot projects also are useful for determining the effectiveness of dust control and refining design criteria for full-scale implementation. This helps develop efficient approaches for the design, construction, and operation of DCMs on the playa.

[1] SWEEP (Single-event Wind Erosion Evaluation Program) is part of the Wind Erosion Prediction System (WEPS) developed by the USDA Natural Resources Conservation Service, and applied to assess soil erosion and associated PM_{10} emissions from agricultural fields.

As part of the Air Quality Program, IID is proceeding with several DCM pilot projects. The location of additional pilot project sites will be selected to represent future playa conditions. Potential sites will be screened according to factors influencing their suitability, including, but not limited to: size, land ownership, permitting challenges, compatibility with anticipated operations, and potential future uses. The initial selection of DCMs for pilot projects will be based on previous application (i.e., Owens Lake) and existing literature on large-scale playa dust control. Some of the guiding principles for DCM selection include:

1. *Effective dust control is achieved by a combination of factors.*
   These factors include the following:
   - Physical stabilization of the playa surface (i.e., particles cohere more strongly when the soil is wetted or cemented together into a stable crust).
   - Reduction in wind velocity at the playa surface (i.e., obstructing wind with plant or gravel cover, or with intermittent, larger obstructions, such as windbreaks or sand fences, reduces sand flux and resulting erosion rates).
   - Enhanced net-sand capture rates (i.e., sand settles more readily under reduced wind velocities and/or if it coheres to a wetted surface).

2. *DCMs should enable constant dust control.*
   Control methods are strongly affected by the nature of the Clean Air Act, which requires that local air quality management agencies develop State Implementation Plans to attain national ambient air quality standards (NAAQS) with extremely rare exceptions due to natural events. Climatic conditions causing dust storms, though relatively rare, have the potential to occur over relatively long periods (months) and, at the Sea and its surroundings, over large expanses. This results in a much more extensive and constant need for control than might be required if only a fixed proportion of baseline emissions were required to be abated.

3. *Dust control should be based on achieving target levels of emission control on a preventive, macro scale, not a reactive, micro scale*.
   It is ineffective and expensive to limit dust control to imminent threats to air quality. By the time a threat is identified, a geographically-small emission problem may have already spread over a larger area (i.e., caused previously stable areas to begin emitting), thus increasing the footprint of the required control area. Also, locating areas that require immediate control in the midst of a vast playa entails substantial monitoring, analysis, and cost. Lastly, if control is installed early, then simpler, less costly approaches may serve well to prevent the spread of emissive areas; where control is installed after the fact, it often must be more intensive and costly to halt erosion from chronic (i.e., fragile) source areas.

4. *Water-based DCMs are effective, but are generally inefficient from a cost, water supply, and water-use standpoint.*
   Water-based controls are dependent on sufficient water supply to maintain widespread surface wetness throughout potentially-emissive periods. DCM water use competes with other uses of inflows to the Sea (i.e., maintaining Sea elevation, supporting Sea restoration, or supporting vegetation-based dust control). For these reasons, water-efficient or waterless DCMs are favored.

5. *DCMs that are designed to interrupt wind fetch and saltation protect downwind surfaces and capture sand.*
   This approach indirectly controls PM_{10} emissions from land surfaces between control strips (i.e., vegetation, ditches, or berms). Little or no water, construction, or operations effort are required for areas that are incidentally protected between the control strips. By reducing erosional forces in the intervening areas, it creates a condition in which native stability is sufficient to control dust. Spacing and orientation will vary depending on local playa conditions and other constraints.

6. *DCMs with salt- and drought-tolerant vegetation can be challenging to establish and sustain, but are generally water efficient and provide effective dust control*.
   Although water is required for establishment and maintenance of vegetation, dust control persists beyond irrigation events and irrigation seasons, because emissions are controlled by vegetation and not water. Where vegetation is damaged or buried, it can be left to regrow, or if needed, be re-established.

3.2 DUST CONTROL MEASURES

This section summarizes the potential dust control measures for the Sea. Some of these measures have been field-tested and proven to be effective at Owens Lake. For example, water efficient vegetation, moat and row, and tillage. Other measures have not been field tested and need additional research prior to use at the Sea. For example, plant community enhancement and alternative land use (e.g., renewable energy). More detailed descriptions of vegetated swales, plant community enhancement, moat and row, water efficient vegetation, and tillage are included as Appendix B. Additional new, and as yet unknown, dust control methods may be identified in the future.

3.2.1 SURFACE STABILIZERS

Surface stabilizers are commonly used as dust suppressants on unpaved roads, construction sites, and other disturbed lands. They are usually applied topically and can include water, salts and brines, organic non-petroleum products, synthetic polymers, organic petroleum products, or mulch and fiber mixtures. Surface stabilizers abate dust by changing the physical properties of the soil surface; some stabilizers form crusts or protective surfaces on the soil, others act as binding agents causing particles to agglomerate, and some attract moisture to the soil particles. The effectiveness of surface stabilizers varies with the product type, environmental conditions, soil type, weather, application rate, and application frequency. Table 1 provides a summary of commonly used surface stabilizers, the mechanism of dust control, product examples, and considerations for implementation.

TABLE 1

COMMON SURFACE STABILIZATION PRODUCTS AND CONSIDERATIONS FOR IMPLEMENTATION

Surface Stabilizer	Mechanism of Dust Control	Product Examples	Considerations for Implementation
Water	Binds soil particles together and weighs them down when wet, it can form a crust when dry	▪ Fresh water ▪ Seawater	▪ Effective, but expensive to implement ▪ Large-scale implementation would require infrastructure ▪ Minimal to no environmental risk
Salts and brines	Absorbs moisture from the air, weighs down soil particles, and promotes cohesion	▪ Magnesium chloride ($MgCl_2$) ▪ Calcium chloride ($CaCl_2$)	▪ Inexpensive to implement ▪ Salts are soluble, but leaching would not affect local saline water quality ▪ $MgCl_2$ is more effective than $CaCl_2$
Organic non-petroleum products	Binds soil particles together and weighs them down	▪ Vegetable oil ▪ Molasses ▪ Liginsulfonate	▪ Inexpensive ▪ Liginsulfonates can reduce biological activity
Synthetic polymers	Binds soil particles together and weighs them down	▪ Polyvinyl acetate ▪ Vinyl acrylic	▪ Expensive to implement ▪ Includes synthetic materials ▪ Not feasible for large-scale implementation
Organic petroleum products	Binds soil particles together and weighs them down	▪ Asphalt emulsion ▪ Cutback solvents ▪ Dust Oils	▪ Expensive to implement ▪ Can reduce biological activity ▪ Can include heavy metals
Electrochemical	Expels adsorbed water from the soil, reducing pore space and increasing compaction	▪ Enzymes ▪ Ionic products (ammonium chloride) ▪ Sulfonated oils	▪ Expensive to implement ▪ Success depends on clay mineralogy and only works on certain types of soils
Clay additives	Creates tension on soil particles and weighs them down	▪ Bentonite ▪ Montmorillonite	▪ Expensive to implement ▪ Effectiveness decreases as soil moisture increases
Mulch and fiber mixtures	Forms a protective layer on the soil surface	▪ Paper mulch with gypsum binder ▪ Wood fiber mulch mixed with brome seed	▪ Physical cover is not as durable as other stabilizers

Source: Piechota, et al., 2004

3.2.2 VEGETATED SWALES

Habitat swales are vegetated, earthen channels constructed by raising pairs of parallel berms approximately 60 feet apart, with adjacent pairs of berms spaced 200 to 500 feet from one another. Habitat swales operate on the principle of interrupting wind fetch (the distance that wind has traveled over an unobstructed area) on the playa, leading to reduced wind velocity at the soil surface and suppression of sand flux and dust emissions in downwind areas. After

vegetation is established, swales capture sand and immobilize it beneath the plant community's canopy. A combination of periodic surface wetting, natural crusting, regional reduction in sand motion, and reduced surface wind velocities due to sheltering of areas downwind of the swales result in dust control over the entire swale and inter-swale area.

3.2.3 Plant Community Enhancement

The central concept of this DCM is managed enhancement of existing vegetation onto new playa areas. As the Sea recedes, plant communities along the shoreline may naturally expand, especially where freshwater inflows create fresher, shallow groundwater and/or leach salts from newly exposed playa and create more favorable growing conditions (Figure 1). Species would likely include a mix of sedges, rushes, and similar wetland vegetation located near the wet shoreline; grasses and other herbaceous species near the middle of the landscape; and shrub species in drier areas near and above the historic shoreline. These plant communities can achieve plant cover densities that postpone or eliminate the need for more resource intensive DCMs.

Figure 1.
Existing Playa Vegetation would be Expanded and Enhanced under the Plant Community Enhancement Dust Control Measure.

3.2.4 Moat and Row

Moat and row consists of an array of earthen berms (rows) flanked on either side by ditches (moats). Figure 2 is a conceptual cross-section of this type of DCM. Spacing can vary depending on the surface type, the control effectiveness required, and the intensity of adjacent sand sources. Moats control dust by capturing moving soil particles and rows physically shelter the downwind playa by lifting wind velocity profiles, thereby reducing velocity at the soil surface. Moats and rows are constructed to run perpendicular to primary wind vectors. Dust control effectiveness can be enhanced by reducing the distance between rows, increasing the height of the rows, vegetating rows, or using gravel, sand fences, or similar methods to enhance sand capture in between rows.

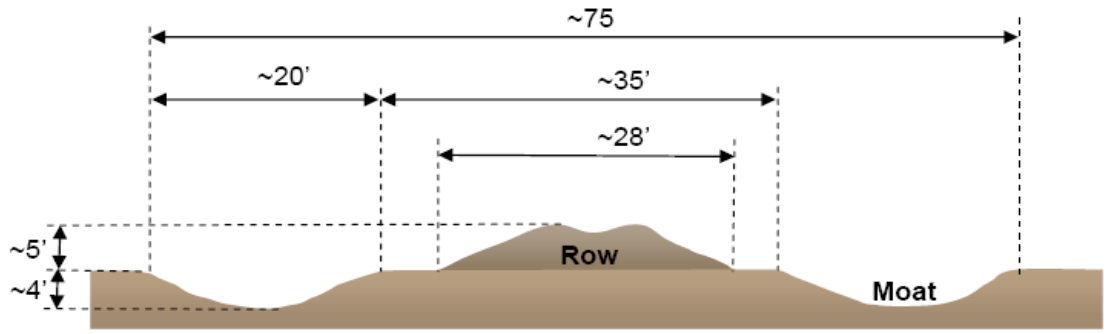


Figure 2.
Conceptual Cross-Section of a Moat and Row Dust Control Measure

3.2.5 WATER-EFFICIENT VEGETATION

Water-efficient vegetation controls dust by vegetating playa surfaces with salt- and drought-tolerant species that can stabilize and suppress soil and sand movement beneath their canopies. Vegetation can be seeded or planted on beds raised one to three feet high and spaced five to 15 feet apart. Previous work on dry, saline playas suggests that the most desirable species for dust control are salt- and drought-tolerant, may be rhizomatous (growth by the spread of underground roots and shoots), and must provide adequate cover even during dormant periods. Saltgrass (*Distichlis spicata*) is a common species, but native shrubs, such as salt bushes (*Atriplex* spp.) and seepweed (*Sueada moquinii*) may also be used alone or in combination with saltgrass. A mix of native species will provide the needed diversity to maintain adequate cover levels, reduce water demand, and suppress invasive species. Additional research is necessary to assess the influence of different levels of infrastructure, vegetation density, and vegetation uniformity on dust control efficiency, as well as water use and cost efficiency.

3.2.6 TILLAGE

This DCM consists of roughening the land surface, typically with conventional tillage implements, depending on soil conditions and the target roughness. The roughened surface is less susceptible to erosion due to the lifting of the boundary layer of moving air further above the land surface, and due to the capture of mobile sand within the furrows created by the roughened surface. To maintain control over time, tillage may need to be repeated periodically as the land surface may be smoothed by erosion, sedimentation, and settling.

Tillage can be done in blocks or strips that minimize turning and that avoid traffic on untilled areas to the maximum extent practicable. Tillage has some significant cost and operational advantages over other dust control approaches. Relative to other control measures, it can be designed and installed at a fairly low cost with common implements used in agricultural production. Tillage configurations are currently being evaluated for dust control at Owens Lake. Results will serve as a useful guide for the Salton Sea.

3.2.7 ALTERNATIVE LAND USE

Alternative land use practices can be implemented to cover exposed playa and thus eliminate or significantly mitigate the potential for emissions. Example land use practices include the following:

- **Reclamation of agricultural land.** Portions of exposed playa may be reclaimed for more conventional agricultural activities, such as graminoid forage crops typically grown in the Imperial Valley, or aquaculture crops, such as algae. These crops may be harvested for protein (food) or used as biomass for conversion to energy.

  The development of exposed playa for agriculture will be constrained by irrigation infrastructure, irrigation water availability, and agricultural markets. Certain areas around the southwest quadrant of the Sea have soil types that are suitable for conventional agricultural production of crops. The areas west of the New River delta include soil associations/complexes that are silty clays and various loams. The soils are also considered non-hydric and moderately- to well-drained. Aquaculture farming (i.e., algae and other aquatic vegetation) may be located on exposed playa areas with less suitable soils types. IID will continue evaluating areas around the Sea to evaluate reclamation potential for agricultural activity.

  IID is also evaluating several halophytic plants that might be suitable for crop use in playa areas or other high salt content soils. Vegetating playa with high salt tolerant plants may allow the reclamation of playa areas with less well drained soils and/or soils with higher salt content. IID may also elect to reclaim areas of playa for agricultural purposes or to develop specific crop types that could be used on playa areas without partnering with local entities.

- **Energy Generation Projects.** Energy generation projects that use geothermal and solar resources may also be located on exposed playa. The surface facilities needed to generate energy from these resources could be located on exposed playa and could also, with prior planning and design modification, be co-located with habitat projects.

  Geothermal: The *Refined Conceptual Modeling and a New Resource Estimate for the Salton Sea Geothermal Field, Imperial Valley, California* (Hulen, et. al. Sept 2002) defined the geothermal resources at the Salton Sea as more extensive than previously thought. The so-called Salton Sea Shallow Thermal Anomaly is mapped from east of the New River delta, through the Alamo River delta area and the Morton Bay/Mullet Island area and along the east side of the Salton Sea to the Imperial Wildlife Area-Wister Unit. The potential geothermal area extends out into the Sea up to three miles in some areas.

  Solar: There are two types of solar energy recovery being considered for installation on exposed playa: photovoltaic panel technology and solar gradient ponds. Photovoltaic panel technology is a relatively well proven technology, although it has not been tested on the extreme environment of the Sea playa.

Solar gradient ponds, which extract energy by using solar rays to heat the lower water layer in a stratified impoundment, are being considered as a longer-term (greater than five years) use for the playa. While this technology has been moderately successful in other areas, it has not been tested in the Imperial Valley.

3.2.8 Species Conservation Habitat and other Habitat-Based Uses

Biological habitat is another type of land use that can cover exposed playa and thus eliminate or significantly mitigate the potential for emissions. Numerous habitat restoration projects are proposed in the Salton Sea area in an effort to sustain the fish and wildlife currently dependent on the Sea. Some of these projects will extend onto areas of the playa that would otherwise be exposed. These projects include, but are not limited to, the following:

- The Species Conservation Habitat Project will be located at the southern end of the Sea and will create up to 3,770 acres of relatively shallow water habitat. Ponds to support fish and wildlife species will be constructed and operated by the CA Department of Fish and Game and supplied with a combination of brackish and saline water, blended to maintain an appropriate salinity range.
- The US Fish and Wildlife Service has proposed development of approximately 700 acres of wading and shore bird habitat in Red Hill Bay in an effort to maintain wetland habitat values on this part of the National Wildlife Refuge.
- There is also potential for the Wister Unit of the Imperial Wildlife Area or the Sonny Bono Salton Sea National Wildlife Refuge Complex to expand habitat onto exposed playa.

3.3 Dust Control Measure Monitoring

All pilot projects will be monitored for three to five years after construction begins. Monitoring will be conducted to evaluate overall performance, dust control efficiency, surface conditions, and other parameters that may relate to feasibility, such as habitat quality or biological impacts. Maintenance requirements also will be monitored to determine how full-scale facilities could be efficiently and effectively configured and managed, how dust control is sustained over time, and to better understand other potential impacts on the environment. Monitoring approaches will vary according to specific questions for and the nature of each pilot project, but will generally include the following:

- Meteorological and aerometric (i.e., sand motion, dust concentrations in ambient air) measurements will be made to determine the level of achieved dust control.
- Land surfaces will be observed for evidence of wind erosion in order to identify dust source areas and erosion intensity within the site footprint.
- Habitat and species of interest will be monitored. Species' use of and demographic response to DCM design will be evaluated.

- Plant establishment, cover development, water flow, irrigation, erosion and deposition will be monitored to define relationships between water management, cover development, and dust control effectiveness.
- As appropriate, water, sediments, and biota will be sampled periodically to establish levels of ecological risk (e.g., selenium levels) associated with irrigation with Sea inflows.

After DCMs are implemented at a larger scale, the main objective of monitoring is to ensure that the desired benefits (e.g., dust control efficiency) are achieved. Most of the time, it is much easier to monitor surface conditions, such as the amount of vegetative cover in the case of vegetative stabilization, than it is to directly measure DCM effectiveness. For this reason, the best way to confirm DCM effectiveness is to establish performance specifications and to monitor conformance.

At other sites, specifically, at Owens Lake, where large-scale DCMs have been installed, remote sensing analytical tools have been developed, calibrated and used extensively to monitor surface conditions. These tools have proven to be cost effective, timely, and accurate for nearly any surface measurement done at a large scale. Remotely sensed data sources, including satellite imagery, vary widely in quality, cost, and frequency of availability. Image analysis software also allows a variety of ways to differentiate the distinctions that are most important to an air quality manager. It is anticipated that these tools will be heavily used to monitor DCMs at the Sea, potentially including surface wetness, roughness, vegetative cover, or another parameters related to dust control effectiveness. Additional tools may also be used, including those described for the pilot projects.

4 DUST PREVENTION AND MITIGATION

This section describes the components of the Air Quality Program related to dust prevention and mitigation. Dust prevention will focus on limiting public access, especially off-highway vehicles, to the extent legally and practically feasible. Dust emissions will be primarily mitigated by implementation of dust control measures, and/or by creating or purchasing offsetting emission reduction credits. Specifically, this section will address the following questions:

- How can dust emissions from traffic, especially off-highway vehicle use, on the playa be prevented?
- How can dust emissions from the playa be mitigated?

4.1 DUST PREVENTION

Extensive desert areas around the Sea attract recreationalists and off-highway vehicle (OHV) traffic. Off-highway vehicle use is expected to expand onto the playa as the Sea recedes. This activity will disturb the natural stability of playa crust and soil surfaces and increase erodibility. This is caused by the physical destruction of the fragile crusts by passes of OHV tires. Tires pulverize the surface into sand-sized particles (Figure 3). These particles are then picked up by

the wind, commencing saltation, and leading to loosening of many more particles downwind. This cascading effect increases erodibility on and around an OHV trail. The larger the footprint of OHV use (through repeated passes), the larger the impact on the fragile crust.

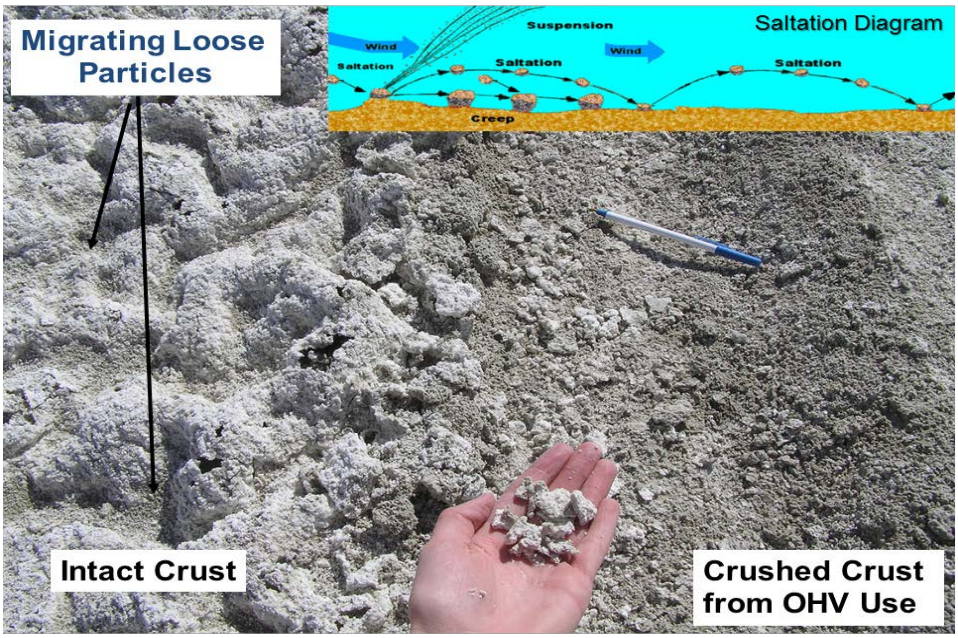


Figure 3.
Photo of Salt Crust Pulverized by Off-Highway Vehicle Traffic

Prevention of OHV-related disturbances is the most important and cost-effective measure available to prevent emissions. Dust prevention will focus on limiting public access to the extent legally and reasonably feasible. The Bureau of Land Management (BLM), California State Parks, and the Michigan Department of Natural Resources have found that approaches such as public outreach, education, sign posting, strategic fencing, gate installation, and selectively closing or maintenance of roads and trails are effective methods to control OHV activity. Therefore, rather than physical restriction of playa access, the dust prevention will focus on developing a plan that includes these approaches (Table 2).

TABLE 2
Playa Traffic Management Plan - Program Items and Approach

Program Item	Program Item Approach
Partnership and Educational Efforts	• Leverage partnerships relative to resource areas. Work cooperatively with partners to share resources and effectively manage OHV use around the Sea. • Initiate public outreach effort which encourages OHV users to adopt a land use ethic that responsible OHV riders respect land resources and do not travel cross playa off roads and trails except in managed open areas.
	• Develop an education program in partnership with other federal and state agencies, counties, tribes, communities, OHV dealerships, user and other interest groups to teach the recreating public about the value of public land resources and how they can protect the environment while enjoying their recreation activities. • Maximize volunteer efforts for enforcement activities

Program Item	Program Item Approach
Land Use / Playa Planning	• Identify sensitive land resource and biological resource areas • Determine appropriate OHV use of these areas (if any) • Work with partners to complete a regional coverage of OHV trails and open areas. • Determine/Designate standard OHV trail system and develop/improve those trails • Designate hunting trail system • Special emphasis on sensitive areas - Managing sensitive areas to ensure non-impairment
Restrictive Orders and Monitoring	• Encourage the public to adopt a land use ethic that, except in managed open areas, cross country travel off roads and trails should no longer be considered a responsible use of OHVs • Restrict OHV use through signage, enforcement, and education in: sensitive playa areas, mitigation facilities, habitat facilities, energy facilities, cultural sites, etc. • Ensure compliance through increased enforcement, posting signs, providing information, and monitoring activities and impacts. Work to gain the cooperation and assistance of local government, private citizens and interest groups in completing these actions and obtaining voluntary compliance.
Adaptive Management	• Periodically look back at approach in place. Identify lessons learned and incorporate those into the revised management approach with partners. • Through monitoring results, identify if/where existing OHV and hunting trails need to be augmented

With the help of the basic framework outlined in Table 2, a Playa Traffic Management Plan will be more fully developed by IID, the resource agencies, Imperial County, and other interested stakeholders. The plan will include an assessment element to gauge success of the plan and to determine whether modifications to the plan are necessary.

4.2 DUST MITIGATION

As the Sea recedes and emissive playa is exposed, dust mitigation strategies will be implemented at the discretion of IID, in consultation with ICAPCD and the resource agencies. It is expected that playa emissions due to the Water Transfer will be mitigated by implementation of feasible dust control measures (identified during the research and monitoring phase), and/or by purchasing offsetting emission reduction credits, if available and cost-effective. The following section describes these two potential approaches.

4.2.1 CREATE OR PURCHASE OFFSETTING EMISSION REDUCTION CREDITS

Emissions trading, including the creation or purchase of offsetting emission reduction credits, is a market-based approach used to control pollution by providing economic incentives. These types of programs include “cap-and-trade” of major pollutants, such as carbon dioxide. At the Sea, this type of measure would require negotiations with the local air pollution control districts to develop a long-term program for creating or purchasing off-setting PM-10 emission reduction credits. If successful, this type of measure could allow IID to receive emission “credits” for on-

Sea emissions by implementing controls on off-Sea sources, such as the emissive sand dunes to the west of the Sea.

4.2.2 DIRECT EMISSION REDUCTIONS AT THE SEA

The Air Quality Program components described in the previous sections have been designed to aid air quality managers in implementation of appropriate dust mitigation strategies on the playa. If emission source areas are identified through monitoring, then IID will implement, at its discretion, appropriate dust mitigation strategies to control playa emissions. This may include pro-active, low cost, quick-strike dust control measures identified through research and monitoring. Such measures may be used to quickly reduce playa emissions and the spread of the source areas. It is anticipated that a pro-active approach will allow time to determine if, when, and where longer-term dust controls are needed.

5 IMPLEMENTATION OF THE AIR QUALITY PROGRAM

The Air Quality Program will be implemented throughout the duration of the Water Transfer Project. Research and monitoring of some components, such as ambient air quality and dust control measure pilot projects, are already underway. Other components will be implemented in a step-wise fashion as the Sea recedes, such as identification of emission source areas and implementation of dust control measures. Throughout implementation of the Air Quality Program, IID will follow all appropriate mitigation measures identified in the Water Transfer EIR/EIS. Appendix C includes a table of potentially applicable mitigation measures.

In addition, IID will coordinate with regulatory agencies and provide periodic updates on the implementation of the Air Quality Program. This section provides a brief overview of agency coordination and a summary of reporting. This section also briefly summarizes implementation progress to date.

5.1 AGENCY COORDINATION

The Clean Air Act (CAA) is the comprehensive Federal law that regulates air emissions from stationary and mobile sources. Among other things, this law authorizes the USEPA to establish National Ambient Air Quality Standards (NAAQS) to protect public health. The CAA also directed States to develop State Implementation Plans (SIPs) in order to achieve these standards. California delegates authority for preparation of SIPs to local Air Pollution Control Districts. The Salton Sea is primarily located within the Imperial County Air Pollution Control District (ICAPCD) and also within the South Coast Air Quality Management District (SCAQMD). These districts are responsible for regulating attainment with NAAQS at the Salton Sea. In 2009, the ICAPCD finalized its SIP regarding attainment of PM_{10} ambient air quality standards in its district (ICAPCD 2009).

Communication and coordination with responsible air quality agencies is essential to the success of the Air Quality Program. Air quality mitigation at the Salton Sea, beyond the mitigation

requirements of the Water Transfer Project, will in many cases be developed and implemented by the ICAPCD, SCAQMD and CARB. Accordingly, coordination with these agencies is important because the SIPs may overlap with monitoring, modeling, pilot testing, and analyses that are a part of the Air Quality Program.

In addition, IID will coordinate with the Implementation Team (IT) for the Water Transfer Project. The IT includes IID, the CA Department of Fish and Game (DFG), and the US Fish and Wildlife Service (USFWS). The Water Transfer Project includes a Habitat Conservation Plan and a Natural Community Conservation Plan (HCP/NCCP) to address impacts to Covered Species (i.e., 95 fish, wildlife, and plant species) by Covered Activities (i.e., all water conservation projects and mitigation measures in connection with the Water Transfer Project, and all activities related to IID Water Department operations and maintenance). Mitigation measures associated with the HCP/NCCP are managed by the IT, which was established as part of the mitigation requirements for the Water Transfer Project, and a Joint Powers Authority (JPA) that is responsible for managing the funding of the mitigation measures. The JPA includes DFG, IID, Coachella Valley Water District, and the San Diego County Water Authority.

The IT is not responsible for managing air quality mitigation, except to the extent that implementation of the Air Quality Program might have an impact on Covered Species or other wildlife. IID will coordinate implementation of the Air Quality Program with the IT to ensure that the mitigation and conservation measures in the HCP/NCCP are met.

The IID, in coordination with the JPA and the IT, prepares and annual budget for review and approval by the JPA. IID presents the annual budget, which includes cost for implementation of the Air Quality Program to the JPA for approval. After approval, IID manages the implementation of the various measures included in the annual budget and submits periodic invoices to the JPA to cover the implementation costs. IID will coordinate with the ICAPCD, SCAQMD and CARB during the budget planning process and will provide periodic progress reports to the agencies.

5.2 REPORTING

A variety of documents will be prepared throughout implementation of the Air Quality Program. Documents may include: technical memoranda describing results of research and monitoring activities; conceptual and final designs for dust control measures; or outreach materials for the general public. Milestone Summary Reports also will be prepared to document progress and findings from implementation of the Air Quality Program. Technical memoranda will be appended to the Milestone Summary Report. Materials also may be posted to the IID website.

5.3 SUMMARY OF PROGRESS TO DATE

The IID has been implementing research and monitoring activities for a number of years. Progress through spring 2013 is briefly summarized below. More detailed information and results will be presented in the Milestone Summary Report, as described above in Section 5.2,

Reporting. The first Milestone Summary Report is anticipated to be complete in November 2014.

Air Quality and Playa Characterization

- Six ambient air quality monitoring stations were installed in 2009. These stations are operated by IID for characterization of baseline/background ambient air quality. Analysis of baseline conditions, as well as on- and off-sea erosion source areas, is ongoing.
- Playa exposure modeling has been completed using the Water Transfer Project EIR/EIS hydrologic modeling results. Analysis is underway to estimate the expected rate of playa exposure.
- Playa exposure and shoreline monitoring has been ongoing since 2009. Historical shoreline locations have been extracted on a monthly basis from 2000 to present. Current shoreline locations are monitored on a monthly basis to determine actual playa exposure.
- Playa surface characterization activities have been ongoing since 2011. Playa surface characterization methodology has been developed and is currently being implemented on an ongoing basis for over 40 baseline monitoring sites around the Sea.
- Playa emissions characteristics have been monitored since 2011. Approximately 250 PI-SWERL measurements across a range of surface conditions have been collected. Additional PI-SWERL measurements are being collected on an ongoing basis for evaluation with the playa surface characterization at the 40 baseline monitoring sites around the Sea.

Dust Control Measure Research and Monitoring

- Three pilot projects have been implemented, including the following:
    - Surface stabilizer product evaluation
    - Shallow flooding at the New River
    - Plant community enhancement at the New River
- A vegetated swale pilot project is in the planning phase.

Dust Prevention and Mitigation

- Specific activities to-date have focused on the identification/quantification of active OHV traffic areas on the playa using remote sensing and advanced, satellite-based radar techniques.

6 LIST OF PREPARERS

The following individuals contributed to preparation of this Air Quality Program.

Preparer	Firm	Role
Dr. Kent Norville	Air Sciences Inc.	Air Quality Scientist
Dr. Maarten Schreuder	Air Sciences Inc.	Air Quality Scientist
Dr. Mark Schaaf	Air Sciences Inc.	Senior Air Quality Scientist
Mr. Brian Schmid	Formation Environmental LLC.	Project Manager; Senior Soil Scientist
Mr. Dane Williams	Formation Environmental LLC.	Senior Data Analyst
Ms. Andrea Schmid	PlanTierra LLC.	Environmental Planner
Dr. John Dickey	PlanTierra LLC.	Senior Soil Scientist

7 REFERENCES CITED

Buck, B., J. King, and V. Etyemezian. 2011. Effects of Salt Mineralogy on Dust Emissions, Salton Sea, California. Soil Sci. Soc. Am. J. 75:1958–1972. doi:10.2136/sssaj2011.0049.

California Department of Water Resources (DWR). 2005. Final Technical Memorandum: Salton Sea Task 4, Soil/Sediment Emissivity Assessment to Support the Salton Sea Ecosystem Restoration Plan Programmatic Environmental Impact Report (Appendix D to Unified Executive Summary and Appended Final Air Quality Technical Memoranda Prepared to Support the Salton Sea Ecosystem Restoration Plan Programmatic Environmental Impact Report).

Eswaran, H. 1984. Scanning electron microscopy of salt. p. 403–405. In McGraw-Hill yearbook of science and technology. McGraw-Hill Book Co., New York.

Hulen, B., D. Kaspereit, D. Norton, W. Osborn, F. Pulka. 2002. Refined Conceptual Modeling and a New Resource Estimate for the Salton Sea Geothermal Field, Imperial Valley, California. Geothermal Resources Council Transactions, v. 26, 18 p.

Imperial County Air Pollution Control District. 2009. Imperial County State Implementation Plan for Particulate Matter Less Than 10 Microns in Aerodynamic Diameter.

King, J., V. Etyemezian, M. Sweeney, B. Buck, and G. Nikolich. 2011. Dust emission variability at the Salton Sea, California, USA. Aeolian Res. 3:67–79. doi:10.1016/j.aeolia.2011.03.005

Piechota, T., J. van Ee, J. Batista, K. Stave and D. James (editors). 2004. Potential Environmental Impacts of Dust Suppressants: “Avoiding Another Times Beach” - An Expert Panel Summary. Las Vegas, Nevada. May 30-31, 2002. Sponsored by the U.S. Environmental Protection Agency.

Schoeneberger, P.J., D.A. Wysocki, and E.C. Benham. 2002. Field book for describing and sampling soils. Natl. Soil Surv. Ctr., Lincoln, NE.

Teller, J., and W. Last. 1990. Paleohydrological indicators in playas and salt lakes, with examples from Canada, Australia, and Africa. Palaeogeogr. Palaeoclimatol. Palaeoecol. 76:215–240. doi:10.1016/0031-0182(90)90114-M

APPENDIX A

Master Response on Salton Sea Air Quality Monitoring and Mitigation Plan in the Final EIR/EIS

AIR QUALITY

3.9 Master Response on Salton Sea Air Quality Monitoring and Mitigation Plan

3.9.1 Introduction

Commenters have requested additional discussion of measures that might be practical, available, and feasible for problem assessment and avoiding, minimizing, and mitigating potential dust and air quality impacts associated with exposed shoreline around the Salton Sea caused by the Project. This master response is intended to address those comments.

3.9.2 Difficulties Associated with Impact Assessment

Comments on the Air Quality Section of the Draft Environmental Impact Report/ Environmental Impact Statement (EIR/EIS) vary widely but tend to acknowledge that prediction of the scale or intensity of future dust impacts is not possible, given the limited available information on submerged areas and the variability of conditions that might promote or inhibit dust emissions at the Salton Sea. Notes from the Salton Sea Authority on the Salton Sea Air Quality Workshop held April 3, 2002, concluded, "At this time there is neither enough data nor enough exposed shoreline to predict with any credibility where, when, or how bad the emissions will be." As stated in the Draft EIR/EIS, several factors prevent any reasonable quantitative estimate of emissions and associated impacts from the exposed shoreline:

- Lack of data regarding sediment characteristics.
- Lack of data relating sediment characteristics to surface stability and actual emissions rates.
- Spatial variations in sediment characteristics and land surface erodibility.
- Temporal variations in wind conditions.
- Temporal variations in factors contributing to the formation of salt crusts and otherwise influencing the tendency of land surfaces to emit dust in high winds.

It is also not possible to perform modeling of potential impacts on ambient concentrations of PM10 (particulate matter with a diameter of less than 10 micrometers) in areas around the Sea without information on mass emission rates, location, or the areal extent of emissive land surfaces.

3.9.3 Similarities to and Differences from Owens Lake

Several comments pointed to similarities between exposure of sediments at Salton Sea and at Owens Lake, suggesting that similar dust emissions and air quality problems could ensue with lowering of the Salton Sea elevation. This response is based on available information and considerable experience at Owens Lake (where a large dust mitigation program is being implemented by the Los Angeles Department of Water and Power) and at the Salton Sea (where Imperial Irrigation District [IID] has operated for many decades).

Return to Contents

At the April 3, 2002 Air Quality Workshop held by the Salton Sea Authority, it was concluded that definitive data are lacking for prediction of PM10 emissions from exposed seabed sediments. However, several general observations regarding this comparison shed light on the level of risk of major dust emissions resulting from exposure of sediments at the Salton Sea.

Driving forces for dust emissions include wind and sand. Winds at the Salton Sea have been compared with those at Owens Lake in the Master Response on *Air Quality – Wind Conditions at the Salton Sea* in Section 3.16 of this Final EIR/EIS. Those data (Table 3.9-1) show that the frequency of high winds at the Salton Sea are much less frequent than at Owens Lake.

TABLE 3.9-1
Comparison of wind-speed frequency at 10 m above the ground surface for Salton Sea and Owens Lake

Site	>8.5 m/s (19 mph)	>11.0 m/s (25 mph)
Niland (near Salton Sea)	4.4%	1.4%
Tower N3 (Owens Lake)	18.9%	7.9%

Above a threshold wind velocity, sand if it is present on the surface, saltates (skips on the surface), and with each impact may break coherent soil crust and eject finer material upward into the airstream. So pronounced is the correlation of sand motion with PM10 emissions that, at Owens Lake, one of the primary tools for mapping dust emissions for mitigation is sand motion.

The sources of sand at Owens Lake are relatively steep-gradient streams feeding the lake, with few control structures to impede flow and cause sediment removal upstream of the lakebed. This has resulted in the following sand distribution at Owens Lake:

- A relatively continuous ring of sand dunes surrounding Owens Lake at its shoreline.
- Extensive areas of mobile sand (known locally as “sand sheets”) on the lakebed surface.
- Extensive areas of lakebed with deep sand deposits mapped as the dominant soil type.

In contrast, there is very little sand to blow in the southeastern shore areas of the Salton Sea, where bathymetry suggests that sediments would be most extensively exposed. This is because of shallow gradients and extensive control on tributary rivers. Likewise, sand sources such as dunes are absent in this area. Where sand dunes do occur along the western side of the Sea, bathymetry suggests sediment exposure would be very limited. Therefore, the co-occurrence of sand sources and exposed lakebed, which is so widespread and problematic at Owens Lake, appears to be largely absent in this area of the Salton Sea.

Exposed soil surfaces are more resistant to wind erosion when they are roughened or covered with a stable crust. When saline sediments are exposed by lowered water levels, the crust that forms at the soil surface is cemented by salt, and its strength is largely dependent on the strength of this cementation. The salt chemistry at Owens Lake results in a high

Return to Contents

proportion of sodium-carbonate evaporite salts that change radically in degree of hydration and volume at temperature variations within the range commonly experienced at Owens Lake. This has the effect of softening the crust and increasing rates of breakage and emissions. Comparing the makeup of salts in the Salton Sea (Bertram Station) and at Owens Lake (subsurface drainage or aerated groundwater), the following observations can be made (see Figure 3.9-1):

- There is much more (26 percent) calcium and magnesium at the Salton Sea; cations at Owens Lake contain 97 percent sodium.
- Carbonate and bicarbonate are virtually absent at the Salton Sea; they make up about 29 percent of anions at Owens Lake.
- Sulfate levels at Salton Sea (29 percent) are more than twice Owens Lake levels (12 percent).

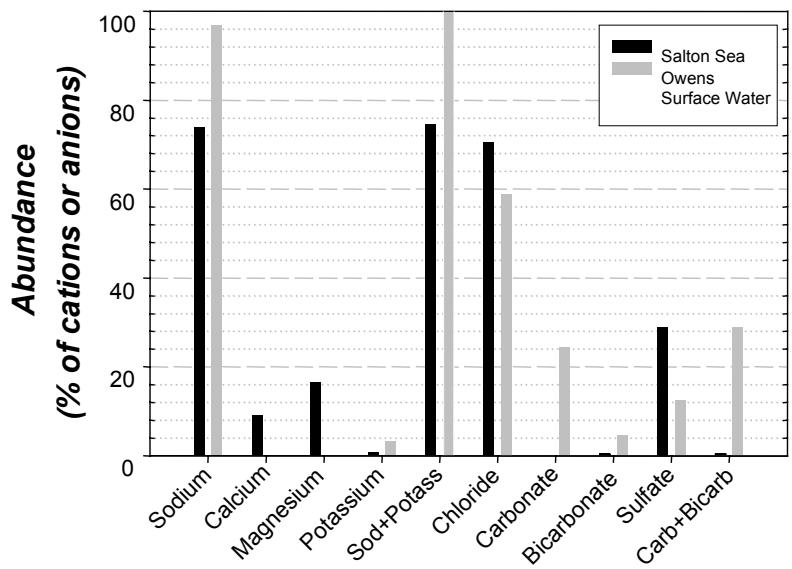


Figure 3.9-1

Relative abundance of major cations and anions at Salton Sea (Bertram Station, 1996-2001) and in subsurface drainage water at Owens Lake (Agrarian and Tree Rows sites, October 1998). Abundance for cations (sodium, calcium, magnesium, and potassium) is given as a percentage of the total cations, and for anions (chloride, carbonate, bicarbonate, and sulfate) as a percentage of total anions (milliequivalents/liter).

Further, the range of temperature variation at the Salton Sea is quite distinct from (generally warmer than) Owens Lake. The particular climatic interaction with salt minerals at Owens Lake influences dust emissions. This will also be the case at the Salton Sea. At the April 3 Air Quality Workshop, it was generally acknowledged that interactions between Salton Sea climate and minerals are undefined and constitute a pressing research need.

Sea levels have fluctuated over the period since the Sea filled during 1905 to 1907, resulting in periodic and extended exposure of significant Sea sediments. Such exposure at Owens

Return to Contents

and Mono Lakes generated unmistakable dust emissions. While there has been no systematic monitoring program at the Salton Sea, there does not appear to be any substantial anecdotal information that these areas have historically contributed observable dust emissions.

This is consistent with observations of soil crusts in the Salton Sea area. Crusts re-form when rain falls on these desert lakebeds and then progressively break apart over time; the extent and rate of breakage indicate the erosive forces to which the crusts are subjected, and, to some extent, the amount of wind erosion. Year-old crusts are generally heavily damaged in emissive areas at Owens Lake. Relatively old crusts (at least 18 months) generally show little damage at the Salton Sea.

In summary, weaker driving forces at Salton Sea, especially the absence of sand in potentially exposed areas, are consistent with observations suggesting that exposed sediments are not as emissive as they have been at Owens Lake.

3.9.4 Difficulties Associated with Specific Prescription of Mitigation

Without information on the nature and extent of the potential problem to be mitigated, it is unwise and impractical to propose or commit prematurely to costly dust control mitigation measures. Further, the dust control mitigation measures studied and under implementation at other lakebeds, such as Mono and Owens, may not be feasible or practical at the Salton Sea, given limitations on financial resources and the constraints on water availability for mitigation in this desert area. Nor would it be prudent to propose use of ratepayers' money to fund dust control measures for a problem that does not currently exist and may never materialize.

Under shoreline exposure scenarios, it is currently impossible to predict the extent and intensity of potential increases in dust emissions or the associated increases in ambient concentrations of the pollutant PM10 in excess of standards. The Draft EIR/EIS describes conditions at the Salton Sea that would naturally inhibit PM10 suspension, i.e., the combination of moisture present in the unsaturated zone beneath the exposed playa, the probable formation of dried algal mats and stable salt crusts consisting of chloride and sulfate salts, and the relatively low frequency of high wind events at the Salton Sea. In the best case, no problem would occur; in the worst case, a problem would emerge at some later date, after 2035, as the Sea's shoreline becomes exposed. Shoreline exposure caused by the Project will be delayed until that date because of implementation of the Salton Sea Habitat Conservation Strategy, which would provide mitigation water to the Sea to offset reductions in inflow caused by the Project. See the Master Response on *Biology – Approach to Salton Sea Habitat Conservation Strategy* in Section 3.5. IID would be responsible for impacts associated with implementation of the Proposed Project, apart from impacts associated with shoreline exposure anticipated from Baseline conditions.

3.9.5 Monitoring and Mitigation Plan

Rather than focusing on site-specific and costly dust control mitigation for an undefined and future potential problem, a phased approach is proposed to detect, locate, assess, and resolve this potentially significant impact. The following 4-step plan would be implemented

Return to Contents

to mitigate significant PM10 emissions and incremental health effects (if any) from Salton Sea sediments exposed by the Proposed Project:

(1) **Restrict Access.** Public access, especially off-highway vehicle access, would be limited, to the extent legally and practicably feasible, to minimize disturbance of natural crusts and soils surfaces in future exposed shoreline areas. Prevention of crust and soil disturbance is viewed as the most important and cost-effective measure available to avoid future dust impacts. IID or other governmental entities own or control most of the lands adjacent to and under the Salton Sea. Fencing and posting would be installed on these lands in areas adjacent to private lands or public areas to limit access.

(2) **Research and Monitoring.** A research and monitoring program would be implemented incrementally as the Sea recedes. The research phase would focus on development of information to help define the potential for problems to occur in the future as the Sea elevation is reduced slowly over time. Research would:

(a) Study historical information on dust emissions from exposed shoreline areas.

(b) Determine how much land would be exposed over time and who owns it.

(c) Conduct sampling to determine the composition of "representative" shoreline sediments and the concentrations of ions and minerals in salt mixtures at the Sea. Review results from prior sampling efforts. Identify areas of future exposed shoreline with elevated concentrations of toxic substances relative to background.

(d) Analyze to predict response of Salton Sea salt crusts and sediments to environmental conditions, such as rainfall, humidity, temperature, and wind.

(e) Implement a meteorological, PM10, and toxic air contaminant monitoring program to begin under existing conditions and continue as the Proposed Project is implemented. Monitoring would take place both near the sources (exposed shoreline caused by the Project) and near the receptors (populated areas) in order to assess the source-receptor relationship. The goal of the monitoring program would be to observe PM10 problems or incremental increases in toxic air contaminant concentrations associated with the Proposed Project and to provide a basis for mitigation efforts.

(f) If incremental increases in toxic air contaminants (such as arsenic or selenium, for example) are observed at the receptors and linked to emissions from exposed shoreline caused by the Project, conduct a health risk assessment to determine whether the increases exceed acceptable thresholds established by the governing air districts and represent a significant impact.

(g) If potential PM10 or health effects problem areas are identified through research and monitoring and the conditions leading to PM10 emissions are defined, study potential dust control measures specific to the identified problems and the conditions at the Salton Sea.

(3) **Create or Purchase Offsetting Emission Reduction Credits.** This step would require negotiations with the local air pollution control districts to develop a long-term program for creating or purchasing offsetting PM10 emission reduction credits. Credits would be

Return to Contents

used to offset emissions caused by the Proposed Project, as determined by monitoring (see measure 2, above). IID proposes negotiation of an offset program that would allow purchase of credits available under banking programs, such as Imperial County Air Pollution Control District Rule 214 for agricultural burning. Other means of dust control and PM10 emissions reductions available for application to agricultural operations in the IID service area would also be pursued for credit banking opportunities (e.g., managing vacant lands, improving farming practices to reduce PM10, and paving roads). This step would not be used to mitigate toxic air contaminants (if any); Step 4 would be necessary if toxic air contaminants pose a significant health issue.

(4) **Direct emission reductions at the Sea.** If sufficient offsetting emission reduction credits are not available or feasible, Step 4 of this mitigation plan would be implemented. It would include either, or a combination of:

(a) Implementing feasible dust mitigation measures. This includes the potential implementation of new (and as yet unknown or unproven) dust control technologies that may be developed at any time during the term of the Proposed Project; and/or

(b) If feasible, supplying water to the Sea to re-wet emissive areas exposed by the Proposed Project, based on the research and monitoring program (Step 2 of this plan). This approach could use and extend the duration of the Salton Sea Habitat Conservation Strategy.

If, at any time during the Project term, feasible dust mitigation measures are identified, these could be implemented in lieu of other dust mitigation measures or the provision of mitigation water to the Sea. Thus, it is anticipated that the method or combination of methods could change from time to time over the Project term.

The success of the proposed plan is dependent on coordination and cooperation of the involved parties and the air quality regulatory agencies. Coordination, communication, staff commitment, and funding will be required in each phase of the proposed research, monitoring, and emissions reduction program.

3.9.6 Impact Assessment; Feasibility of Implementation

The Draft EIR/EIS concludes that windblown dust from exposed shoreline caused by the Proposed Project may result in potentially significant and unavoidable air quality impacts that could not be mitigated. This conclusion was based upon (1) uncertainty regarding the actual air quality impacts of Salton Sea shoreline exposure, because of the lack of sufficient records or research regarding emissive potential, and (2) uncertainty regarding the availability or feasibility of mitigation measures. This conclusion was intended to be conservative in view of the broad disclosure goals of the California Environmental Quality Act and the National Environmental Policy Act.

This master response is intended to propose a method for identifying the scope of actual air quality impacts caused by the Project and for identifying and implementing potentially feasible mitigation measures that could reduce those impacts. The proposed mitigation is potentially sufficient to avoid or suppress PM10 emissions to less than significant levels. However, a level of uncertainty remains regarding whether short-term and long-term impacts can be mitigated to a less-than-significant level, as described below. Therefore, the

Return to Contents

conservative conclusion that these impacts are potentially significant and cannot be mitigated has been retained in this Final EIR/EIS.

With the implementation of Salton Sea Habitat Conservation Strategy, shoreline exposure caused by the Project would not begin until some time after the year 2035. Up to an estimated 16,000 acres of shoreline would potentially be exposed between 2035 and end of the Project term as a result of full implementation of the Proposed Project. The mitigation plan described above works in concert with the Salton Sea Habitat Conservation Strategy and is expected to reduce air quality impacts and PM10-related health effects. However, problem assessment and mitigation implementation would occur subsequent to the development of potential dust emissions. Therefore, interim impacts could be significant.

It is uncertain what the conditions in the Salton Sea Air Basin will be as of 2035 when Project impacts may begin to occur. The Imperial Valley portion of the Salton Sea Air Basin is currently a moderate nonattainment area and the Riverside County/Coachella Valley portion is currently a serious nonattainment area for the National Ambient Air Quality Standard for PM10. The attainment status of the Basin in 2035 cannot be ascertained; however, the Clean Air Act requires a plan for attainment well in advance of that date.

Cost and water availability may affect the feasibility of certain dust mitigation measures and the proposed delivery of water to the Sea to re-wet emissive areas, as proposed under the mitigation plan described above. If mitigation water is generated by non-rotational fallowing within the IID water service area, this may result in significant impacts to agriculture, as described in Section 3.5 of the Draft EIR/EIS. Fallowing may also adversely affect the Imperial Valley economy, as described in Section 3.14 of the Draft EIR/EIS. Before approving the Project, the Lead Agencies must balance the benefits and impacts of the Project as well as the effects and feasibility of proposed mitigation measures.

Return to Contents

3.10 Master Response on Air Quality Issues Associated with Fallowing

3.10.1 Introduction

Several comments received on the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) refer to the lack of pre- and post-mitigation emission estimates for fallowing of lands under the Proposed Project and Alternatives. The current analysis considers a worst case, in which a maximum of 84,800 acres per year would be fallowed, at unspecified locations, over an area of approximately 500,000 acres. The site-specific information required for estimation of emissions (soil type, soil moisture content, vegetative cover or residue, wind speed, wind travel distance or fetch) is not available because the fallowing program would be voluntary.

Commenters referred to potential emission factors for estimation of fallowing emissions, including the California Air Resources Board (ARB) document titled "Emission Inventory Procedural Manual, Volume III, Methods for Assessing Area Source Emissions in California" (California Air Resources Board 1997). This document has been reviewed and the author at ARB has been contacted (Gaffney 2002), confirming that emission factors for agricultural land fallowing are not currently available. The document includes some general emission factors for agricultural land preparation activities and windblown dust from agricultural land but nothing sufficient to quantify pre- and post-mitigation emissions from generic fallowed lands.

3.10.2 Fugitive Dust and PM10 Emissions from Fallowing

As described in the Draft EIR/EIS, in Mitigation Measure AQ-3, implementation of Best Management Practices (BMPs) to minimize PM10 emissions would be required for lands fallowed under the Proposed Project or Alternatives. These BMPs, which are listed on page 5.7-31 of the Draft EIR/EIS, include measures specified by the U.S. Department of Agriculture Natural Resources Conservation Service that are in common use in Imperial County to protect agricultural lands from wind erosion and mitigate fugitive dust emissions. Responsible land management and dust control may require use of more than one BMP for adequate mitigation, depending on field conditions, prior crop type, and potential dust emissions. Imperial Irrigation District (IID) would require conformance with these mitigation measures in the contracts between IID and the landowners who implement fallowing as part of the conservation program.

The land fallowing activities would occur in the IID water service area, which is under the jurisdiction of the Imperial County Air Pollution Control District (ICAPCD). ICAPCD Rule 800, Fugitive Dust Requirements for Control of Fine Particulate Matter (PM10), specifically exempts agricultural operations. As in most agricultural areas, soil conservation and fugitive dust control are accomplished by use of established and proven BMPs.

In the absence of available specific emission factors for fallowed lands, the approach taken in the Draft EIR/EIS is appropriate, and the conclusion that impacts would be less than significant with implementation of BMPs is also appropriate. It should be noted that emissions attributable to fallowing under the Project consist of any increment of additional

Return to Contents

emissions resulting from the conversion of a farmed field to a fallowed field. Several factors suggest that emissions from fallowed lands would likely be lower than the emissions from fields in agricultural production, and thus a net reduction in emissions would be anticipated if fallowing is implemented. These factors include the following:

(1) Seedbed preparation generates dust on cropped land.

(2) Other agricultural operations, such as cultivation and harvest, generate dust on cropped land.

(3) More vehicle and truck trips, often on unpaved roads, are involved in crop production than fallowing.

(4) Burning crop residue several times a year for multiple cropped fields generates dust.

Additionally, application of mitigation measures described in the Draft EIR/EIS and discussed above would further reduce emissions from fallowed fields. Dust and PM10 impacts from fallowing would therefore be reduced to less than significant.

3.10.3 Costs of Mitigation for Fallowed Fields

Costs of BMPs vary but are generally found practicable by agricultural land managers. Fallowing BMPs may be similar to those for a cropped field or may replace other BMPs practiced when land is in continuous crop production. The major cost issue is the loss of production from fallowed fields, because production normally offsets BMP costs. IID's program would involve contracts with the landowners participating in the fallowing program as part of the conservation and transfer project; those contracts would address the financial aspects of participation in the program, including any required mitigation.

3.10.4 Water Requirements and Impacts on the Transfer Project

BMPs vary with respect to water requirements. Methods such as leaving a field in a cloddy condition, which reduces emissions by roughening the land surface, and leaving crop residue (such as wheat stubble) from a previous crop, require no water. It is acknowledged that establishment of a new vegetative cover would require water. However, the cover crop would only need to be irrigated until adequate soil protection is established, and cover crops would require much less water than production crops. Once established, the cover crop could be effective for several seasons, so annual irrigation would not be required for maintenance. Delivery of water to meet these minimal requirements is facilitated by existing irrigation systems. Note that where fallow periods are sufficiently brief, crop residue and other measures may adequately protect soil, eliminating any irrigation requirement during the fallow. In calculating the amount conserved by fallowing a field, it is anticipated that IID's conservation program would take into account the water used for required mitigation for the fallowed field.

3.10.5 Adequacy of BMPs to Mitigate Impacts to Less than Significant

Soil conservation BMP development and specifications are based on a substantial body of land management research and practical experience. These BMPs are applied throughout U.S. agriculture, required as part of federal farmland conservation programs, and have been absorbed as a standard for soil conservation throughout much of the world. Adherence to

Return to Contents

these standard, proven practices assures that air quality will not be significantly degraded by an increase in emissions from agricultural lands.

3.10.6 Potential for Increased Pesticide and Herbicide Use to Control Weeds on Fallowed Lands

Weed growth will be discouraged without pesticides by the employment of vigorous and competitive cover crops when water is being applied and by the lack of water at other times. Normal cultural and chemical weed control will be used during the cropping phases of the rotation. Most chemical weed control on fallowed land is expected to take place during the cropping, not the fallow phases, of the rotation. Also note that chemical weed control is a significant land management cost that is accepted as a normal cost of agricultural production and offset in the producer's budget by income from the crop. When a field is fallowed, costly chemical weed control will be avoided simply because of its cost and the absence of offsetting revenue benefit.

3.10.7 Loss of Carbon Dioxide Sequestering Capacity if Fallowed Lands are Not Left With a Green Cover Crop

The capacity of soils to produce crops, sequester carbon, and provide other benefits is determined by their potential to store organic carbon and to support (living or dead) biomass. Standard soil conservation, practiced on cropped or fallow land, adequately protects this capacity.

3.11 Master Response on Emissions from Construction of Conservation Measures

3.11.1 Introduction

Many commenters suggested that potential dust emission from construction of conservation measures should be quantified.

3.11.2 Fugitive Dust (PM10) Emissions from Construction

Construction of on-farm and delivery-system conservation measures under the Proposed Project and Alternatives would take place in the Imperial Irrigation District (IID) water service area, which is under the jurisdiction of the Imperial County Air Pollution Control District (ICAPCD). For its construction activities, IID has and will continue to meet the requirements of ICAPCD Rule 800, Fugitive Dust Requirements for Control of Fine Particulate Matter (PM10). This includes requirements for mitigation of fugitive dust at all construction sites. If required by the ICAPCD, IID will submit and comply with site-specific dust control plans for construction projects associated with the water conservation and transfer program. For construction activities on area farms, IID would require conformance with these mitigation requirements in the contracts between IID and the landowners taking part in the conservation program.

Construction emission estimates prepared for this air quality analysis did not quantify fugitive dust emissions associated with soil disturbance for two reasons:

(1) Normal operations at farms involve a substantial amount of soil disturbance and installation of the conservation measures is assumed to be within the range of typical activities.

(2) The project- and site-specific information needed to do this quantification is not available because participation in the conservation program is voluntary in the case of the on-farm measures or as yet unplanned in the case of the system-based measures. The distribution and type of conservation measures that would be constructed, the amount of soil that would be disturbed, the schedule for construction, and the areas affected by the construction projects are not possible to predict and is expected to change over the 75-year Project term.

Although emissions cannot be quantified because of uncertainties regarding intensity and location of construction, BMPs to minimize PM10 emissions during construction, site restoration, and operation of the conservation measures are recommended as mitigation measures in the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). These Best Management Practices (BMPs) are in common practice in the IID water service area. They would include, but are not limited to the following:

- Equip diesel-powered construction equipment with particulate-matter emission-control systems, where required.
- Use paved roads to access the construction sites when possible.

Return to Contents

- Minimize the amount of disturbed area, and apply water or soil-stabilization chemicals periodically to areas undergoing ground-disturbing activities. Limit vehicular access to disturbed areas, and minimize vehicle speeds.
- Reduce ground-disturbing activities as wind speeds increase. Suspend grading and excavation activities during windy periods (i.e., surface winds in excess of 20 miles per hour).
- Limit vehicle speeds on construction sites to 10 mph on unpaved roads.
- Cover trucks that haul soils or fine aggregate materials.
- Enclose, cover, or water excavated soil twice daily.
- Cover stockpiles of excavated soil at all times when the stockpile is not in use. Secure the covers.
- Replant vegetation in disturbed areas where water is available, following the completion of grading and/or construction activities.
- Designate personnel to monitor dust control measures to ensure effectiveness in minimizing fugitive dust emissions.

3.11.3 Exhaust Emissions from Construction Equipment

Commenters suggested that the construction equipment exhaust emissions for on-farm or water-delivery-system measures should be summed. Equipment exhaust emissions estimated for construction of the measures (Tables 3.7-12 and 3.7-13 of the Draft EIR/EIS) should not be summed, because the emissions estimates for each individual measure represent the maximum construction level (and associated emissions) anticipated for that measure for any given year over the life of the Proposed Project. This means that if more than one type of measure is constructed at the same time, each type would be constructed at less than 100 percent, so the combined emissions would never exceed the highest emissions estimated for any one type of measure. These estimates are provided to allow comparison of the measures available to meet the maximum estimated annual amount for conservation of 20 thousand acre-feet per year (KAFY).

Likewise, it is not appropriate to convert the annual estimates to daily emission rates. The significance criteria used in the Draft EIR/EIS are based on annual, rather than daily, emission rates. In addition, the location and timing of the proposed construction activities necessary to calculate a daily emission rate are unknown at this time.

ICAPCD does not have daily or annual significance thresholds for construction emissions. If required by ICAPCD, IID will submit site-specific construction emission estimates for its construction activities at the time specific projects are planned, including estimates of fugitive dust from soil disturbance, and evaluate these emissions in conjunction with other project-related emissions for level of significance and need for additional mitigation. The current analysis is for hypothetical conservation projects, and the project-specific information required for estimation of project-specific construction emissions or mitigation benefits is not available.

Return to Contents

Several commenters expressed concern regarding emissions of ozone precursors (nitrogen oxides and volatile organic compounds) from construction equipment. As indicated in the Draft EIR/EIS, these emissions do not represent a significant impact, and mitigation is not required. However, for its construction activities, IID is committed to use of construction equipment that is maintained, properly tuned, and operated in a manner so as to reduce peak emission levels of ozone precursors. For construction activities on area farms, IID would require proper equipment maintenance and operation in the contracts between IID and the landowners taking part in the conservation program.

3.11.4 Emissions from Construction Employee Commute Vehicles

The analysis of construction impacts is for hypothetical conservation projects, and the project- and site-specific information required for estimation of emissions from construction employee commute vehicle travel (e.g., vehicle miles traveled, road conditions, project year) is not available. If required by ICAPCD, IID will submit site-specific employee commute vehicle exhaust emission estimates for its construction activities at the time specific projects are planned and will evaluate these emissions in conjunction with other project-related emissions for level of significance and need for mitigation. As stated in the Draft EIR/EIS, normal operations at farms involve employee and owner commute vehicle activities not substantially different than those proposed for the construction and operation of the conservation measures. As a result, construction of the conservation measures is not expected to substantially increase overall commute vehicle activities in the IID water service area. Any construction-related increases in emissions of exhaust from employee commute vehicles would be temporary and localized.

Return to Contents

3.12 Master Response on Aggregate Emissions from the Salton Sea, Fallowing, and Construction

3.12.1 Introduction

Commenters requested additional evaluation of the air quality impacts associated with the aggregate emissions from the Proposed Project and Alternatives. Commenters emphasized ozone and PM10 (particulate matter with a diameter of less than 10 micrometers) because the locations of the Proposed Project and Alternatives in Imperial and Riverside Counties are designated as federal and state nonattainment areas for these two air pollutants. Commenters contended that the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) inappropriately evaluated the Project's impacts on air quality by separately evaluating the emissions from different types of activities and not totaling the emissions.

This response discusses PM10 and ozone separately, to clarify both the types of emissions and timing of emissions from the various potential emissions sources associated with the Proposed Project and Alternatives. The emissions sources are construction emissions for conservation/transfer (both on-farm and water-delivery-system measures), construction emissions for the Habitat Conservation Plan (HCP) fallowing, and emissions from the exposed areas of the Salton Sea shoreline caused by the Proposed Project and Alternatives.

3.12.2 PM10 Emissions

It is acknowledged that increases in airborne dust would result in related increases in dust constituents such as PM10. As discussed in Section 3.10, Master Response on *Air Quality – Air Quality Issues Associated with Fallowing*, it is not possible to quantitatively estimate dust/PM10 emissions associated with fallowing. However, if fallowing is implemented as a method of generating conserved water, the Project effect is the conversion of a farmed field to a fallowed field, and several factors suggest that PM10 emissions from fallowed fields would be lower than emissions from fields in agricultural production. In addition, if Best Management Practices (BMPs) are implemented in connection with fallowing, as recommended in the Master Response on *Air Quality – Air Quality Issues Associated with Fallowing*, PM10 emissions from fallowing would be reduced to less than significant.

PM10 emissions from construction of on-farm measures to conserve the estimated maximum annual ramp-up amount of 20 thousand acre-feet per year (KAFY) of water were estimated in Table 3.7-12 of the Draft EIR/EIS at between 0.3 and 4.6 tons per year, depending on which on-farm measures were used. PM10 emissions for construction of water-delivery-system measures to conserve 20 KAFY annually were estimated in Table 3.7-13 of the Draft EIR/EIS and the accompanying text at 5.2 tons per year, at the highest. These emissions estimates cannot be added together for the purposes of assessing the impacts of construction measures for conservation because each reflects the conservation of the entire estimated maximum annual amount of 20 KAFY. As noted in the Draft EIR/EIS, there is no applicable significance criterion in the Imperial Valley (where all of the construction measures would take place); however, we applied the general conformity *de minimus* threshold of 100 tons per year for PM10. Construction of the on-farm measures,

Return to Contents

the water-delivery-system measures, or any mix of these measures for purposes of conserving the estimated maximum annual amount of 20 KAFY would result in PM10 emissions far below the PM10 significance threshold. As discussed in the Draft EIR/EIS, construction–related exhaust emissions of PM10 from employee commute vehicles would be within the context of normal farm and water system activities and would be minor, temporary, and localized. Operation and maintenance of the on-farm and/or water-delivery-system measures would be intermittent and within the range of normal activities for the area and would not result in any significant PM10 emissions.

Emissions associated with construction of marshes for the HCP are described in the Master Response on *Air Quality – Applicability of General Conformity Requirements to the Proposed Project or Alternatives* in Section 3.4. From this response, the PM10 emissions from construction equipment are estimated to not exceed 1 ton/year, and fugitive dust emissions would be negligible because the area where the HCP marshes would be constructed is very wet. No operations emissions of PM10 are expected.

With the implementation of the Salton Sea Habitat Conservation Strategy, Salton Sea shoreline exposure caused by the Proposed Project would not begin until some time after the year 2035. As discussed in detail in the Master Response on *Air Quality – Salton Sea Air Quality Monitoring and Mitigation Plan* in Section 3.9, no reasonable quantitative estimate of PM10 emissions from exposed shoreline can be made. However, the Monitoring and Mitigation Plan described in the Master Response is designed to mitigate PM10 emissions from the exposed seabed.

Table 3.12-1 shows the timing of the various PM10 emission sources in relation to each other.

TABLE 3.12-1
Timing of PM10 Emission Source

PM10 Source	Before 2035	After 2035
Salton Sea Exposed Shoreline	No	Yes
HCP Managed Marsh Construction	Yes	No
Fallowing	Yes	Yes
Construction for Conservation Measures	Yes	Yes

As discussed above, PM10 emissions associated with construction of conservation measures and marshes for the HCP are much lower than the *de minimus* threshold of 100 tons/year. PM10 emissions from fallowing with implementation of BMPs would be expected to be less than the emissions from fields in active agriculture. Before 2035, PM10 emissions impacts would therefore be less than significant.

After 2035, as Salton Sea shoreline begins to be exposed as a result of the Proposed Project, the Monitoring and Mitigation Plan would be implemented. The *Air Quality – Salton Sea Air Quality Monitoring and Mitigation Plan* states that the proposed mitigation is potentially sufficient to avoid or suppress PM10 emissions to less than significant levels. However, because of uncertainty in the magnitude of the emissions and the effectiveness of the

Return to Contents

mitigation, the conservative conclusion that PM10 impacts resulting from exposed Salton Sea shoreline are potentially significant and unmitigable has been retained in this Final EIR/EIS. Therefore, using the same rationale, the aggregate emissions of shoreline exposure, plus construction for conservation, plus fallowing would also be potentially significant and unmitigable. However, because the impacts from construction for conservation and fallowing are relatively small, the aggregate impacts including shoreline exposure are not expected to be substantially different from shoreline exposure alone.

3.12.3 Ozone

Ozone impacts associated with the Proposed Project would result from emissions of ozone precursors (reactive organic compounds [ROC] and nitrogen oxides [No_x]) by equipment used for construction of conservation measures and marshes for the HCP. No increase in ozone precursor emissions would be associated with fallowing or with the exposed Salton Sea shoreline.

Ozone precursor emissions for construction of on-farm measures to conserve the estimated maximum annual amount of 20 KAFY of water were estimated in Table 3.7-12 of the Draft EIR/EIS at between 1.1 and 9.7 tons per year of ROC and between 3.9 and 76.8 tons per year of NO_x, depending on which on-farm measures were used. Ozone precursor emissions for construction of water-delivery-system measures to conserve 20 KAFY annually were estimated in Table 3.7-13 of the Draft EIR/EIS and the accompanying text at 6.4 tons per year of ROC and 77.6 tons per year of NO_x, at the highest. These emissions estimates cannot be added together for the purposes of assessing the impacts of construction measures for conservation because each reflects the conservation of the entire estimated maximum annual ramp-up amount of 20 KAFY. As noted in the Draft EIR/EIS, there is no applicable significance criterion in the Imperial Valley (where all of the construction measures would take place); however, we applied the general conformity *de minimus* thresholds of 100 tons per year each of ROC and NO_x. Construction of the on-farm measures alone, the water-delivery-system measures alone, or any mix of these measures for purposes of conserving the estimated maximum annual amount of 20 KAFY would result in ozone precursor emissions no higher than the highest-emitting individual measure (9.7 tons per year ROC and 77.6 tons per year NO_x), which are below the significance thresholds for ROC and NO_x. As discussed in the Draft EIR/EIS, construction–related exhaust emissions from employee commute vehicles would be within the context of normal farm and water-system activities and would be temporary and localized. Operation and maintenance of the on-farm and/or water-delivery-system measures would be intermittent and within the range of normal activities for the area and would not result in any significant additional ozone precursor emissions.

Return to Contents

3.13 Master Response on Health Effects Associated with Dust Emissions

3.13.1 Introduction

Commenters requested additional evaluation of the potential health effects associated with air quality impacts, in particular dust and PM10 emissions, from the Proposed Project and Alternatives.

It is acknowledged that increases in airborne dust would result in related increases in dust constituents such as PM10 (particulate matter with a diameter of less than 10 micrometers) and would also have the potential to increase associated health effects.

This master response discusses the potential for incremental health effects from PM10 exposure associated with the Proposed Project from two different perspectives. First, health effects are assessed that are related to the *size* of PM10 – that is, the ability of particles to penetrate the respiratory system and cause adverse health effects because of their small size. And second, health effects are assessed that are related to the *composition* of PM10 – that is, the possibility that compounds known to be toxic to humans or other living organisms could be present in the dust particles and could be absorbed into the body through inhalation, dermal contact, or ingestion.

3.13.2 Health Effects from PM10 Particle Size

According to the U.S. Environmental Protection Agency (US EPA), PM10-sized particles can originate from sources such as windblown dust and can accumulate in the respiratory system and aggravate respiratory conditions, including asthma. Children, the elderly, and persons with pre-existing cardiopulmonary disease are considered to be the most sensitive to PM10 exposure (US EPA 2002). Therefore, ambient air quality standards have been developed for PM10 by the US EPA. These standards are established to protect human health and welfare.

As mentioned in the Draft EIR/EIS, the US EPA recently promulgated new national ambient air quality standards for fine particles (PM2.5) because of their ability to deeply penetrate the respiratory system and cause acute health effects. The US EPA describes PM2.5 as originating from sources such as fuel combustion from motor vehicles, power generation, industrial facilities, and residential fireplaces and wood stoves (US EPA 1997). By contrast, coarse particles (PM10) are generally emitted from sources such as vehicles traveling on unpaved roads, materials handling, crushing and grinding operations, and windblown dust (US EPA 1997). Therefore, given the nature of the dust sources associated with the Proposed Project, PM2.5 is expected to make up only a relatively small fraction of the Project-generated particulate matter. As a result, the impacts described for PM10 in this Draft EIR/EIS would also apply for PM2.5 but to a much lesser extent.

The construction and fallowing associated with the Proposed Project and Alternatives would occur in the Imperial Irrigation District (IID) water service area, which is under the jurisdiction of the Imperial County Air Pollution Control District (ICAPCD). IID has and will continue to meet the requirements of ICAPCD Rule 800, Fugitive Dust Requirements

Return to Contents

for Control of Fine Particulate Matter (PM10). IID is committed to mitigation of dust impacts through implementation of Best Management Practices (BMPs) for fallowing and for construction of on-farm and system-based conservation measures. The EIR/EIS also prescribes a 4-Step monitoring and mitigation plan to minimize PM10 impacts associated with shoreline exposure (see the Master Response on *Air Quality – Salton Sea Air Monitoring and Mitigation Plan* in Section 3.9).

In addition, as noted in the Draft EIR/EIS, the ICAPCD has published a *State Implementation Plan for PM10 in the Imperial Valley* as a result of the area's designation as a federal moderate nonattainment area for PM10 (ICAPCD 1993). According to ICAPCD staff, this document is currently being updated. IID will coordinate with ICAPCD as it prepares the updated State Implementation Plan (SIP) to provide information on Project-related impacts and mitigation. The SIP will demonstrate ICAPCD's proposed control measures, methods, and schedule for attainment of the applicable ambient air quality standards for PM10.

The northern portion of the Salton Sea is within the South Coast Air Basin, and projects affecting that portion of the Sea would be subject to the SIP for this area (the Coachella Valley). With the implementation of the Salton Sea Habitat Conservation Strategy, shoreline at the Salton Sea would not begin to be exposed as a result of the Project until the year 2035. Consistency with the current SIP is not an issue, because no Project impacts are anticipated in this area for quite some time. The attainment status of the air basin in 2035 cannot be ascertained; however, if a SIP is required, IID will coordinate with South Coast Air Quality Management District to provide information on Project-related impacts and mitigation.

The combination of (a) BMPs for construction and fallowing, (b) dust mitigation for shoreline exposure, and (c) SIPs for region-wide emission reduction is potentially sufficient to avoid or suppress air quality impacts and PM10 emissions to less than significant levels. However, a level of uncertainty remains regarding whether air quality impacts associated with exposed shoreline can be mitigated to a less-than-significant level. Therefore, the conservative conclusion that air quality impacts, which include possible health effects as described above, are potentially significant and unmitigable has been retained in this Final EIR/EIS.

3.13.3 Health Effects from PM10 Particle Composition

Although the recommended mitigation would minimize Project-generated impacts on ambient PM10 levels, it is possible that newly exposed seabed could contain levels of toxic compounds that are higher than the natural background levels found in soils of the western U.S. These compounds would be present in windblown dust (or PM10) generated from the exposed seabed. Exposure could occur through inhalation, dermal contact, or ingestion. Health effects could occur if the Project creates an incremental increase in airborne toxic contaminants relative to Baseline conditions.

In 1999, Levine-Fricke conducted a comprehensive study to evaluate sediments underlying the Salton Sea, collecting sediment samples at 73 locations in the Salton Sea and its three main tributaries (Levine-Fricke 1999). The study found concentrations of the following substances in the seabed sediment at levels that exceeded maximum baseline concentrations for soils in the western United States:

- Cadmium
- Copper
- Molybdenum
- Nickel
- Zinc
- Selenium

A separate study by the U.S. Geological Survey and Bureau of Reclamation (Salton Sea Symposium III 2000) found that the highest selenium concentrations in sediment are in the deepest parts of the Sea, which would remain submerged under the Proposed Project.

The Levine-Fricke study also found that organic chemicals commonly used in agriculture in previous years were *not* detected at elevated concentrations in the sediment. These chemicals include DDT, many semivolatile organic compounds, chlorinated pesticides and PCBs, organophosphate and nitrogen pesticides, and chlorinated herbicides.

Another potential chemical of concern is arsenic because the background level of arsenic in some western U.S. soils already exceeds US EPA's Preliminary Remediation Goal (PRG) for arsenic in residential soil. (The PRGs combine current US EPA toxicity values with "standard" exposure factors to estimate contaminant concentrations in environmental media; these factors are considered protective of humans, including sensitive groups, over a lifetime). However, the Levine-Fricke study did not find elevated levels of arsenic in the Salton Sea sediment relative to the maximum baseline concentration for soils in the western U.S.

Other more limited studies have collected and analyzed Salton Sea sediment samples. These sampling efforts were mostly targeted at specific locations where localized problems were expected to exist. Specific examples include offshore of the U.S. Navy's Salton Sea Test Base, where non-explosive test ordnance has been dropped into the Sea, and the outlets of major tributaries such as the Alamo and New Rivers. At these locations, elevated concentrations of specific organic and inorganic constituents associated with specific activities or land uses in these areas have been found.

Under the Proposed Project, up to 16,000 acres of shoreline would be gradually exposed beginning in the year 2035. At this time, sufficient data do not exist to predict the amount of PM10 emissions from the exposed shoreline, nor do enough data exist to pinpoint the locations and extent of elevated metals concentrations in the exposed shoreline sediment. Therefore, a meaningful health risk assessment is not possible at this time. However, because the potential does exist for incremental health risks under the Proposed Project, the monitoring and mitigation plan for the Proposed Project includes the following steps to minimize the potential for health risks:

- Collect additional sediment samples
- Monitor emissions from exposed shoreline

Return to Contents

- Monitor airborne concentrations
- Assess potential health risks if necessary
- Apply mitigation if necessary

These five steps are potentially sufficient to suppress the potential for Project-generated health effects from toxic compounds in PM10 to less-than-significant levels. However, a level of uncertainty remains regarding whether air quality impacts and related health effects associated with exposed shoreline can be mitigated to a less-than-significant level. Therefore, the conservative conclusion that air quality impacts, which include possible health effects as described above, are potentially significant and unmitigable has been retained in this Final EIR/EIS.

This sampling, monitoring, and mitigation plan is discussed in greater detail in the Master Response on *Air Quality – Salton Sea Air Quality Monitoring and Mitigation Plan* in Section 3.9 of this Final EIR/EIS. The results of the Levine-Fricke study are discussed in greater detail in the response to Comment F6-24 in Section 5 of this document.

3.14 Master Response on Applicability of General Conformity Requirements to the Proposed Project or Alternatives

3.14.1 Introduction

Several comments ask for clarification of the applicability of general conformity requirements to the Proposed Project and alternatives. In lieu of other quantitative air quality criteria (no air quality permit is required and Imperial County Air Pollution Control District does not have California Environmental Quality Act (CEQA) criteria or guidelines), general conformity *de minimis* levels were adopted by the lead agency as significance criteria to determine the potential for significance of project impacts in the Imperial Irrigation District (IID) water service area. However, as described below, the requirements of the General Conformity Rule were determined to be not applicable to the Proposed Project or alternatives, with one exception. The exception is the Habitat Conservation Plan (HCP), which involves the federal action of issuance of a permit by the U.S. Fish and Wildlife Service.

3.14.2 General Conformity Applicability Determination

The Clean Air Act at 42 USC 7506(c) prohibits federal agencies from approving or supporting any activity that does not conform to the applicable State Implementation Plan for attainment of national ambient air quality standards. This provision is implemented through regulations promulgated by U.S. Environmental Protection Agency, which are found at 40 CFR 51.850 et seq., also known as the General Conformity Rule.

The following discussion documents the finding that the requirements of the General Conformity Rule do not apply to the remainder of the Proposed Project or Alternatives (other than the HCP).

40 CFR 51.853(b) provides: "A conformity determination is required for each pollutant where the total of direct and indirect emissions in a nonattainment or maintenance area caused by a Federal action would equal or exceed any of the rates" provided in a chart in that subparagraph. The emission thresholds that trigger requirements of the conformity rule for federal actions emitting nonattainment or maintenance pollutants, or their precursors, are called *de minimis* levels. For example, the *de minimis* threshold for PM10 (particulate matter with a diameter of less than 10 micrometers) in a serious nonattainment area is 70 tons per year, and in a moderate nonattainment area is 100 tons per year.

"Direct Emissions means those emissions of a criteria pollutant or its precursors that are caused or initiated by the Federal action and occur at the same time and place as the action" (40 CFR 51.852).

"Indirect Emissions means those emissions of a criteria pollutant or its precursors that: (1) are caused by the Federal action, but may occur later in time and/or may be further removed in distance from the action itself but are still reasonably foreseeable; and (2) the Federal agency can practicably control and will maintain control over due to a continuing program responsibility of the Federal agency" (40 CFR 51.582).

Return to Contents

On the basis of these definitions, the General Conformity Rule is not applicable to the Proposed Project or Alternatives, with the exception of the HCP, and a conformity determination is not required. IID, not a federal agency, is the responsible agency for selection of the conservation measures to support the Project. As a result:

- No federal agency action causes or initiates the direct or indirect emissions from the Proposed Project or Alternatives.
- No federal agency can practicably control the Project emissions.
- No federal agency will maintain control over the Project emissions because of a continuing responsibility of the agency.

3.14.3 Applicability of General Conformity Requirements to the HCP

The HCP will involve the federal action of issuance of a permit by the U.S. Fish and Wildlife Service, and as a result is subject to General Conformity requirements. The General Conformity Rule requires quantification of construction and operation emissions for the federal action, comparison of these emission levels to baseline emission levels, and if the difference exceeds the General Conformity *de minimis* levels for the peak year or any milestone year for attainment of standards, additional General Conformity determination is required.

To estimate emissions for construction of the HCP, lists of the types of equipment required and estimates of the length of time the equipment would need to operate were developed based on experience with construction of similar facilities at other locations. Emission factors from the South Coast Air Quality Management District (SCAQMD) CEQA *Air Quality Handbook* were used to estimate exhaust emissions associated with operation of the construction equipment (SCAQMD 1993).

Creation of the managed marsh habitat will be phased over 15 years, with at least one-third of the total amount created within 5 years, two-thirds within 10 years, and the total amount created within 15 years. One pond per year will be constructed with pond size between 40 acres and 160 acres. For construction of a 160-acre pond with a 2-foot high berm, emission estimates do not exceed 1 ton/pond, or 1 ton/year, for any nonattainment criteria pollutant or precursor, assuming a 2- to 4-week construction period. Negligible fugitive dust emissions are expected, as the soils in the area where the ponds will be constructed are very wet. No operation emissions are anticipated. Baseline emissions would be zero, so the emissions estimated for construction and operation of the HCP (the federal action) were directly compared to *de minimis* levels.

Emissions associated with the federal action are far below General Conformity *de minimis* levels, and are not regionally significant (that is, they do not represent 10 percent of the area emission inventory). On this basis, the federal action associated with the HCP is presumed to conform, and no further conformity determination is required.

3.15 Master Response on Consistency with the State Implementation Plan for PM10

Commenters requested additional discussion of the consistency of the Proposed Project and alternatives with the applicable State Implementation Plans (SIPs) for PM10 (particulate matter with a diameter of less than 10 micrometers).

The construction and fallowing associated with the Proposed Project and Alternatives would occur in the Imperial Irrigation District (IID) water service area, which is under the jurisdiction of the Imperial County Air Pollution Control District (ICAPCD). As noted in the Draft Environmental Impact Report/Environmental Impact Statement, as a result of the area's designation as a federal moderate nonattainment area for PM10, the ICAPCD has published a *State Implementation Plan for PM10 in the Imperial Valley* (ICAPCD 1993). According to ICAPCD staff, this document is currently being updated (Romero 2001). IID will coordinate with ICAPCD as it prepares the updated SIP and the related ICAPCD Rules and Regulations, to provide information on Project-related impacts and mitigation. The SIP will demonstrate ICAPCD's proposed control measures, methods, and schedule for attainment of the applicable ambient air quality standards, and the ICAPCD Rules and Regulations will be revised to implement the required control measures. IID will comply with applicable requirements.

The northern portion of the Salton Sea is in the South Coast Air Basin and projects affecting this portion of the Sea would be subject to the SIP for this area (the Coachella Valley). With the implementation of the Salton Sea Habitat Conservation Strategy, shoreline at the Salton Sea would not begin to be exposed until some time after the year 2035. Consistency with the current SIP is not an issue, as no Project impacts are anticipated in this area until the shoreline recedes. The attainment status of the air basin in 2035 cannot be ascertained; however, if a SIP is required, IID will coordinate with South Coast Air Quality Management District to provide information on project-related impacts and mitigation. Again, IID will comply with applicable requirements.

Return to Contents

3.16 Master Response on Wind Conditions at the Salton Sea

3.16.1 Introduction

The Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) describes the wind patterns representative of the Salton Sea on pages 3.7-14-15. Wind roses are presented for two representative meteorological stations—California Irrigation Management Information System (CIMIS) Station 154 (located near the city of North Shore, on the northeast side of the Sea in Riverside County) and CIMIS Station 127 (in Salton City, near the middle portion of the western shoreline of the Salton Sea in Imperial County). The wind data are then used later in the Draft EIR/EIS to help assess the potential air quality impacts associated with the proposed project.

Several comments were received regarding the wind data in the Draft EIR/EIS; they are summarized as follows:

- Site descriptions of the meteorological stations should be incorporated into the document.
- The frequency of high wind speeds capable of generating dust emissions seems too low.
- The different anemometer heights of the meteorological stations make comparisons invalid.
- Niland is the most representative meteorological site for the area of concern.
- Wind gusts should be considered when predicting the potential for windblown dust.
- Wind speeds as low as 17 mph would potentially cause windblown dust, based on research at Owens Lake.

3.16.2 Discussion

The Salton Sea wind data are used for two primary purposes in the Draft EIR/EIS: first, to help determine whether the winds are strong enough to generate windblown dust emissions under the Proposed Project; and second, to help gain a perspective on the potential severity of windblown dust impacts. Based on this wind data, the Draft EIR/EIS concludes that (1) wind speeds occasionally reach levels that could generate windblown dust, thereby supporting our finding of a significant impact; and (2) high wind speeds occur much more frequently at Owens Lake than at the Salton Sea, thereby supporting our statement that the potential for frequent or severe dust events is much greater at Owens Lake than at the Salton Sea.

As pointed out in the comments, there are errors in the wind data presented in the Draft EIR/EIS. However, the two primary conclusions of the Draft EIR/EIS that are based on the wind data (which are summarized in the preceding paragraph) remain unchanged. These conclusions along with the corrected wind data are presented in the following discussion. The discussion focuses on responding to comments that would have a direct effect on the conclusions of the Draft EIR/EIS.

Potential for Windblown Dust Generation

Impact AQ-7 on pages 3.7-34 through 3.7-36 of the Draft EIR/EIS discusses the potential for windblown dust from exposed shoreline at the Salton Sea. Under the Proposed Project, about 16,000 acres of currently submerged bottom sediments or playa would become exposed by the year 2077.

The wind data presented in the Draft EIR/EIS for Stations 154 and 127 are incorrect. Therefore, additional meteorological data from Niland, California (east of the Salton Sea in Imperial County) were obtained from the Imperial County Air Pollution Control District (ICAPCD) for the years 2000 and 2001 (ICAPCD, 2002). As suggested by a commenter, Niland data are considered representative of the winds that could generate dust on the exposed shoreline of the Salton Sea.

Figures 3.16-1 and 3.16-2 on the following pages present annual wind roses for Niland for the years 2000 and 2001, respectively, at an anemometer height of 10 meters above ground. Tables 3.16-1 and 3.16-2 present the corresponding wind frequency tables for Niland. Although the meteorological data used to compile these figures and tables are missing a significant number of observations (26 percent missing in 2000 and 11 percent missing in 2001), they nevertheless give a good approximation of wind conditions at the Salton Sea.

Table 3.16-a summarizes high wind frequency data for the Salton Sea and Owens Lake. The wind frequency tables for Niland show that the average hourly wind speed exceeded 8.5 m/s (19 mph) about 4.4 percent of the time in 2000 and 3.2 percent of the time in 2001. The wind speed exceeded 11.0 m/s (25 mph) about 1.4 percent of the time in 2000 and 0.7 percent of the time in 2001. Although the precise wind speed needed to generate windblown dust at the Salton Sea is not known, research from Owens Lake suggests that wind speeds exceeding 17 mph may be sufficient to generate dust. Using this speed as a guide indicates that the potential does exist for windblown dust generation on the Salton Sea shoreline. Wind gusts could further increase the potential for short term bursts of dust emissions even when the average wind speeds are lower.

TABLE 3.16-a
Comparison of wind speed frequency at 10 m above the ground surface for Salton Sea and Owens Lake, Year 2000

Site	>8.5 m/s (19 mph) percentage	>11.0 m/s (25 mph) percentage
Niland (near Salton Sea)	4.4	1.4
Tower N3 (Owens Lake)	18.9	7.9

Severity of Dust Impacts

To gain a perspective on the potential severity of the impact of windblown dust, the Draft EIR/EIS compares conditions at Owens Lake, where extreme dust events have occurred, to conditions at the Salton Sea. The Draft EIR/EIS concludes that the potential for frequent or

Return to Contents

severe dust events is much greater at Owens Lake than at the Salton Sea, in part because of differences in wind conditions between the two areas.

Figure 3.16-3, and corresponding Table 3.16-3, show wind data from Owens Lake for the year 2000 (CH2M HILL, 2000a, 2000b, 2000c, and 2001). The data were measured from Tower N3, which was located in the southern portion of the dry lakebed in an area of frequent large dust storms. The anemometer height was 10 meters, equal to that at the Niland station.

The wind frequency table for Owens Lake shows that the average hourly wind speed exceeded 8.5 m/s (19 mph) about 18.9 percent of the time in 2000 (Table 3.16-a). The wind speed exceeded 11.0 m/s (25 mph) about 7.9 percent of the time in 2000. A comparison of these results for the Owens Lake station to those for the Niland station show that the Owens Lake station has a substantially greater frequency of higher wind speeds. Therefore, based on these data, the wind conditions at Owens Lake provide a much greater potential for frequent or severe dust events than at the Salton Sea.

Return to Contents

Insert Figure 3.16-1. Wind Rose for Niland, California – Year 2000

Return to Contents

Table 3-16.1. Wind Frequency Distribution for Niland, California – Year 2000

Station ID: 99999
Year: 2000
Date Range: Jan 1 - Dec 31
Time Range: Midnight - 11 PM
Anemometer Height: 10 meters

RUN ID: Niland, Year 2000

Frequency Distribution
(Normalized)

Speed (M / s)

Dir. (Deg)	0.50 - 2.00	2.00 - 3.50	3.50 - 5.50	5.50 - 8.50	8.50 - 11.00	> 11.00	Total
0.0	0.008025	0.006327	0.004784	0.002932	0.000309	0.000926	0.023302
22.5	0.006327	0.006173	0.001389	0.001698	0.000000	0.000000	0.015586
45.0	0.009877	0.011574	0.002778	0.000463	0.000000	0.000000	0.024691
67.5	0.010340	0.013272	0.003086	0.000154	0.000000	0.000000	0.026852
90.0	0.015278	0.031636	0.010957	0.000154	0.000000	0.000000	0.058025
112.5	0.018364	0.064660	0.045833	0.002006	0.000154	0.000000	0.131019
135.0	0.022994	0.056327	0.050000	0.009568	0.001080	0.000309	0.140278
157.5	0.023765	0.050463	0.029938	0.003858	0.000154	0.000000	0.108179
180.0	0.019599	0.036883	0.008488	0.000617	0.000000	0.000000	0.065586
202.5	0.012037	0.017747	0.003549	0.000463	0.000000	0.000000	0.033796
225.0	0.016975	0.012346	0.002623	0.002778	0.000772	0.000000	0.035494
247.5	0.012346	0.031173	0.016667	0.016358	0.006790	0.002315	0.085648
270.0	0.007870	0.031481	0.037963	0.036883	0.017593	0.010648	0.142438
292.5	0.007716	0.020525	0.015741	0.006944	0.001080	0.000000	0.052006
315.0	0.007253	0.016975	0.006019	0.001389	0.000154	0.000000	0.031790
337.5	0.008642	0.004475	0.002623	0.003241	0.001698	0.000309	0.020988
ALL	0.207407	0.412037	0.242438	0.089506	0.029784	0.014506	

Frequency Calm Winds : 0.43%
Average Wind Speed : 3.36 m/s
No. of Observations : 6,480 hours (74%)
Source Imperial County APCD, 2002.

Return to Contents

Insert Figure 3.16-2. Wind Rose for Niland, California – Year 2001

Return to Contents

Table 3.16-2. Wind Frequency Distribution for Niland, California – Year 2001

Station ID: 99999
Year: 2001
Date Range: Jan 1 - Dec 31
Time Range: Midnight - 11 PM
Anemometer Height: 10 meters

RUN ID: Niland, Year 2001

Frequency Distribution
(Normalized)

Speed (M / s)

	0.50 - 2.00	2.00 - 3.50	3.50 - 5.50	5.50 - 8.50	8.50 - 11.00	> 11.00	Total
Dir. (Deg)							
0.0	0.007692	0.006410	0.002564	0.002308	0.000897	0.000000	0.019872
22.5	0.007179	0.008205	0.001538	0.000769	0.000128	0.000000	0.017821
45.0	0.011410	0.016538	0.000385	0.000256	0.000000	0.000000	0.028590
67.5	0.012692	0.023205	0.001667	0.000128	0.000000	0.000000	0.037692
90.0	0.020897	0.054231	0.010128	0.000385	0.000000	0.000000	0.085641
112.5	0.024872	0.076538	0.047949	0.002564	0.000000	0.000128	0.152051
135.0	0.034487	0.089615	0.034872	0.006410	0.000769	0.000128	0.166282
157.5	0.021795	0.044103	0.019487	0.002821	0.000513	0.000000	0.088718
180.0	0.013846	0.018718	0.004359	0.000769	0.000000	0.000000	0.037692
202.5	0.011410	0.012179	0.003846	0.000641	0.000000	0.000000	0.028077
225.0	0.010897	0.012821	0.004744	0.001667	0.000000	0.000385	0.030513
247.5	0.011026	0.023590	0.015000	0.016667	0.012692	0.003077	0.082051
270.0	0.014359	0.041410	0.035385	0.026026	0.009615	0.002949	0.129744
292.5	0.010000	0.019231	0.011026	0.002308	0.000000	0.000000	0.042564
315.0	0.009487	0.013590	0.004231	0.000769	0.000000	0.000000	0.028077
337.5	0.007821	0.007308	0.002949	0.002949	0.000385	0.000000	0.021410
ALL	0.229872	0.467692	0.200128	0.067436	0.025000	0.006667	

Frequency Calm Winds : 0.32%
Average Wind Speed : 3.05 m/s
No. of Observations : 7,800 hours (89%)
Source Imperial County APCD, 2002.

Return to Contents

Insert Figure 3.16-3. Wind Rose for Owens Lake, California – Year 2000

Return to Contents

Table 3-16.3. Wind Frequency Distribution for Owens Lake, California – Year 2000

Station ID: 99999 RUN ID: Owens Lake, Year 2000
Year: 2000
Date Range: Jan 1 - Dec 31
Time Range: Midnight - 11 PM
Anemometer Height: 10 meters

Frequency Distribution
(Normalized)

Speed (M / s)

Dir. (Deg)	0.50 - 2.00	2.00 - 3.50	3.50 - 5.50	5.50 - 8.50	8.50 - 11.00	> 11.00	Total
0.0	0.025588	0.018554	0.006670	0.008732	0.012491	0.017948	0.089983
22.5	0.025346	0.015401	0.005457	0.006912	0.008368	0.004730	0.066214
45.0	0.023041	0.015401	0.006549	0.003153	0.001455	0.000364	0.049964
67.5	0.018676	0.012248	0.007155	0.001091	0.000000	0.000000	0.039171
90.0	0.012976	0.008368	0.002547	0.000121	0.000000	0.000000	0.024012
112.5	0.012006	0.006427	0.001213	0.000364	0.000243	0.000000	0.020252
135.0	0.014310	0.007155	0.003517	0.001577	0.000121	0.000121	0.026801
157.5	0.013461	0.012127	0.009823	0.018554	0.014310	0.014795	0.083071
180.0	0.025467	0.028256	0.032622	0.053844	0.040262	0.027286	0.207737
202.5	0.030075	0.040990	0.031530	0.039049	0.018191	0.004608	0.164443
225.0	0.021707	0.022920	0.013461	0.009459	0.004366	0.001213	0.073126
247.5	0.012491	0.011399	0.003032	0.005093	0.004851	0.001334	0.038200
270.0	0.009580	0.006912	0.002183	0.002425	0.001334	0.000121	0.022556
292.5	0.010308	0.003881	0.001577	0.000970	0.000364	0.000243	0.017342
315.0	0.012370	0.008853	0.002668	0.000728	0.000243	0.000121	0.024982
337.5	0.018554	0.012855	0.007034	0.003759	0.002668	0.006427	0.051298
ALL	0.285957	0.231749	0.137036	0.155833	0.109265	0.079311	

Frequency Calm Winds : 0.08%
Average Wind Speed : 4.82 m/s
No. of Observations : 8,239 hours (94%)
Source: CH2M HILL, 2000a, 2000b, 2000c, 2001.

Return to Contents Continue >>

APPENDIX B

Project Descriptions for Dust Control Measures

1 VEGETATED SWALES

Habitat swales are vegetated, earthen channels constructed by raising pairs of parallel berms approximately 60 feet apart, with adjacent pairs of berms spaced 200 to 500 feet from one another (Figure 1). Habitat swales operate on the principle of interrupting wind fetch (the distance that wind has traveled over an unobstructed area) on the playa, leading to reduced wind velocity at the soil surface and suppression of sand flux and dust emissions in downwind areas. After vegetation is established, swales capture sand and immobilize it beneath the plant community's canopy. A combination of periodic surface wetting, natural crusting, regional reduction in sand motion, and reduced surface wind velocities due to sheltering of areas downwind of the swales result in dust control over the entire swale and inter-swale area.

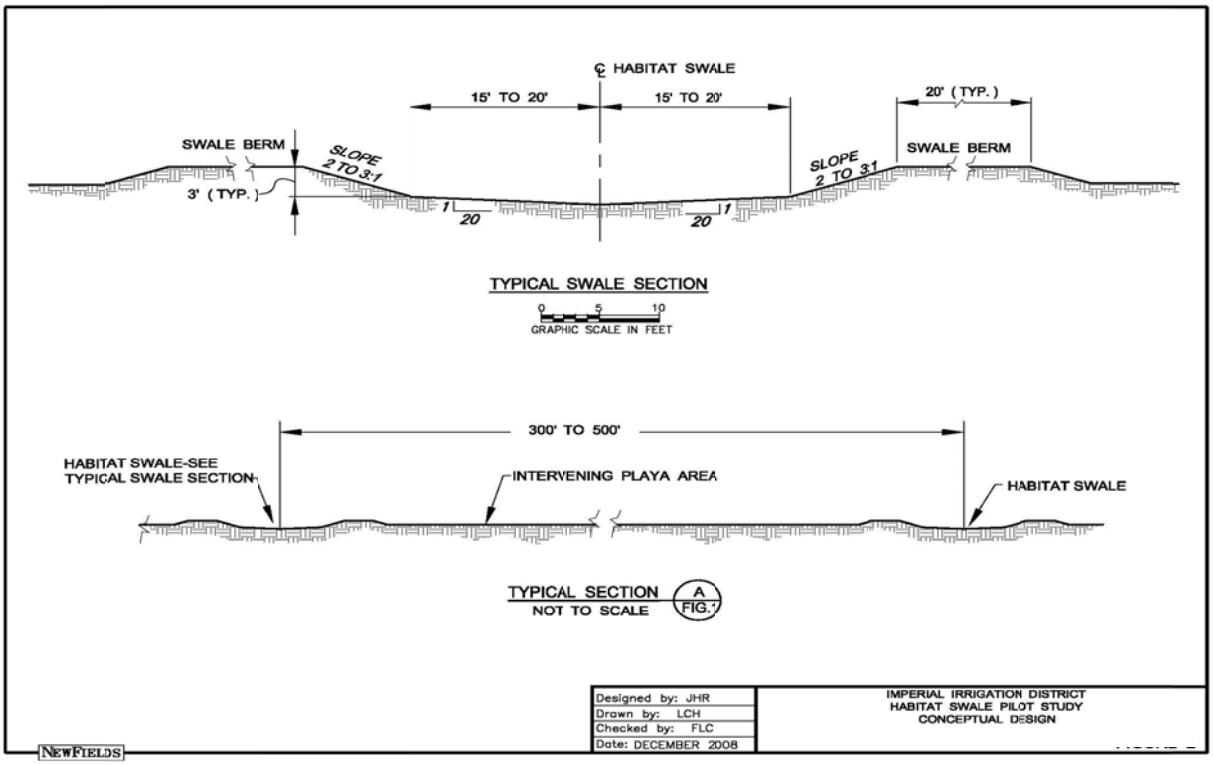


Figure 1.
Habitat Swale Cross-Section Conceptual Design

1.1 CONFIGURATION

As described above, swales will consist of parallel berms approximately 60 feet apart. The swales will be designed with a 30- to 40-ft bottom width and four feet total depth. The top width of each earthen side berm will be approximately 20 feet and the top of the berm, standing approximately two feet above existing grade. The configuration of the swales will be refined during design based on site-specific investigations (i.e., topography, surface erosion potential, primary wind direction) and desired dust control efficiency. The swales and berms will be constructed from local, on-site materials and import/borrow soil or disposal of excess fill will be minimized.

Channel lengths and profile gradients will depend on site topography, but in general will be designed so that pulsed irrigation flows can be sustained along the full length of the swale without requiring excessively large and erosive flows at the head end. Given the relatively level topography of the sea floor (and therefore exposed Playa in the future), longitudinal profile gradients are expected to be low. The swale cross-section will be sloped toward the center, where there will be a low-flow channel to provide drainage. Swale tailwater will be recycled for other uses or will flow to the Sea. Analysis of soil wind and water erosion potential will be conducted during the design phase and will help to determine adequate design criteria.

To achieve regional reductions in sand motion, and thus dust emissions, a network of Swales (as described above) will be constructed at intervals of 200 to 500 feet, with traffic being avoided to the maximum extent feasible on the intervening Playa. A combination of natural crusting, regional reduction in sand motion, and reduced surface wind velocities due to sheltering of areas downwind of the swales result in dust control over the entire swale and inter-swale area. Final swale spacing will be determined during the design phase as a function of topography, surface erosion potential, primary wind direction, and desired dust control efficiency targets.

1.2 VEGETATION

Swale cross-sections would mimic natural channels, in which pulsed flow would spread laterally from the cross-section's low point. This favors development of a broad swath of vegetation, ranging from hydrophytic near the centerline to xeric and halophytic along the margins. Plant species will be selected based on suitability for range of the hydrologic regime and saline soil conditions of the site and location along the length of the swale (i.e., wetter conditions on the swale bottom and upstream; drier, more saline conditions on the swale margins and downstream). In general, species will include sedges, rushes, and similar wetland vegetation located in the bottom and head end of the swale; grasses and other herbaceous species on both sides and downstream reaches of the swale; and shrub species up to the boundaries of anticipated swale seepage. Rhizomatous species should predominate in the swale because they increase the likelihood of re-establishment during long-term maintenance/management without the need for extensive re-planting. Vegetative cover within the swale will be established quickly, with gradual succession to more diverse native species. Stands of vegetation will provide ecological benefits (i.e., microhabitats) similar in character to desert wetlands and xeric native desert vegetation. This vegetation approach tends to discourage (but does not eliminate) establishment of invasive species, such as Tamarisk.

1.3 OPERATION

The swales will be irrigated by pulse irrigation to shorten water's residence/travel time and therefore minimize stagnant water in the swales. During establishment, drain water (inflows to the Sea) would be pulsed through each swale bi-weekly. As vegetation is established, inflows will likely be reduced to a frequency of every few weeks, or longer, as needed to maintain vegetative growth. After establishment, water would be pulsed through each swale five to 12 times annually. The timing and duration of the pulses will be a function of inflow availability, soil conditions, and plant irrigation needs. Irrigation frequency and duration will be evaluated during design and the pilot study. Water flow into each swale will be controlled with slide gates. Open-channel flow will be measured near each gate structure to measure flows entering each swale. The number of swales that can be irrigated simultaneously will be determined by balancing the required flow rate with the available inflow supply. Details regarding flows into the swales such as amount of flow, cycle times, cutoff time, and other parameters will be developed during the final design phase.

Tractor and backhoe/excavation (mainly tracked) equipment will be used during construction and operation of the swales and irrigation systems; lighter, wheeled equipment may be employed for planting/maintenance of vegetation. Intermittent tractor and/or backhoe access will be required during the maintenance activities including, but not limited to cultivation and weed control. Intermediate access between periods of maintenance will likely be by small utility four-track vehicles.

2 PLANT COMMUNITY ENHANCEMENT

The central concept of this DCM is managed enhancement of existing vegetation onto new playa areas. As the Sea recedes, plant communities along the shoreline may naturally expand, especially where freshwater inflows create fresher, shallow groundwater and/or leach salts from newly exposed playa and create more favorable growing conditions (Figure 1). Species would likely include a mix of sedges, rushes, and similar wetland vegetation located near the wet shoreline; grasses and other herbaceous species near the middle of the landscape; and shrub species in drier areas near and above the historic shoreline. These plant communities can achieve plant cover densities that postpone or eliminate the need more resource intensive DCMs.

Figure 2.
Existing Playa Vegetation would be Expanded and Enhanced under the Plant Community Enhancement Dust Control Measure.

2.1 CONFIGURATION/VEGETATION

The central concept of the vegetation enhancement DCM is enhancement of existing vegetation that can spread onto new playa as the Sea recedes. Configuration of the DCM, selection of vegetative species, and irrigation design will be determined by the existing vegetation and site-specific (landscape position, hydrologic, and salinity) conditions. Species would likely be a mix of sedges, rushes, and similar wetland vegetation located near the wet shoreline; grasses and other herbaceous species near the middle of the landscape; and shrub species in drier areas near and above the historic shoreline. Hydrophytic vegetation would likely line watercourses as they cross the playa. As the Sea continues to recede, it is anticipated that the species mix (with the right management) will migrate down the Playa with the shoreline. Over time, needed vegetation densities may no longer be sustainable in some areas without additional inputs, such as irrigation and/or artificial drainage. At this point, based on monitoring data, sensitive areas would likely be transitioned to another DCM as needed to sustain dust mitigation performance.

2.2 OPERATION

Any combination of flood, pulse, or drip irrigation may be used to meet plant water demand. When needed, fertilizer will be added to irrigation water to stimulate and support vegetative cover levels needed to meet the dust control efficiency requirements. The applied nutrients may include, but are

not limited to: nitrogen, phosphorus, and potassium fertilizers, as well as small amounts of micronutrients. Soil and plant tissue will be monitored to determine fertilizer application rates based on plant nutrient needs, and to avoid excess application that might induce off-site migration of applied nutrients.

Tractor and tillage (tracked and/or wheeled) equipment may be used during construction and operation of the DCM, and for planting/maintenance of vegetation. Intermittent tractor and/or backhoe access will be required during the maintenance activities including, but not limited to cultivation and weed control. Intermediate access between periods of maintenance will likely be with personal and small utility four-track vehicles.

3 MOAT AND ROW

Moat and row consists of an array of earthen berms (rows) flanked on either side by ditches (moats). Figure 3 is a conceptual cross-section of this type of DCM. Spacing can vary depending on the surface type, the control effectiveness required, and the intensity of adjacent sand sources. Moats control dust by capturing moving soil particles and rows physically shelter the downwind playa by lifting wind velocity profiles, thereby reducing velocity at the soil surface. Moats and rows are constructed to run perpendicular to primary wind vectors. Dust control effectiveness can be enhanced by reducing the distance between rows, increasing the height of the rows, vegetating rows, or using gravel, sand fences, or similar methods to enhance sand capture in between rows.

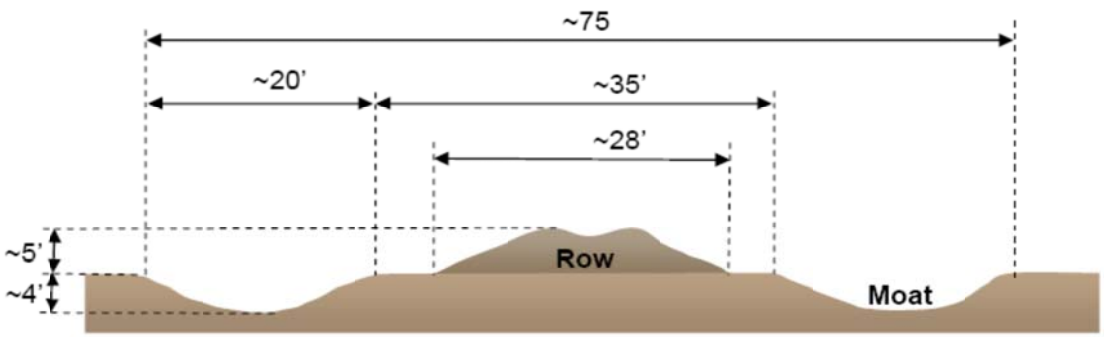


Figure 3.
Conceptual Cross-Section of a Moat and Row Dust Control Measure

3.1 CONFIGURATION

Moats and rows are generally parallel to one another and spaced at variable intervals so that fetch between rows is not conducive to unacceptable levels of dust emission. Spacing can vary depending on the surface type, the control effectiveness required, or exposure to and capture of sand coming from offsite. Previous experience indicates that MR spacing will generally vary from 250 to 1,000 feet. Spacing of MR elements is interdependent with cross-section design criteria (e.g., taller elements that shelter longer downwind fetches can be more widely spaced).

3.2 OPERATION

During operation the MR array may need to be altered, improved, or maintained to achieve the required level of dust control. The extent, nature, and timing of these operational activities will be determined by monitoring results. Operational activities may include the following:

1. Construction of additional, intermediate moats and rows;
2. Repair of existing moats and rows, mainly through excavation of adjacent playa to form new moats, and burial of sand-filled MR margins with spoil, effectively fattening the original row in the repaired section.
3. Addition of sand fences to increase row height or to enclose the site along an unprotected margin,
4. Watering of moats or area between MR elements
5. Irrigation and planting of vegetation on rows or area between MR elements
6. Gravel armoring along the tops of rows to prevent erosion of the row

4 WATER-EFFICIENT VEGETATION

In this DCM, control is achieved by vegetating playa surfaces with salt- and drought-tolerant species that stabilize and suppress soil and sand movement beneath their canopies. Water-efficient vegetation pilot projects will be conducted to assess the effect of different levels of infrastructure, vegetation density, and vegetation uniformity on dust control efficiency, as well as water use and cost efficiency.

4.1 CONFIGURATION AND VEGETATION

Vegetation will be seeded or planted on raised beds one to three feet high and spaced five to 15 feet apart (center-to-center). Previous work on dry, saline playas suggests that the most desirable species for dust control are salt- and drought-tolerant, may be rhizomatous (growth by the spread of underground roots and shoots), and must provide adequate cover even during dormant periods. Saltgrass (*Distichlis spicata*) is a common species, but native shrubs, such as salt bushes (*Atriplex* spp.), greasewood (*Sarcobatus vermiculatus*), and seepweed (*Sueada moquinii*) may also be used alone or in combination with saltgrass. A mix of native species will provide the needed diversity to maintain adequate cover levels, reduce water demand, and suppress invasive species. Species diversity will also allow better cover within the vegetated areas because different species can occupy different microhabitats. This vegetation approach tends to exclude (but does not eliminate) invasive species, such as Tamarisk.

4.2 OPERATION

Flood, pulse, or drip irrigation will be used to meet plant water demand needs. When needed, fertilizer will be added to irrigation water to stimulate and support adequate vegetative growth and cover levels needed for dust control. The applied nutrients may include, but are not limited to: nitrogen, phosphorus, and potassium fertilizers, as well as small amounts of micronutrients. Soil and plant tissue will be monitored to determine fertilizer application rates based on plant nutrient needs, and to avoid excess application that might induce off-site migration of applied nutrients.

Where soil or groundwater conditions so dictate, drainage improvements will be made to reduce the influence of saline shallow groundwater on the plant root zone. Drainage improvements may include: augmentation of natural drainage by increasing the size (height and width) of the raised beds; excavation of drainage interceptor canals; and/or installation of a subsurface drainage network to

maintain an adequate depth of leached and unsaturated soil for plant rooting. Drains will consist of perforated plastic pipes, installed in covered trenches, placed between four and 10 feet below ground surface. The drains will be enveloped by coarse material (fine gravel or sand), and wrapped in a fabric liner to prevent sediment movement into the perforated pipe, while still allowing for water collection. Final site conditions, design needs, operational inputs, vegetative cover levels, and control efficiency requirements will determine the ultimate mix of infrastructure to achieve dust control.

Tractor and backhoe/excavation (tracked and/or wheeled) equipment will be used during construction and operation of the DCM and irrigation systems, and for planting/maintenance of vegetation. Intermittent tractor and/or backhoe access will be required during the maintenance activities including, but not limited to cultivation and weed control. Intermediate access between periods of maintenance will likely be with personal and small utility four-track vehicles.

5 TILLAGE

This DCM consists of roughening the land surface, typically with conventional tillage implements, depending on soil conditions and the target roughness. The roughened surface is less susceptible to erosion due to the lifting of the boundary layer of moving air further above the land surface, and due to the capture of mobile sand within the furrows created by the roughened surface. To maintain control over time, tillage may need to be repeated periodically as the land surface may be smoothed by erosion, sedimentation, and settling.

5.1 CONFIGURATION

Where less than 100% of the land surface can be tilled to achieve target levels of control, tillage can be done in blocks or strips that facilitate tillage by minimizing turning, and that avoid traffic on untilled areas to the maximum extent practicable. The long axis of tilled blocks should be oriented perpendicular to the principal wind vectors. Long, uninterrupted fetches across untilled areas should be avoided. Tillage configurations are currently being installed and monitored at Owens Lake. Results should serve as a useful guide when designing pilot studies for the Salton Sea.

For heavier (more clayey) soils, relatively deep cuts will require substantial draft power and have a relatively narrow working width (per pass), whether soil is turned with a dozer blade or plow. However, resulting roughness is substantial and should not require as frequent re-tillage as lighter soils.

On lighter (sandier) soils (which are rare on the Playa), tillage may be more superficial and be done with lighter, wider equipment (e.g., a sandfighter). It should therefore proceed more rapidly, but will likely have to be maintained at a more frequent interval.

5.2 OPERATION

Tillage has some significant cost and operational advantages over other dust control approaches. Relative to other control measures, it can be designed and installed at fairly low cost with unspecialized equipment. However, maintenance costs may be significant, depending on the average return time for tillage and the types of implements used. One of the great strengths of tillage, where applicable, is its potential for flexible, rapid, and relatively low-cost deployment.

The main challenges of tillage are the need to adapt the approach to soil conditions and required level of control, and the potentially frequent and maintenance activity. It could also be that, as soils dry on

the playa, the effectiveness of tillage may decline, and the cost of adequate control increase. Over time, tillage could also become a significant dust source, both due to the substantial dust emissions during the tillage operation, and if the tilled surfaces are no longer sufficiently moist and stable to provide to confer control. On the other end of the spectrum, when soils are too moist, it is very difficult to achieve the draft power needed to pull or push equipment, and workability of the soil, functioning of equipment, and resulting tilled surface conditions can all be compromised.

APPENDIX C

Potentially Applicable Mitigation Measures from the Transfer Project Final EIR/EIS

Appendix C. Applicable Mitigation Measures from the Water Transfer EIR/EIS

Implementation of the Air Quality Program will include installation of air quality monitoring equipment and ground-disturbing activities associated with construction of pilot projects and longer-term dust control measures. All appropriate mitigation measures identified in the Water Transfer Project EIR/EIS will be implemented during implementation of the Air Quality Program. The Water Transfer Project EIR used an alpha-numeric system to identify impacts and mitigation measures. The same alpha-numeric system is used in this section. Table C-1 identifies mitigation measures from the Water Transfer EIR/EIS that will be implemented, as appropriate, throughout implementation of the Air Quality Program.

TABLE C-1. SUMMARY OF APPLICABLE MITIGATON MEASURES FROM THE WATER TRANSFER EIR/EIS

Resource Area	Potential Impact	Mitigation Measure
Hydrology and Water Quality	Implementation of the Air Quality Program may include the use of water from the New River, Alamo River, and/or irrigation drainages before they flow into the Salton Sea. The intent of these periodic diversions would be to establish vegetative and/or soil characteristics necessary for dust control measures. Diversions would be consistent with applicable federal and state law, including the Clean Water Act and the California Water Code.	None applicable.
Biological Resources	Implementation of the Air Quality Program will occur on the barren playa. Little to no biological habitat exists in these areas.	The Water Transfer Project HCP/NCCP addresses mitigation of biological impacts due to the Water Transfer Project. IID will coordinate implementation of the Air Quality Program with the Implementation Team (IT) to ensure that the mitigation and conservation measures relating to wildlife in the Water Transfer Project HCP/NCCP are met. The IT includes IID, the CA Department of Fish and Game (DFG), and the US Fish and Wildlife Service (USFWS). Mitigation measures associated with the HCP/NCCP are monitored by the IT, which was established as part of the mitigation requirements for the Water Transfer Project, and a Joint Powers Authority (JPA) that is responsible for managing the funding of the mitigation measures. The JPA includes DFG, IID, Coachella Valley Water District, and the San Diego County Water Authority.

TABLE C-1. SUMMARY OF APPLICABLE MITIGATON MEASURES FROM THE WATER TRANSFER EIR/EIS

Resource Area	Potential Impact	Mitigation Measure
Geology and Soils	Construction activities associated with implementation of the Air Quality Program will involve disturbance to the playa soil surface, including excavation, re-grading, and temporary soil stockpiling. Construction activities are expected to result in temporary increases in soil erosion potential. The extent of soil erosion would depend on the degree of slope, the total exposed area, and the amount of wind and rainfall.	The Water Transfer EIR/EIS did not identify specific mitigation measures to mitigate the increase in soil erosion potential. Rather, the Water Transfer EIR/EIS concluded that construction activities would likely require a site-specific Stormwater Pollution Prevention Plan (SWPPP) that would require the use of BMPs during construction. During implementation of the Air Quality Program, IID will implement a SWPPP and the associated BMPs, as necessary. If a SWPPP is not required, then IID will continue to implement BMPs to reduce soil erosion. Many of the BMPs listed as a part of Air Quality mitigation would also control erosion potential.
Land Use	The Imperial County General Plan sets forth land use and planning guidance for the portion of the Salton Sea located in Imperial County (i.e., the southern two-thirds of the Sea). The area surrounding the southern two-thirds of the Salton Sea contains the following land use classifications: Agricultural, Urban Area, Community Area, and Rural Residential. Both the Riverside County Comprehensive General Plan and the Eastern Coachella Valley Plan (ECVP) apply to the northern third of the Salton Sea and its surrounding area (i.e., the portion of the Salton Sea located within the jurisdiction of Riverside County). The northern third of the Salton Sea and surrounding area contains the following “Open Space and Conservation” classifications: Water Resources, Agriculture, and Parks/Forests. Implementation of the Air Quality Program, including pilot projects and longer-term dust control measures is not in conflict with such uses.	None applicable.
Agriculture	Implementation of the Air Quality Program would occur on the Salton Sea playa and would not involve agricultural lands.	None applicable.

TABLE C-1. SUMMARY OF APPLICABLE MITIGATON MEASURES FROM THE WATER TRANSFER EIR/EIS

Resource Area	Potential Impact	Mitigation Measure
Recreation	The playa is currently inundated. The only recreation that will occur on exposed playa is off-highway vehicle use (OHV). Off-highway vehicle (OHV) use is expected to expand onto the playa as the Sea recedes. The Air Quality Program includes development of a Playa Traffic Management Plan to prevent OHV-related disturbances to the playa surface. The Playa Traffic Management Plan will include public outreach, education, sign posting, strategic fencing, gate installation, and selectively closing or maintenance of roads and trails are effective methods to control OHV activity.	None applicable.
Air Quality	Construction activities associated with implementation of the Air Quality Program are expected to result in a temporary increase in PM10 emissions, temporary increases in soil erosion potential, and increase in traffic and transportation.	**Mitigation Measure AQ-2**: Implementation of BMPs during construction and operation would help to minimize PM10 emissions. BMPs could include, but are not limited to, the following: • Equip diesel powered construction equipment with particulate matter emission control systems, where feasible. • Use paved roads to access the construction sites when possible. • Minimize the amount of disturbed area, and apply water or soil stabilization chemicals periodically to areas undergoing ground-disturbing activities. Limit vehicular access to disturbed areas, and minimize vehicle speeds. • Reduce ground disturbing activities as wind speeds increase. Suspend grading and excavation activities during windy periods (i.e., surface winds in excess of 20 miles per hour). • Limit vehicle speeds to 10 mph on unpaved roads. • Cover trucks that haul soils or fine aggregate materials. • Enclose, cover, or water excavated soil as necessary. • Replant vegetation in disturbed areas where water is available, following the completion of grading and/or construction activities. • Designate personnel to monitor dust control measures to ensure effectiveness in minimizing fugitive dust emissions. In addition, IID will comply with all applicable regulations, including the ICAPCD Regulation VIII and the SCAQMD Rule 403 for fugitive dust. The ICAPCD Regulation VIII rules were adopted in 2005, after completion of the 2002 Water Transfer EIR/EIS. Regulation VIII

TABLE C-1. SUMMARY OF APPLICABLE MITIGATON MEASURES FROM THE WATER TRANSFER EIR/EIS

Resource Area	Potential Impact	Mitigation Measure
		applies to all projects, regardless of size. Requirements address construction and earthmoving, bulk materials, carry-out and track-out, open areas, paved and unpaved roads, and construction management practices.
Cultural Resources	Construction activities associated with implementation of the Air Quality Program would include ground-disturbing activities that could potentially disturb unknown cultural resources.	**Mitigation Measure CR-1:** The following mitigation measures have been designed to provide assurances in the event that if cultural resources are encountered during project construction or operation, they will be handled appropriately. • Archaeological and historical surface surveys to identify any cultural resources that may be affected. Areas that may contain buried archaeological resources also will be identified. **Archaeological Resources** • Modify Project design, when feasible, to avoid impacts to cultural resources, unless a qualified archaeologist conducts a field inspection and determines that the resource has no potential for significance because it is re-deposited, an isolated occurrence, modern, or otherwise lacks data potential. • Develop and implement a pre-Project Phase II Testing and Evaluation Plan for all unavoidable potentially significant archaeological sites that will be directly impacted to evaluate the significance of the resource in terms of applicable criteria. • Develop and implement a pre-Project Phase III Data Recovery Plan for all significant archaeological sites that will be directly impacted if the sites cannot be avoided through redesign. • If impacts to significant resources cannot be reduced to less than significant levels through data recovery or other by other mitigation measures, then the Project will be redesigned to avoid the impact. • Develop a Cultural Resources Construction Monitoring Plan prior to construction if ground disturbance will occur within any areas of archaeological sensitivity, such as recorded sites and areas that may contain buried archaeological sites. • In the event of an unanticipated cultural resource discovery during construction, all ground disturbances within 200 feet of the discovery will be halted or re-directed to other areas until the discovery has been documented by a qualified archaeologist and its potential significance evaluated in terms of applicable criteria. Resources considered significant will be avoided or subject to a data recovery program as described above. • Coordinate with SHPO and local Native American groups, if required, in compliance with applicable state laws.

TABLE C-1. SUMMARY OF APPLICABLE MITIGATON MEASURES FROM THE WATER TRANSFER EIR/EIS

Resource Area	Potential Impact	Mitigation Measure
		Paleontologic Resources • A literature review and paleontological field survey (as needed) will be conducted as part of site-specific CEQA review to identify potential impacts to rock units that may contain significant fossil remains. • Modify construction design, when feasible, to avoid impacts to all significant paleontologic resources. • Construction monitoring by a qualified paleontologist may be recommended for locations within paleontologically sensitive sediments. If so, a Paleontological • Monitoring Plan shall be prepared prior to ground disturbance in sensitive areas. • In the event of an unanticipated discovery during construction, all ground disturbance within 200 feet of the discovery will be halted or re-directed to other areas until the discovery has been recovered by a qualified paleontologist. • All paleontologic resources recovered will be appropriately described, processed, and curated in a scientific institution such as a museum or university.
Indian Trust Assets	The Torres Martinez Reservation is located on about 24,000 acres along the northern shore of the Salton Sea. About 11,800 acres of the Torres Martinez reservation are currently inundated by the Sea. IID will continue to coordinate with the Torres Martinez Tribe for all activities located within the Torres Martinez Reservation.	None applicable.
Noise	Construction activities associated with implementation of the Air Quality Program would generate temporary noise for sensitive receptors, such as communities and landowners located along the shoreline of the Salton Sea or riparian bird species.	**Mitigation Measure N-1:** The following measures would be implemented to reduce noise resulting from construction activities. • Use hydraulically or electrically powered impact tools (e.g., jack hammers) when possible. If the use of pneumatically powered tools is unavoidable, use an exhaust muffler on the compressed air exhaust. • Install manufacturer's standard noise control devices, such as mufflers, on engineer-powered equipment. • Locate stationary construction equipment as far from noise-sensitive receptors as possible. • Limit construction activities to non-mating, non-nesting seasons (also see Biological Resources). • Notify nearby property users whenever extremely noisy work might occur. • Utilize stockpiles as effective noise barriers when feasible. • Keep idling of construction equipment to a minimum when not in use. No piece

TABLE C-1. SUMMARY OF APPLICABLE MITIGATON MEASURES FROM THE WATER TRANSFER EIR/EIS

Resource Area	Potential Impact	Mitigation Measure
		of equipment should idle in place for more than 30 minutes. • Install temporary or portable acoustic barriers around stationary construction noise sources.
Aesthetics	The playa is the exposed, dry bed of the Salton Sea. It is characterized by barren shoreline where few to no plants or animals currently exist. The main visual resource in the area is the Salton Sea and surrounding mountains provide a backdrop. Implementation of the Air Quality Program would not change the visual character of the playa. Dust control projects will add variability to the landscape, generally consistent with existing drain habitat. The Air Quality Program does not include light features.	None applicable.
Public Services and Utilities	Implementation of the Air Quality Program will occur on the playa. There are no public services or utilities to maintain on the playa.	None applicable.
Transportation	Implementation of the Air Quality Program would involve construction activities for certain components, such as pilot projects and longer-term dust control measures. Construction vehicles and personal vehicles for transportation to the construction sites would use local roadways and interstate/freeways in the vicinity of the Salton Sea. Use of vehicles for research and monitoring associated with the Air Quality Program also would occur. The impact on traffic as a result of the presence of construction equipment on public roads would be similar to that of existing agricultural practices in the Imperial Valley (over an area of approximately 1,000 square miles). Implementation of the Air Quality Program would be gradual, and construction would be conducted over a period of time, and would not result in intensive traffic.	None applicable.

TABLE C-1. SUMMARY OF APPLICABLE MITIGATON MEASURES FROM THE WATER TRANSFER EIR/EIS

Resource Area	Potential Impact	Mitigation Measure
	In addition, the Air Quality mitigation measures require IID to develop a trip reduction plan to achieve a 1.5 average vehicle ridership (AVR) for construction employees and to implement a shuttle service to and from retail services and food establishments during lunch hours. This will reduce construction-related traffic.	
Socioeconomics	Construction activities associated with implementation of the Air Quality Program would not adversely affect regional economic activity.	None applicable.
Environmental Justice	No disproportionate effects are expected to occur to minority or low-income communities, or the Torres Martinez Indian Reservation. The purpose of the Air Quality Program is to mitigate fugitive dust emissions from the playa. The Air Quality Program will benefit the communities in this region.	None applicable.
Transboundary Impacts	Transboundary impacts pertain to federal actions within the Lower Colorado subregion for the Water Transfer Project are not applicable to the Air Quality Program.	None applicable.

Salton Sea Authority

Staff Report

To: Salton Sea Authority Board
From: Phil Rosentrater, Deputy Director, Riverside County EDA
Date: January 22, 2015
Subject: **Legislative Update**
CM No. VI.E – 1-22-15

Staff from member agencies of the Salton Sea Authority are coordinating a unified response to threats and opportunities in the legislative arena at both the state and federal levels.

The priorities in this platform are founded on the legislative vision and guiding principles adopted by the SSA Board of Directors. A draft of this 2015 platform was presented to the SSA Board of Directors at its December 18, 2014 meeting and there have been no substantial changes to that draft which is placed before the SSA Board for consideration of approval today.

The attached proposed platform highlights the key focus areas generating progress for existing and emerging legislative efforts work to secure state and federal funding as well as policy support for initiatives supported by the Salton Sea Authority Board of Directors.

Federal

- Renewable Energy: Federal/Local Government revenue sharing: Energy or Mineral Extraction on federal lands
- Funding for Salton Sea: Appropriations from existing BOR authorization: PL-984 Small Reclamations Project Act
- Funding for Salton Sea: Appropriations from existing WRDA authorization: ACOE

State

- Renewable Energy: State Renewable Energy Portfolio Standard: Equitable cost
- Funding for Salton Sea: Appropriations from Prop 1 authorization: state obligations in water right settlements including QSA

Issue: Federal – Local Government revenue sharing: Energy and Mineral extraction on federal lands

Action: Salton Sea Authority supports federal legislation enabling federal agencies to negotiate revenue sharing agreements with local governments for funds generated on federal lands as a result of energy production and/or mineral extraction.

Background: Salton Sea Authority supports its board-adopted Guiding Principles for Legislative Action, which call for local leadership to assert defense of local resources from predation by entities that would extract the resources without compensation to the impacted communities.

Specifically, the principles call for opposition to financial arrangements that enable state/federal or other entities outside the region to extract – without remuneration to locals and the Salton Sea restoration effort -- revenues from the local area derived from local resources on public lands overseen by publicly agencies.

As a corollary, the Salton Sea Authority supports revenue sharing agreements that are mutually acceptable to all concerned warrant support, along with legislation that will enable such arrangements.

Further, the federal government shares an interest in this approach in that the domestic supply chain of certain rare earth metals should be developed as an alternative to undue dependence upon foreign sources for these metals of strategic significance to the tech economy and military defense. Cooperative ventures between the federal government and mineral rich counties in the Salton Sea region where one of the world's largest and purest deposits of lithium has been discovered hold promise for equitable arrangements that address federal and local priorities with new resources.

#

Issue: Salton Sea: seek appropriations from existing Bureau of Reclamation PL-984 Small Reclamations Project Act Program

Action: Salton Sea Authority will support Federal funding and cooperation with US Bureau of Reclamation to maintain and improve agricultural productivity.

Background:

The US Bureau of Reclamation under P.L. 984- Small Reclamations Project Act currently has nearly $330 million in unspent federal funding authorized under a BOR loan and grant program that could be applied to agriculture-related projects delivering storm drain improvements and wildlife enhancements at the Salton Sea.

Because the federal government owns a significant portion of the land around and under the Sea that will be exposed as dry lakebed due to water transfers accelerating in 2017, the federal government is a major stakeholder in partnerships that can generate positive outcomes in lieu of liabilities for a deteriorating environment and its impact on irrigated agriculture. In particular, Title II – “Partnership Programs” states that the state and local government have the same obligations to be involved in these small projects that focus on revitalization efforts. It is imperative that the federal/state/local government involve itself with private enterprise investments that focus on irrigated agriculture, water conservation, and fish and wildlife enhancement.

The top priority for the Salton Sea Authority at the federal level is securing appropriations from existing authorized sources plus new funding for public/private partnerships (“P-3”). Under the Small Reclamations Project Act, Section 102, subsection C, it states that there are still funds available for these small reclamation projects. Thus, the Salton Sea Authority seeking appropriations from these available funds would be consistent with the goals of this federal program.

#

Issue: Salton Sea: seek appropriations from existing WRDA authorization

Action: Salton Sea Authority will support Federal funding and cooperation with the US Army Corps of Engineers to reduce liability for environmental destruction and human health impacts from soon-to-be exposed seabed, of which nearly half is federally owned.

$30 million in federal funding for Salton Sea restoration was authorized in 2007 under the federal Water Resource Development Act (WRDA), but never spent. Additionally, large sums of funding ($100 M) have been designated for alternative energy research in the Defense budget – funds that should be spent where multiple benefits can be achieved in addition to renewable fuel development as a national security priority.

Support federal legislation to appropriate maximum funding to Salton Sea Authority and member agency projects while also supporting federal safe harbor provisions and incentives for private investors to partner with public entities on renewable energy projects at the Sea, conditional to cooperation with local restoration efforts under auspices of the Salton Sea Authority.

Background:

Enormous economic opportunities in renewable energy and mineral extraction at the Salton Sea offer the financial means to revitalize the economy and restore the environment. Because the federal government owns half of the land under the Sea that will be exposed as dry lakebed due to water transfers starting in 2017, the federal government holds a major stake in supporting federal/state/local partnerships with private enterprise (renewable energy development) that can generate positive outcomes in lieu of liabilities for deteriorating environment and deadly human health impacts.

Top priority for the Salton Sea Authority at the federal level is securing appropriations from existing authorized sources (WRDA) plus new funding for public/private partnerships in renewable energy development at the Sea.

Member agencies of the Salton Sea Authority support a legislative platform guided by the following principles:

I. PRESERVE LOCAL CONTROL; ASSERT LEADERSHIP ROLE

Preserve and protect the Salton Sea Authority's charter powers, duties and prerogatives to harness the joint powers of its member agencies in a manner that asserts local leadership of efforts to revitalize the economy and restore the Salton Sea environment. The SSA will

oppose legislation that preempts local authority or that shifts responsibilities and liabilities to the locals from state or federal governments. Local agencies will preserve and enhance authority and accountability for revenues raised and restoration projects that are facilitated.

II. EVALUATE FUNDING OPPORTUNITIES THAT PROMOTE FISCAL STABILITY

Support measures that promote fiscal stability, predictability, financial independence, and preserve the Salton Sea Authority's revenue base and maximum local control over local government budgeting for Salton Sea restoration projects. Oppose measures that shift proceeds from P-3 revenue streams necessary for Salton Sea revitalization to the State or Federal Government. Oppose measures that increase SSA dependence upon State or Federal Governments for financial stability, or that increase burdens of liability or mandated costs with no guarantee of local reimbursement or offsetting benefits.

III. INTEGRATE FUNDING RESOURCES TO RESTORE THE SALTON SEA

In an era of limited public funding and enormous competing needs, it is the responsibility of leaders at the state and local levels to cooperate on projects that yield multiple benefits and ultimately achieve a greater common good. Support cooperative P-3 ventures and expedited development of public infrastructure and programs consistent with locally preferred plans for Sea restoration. Oppose financial arrangements that enable state/federal or other entities outside the region to extract – without remuneration to locals and the Salton Sea restoration effort -- revenues from the local area derived from local resources on public lands overseen by publicly agencies.

The Salton Sea Authority is positioned to leverage both state and federal accounts that appear to be idle and loosely coordinated.

WRDA 2007, signed into law on 11/9/07, included a $30 million authorization for the Army Corps to fund Salton Sea Restoration Pilot Projects. Funding is limited to $5 million federal contribution for any individual pilot project and *a non-Federal cost-share of 35 percent is required*.

- Salton Sea provisions:
    - The Secretary of the Army will enter into agreement with the State of California, with the consultation of the Salton Sea Authority and the USGS Salton Sea Science Office (SSSO) to carry out pilot projects for improvement of the environment in the area of the Salton Sea.
    - In addition to consulting with the SSA and SSSO, the Secretary must also take into consideration the priorities of the State and the SSA.

At long last, funding has been appropriated in the current annual Energy and Water Appropriations Act budget for the Army Corps to move forward with Salton Sea Restoration Pilot Projects. The $30 million authorization thus remains available, subject to appropriations. Pilot projects could be funded through the Army Corps, if the budget is passed with the current provisions intact.

Issue: Renewable Energy: State RPS portfolio: Equitable cost

Action: Salton Sea Authority support requested for achieving as more accurate accounting of costs for producing energy eligible for consideration in the state Renewable Energy Portfolio.

Background:

The Salton Sea Restoration and Renewable Energy Initiative concept supported by Salton Sea Authority calls for development of renewable energy resources at the Salton Sea in order to provide potential revenue streams to help fund revitalization projects and activities.

Although Geothermal energy has been identified as potentially one of the largest and most reliable of renewable energy source, it has not enjoyed support in the procurement policies associated with the state Renewable Energy Portfolio Standard.

The current RPS purchasing policy directs power purchasers to consider only the “best fit, lowest cost” when buying power from renewable energy sources. Because the formula does not account for the need to have baseload reliability, the 24/7 around the clock costs for a particular source are not fully accounted on some intermittent sources like wind and solar power, thus creating an inequitable cost accounting that eventually affects the viability of bringing other power sources to market that may be more capital intensive for start-up, but less costly to operate in the long run.

As it impacts the component of the Salton Sea Restoration and Renewable Energy Initiative, the current RPS formula undermines geothermal power development while favoring intermittent power sources because the intermittent sources do not include costs such as backup power provided by gas-fired generating plants.

Salton Sea Authority and its partnering agencies successfully supported passage of AB 2363 (Dahle) a bill that directs the California Public Utilities Commission to re-examine the cost formulas for calculating cost of energy production in the Renewable Portfolio Standard to include the currently unaccounted integration costs associated with power generation from intermittent sources. Salton Sea Authority needs to remain engaged in the CPUC policy review of these inequities that was successfully initiated by passage of AB 2363.

Title

Issue: Proposition 1 (Water Bond): Implementation: Fair share

Action: Salton Sea Authority needs to assert a leadership role in developing Prop 1 Water Bond implementation language expediting expenditure of fair share of funding for Salton Sea revitalization as part of the $475 million provision related to state obligations in water right settlements including the Quantitative Settlement Agreement (QSA) of Colorado River water supplies.

Background:

The Salton Sea Authority has successfully secured provisions in the Prop 1 Water Bond that call for timely expenditure of funding for Sea revitalization projects.

Specifically, Salton Sea Authority and the partnering member agencies succeeded in securing $475 million provision to help fulfill the State's obligations in water-related settlements, including the QSA. The $475 million is a pot of money that must be distributed fairly amongst several water settlement regions and projects in the state.

The provision of Prop 1 funding QSA related settlement agreements was successfully broadened to explicitly include efforts to restore habitat and provide air quality mitigation at the Salton Sea, in order to assist the State in meeting critical habitat replacement needs and to fulfill legislative promises that were made to address the State's last water crises.

The QSA water transfers are the linchpin of the California Water plan to live within California's Colorado River allocation. In proceedings to authorize the QSA transfers, it became clear that the transfers would have a large impact on the Salton Sea. In order to facilitate a resolution of the disputes, and solidify support for the locally- unpopular transfers, the state agreed in the QSA settlement agreements to mitigate QSA related impact to the extent that they exceeded the $133 million contributed by QSA participants.

The QSA enabling legislation also commits the State to assist in the Sea's restoration:

SB 654, Machado (2003).

Restoration of the Salton Sea is in the state and national interest.

The Legislature further finds that it is important that actions taken to reduce California's Colorado River water use are consistent with its commitment to restore the Salton Sea, which is an important resource for the state.

SB 1214, Kuehl (2004).

2931. (a) It is the intent of the Legislature that the State of California undertake the restoration of the Salton Sea ecosystem and the permanent protection of the wildlife dependent on that ecosystem…..

3) Existing law declares the intent of the Legislature that the State of California undertake the restoration of the Salton Sea ecosystem and the permanent protection of the wildlife dependent on that ecosystem…….. The proposed funding plan shall include a determination of the moneys that are, or may be, available to construct and operate the preferred project, including, but not limited to, all of the following moneys:

(i) Moneys in the Salton Sea Restoration Fund established by Section 2932.

(ii) State water and environmental bond moneys…..

The Prop 1 Water Bond provides that bond funds be available to accomplish those purposes identified in the statues cites above.

Compounding the benefit, of course, is the potential reduction in state costs to mitigate destruction to the environment, human health and the economy in the absence of timely state contributions to meet its legal obligation under QSA.

It should be further noted that the SSA and its partnering agencies continues marching forward with a restoration approach designed to deliver significant matching funding opportunities that can leverage state bond moneys as much as threefold. Coupled with investment from private sector, this strategy is ultimately destined to establish a sound environmental restoration plan that can be considered financially sustainable.

A synergistic approach to the Water bond, as requested above, should be developed as a means to responsibly manage the financial obligation on the state for water transfer mitigation and related restoration.

#

Salton Sea Authority

Commission Memorandum

To: Salton Sea Authority Board of Directors

From: Roger Shintaku, General Manager

Date: January 22, 2015

Subject: Reschedule February 2015 Board Meeting

CM No. VII.A – 1-22-15

GENERAL:

Due to meeting schedules which conflict with the February 26, 2015 Board meeting date, and anticipated travel to Washington D.C. during the month of February, the Salton Sea Authority Staff requests that the Salton Sea Authority Board of Directors reschedule the February 26, 2015 Board meeting to February 19, 2015.

Respectfully,

Roger Shintaku
General Manager

Salton Sea Authority

Commission Memorandum

To: Salton Sea Authority Board of Directors

From: Roger Shintaku, General Manager

Date: January 22, 2015

Subject: Continued Discussion re: Petition for Modification of Revised Water Rights Order 2002-0013

CM No. VII.B – 1-22-15

BACKGROUND:

This item was agendized at the December 18, 2014 Salton Sea Authority Board meeting (see attached document for consideration). After lengthy discussion, it was agreed that this matter be reviewed by the Authority Board of Directors members and returned for further discussion.

RECOMMENDATION:

The Salton Sea Authority Staff submits this item for further discussion and Salton Sea Authority Board action.

Respectfully,

Roger Shintaku
General Manager

MUNGER, TOLLES & OLSON LLP

355 SOUTH GRAND AVENUE
THIRTY-FIFTH FLOOR
LOS ANGELES, CALIFORNIA 90071-1560
TELEPHONE (213) 683-9100
FACSIMILE (213) 687-3702

560 MISSION STREET
SAN FRANCISCO, CALIFORNIA 94105-2907
TELEPHONE (415) 512-4000
FACSIMILE (415) 512-4077

RONALD L. OLSON
ROBERT E. DENHAM
JEFFREY I. WEINBERGER
GARY G. LERMAN
GREGORY P. STONE
BRAD D. BRIAN
BRADLEY S. PHILLIPS
GEORGE M. GARVEY
WILLIAM D. TEMKO
STEPHEN M. KRISTOVICH
JOHN W. SPIEGEL
TERRY E. SANCHEZ
STEVEN M. PERRY
MARK B. HELM
JOSEPH D. LEE
MICHAEL R. DOYEN
MICHAEL E. SOLOFF
GREGORY D. PHILLIPS
KATHLEEN M. MCDOWELL
GLENN D. POMERANTZ
THOMAS B. WALPER
PATRICK J. CAFFERTY, JR.
JAN M. FUJITANI
O'MALLEY M. MILLER
SANDRA A. SEVILLE-JONES
MARK H. EPSTEIN
HENRY WEISSMANN
KEVIN S. ALLRED
BART H. WILLIAMS
JEFFREY A. HEINTZ
JUDITH T. KITANO
KRISTIN LINSLEY MYLES
MARC T. G. DWORSKY
JEROME C. ROTH
STEPHEN D. ROSE
JEFFREY L. BLEICH
GARTH T. VINCENT
TED DANE
STUART N. SENATOR
MARTIN D. BERN
DANIEL P. COLLINS
ROBERT L. DELL ANGELO
BRUCE A. ABBOTT
JONATHAN E. ALTMAN
MARY ANN TODD
MICHAEL J. O'SULLIVAN
KELLY M. KLAUS
DAVID B. GOLDMAN
KEVIN S. MASUDA
HOJOON HWANG

PETER A. DETRE
DAVID H. FRY
LISA J. DEMSKY
MALCOLM A. HEINICKE
GREGORY J. WEINGART
TAMERLIN J. GODLEY
JAMES C. RUTTEN
RICHARD ST. JOHN
RONI A. BINOLA
LUIS LI
CAROLYN KOECKER LUEDTKE
C. DAVID LEE
MARK H. KIM
BRETT J. RODDA
SEAN ESKOVITZ
FRED A. ROWLEY, JR.
KATHERINE M. FORSTER
BLANCA FRONM YOUNG
RANDALL G. SOMMER
MARIA SEFERIAN
MANUEL F. CACHAN
ROSEMARIE T. RING
JOSEPH J. YBARRA
MICHELLE C. FRIEDLAND
TODD J. ROGER
ERIC T. DC
MELINDA EADES LEMOINE
BETH GOLDMAN
GRANT A. DAVIS-DENNY
JONATHAN H. BLAVIN
JOHN B. OWENS
DANIEL B. LEVIN
MIRIAM KIM
MISTY M. SANFORD
KATHERINE KU
HAILYN J. CHEN
BETHANY W. KRISTOVICH
SUSAN R. SZABO
LIKA C. MIYAKE
BRAD SCHNEIDER
JACOB S. KREILKAMP
ERIC P. TUTTLE
HEATHER E. TAKAHASHI
KEITH R.D. HAMILTON, II
SORAYA C. KELLY
JEFFREY Y. WU
ALISSA BRANHAM
ADAM R. LAWTON
PUNEET K. SANDHU
JENNY H. HONG

KAROH SEIJI LOWENSTEIN
LAURA D. SHOLOWE
MATTHEW A. MACDONALD
MARGARET S. HARABEDIAN
ESTHER H. KUNG
BENJAMIN J. HARO
MICHAEL J. MIRANDA
KYLE A. CASAZZA
ERIN J. COX
CLAIRE YAN
ALLISON S. WOODS
GRAM ALDEN
JESSICA A. MILLER
HARIL N. BAYSON
CHRISTIAN R. WIEDE
PETER E. DRATZINGER
ANJAN CHOUDHURY
JEREMY A. LAWRENCE
BENJAMIN E. FRIEDMAN
CHRISTOPHER H. LYNCH
RAY R. RIDDE
NICHOLAS C. SOLTMAN
ADAM L. KAPLAN
AMELIA L. B. SARGENT
KENNETH M. TROUTLEN-JAMISON
BRYAN H. HECHENLIVELY
LAURA WIRTH
JASMINE R. ROBERTS
JENNIFER A. JONES
LAURA R. LIN
KYLE W. MACH
JEFFREY A. OBOFSKY
ENRIQUE R. SCHAERER
GREGORY M. SERGI
ACHRIT J. PHADKE
DAVID A. TAYLOR
NEWMAN NOVILLO
TINA W. ARROYO
HARI OVERSLOOK
JESSE MAX CREED
JOHN M. OLDERSLEEVE
ERIC K. CHU
SARAH L. GRAHAM
JESSICA BARCLAY-STROBEL
ZACHARY H. BRIERO
JENNIFER H. BROOKER
CHRISTINA M. MONIODIS
JOHN P. MITELSACH
EMMANUEL S. TEGDEN
BARAM GARBER

SAMUEL T. GREENBERG
CAROLINE H. MCKAY
EMILY B. VIQUETTA
WILLIAM J. EDELMAN
KEVIN L. BRADY
EMILY A. D. MURPHY
ELLEN MEDLIN RICHMOND
NICOLE S. PHILLIS
JORDAN D. SEGALL
DANIEL J. HARRIS
VICTORIA A. DEGTYAREVA
WESLEY T. L. BURRELL
CHRISTA L. CULVER
ANYA J. GOLDSTEIN
KAREN A. LORANO
KIRIAMILLA J. OLASA
MATTHEW D. ROWEN
KEVIN H. SCOTT
JUSTIN P. RAPHAEL
HANNAH E. SHEARER
CRAIG A. LAVOIE
ELIA HERRERA
ROBERT W. GRAY, JR.
THOMAS P. CLANCY
JOSHUA PATAGUINIA
ERIC C. TUNG
GUHA KRISHNAMURTHI
JOSHUA S. MELTZER
SARA E. GROLL
ANDREW D. PROUT

OF COUNSEL
RICHARD D. ESBENSHADE*
ROBERT K. JOHNSON*
ALAN V. FRIEDMAN*
RONALD K. MEYER
ALLISON B. STEIN
SUSAN E. NASH
WILLIAM CHANG
MIRANDA KANE

C. LEROY TOLLES
(1922-2009)

*A PROFESSIONAL CORPORATION

WRITER'S DIRECT CONTACT
(213) 683-9111
(213) 683-5111 FAX
ron.olson@mto.com

November 18, 2014

Thomas Howard
Executive Director
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Michael Lauffer
Chief Counsel
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

2014 NOV 18 AM 9:56
STATE WATER RESOURCES CONTROL BOARD
OFFICE OF WATER RIGHTS
SACRAMENTO

Re: Imperial Irrigation District Petition for Modification of Revised Water Rights Order 2002-13

Dear Messrs. Howard and Lauffer:

Enclosed please find a Petition for Modification of Revised Water Rights Order 2002-13, which the Imperial Irrigation District (IID) is filing today with the State Water Resources Control Board. A check with payment of the filing fee of $6,153 is included, as is a separate check for $850 made payable to the Department of Fish and Wildlife.

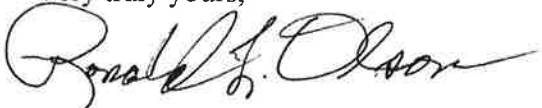
IID is filing this petition in an effort to start a collaborative process to ensure restoration of the Salton Sea and prevent a looming environmental and public-health crisis at the Sea and in the Imperial and Coachella valleys. To date, the State of California has not fulfilled its statutory commitment to restore the Salton Sea—a commitment that the Legislature undertook in order to facilitate the negotiation and signing of the Quantification Settlement Agreement (QSA). In Revised WRO 2002-13, the Board approved the long-term water transfers envisioned by the QSA, conditioned upon the implementation of certain mitigation measures that would provide temporary relief from the effects of the transfers while the State's broader restoration work was carried out. The Board retained continuing authority to revisit the matter as circumstances warranted.

This petition asks the Board to revisit the matter because it is warranted to require the State to fulfill its statutory commitment to restore the Salton Sea as an added condition of the QSA transfers. In the 12 years since Revised WRO 2002-13, the State has made scant progress toward performance of that commitment. This inaction already has had significant environmental and public-health impacts for the people of the Imperial and Coachella valleys, and those impacts will only accelerate when deliveries of mitigation water end in 2017. IID submits this petition requesting that the Board exercise its statutory and continuing authority to revisit Revised WRO 2002-13.

As set forth in detail in the body of the petition, IID asks that the Board initiate a collaborative dialogue, involving workshops and status conferences, among the QSA parties, the Salton Sea Authority member agencies, and other key stakeholders, with the objective of building consensus around a restoration and funding plan that can be implemented immediately. Given the urgency of the situation at the Salton Sea, IID requests that the Board notice and schedule a public hearing for no more than nine months from today's date, at which time the Board may assess the results of that collaborative dialogue and receive legal and factual submissions regarding restoration of the Sea as a condition of the QSA transfers. The Board should then issue an order modifying Revised WRO 2002-13 and requiring the State to fulfill its commitment to restore the Sea as a condition of the QSA transfers.

IID looks forward to working cooperatively with the other QSA parties, key stakeholders, and Board staff to craft a workable solution that averts the looming environmental and public-health crisis at the Salton Sea and in the Imperial and Coachella valleys, and that promotes stability and sound water policy in California during this time of drought.

Very truly yours,



Ronald L. Olson

RLO:bap

Enclosure

STATE OF CALIFORNIA

STATE WATER RESOURCES CONTROL BOARD

In the matter of IMPERIAL IRRIGATION DISTRICT'S (IID) AND SAN DIEGO COUNTY WATER AUTHORITY'S (SDCWA) AMENDED JOINT PETITION FOR APPROVAL OF A LONG-TERM TRANSFER OF CONSERVED WATER FROM IID TO SDCWA AND TO CHANGE THE POINT OF DIVERSION, PLACE OF USE, AND PURPOSE OF USE Under Permit 7643 on Application 7482 of Imperial Irrigation District (counsel listed on next page)	**PETITION OF IMPERIAL IRRIGATION DISTRICT FOR MODIFICATION OF REVISED WATER RIGHTS ORDER 2002-0013**

MUNGER, TOLLES & OLSON LLP
Ronald L. Olson (SBN 44597)
Kristin Linsley Myles (SBN 154148)
Matthew A. Macdonald (SBN 255269)
Joshua Patashnik (SBN 295120)

355 South Grand Avenue, 35th Floor
Los Angeles, CA 90071
Telephone: 213-683-9100

560 Mission Street, 27th Floor
San Francisco, CA 94105
Telephone: 415-512-4000

LAW & RESOURCE PLANNING ASSOCIATES, P.C.
Charles T. DuMars (pro hac vice)
Patrick J. Redmond (SBN 282334)

Albuquerque Plaza
201 3rd Street NW, Suite 1750
Albuquerque, NM 87102
Telephone: 505-346-0998

DOWNEY BRAND LLP
David R. E. Aladjem (SBN 152203)

621 Capitol Mall, 18th Floor
Sacramento, CA 95814
Telephone: 916-444-1000

IMPERIAL IRRIGATION DISTRICT
Ross G. Simmons (SBN 144656)
Joanna Smith Hoff (SBN 243673)

333 Barioni Boulevard
P.O. Box 937
Imperial, CA 92251
Telephone: 760-339-9530

CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

PETITION FOR MODIFICATION OF REVISED WATER RIGHTS ORDER 2002-0013

TABLE OF CONTENTS

I. INTRODUCTION AND EXECUTIVE SUMMARY 1

II. FACTUAL AND LEGAL BACKGROUND 8

A. The Salton Sea Is a Critical Environmental Resource and the Imperial and Coachella Valleys Face a Dire Public-Health Threat If No Restoration Plan is Implemented and Funded 9

B. The QSA Was Designed to Reduce California's Use of Colorado River Water While Protecting the Environment at the Salton Sea and the Public Health of the Imperial and Coachella Valleys 12

1. QSA Background 12

2. The QSA Mitigation and Restoration Scheme and the 2002 Order 14

3. The QSA Legislation 17

4. The QSA Agreements 19

C. Since the QSA Was Signed, a Variety of Restoration Plans Have Been Studied and Proposed, But the State Has Not Fulfilled Its Obligation to Restore the Salton Sea 20

D. IID and Farmers in the Imperial Valley Have Fulfilled All of Their Obligations Under the QSA, at Significant Cost and Difficulty 25

1. Performance by IID and Farmers in the Imperial Valley 25

2. QSA Mitigation Efforts and Facilitation of Restoration 26

3. QSA Litigation 28

III. THE BOARD SHOULD EXERCISE ITS "CONTINUING AUTHORITY" TO MODIFY ITS 2002 ORDER AND REQUIRE THE STATE TO FULFILL ITS STATUTORY OBLIGATION TO RESTORE THE SALTON SEA AS A CONDITION OF THE QSA TRANSFERS 29

A. The Board Has Both the Authority and the Duty to Impose New or Modified Conditions on the QSA Transfers to Protect the Environment 30

B. The Board Should Require the State to Fulfill Its Statutory Commitment to Restore the Salton Sea as a Condition of the QSA Transfers 33

1. The State Has Made an Unequivocal Statutory Commitment to Restore the Salton Sea 34

2. The Factual Context and Legislative History Surrounding the QSA Legislation Confirm that Its Primary Purpose Was to Ensure that Salton Sea Restoration Would Take Place in Exchange for the Substantial Benefits the QSA Transfers Provided to the State as a Whole 36

3. The Parties Expressly Premised the QSA Transfer Agreements on the State's Fulfilling Its Statutory Commitment to Restoration 41

4. Restoration of the Salton Sea Is Feasible and Necessary to Prevent Severe Public-Health and Environmental Consequences 44

IV. REQUESTED RELIEF 48

V. CONCLUSION 51

TABLE OF AUTHORITIES

Page(s)

STATE CASES

Baker v. Workers' Comp. Appeals Bd.
(2011) 52 Cal.4th 434 35

Betchart v. Dep't of Fish & Game
(1984) 158 Cal.App.3d 1104 34

City of Los Angeles v. County of Kern
(2014) 59 Cal.4th 618 36

Day v. City of Fontana
(2001) 25 Cal.4th 268 40

Environmental Defense Fund, Inc. v. East Bay Mun. Util. Dist.
(1980) 26 Cal.3d 183 32

Ford & Vlahos v. ITT Commercial Fin. Corp.
(1994) 8 Cal.4th 1220 34

Hartnell Community College Dist. v. Superior Court
(2004) 124 Cal.App.4th 1443 42

In re Johnson
(1980) 107 Cal.App.3d 780 35

In re Quantification Settlement Agreement Cases
No. C074592, Cal. Ct. App. (3d Dist.) 28, 47

In re Quantification Settlement Agreement Cases
(2011) 201 Cal.App.4th 758 ..... passim

Light v. State Water Resources Control Bd.
(2014) 226 Cal.App.4th 1463 ..... 30, 31

Milligan v. City of Laguna Beach
(1983) 34 Cal.3d 829 35

Nat'l Audubon Soc'y v. Superior Court
(1983) 33 Cal.3d 419 ..... 32, 33

Rutherford Holdings, LLC. v. Plaza Del Rey
(2014) 223 Cal.App.4th 221 43

Scheel v. Harr
(1938) 27 Cal.App.2d 345 43

Shippen v. Dep't of Motor Vehicles
(1984) 161 Cal.App.3d 1119 40

Toscano v. Greene Music
(2004) 124 Cal.App.4th 685 44

United States v. State Water Resources Control Bd.
(1986) 182 Cal.App.3d 82 ..... passim

STATE STATUTES

Civil Code § 1689 43

Code Civ. Proc. § 22762 28

Fish & Game Code § 2081.7 18

Fish & Game Code §§ 2930-2933 18

Fish & Game Code § 2931 ..... 18, 34, 35

Fish & Game Code § 2940 ..... 23, 35

Fish & Game Code § 2942 ..... 23, 24

Fish & Game Code § 2943 24

Water Code § 174 30

Water Code § 179 30

Water Code § 186 ..... 31, 48

Water Code § 860 28

Water Code § 1011 31

Water Code § 1013 18

Water Code § 1701 31

Water Code § 1736 ..... passim

Water Code § 1737 31

Water Code § 12562 18

FEDERAL STATUTES

Water Supply Reliability and Environmental Improvement Act of 2004 (118 Stat. 1681, Pub. L. No. 108-361) 22

FEDERAL REGULATIONS

43 C.F.R. Part 417 17

STATE LEGISLATIVE MATERIALS

AB 71, Ch. 402, 2013-2014 Reg. Sess. 23, 24

AB 148, Ch. 124, 2013-2014 Reg. Sess. 23

SB 277, Ch. 611, 2003–2004 Reg. Sess. 18

SB 317, Ch. 612, 2003–2004 Reg. Sess. 19

SB 654, Ch. 613, 2003–2004 Reg. Sess. 19

TREATISES

1 Witkin, Summary of Cal. Law (10th ed. 2005) *Contracts* § 814 43

Restatement (Second) Contracts § 274 43

OTHER AUTHORITIES

Bills Signed Into Law by Gov. Davis, *L.A. Times*, Oct. 13, 2003 41

M. Cohen, Salton Sea Must Be Addressed in Water Deal, *San Diego Union-Tribune*, Feb. 20, 2003 37

California Budget OKs $30M for Salton Sea Study, *Desert Sun (Palm Springs)*, June 27, 2013 22

California State Auditor, Salton Sea Restoration Fund Report (Nov. 2013) ("State Auditor Report") ..... passim

California Legislative Analyst's Office, Restoring the Salton Sea (Jan. 24, 2008) ("LAO Report") ..... passim

Colorado River Deal Could End Water Wars, *San Jose Mercury News*, Sept. 12, 2003 40

K. Daly, Water Bond that Could Benefit Salton Sea Restoration Will Be on the November Ballot, *Imperial Valley Press*, Aug. 15, 2014 23

El Centro's 21.1% Unemployment Rate Second Highest in U.S., *L.A. Times*, July 1, 2014 26

M. Gardner, Davis Signs Bill to Clear Environmental Hurdles on Water Deal, *San Diego Union-Tribune*, Sept. 30, 2003 40

D. Kasler & S. Leavenworth, Salton Sea Impact Threatens to Sink Crucial Water Deal, *Sacramento Bee*, Apr. 28, 2002 ..... 17, 18, 37

G. Martin, Peace at Last in Key Water Battle, *S.F. Chronicle*, Sept. 30, 2003 36

G. Martin, Vote Ends Long-Running Water Wars, *S.F. Chronicle*, Oct. 4, 2003 40

Pacific Institute, *Hazard's Toll: The Costs of Inaction at the Salton Sea* (Sept. 2014) ("Pacific Institute Report") ..... passim

Bureau of Reclamation, *Restoration of the Salton Sea: Summary Report* (Sept. 2007) ("Bureau of Reclamation Report") ..... passim

Salton Sea Authority, *Salton Sea Authority Plan for Multi-Purpose Project* (July 2006) ("Salton Sea Authority Plan") 10, 21, 45

U.S. Fish & Wildlife Service, *Sonny Bono Salton Sea National Wildlife Refuge Complex: Endangered and Threatened Species* 11

CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

PETITION FOR MODIFICATION OF REVISED WATER RIGHTS ORDER 2002-0013

I. INTRODUCTION AND EXECUTIVE SUMMARY

Imperial Irrigation District ("IID") hereby petitions the State Water Resources Control Board ("SWRCB" or the "Board") to modify its Revised Order WRO 2002-0013 (the "2002 Order")[1] in a manner that, as described more fully below, will hold the State of California to its obligation to restore the Salton Sea. The State of California faces a looming environmental and public-health crisis at the Sea that, unless checked, will cause significant damage to the residents and the economy of the Imperial and Coachella valleys and will threaten one of the State's most important environmental resources.

This threat is exacerbated by the current drought, which is one of the most severe and prolonged in California's recent history. The drought not only has placed significant strain on California's water supply for agricultural, urban, and industrial uses, but also poses a major threat to public health and to the environment, including fish and wildlife. It is incumbent upon all water users in the State to work collaboratively to find solutions that ensure that California's limited water supplies are used efficiently, while at the same time protecting the environmental resources upon which all Californians depend. This petition reflects IID's attempt to start that collaborative process by pressing forward to ensure restoration of the Salton Sea in the manner mandated by California law.

IID is the appropriate party to start this process. It is a holder of senior water rights on the Colorado River and has historically stepped up to avert crises on the river. It played a preeminent

---

[1] The 2002 Order is reproduced at App. 1-96 and is also available at http://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/2002/wro2002-13revised.pdf.

role in shaping the Colorado River Compact, and all legislation, agreements, and Supreme Court cases that make up the Law of the River.

Under the Law of the River, California is entitled to use 4.4 million acre-feet per year (afy) of Colorado River water, and IID holds senior water rights to a substantial percentage of that entitlement. For decades, the availability of surplus and unused water on the Colorado River allowed California to use more than its 4.4 million afy entitlement. However, beginning in the late 1990s, due primarily to increased use by other lower Colorado River basin states of their own apportionments, the federal government pressed California to limit itself to 4.4 million afy. That effort posed a serious threat of reductions in deliveries to California users with water rights junior to IID's—most notably, the Metropolitan Water District of Southern California ("MWD"). In 2003, to help avert this threat, IID entered into the Quantification Settlement Agreement ("QSA"), an interconnected series of agreements among IID, the State of California, other California water agencies, and the federal government and Indian tribes.[2]

The centerpiece of the QSA was a proposal that IID conserve water and arrange for the long-term transfer of that conserved water from IID to three other major Southern California water users: the San Diego County Water Authority ("SDCWA"), Coachella Valley Water District ("CVWD"), and MWD. Through the QSA, IID, recognizing the needs of the entire state to continued water supply, agreed to extensive conservation, including fallowing of farmland. Through these actions, IID made water available for other users, particularly in urban coastal Southern California. IID agreed to the QSA transfers in large part because they were widely

[2] The terms "Quantification Settlement Agreement" and "QSA" are used herein to refer to the entire collection of agreements signed in October 2003. To avoid confusion, the October 10, 2003 agreement between the Imperial Irrigation District, the Metropolitan Water District, and the Coachella Valley Water District—which is itself labeled the Quantification Settlement Agreement—will be referred to herein as the "three-party QSA."

considered to be an essential mechanism for allowing California to meet its statewide demand while at the same time keeping within its 4.4 million afy entitlement. The Imperial Valley has faithfully fulfilled its obligations under the QSA, despite the significant sacrifices and challenges IID and its water users have faced in doing so. Many of those sacrifices and challenges have come in the form of economic impacts to the communities within the Imperial Valley, a region suffering from one of the highest unemployment rates in the nation.

In the years since the QSA was signed, and especially in this time of drought, the QSA has only taken on added importance. As an example of extraordinary water conservation, the QSA protects California's entitlement and has become a bulwark of water security and stability in California and along the Colorado River.

But the QSA is not, and never has been, a risk-free endeavor. All who participated in the development of the QSA recognized that the transfers carried the potential for significant adverse environmental and public-health consequences at the Salton Sea and in the Imperial and Coachella valleys.

The Salton Sea is one of California's most important environmental resources. It serves as a critical buffer against windblown dust emissions in the Imperial and Coachella valleys, a region that already suffers from some of the worst air quality in California and the nation. It is also arguably the single most significant habitat for migratory birds in the United States, and among the hundreds of species who reside at the Sea are numerous species listed as endangered or threatened under federal and state law. There was no question in the minds of the parties who orchestrated this water transfer—the largest in U.S. history—that without a commitment to ensure that the Salton Sea would be restored and the other effects mitigated, implementation of the QSA transfers would destroy these essential environmental values. Basic principles of

hydrology made clear that absent restoration of the Sea, reduced agricultural return flows would cause the shoreline to recede and expose playa around the Sea, producing dust emissions that would severely exacerbate the already poor air quality in the Imperial and Coachella valleys. Reduced agricultural return flows would also lead to a spike in the salinity of the Sea, dooming the fishery and, in turn, much of the bird population at the Sea.

The potential for devastating environmental, public-health, and economic impacts was so widely acknowledged, and raised such deep concerns, that the QSA negotiations nearly fell apart as a result. The State of California was desperate to avoid that outcome, believing (with good reason) that chaos would likely result, as users would suffer mandatory cutbacks in their allotment of Colorado River water, prompting them to seek increased imports from elsewhere in the State—particularly the Sacramento–San Joaquin River Delta. In order to get the QSA back on track and alleviate fears about its environmental, public-health, and economic impacts, the Legislature unequivocally committed the State by statute to restoring the Sea, and the State and the QSA parties agreed jointly to bear the costs of mitigation. Only after the State and the QSA parties committed to these measures was the QSA signed, and the QSA agreements were expressly premised on the implementation of mitigation and restoration measures. Absent those measures, the QSA would not have been signed. Both mitigation and restoration of the Salton Sea were, and always have been, indispensable components of the QSA.

The SWRCB correctly recognized as much in its 2002 Order. Under California law, the Board has the authority and duty to ensure that a long-term transfer, such as the one contained in the QSA, will not "result in substantial injury to any legal user of water [or] unreasonably affect fish, wildlife, or other instream beneficial uses." (Water Code § 1736.) That authority and duty entail the power to place conditions on long-term transfers as necessary. To fulfill its statutory

mandate, the Board in its 2002 Order conditioned its approval of the QSA transfer on the implementation of a number of mitigation measures set forth in the Environmental Impact Reports (the "EIRs") prepared by the parties to the QSA transfer.[3] These measures were designed to preserve the State's ability to fulfill its commitment to restoring the Sea, and to ensure that the environment at the Salton Sea and the residents of the Imperial and Coachella valleys would not bear the brunt of the State's effort to reduce its usage of Colorado River water—no matter how necessary and important that effort might be.

The 2002 Order required IID to deliver mitigation water to the Salton Sea for a period of 15 years, until the end of 2017. The choice of that timeframe was a deliberate one: the QSA parties and the Board determined that 15 years would be an adequate period of time to allow the State to study the feasibility of restoration and to identify and begin implementation of a restoration plan. The Board repeatedly and expressly emphasized that it retained "continuing authority" to review developments during this 15-year period and issue additional orders as necessary to protect the public interest. (*See, e.g.*, App. 50, 51 & fn. 12, 70, 91, 95.)

The decision by this Board as to whether the transfers were in the public interest, and therefore should be allowed, necessarily involved balancing the State's interest in meeting its water supply needs against the potential extraordinary negative environmental, public-health and economic consequences of the transfers on the Imperial Valley and the State as a whole. The State's commitment to implement a Salton Sea restoration plan to offset those negative consequences of the transfers was the item that tipped the scales in favor of issuance of the 2002

[3] The parties prepared two EIRs: a program-level EIR (prepared jointly by CVWD, IID, MWD, and SDCWA) and a project-level EIR for the water transfers (prepared jointly by IID and the federal Bureau of Reclamation). This latter EIR doubled as an Environmental Impact Statement (EIS) to fulfill Reclamation's obligations under the National Environmental Policy Act (NEPA).

Order. That commitment by the State was what permitted the Board to find that the QSA water transfer would not unreasonably affect fish, wildlife, or other instream beneficial uses. The Board understood that, to preserve the feasibility of restoration, salinity levels would not be allowed to increase to the point at which they would preclude restoration. And the Board understood and expected that by 2017, a plan for restoration would be in place. The year 2017 is fast approaching and yet no restoration plan has been forthcoming.

The time has come for the Board to exercise its continuing authority and add a condition to the 2002 Order that requires the State to fulfill its unequivocal statutory commitment to restoring the Salton Sea. This is a matter of the highest possible importance and urgency. The Salton Sea and the Imperial and Coachella valleys already have begun to suffer significant environmental and public-health impacts as a result of the State's failure to abide by its promise to restore the Sea—impacts that will accelerate dramatically once deliveries of mitigation water end in 2017. Absent restoration, over the next 30 years, air pollution in the form of windblown dust emissions will have a catastrophic impact on public health in the region, adding up to a cost of tens of billions of dollars. Ecological impacts, particularly in the form of the death of fish and protected bird species, are likely to be nearly as significant. The recreational, aesthetic, and cultural values of the Sea will also deteriorate sharply. Precisely for those reasons, the QSA was *expressly premised* on the State's commitment to restore the Sea—yet, more than a decade after the agreements were signed, restoration has not occurred. This delay threatens irreparable harm to the Sea and jeopardizes the validity of the other parties' commitments under the QSA.

IID remains committed to the QSA as an essential component of statewide water policy in California and along the Colorado River, and does not seek to undo the many years of painstaking negotiations that were required to arrive at the delicate compromise the QSA parties

struck. But the QSA must be implemented *in its entirety*—and that includes the restoration of the Salton Sea. The residents of the Imperial and Coachella valleys simply cannot be made to shoulder the disproportionate burden—in the form of environmental degradation, severe air pollution, and a wide variety of accompanying economic challenges—of California's effort to live within its entitlement of Colorado River water. The State has received the benefit of the QSA. It now must live up to its legal commitment to restore the Sea as part of the compromise that brought it that benefit.

For that reason and those set forth in this petition, the SWRCB, in exercising its continuing authority to oversee the QSA transfer under Water Code § 1736, should require the State to fulfill its commitment to restore the Salton Sea as a condition of the QSA transfers. The obligation to restore the Sea unquestionably has been assumed by the State alone as part of the *quid pro quo* for the transfers. But the plan for restoration and state funding should be developed through a collaborative and cooperative process among all affected parties. The expertise of State, federal, Native American and local interests should be solicited in the formulation of the restoration plan. There is not time for years of deliberation and discussion. IID is proposing a plan of action now. And IID is prepared to be a leader and an active and engaged partner in the collaborative process.

IID proposes a multi-step process to accomplish this result. As an initial step, the Board should convene a status conference or workshop among all of the QSA parties, as well as other key stakeholders, and order the parties to meet and confer in a good-faith dialogue, with the objective of developing a consensus-based restoration plan and a realistic, viable mechanism for funding it. The results of this dialogue, along with legal and evidentiary submissions from the

parties (and public comment) regarding restoration of the Sea, would be presented to the Board in a final status conference or workshop, and then in a public adjudicatory hearing.

Because of the urgent need to have a fully funded restoration plan implemented immediately—and certainly by the time deliveries of mitigation water end in 2017—the Board should set an expedited timeframe for the process of no more than six months for the dialogue and subsequent status conference or workshop, with the public hearing to occur no more than nine months from the date of filing of this petition. In order to initiate and establish a timeline and procedures for these steps, the Board should hold the initial status conference or workshop within the next month.

This process will allow the Board to identify a restoration and funding plan that will best achieve the key objective of preventing the significant environmental and public-health consequences that the Salton Sea region would face absent restoration. IID's respectful view is that the Board, after full review of the factual and legal issues, should find that the public interest and the necessity of avoiding overwhelming environmental, public-health, and economic impacts at the Salton Sea and in the Imperial and Coachella valleys require modification of the 2002 Order to add the condition that the State comply with its commitment to implement and fund a Salton Sea restoration plan.

II. FACTUAL AND LEGAL BACKGROUND

The factual and legal background regarding IID's water rights and the Salton Sea goes back more than a century and has been thoroughly catalogued elsewhere, including in the Board's 2002 Order (*see* App. 7-25) and in the opinion of the California Court of Appeal rejecting certain challenges to the QSA (*In re Quantification Settlement Agreement Cases* (2011) 201 Cal.App.4th 758, 772-90 ["*In re QSA Cases*"]). This section briefly summarizes the key background points necessary to place this petition in context.

A. The Salton Sea Is a Critical Environmental Resource and the Imperial and Coachella Valleys Face a Dire Public-Health Threat If No Restoration Plan is Implemented and Funded

The Salton Sea, California's largest lake, occupies approximately 370 square miles of low-lying areas in Imperial and Riverside counties in southeastern California. For centuries prior to the westward settlement of California, the region had been home to a large freshwater lake known as Lake Cahuilla, which grew and shrank in size in a cyclical manner, in tandem with precipitation and runoff patterns. The Sea in its current incarnation was formed in 1905, when during a flood year the waters of the Lower Colorado River broke a levee and were diverted from their natural channel (flowing south to the Gulf of California) into an irrigation canal leading into the Imperial Valley. The river was restored to its natural course in 1907, but the Sea remained, and has been sustained ever since, primarily by agricultural return flows from the Imperial and Coachella valleys.

During that time, the Salton Sea has become one of California's most critical environmental resources. It serves as an indispensable buffer against windblown dust emissions in the Imperial and Coachella valleys, two regions that already suffer from some of the worst air pollution in California and the nation. Were the surface area of the Sea to be further reduced, newly exposed playa would emit an additional tens of thousands of tons of dust per year into the air, including potentially toxic compounds of arsenic, cadmium, chromium, lead, and selenium. (*See* Pacific Institute, *Hazard's Toll: The Costs of Inaction at the Salton Sea* (Sept. 2014), at pp. 13, 18 ("Pacific Institute Report").[4]) This would likely result in a significantly increased incidence of heart disease, heart attacks, lung cancer, asthma, and premature death in the

[4] Available at http://pacinst.org/publication/hazards-toll/.

Imperial and Coachella valleys, resulting in billions of dollars in public-health costs. (*Id.* at pp. 12, 17-19.)

The ecological significance of the Salton Sea is due in large part to its unparalleled array of bird species. The Sea is perhaps the single most important avian habitat in the United States, and among the most important in the world. The Sea's "combination of avian biodiversity and importance as breeding habitat is unsurpassed by any limited geographic area within the continuous 48 states and Latin America." (U.S. Bureau of Reclamation, *Restoration of the Salton Sea: Summary Report* (Sept. 2007) ("Bureau of Reclamation Report"), at pp. 1-8.[5]) More than 400 species of birds have been observed at the Sea, including a significant number listed as endangered, threatened, or as species of concern under the federal Endangered Species Act and the California Endangered Species Act. (Salton Sea Authority, *Salton Sea Authority Plan for Multi-Purpose Project* (July 2006) ("Salton Sea Authority Plan"), at p. 2;[6] App. 28.) Approximately 70 percent of all California's bird species have been sighted at the Sea—and a substantial portion of those species use it as their main breeding ground. (Bureau of Reclamation Report, *supra*, at pp. 1-5 through 1-8.) The Sea's avian habitat supports a thriving tourism industry in the region, including both bird-watching and fowl-hunting. (*Ibid.*)

The Sea also ranks among the most important locations on a number of international bird migratory routes. It is a major stop on the 5,000-mile-long Pacific Flyway, one of the main north-south avenues for migratory bird travel in the Americas. (Salton Sea Authority Plan, *supra*, at p. 2.) The U.S. Geological Survey's Bird Banding Laboratory has found that birds observed at the Salton Sea travel from as far away as Russia, Alaska, the Canadian Arctic,

---

[5] Available at http://www.usbr.gov/lc/region/saltnsea/FinalSummaryRpt.pdf.

[6] Available at http://saltonsea.ca.gov/pdfs/ssa-plan-board-review-copy-7-20-06.pdf.

Hawaii, Latin America, and the Maritime Provinces of eastern Canada. (Bureau of Reclamation Report, *supra*, at pp. 1-5.)

The Sea's bird habitat has taken on added importance in light of the degradation of wetlands elsewhere in California and the region; indeed, more than 90 percent of California's original wetlands have been lost due to development. (U.S. Fish & Wildlife Service, *Sonny Bono Salton Sea National Wildlife Refuge Complex: Endangered and Threatened Species.*[7]) In addition, the Colorado River Delta—which had long served as a principal bird habitat in the region—has been degraded significantly as a result of diversions in both the United States and Mexico, further heightening many species' reliance on the Salton Sea habitat.

The Sea's ecological value is not limited to protecting air quality and providing avian habitat. The Sea also supports an important fishery, which bolsters the local tourism economy by providing a food source for dozens of piscivorous bird species at the Sea. The Sea is also a popular tourist destination for a variety of other groups in Southern California and beyond, including photographers, kayakers, campers, hikers, backpackers. Finally, the Sea is an important Indian cultural resource, particularly for the Torres-Martinez Band of Cahuilla Indians.

The QSA transfers threaten these environmental values. Because agricultural return flows from the Imperial and Coachella valleys are the only significant source of inflow for the Sea, any proposal or plan that would result in less water being used in the Imperial and Coachella valleys—such as the QSA transfers—would, absent restoration or mitigation measures, result in a receding shoreline at the Sea, higher levels of salinity, and higher levels of air pollution in the region. As is discussed in greater detail below, the QSA parties and this Board recognized this serious threat, and designed a mitigation and restoration scheme that would preserve the Salton

[7] Available at http://www.fws.gov/saltonsea/endangered%20species.html.

Sea's environment even as the transfers would reduce water consumption in the Imperial Valley. But deliveries of mitigation water to the Sea (designed to offset the reduction in agricultural return flows resulting from the QSA transfers) are scheduled to end in 2017, and no restoration plan has been funded or implemented. Without restoration, the fishery at the Sea will die, which in turn will reduce and possibly eliminate the use of the Sea by piscivorous birds. Dust emissions from exposed playa will increase dramatically, with devastating effects for the region's air quality and significantly increased incidence of heart disease, asthma, lung cancer, and premature deaths in the Imperial and Coachella valleys. It is virtually impossible to overstate the threat to the Sea and to surrounding communities if no restoration plan is funded and implemented.

B. The QSA Was Designed to Reduce California's Use of Colorado River Water While Protecting the Environment at the Salton Sea and the Public Health of the Imperial and Coachella Valleys

The QSA was carefully crafted to avoid precisely the types of environmental and public-health impacts described above. In particular, because of widespread concerns about the impacts of the QSA transfers, the QSA parties and the State agreed to the transfers contingent upon the State making good on its commitment to restore the Salton Sea. Yet, more than a decade after the QSA was signed, restoration of the Salton Sea remains an unfulfilled promise.

1. QSA Background

Farmers and municipalities in the Imperial Valley have been diverting and beneficially using Colorado River water since before the turn of the 20th century. As a result of this long history of water use, IID holds some of the most senior water rights on the Colorado River. These are reflected in Water Right Permit No. 7643 (Jan. 1950), which confirms IID's right to divert and beneficially use up to 3.85 million afy of Colorado River water. It is neither a coincidence nor a historical accident that IID holds these water rights: the citizens of the Imperial

Valley acquired the rights by dint of their labor, and their early appropriation and beneficial use of Colorado River water ensured that California would receive in perpetuity a substantial portion of the river's annual flow. Indeed, based on its early diversion and beneficial use of water, IID would have been entitled to claim rights to more than 7 million afy of Colorado River water. As part of the 1931 Seven-Party Agreement among California users, IID voluntarily agreed to limit itself to 3.85 million afy, in the interests of statewide and regional cooperation in water policy.

For many decades, California diverted and beneficially used more than the 4.4 million afy of Colorado River water to which it is entitled under federal law. This was possible primarily because the other basin states were slower to develop than California and were not yet using their full share of Colorado River water. Hydrological conditions of the Colorado River also provided surplus water on the river. As a result of this unused and surplus water, California users, including agricultural users and urban water districts in Southern California with water rights junior to IID's, were allowed to divert and use more water than they were legally guaranteed under the Boulder Canyon Project Act, the California Limitation Act, and the Seven-Party Agreement.

Beginning in the late 1990s, as more basin states began using their full share of Colorado River water and due to severe drought in the Colorado River basin, the federal government began to press California to limit itself to its 4.4 million afy entitlement. Eventually, Reclamation threatened to take legal action if California did not voluntarily reduce its usage of water. This prospect of curtailment posed the greatest threat to more junior users of Colorado River water. The possibility that water agencies within California might lose part of their supplies of Colorado River water, in turn, posed a significant threat to water users (and to the environment) in

Northern California and the San Joaquin Valley, due to the likelihood that the agencies would seek to compensate for any lost water by increasing imports from the State Water Project.

To help reduce California's usage of Colorado River water, in 1998 IID entered into an agreement for a long-term transfer of 300,000 afy to SDCWA. MWD and CVWD challenged that plan, both in the courts and before the Board, claiming that it would impair their own water rights, in violation of both state and federal law. Around the same time, as other Colorado River basin states began using their full share of Colorado River water, the federal government placed increased pressure on California to reduce its use of water to its 4.4 million afy entitlement. In order to reach an agreement that would benefit all water users in Southern California (and ease demands on State Water Project imports from Northern California), IID, MWD, SDCWA, CVWD and other agencies began negotiations on what ultimately would become the QSA. They formulated a plan, which eventually would become the centerpiece of the QSA, for IID to transfer up to 200,000 afy of conserved water to SDCWA and up to a total of 103,000 afy of conserved water to CVWD (and at times, potentially to MWD), over a period of at least 35 and up to 75 years. These amounts are in addition to the approximately 105,000 afy IID transfers to MWD pursuant to a 35-year agreement entered into in 1988.

2. The QSA Mitigation and Restoration Scheme and the 2002 Order

IID and its partner agencies conducted an extensive environmental review process, culminating in the preparation and certification of the EIRs. The EIRs revealed that the proposed QSA transfers were expected to have numerous significant impacts on the environment at the Salton Sea and in the Imperial and Coachella valleys, including with respect to salinity, air quality, water quality, soils, aesthetics, and cultural and recreational resources. (*See, e.g.*, App. 239-243.) IID and its partner agencies designed a multifaceted mitigation plan, which entailed, for a period of 15 years, deliveries of mitigation water to the Salton Sea in order to offset the

reductions in agricultural return flows that would otherwise have occurred as a result of the transfers. This mitigation plan, the QSA parties reasoned, would preserve baseline environmental conditions at the Salton Sea for a period long enough to allow a plan for the restoration of the Sea—the only viable long-term strategy for protecting the environment at the Sea compatible with reduced water consumption in the Imperial Valley—to be identified, funded, and implemented.

Under California law, the Board's approval was required for the proposed transfer to go forward. Section 1736 of the Water Code grants the Board the authority and duty to ensure that no long-term transfer of water will "result in substantial injury to any legal user of water" or "unreasonably affect fish, wildlife, or other instream beneficial uses." IID and SDCWA jointly petitioned the Board for approval of the proposed transfer.

After a 15-day evidentiary hearing and extensive public participation and comment, the Board issued a draft decision in September 2002 and its final order, the 2002 Order, on December 20, 2002. In the 2002 Order, the Board conditionally approved the proposed transfer. It recognized that the proposed transfer had "the potential to adversely affect fish and wildlife at the Salton Sea" as a result of reduced agricultural return flows (App. 41), and also expressed its "particular concern" about "[t]he impacts to air quality of the proposed transfer" that would result from increased dust emissions (App. 73).

In order to avoid and mitigate these effects, the 2002 Order expressly conditioned the proposed transfers on the implementation of a variety of mitigation measures, including many of the measures identified in the EIRs. It ordered the parties, for a period of 15 years, to implement the Salton Sea Habitat Conservation Strategy—a plan that was outlined in the EIRs and that provided for mitigation water to be delivered to the Sea during the same 15-year period in order

to maintain baseline salinity levels, water elevation, and surface area during that time. (App. 47-48.) This measure, the Board reasoned, would "mitigate[ ] project impacts to the Salton Sea for a long enough period to provide time to study the feasibility of long-term restoration actions" without "prejudging those restoration-planning efforts." (App. 7.) Restoration was thus an integral and essential component of the overall QSA scheme.

In its 2002 Order, the Board went to great lengths to emphasize the importance of considering both the interests of the State as a whole and the specific, localized concerns of communities in the Imperial and Coachella valleys and around the Salton Sea. It concluded that the approach it had selected—conditionally approving the transfer but requiring a robust mitigation scheme—achieved "a reasonable balance between the State's interest in protecting the fish and wildlife that depend on the Salton Sea, the State's interest in protecting the economy of Imperial County, and the State's interest in the implementation of this transfer to meet California's water supply needs." (App. 7.) Significantly, the Board expressly recognized that its duty to consider the interests of the environment in the Imperial and Coachella valleys and at the Salton Sea was an ongoing one. For that reason, the Board "reserve[d] continuing authority to consider whether it would be appropriate to add, delete, or modify the mitigation measures required" by the 2002 Order, in light of future developments, including a study on Salton Sea restoration. (App. 51, 70, 91, 95.)

The Board's 2002 Order merely *allowed* the parties to enter into a transfer agreement; it did not *require* it. (App. 7.) And the parties proved unable to reach a final agreement during 2002 and early 2003. As discussed in greater detail below (*see infra* Section III.B.2), this failure resulted in principal part from widespread concerns that the proposed transfer would have significant, unmitigated adverse impacts on the environment at the Salton Sea and in the Imperial

and Coachella valleys—concerns that could be fully addressed only if the parties could be certain that Salton Sea restoration would accompany the proposed QSA. (*See* D. Kasler & S. Leavenworth, Salton Sea Impact Threatens to Sink Crucial Water Deal, *Sacramento Bee*, Apr. 28, 2002.) Throughout much of 2003, the QSA parties were at an impasse due to these environmental concerns.

In response to this lack of progress, the federal government took actions designed to force California to reduce its use of Colorado River water to 4.4 million afy. In July 2002, Reclamation initiated proceedings under 43 C.F.R. Part 417, which it interpreted (incorrectly, in IID's view) to give it the authority to make determinations about which users should receive Colorado River water. Under this purported authority, Reclamation directed the reduction of IID's water allocation for 2003 by approximately 250,000 acre-feet. Although IID's water allocation ultimately was not reduced because IID sued in federal court and obtained an injunction to halt this reduction, the federal government continued to exert significant pressure on California to limit itself to its 4.4 million afy entitlement. (*See In re QSA Cases*, *supra*, 201 Cal.App.4th at p. 788.)

3. The QSA Legislation

Around this time, the Legislature, recognizing the threat to California water users and to the environment if no plan were adopted to reduce California's use of Colorado River water, began taking a more active role. In September 2002, it enacted Senate Bill 482, which was designed to facilitate implementation of the QSA by authorizing the California Department of Fish and Game to issue permits for the take of certain endangered and threatened species resulting from impacts attributable to the QSA transfers. But the QSA remained stalled, in large part because of concerns about the likely environmental consequences of the transfers. (D. Kasler & S. Leavenworth, Salton Sea Impact Threatens to Sink Crucial Water Deal, *Sacramento*

Bee, Apr. 28, 2002 ["As badly as state regulators want the Imperial water transfer, they fear it could accelerate the decline of the Salton Sea, creating monstrous dust storms and killing scores of birds and fish in California's largest lake."].)

Alarmed by this lack of progress, the Legislature took on additional commitments pertaining to Salton Sea restoration and mitigation in order to encourage the QSA parties to reach an accord. In a package of three bills (SB 277, SB 317, and SB 654—collectively, the "QSA legislation"), the Legislature agreed to assume the costs of Salton Sea restoration and QSA mitigation, with the exception of the first $133 million (in 2003 dollars) in QSA mitigation costs, which were to be borne by IID, CVWD, and SDCWA. In particular, in SB 277, the Salton Sea Restoration Act, the Legislature declared it to be "the intent of the Legislature that the State of California undertake the restoration of the Salton Sea ecosystem and the permanent protection of the wildlife dependent on that ecosystem." (Fish & Game Code § 2931, subd. (a)).[8] The sponsors of the bill explained that it entailed "a commitment on the part of the state to restore the Salton Sea," and that SB 277 "states that it is the responsibility of the State of California to restore the Salton Sea." (App. 99.)

---

[8] SB 277 also provided that the restoration would be carried out in accordance with a "preferred alternative developed as a result of the restoration study" to be undertaken by the Resources Agency. (SB 277, Ch. 611, 2003–2004 Reg. Sess.; *see* Fish & Game Code §§ 2930-2933.).

SB 317 required IID to provide a total of 1.6 million acre-feet of conserved water to the Salton Sea for mitigation purposes and for sale to fund restoration. It also required the Resources Agency to carry out the Salton Sea restoration study referenced in SB 277, and permitted the Department of Fish and Game to issue certain take permits for impacts of QSA-related activities. (SB 317, Ch. 612, 2003–2004 Reg. Sess.; *see* Fish & Game Code § 2081.7; Water Code § 1013.)

SB 654 authorized the Department of Fish and Game to enter into an agreement with CVWD, IID, and SDCWA to assume the cost of QSA-related environmental mitigation in excess of $133 million. (SB 654, Ch. 613, 2003–2004 Reg. Sess.; *see* Water Code § 12562.)

The QSA legislation, and in particular the State's commitment to the restoration of the Salton Sea, led IID and the other agencies negotiating the agreements to modify, in certain important respects, the package of mitigation measures that had been proposed to accompany the QSA water transfers. In addenda to the EIRs adopted in October 2003, the QSA parties took note of the enactment of the QSA legislation, which the EIRs described as being designed to "facilitate implementation of the QSA, as well as restoration of the Salton Sea." (App. 296.) The changes set forth in the addenda "were designed to reflect the terms of the new state legislation ... and to accommodate state goals with respect to restoration of the Salton Sea." (App. 271.)

These changes included, among others, a reduction in the time period specified during which mitigation water would be delivered to the Salton Sea. The final EIRs had envisioned the delivery of mitigation water until 2030, but the QSA parties determined that, in light of the State's commitment to restore the Sea, deliveries of mitigation water would be necessary only until 2017. Indeed, 2017 was considered an *outer limit* of the extent to which these deliveries would be necessary, because the parties understood that a restoration plan would be in place before then. The parties "anticipated that, at some point during the first 15 years of the QSA term," deliveries of mitigation water would become unnecessary, in light of "the approved Salton Sea restoration plan." (App. 276.) That prediction, and the changes the QSA parties made to the mitigation plan in reliance on the QSA legislation, were reasonable and appropriate in 2003, but the State's unanticipated failure to restore the Sea means that, absent action from this Board, there will be no restoration plan in place when deliveries of mitigation water end in 2017.

4. The QSA Agreements

The QSA legislation, designed specifically to provide assurances to the QSA parties and the public that their concerns regarding the environmental effects of the QSA would be

addressed, had precisely that effect. In deciding to enter into the QSA, the parties directly and detrimentally relied upon the commitments made by the State through the QSA legislation. On October 10, 2003, IID, MWD, CVWD, SDCWA, state and federal agencies, as well as other water agencies, municipalities, and Indian tribes, signed the related agreements that together comprise the QSA. In so doing, they expressly agreed that the QSA was "premised on," among other things, the "continuation of the QSA Legislation [*i.e.*, SB 277, SB 317, and SB 654] in full force and effect without material modification." (App. 331, 334.) IID, SDCWA, CVWD, and the State also entered into the QSA Joint Powers Authority Creation and Funding Agreement ("Joint Powers Agreement" or "JPA Agreement"), which effectuated the plan the Legislature had authorized in SB 654. IID, SDCWA, and CVWD agreed to pay the first $133 million of Salton Sea mitigation costs, "with the balance to be borne by the State." (App. 341.) As the Court of Appeal has recognized, "the agreement ... unconditionally obligate[s] the state to pay the excess mitigation costs beyond those for which [IID], Coachella, and San Diego are responsible." (*In re QSA Cases*, *supra*, 201 Cal.App.4th at p. 775.)

C. Since the QSA Was Signed, a Variety of Restoration Plans Have Been Studied and Proposed, But the State Has Not Fulfilled Its Obligation to Restore the Salton Sea

In its 2002 Order, the SWRCB recognized that it would be premature to explicitly condition the QSA transfers on the restoration of the Salton Sea, because it was not yet known whether restoration of the Sea was even feasible. (Appendix ["App."] 7.) In addition, the Legislature had not yet enacted SB 277, in which it committed the State to restoring the Sea and ordered the Resources Agency to study restoration and identify a preferred alternative. Over the past decade, several government agencies and nongovernmental organizations have put forth a variety of restoration plans. These proposals vary in their specifics and any such plan would need to be modified and updated before being implemented, but the plans confirm that

restoration is feasible at a realistic cost and necessary to protecting both the environment of the Salton Sea and the public health and economies of the nearby communities in the Imperial and Coachella valleys. Yet the State has not met its obligation to restore the Sea.

The Salton Sea Authority, an intergovernmental agency whose board of directors represents Imperial and Riverside counties, IID, CVWD, and the Torres-Martinez Desert Cahuilla Indians, released a restoration plan in July 2006. The cost estimate for the Salton Sea Authority's plan was $2.2 billion, of which the Authority projected "[a] significant portion … can be locally financed" through the development of renewable energy resources in the region and other sources of revenue. (Salton Sea Authority Plan, *supra*, at p. ES-12.) IID, along with Imperial County and the Imperial County Air Pollution Control District, endorsed the Salton Sea Authority plan in an October 2013 Memorandum of Understanding as a framework for restoration of the Sea, while recognizing that the plan would need to be "updated, revised, or superseded by a new restoration plan consistent with inflow estimates and projected revenue … that may result in a smaller but still sustainable Salton Sea." (Memorandum of Understanding (Oct. 24, 2013), at p. 3.[9])

As required by the QSA legislation, the Resources Agency published in May 2007 its Salton Sea Ecosystem Restoration Program Preferred Alternative Report and Funding Plan ("Preferred Alternative Report").[10] This report considered nine separate alternatives for Salton Sea restoration and identified a preferred alternative. *Id.* at pp. ES-2 through ES-9; *see also* California Legislative Analyst's Office, Restoring the Salton Sea, at p. 21 (Jan. 24, 2008) ("LAO

---

[9] Available at http://www.iid.com/Modules/ShowDocument.aspx?documentid=8308.

[10] Available at http://www.water.ca.gov/saltonsea/docs/Funding_Plan.pdf.

Report").[11] The preferred alternative was projected to cost $8.9 billion, with major construction expected to begin in 2014. (*Ibid.*)

In September 2007, the Bureau of Reclamation issued its own report analyzing prospects for Salton Sea restoration, acting pursuant to a federal statute—the Water Supply Reliability and Environmental Improvement Act of 2004 (118 Stat. 1681, Pub. L. No. 108-361)—which required Reclamation to complete a new feasibility study on Salton Sea restoration. Reclamation's report evaluated a number of the same options that had been considered by the Salton Sea Authority and the Resources Agency. Although Reclamation declined to recommend the adoption of any particular alternative, it estimated that the no-project alternative—*i.e.*, the status quo without any restoration efforts—would entail at least $1.4 billion in mitigation costs and would have substantial negative air-quality impacts. (Bureau of Reclamation Report, *supra*, at p. xvi.) Given that reality, Reclamation suggested that consideration be given to an option involving construction of "shallow saline habitat complexes," which "could minimize both risk and costs, while providing historic wildlife habitat replacement and partial mitigation of air quality impacts associated with reduced future inflows at the Salton Sea." (*Id.* at p. xvii.)

Despite these extensive studies, little restoration work actually has taken place at the Salton Sea. Proposition 84, passed by the voters in 2006, provided $47 million for restoration of the Salton Sea. (LAO Report, *supra*, at pp. 29-30.) In 2013, the Legislature approved an additional $30 million in its annual budget for an additional restoration study. (*See, e.g.*, California Budget OKs $30M for Salton Sea Study, *Desert Sun (Palm Springs)*, June 27, 2013.) The water bond approved by California voters on the November 2014 ballot includes up to $475 million to fund state obligations relating to environmental restoration projects, some portion of

[11] Available at http://www.lao.ca.gov/2008/rsrc/salton_sea/salton_sea_01-24-08.pdf.

which may be available for Salton Sea restoration. (*See, e.g.*, K. Daly, Water Bond that Could Benefit Salton Sea Restoration Will Be on the November Ballot, *Imperial Valley Press*, Aug. 15, 2014.) These sums, along with the $30 million contributed by IID, SDCWA, and CVWD to the Salton Sea Restoration Fund as required by SB 654, are not insubstantial, but they fall well short of what the State's obligations require. (*See, e.g.*, California State Auditor, Salton Sea Restoration Fund Report (Nov. 2013) ("State Auditor Report"),[12] at p. 3 [noting that, as of June 2013, the amount of money available for Salton Sea restoration through 2047 "totals roughly $81.8 million, or $2.2 billion less than the cost to construct the least costly restoration alternative included in the Preferred Alternative Report"].)

In 2013, the Legislature renewed its commitment to Salton Sea restoration by enacting AB 71, signed into law by Governor Brown on September 28, 2013. AB 71 reaffirmed that it remains "the intent of the Legislature," among other things, to, "[p]ermanently protect fish and wildlife that are dependent on the Salton Sea ecosystem," "[r]estore the long-term stable aquatic and shoreline habitat for fish and wildlife that depend on the Salton Sea," and "[m]inimize noxious odors and other water and air quality problems." (AB 71, Ch. 402, 2013-2014 Reg. Sess., § 1; *see* Fish & Game Code § 2940.)[13] AB 71 also provides that the Secretary of Resources "shall lead the Salton Sea restoration efforts," which "shall include," among other things, habitat demonstration projects and research into water quality, air quality, and biological restoration. (AB 71, Ch. 402, 2013-2014 Reg. Sess., § 2; *see* Fish & Game Code § 2942.) AB 71 requires the Secretary of Resources to "consult[ ]" and "coordinat[e]" with the Salton Sea

[12] Available at http://www.bsa.ca.gov/pdfs/reports/2013-101.pdf.

[13] AB 148, signed into law by Governor Brown on July 16, 2014, made a minor alteration to part of this language, so that the Legislature's present intent is to "protect and provide long-term conservation" of fish and wildlife at the Salton Sea, rather than to "[p]ermanently protect fish and wildlife" at the Sea. (AB 148, Ch. 124, 2013-2014 Reg. Sess.)

Authority in undertaking these efforts. (AB 71, Ch. 402, 2013-2014 Reg. Sess., § 1; *see* Fish & Game Code §§ 2942, 2943.) The Legislature's inclusion of funding in the 2014 water bond to help meet the State's QSA-related restoration obligations is further evidence of the Legislature's recognition of its obligations to the Sea and to the Imperial and Coachella valleys.

In November 2013, the State Auditor issued a report concluding that the State faces significant, open-ended mitigation liabilities—and that the Imperial and Coachella valleys face a potential environmental and public-health crisis—if progress on restoration is not made soon. (*See* State Auditor Report, *supra*, at pp. 1-5.) The State Auditor noted that the Resources Agency had estimated in its May 2007 Preferred Alternative Report that the State's liability for Salton Sea environmental mitigation costs would be approximately $800 million (in 2006 dollars) in upfront construction costs and $50 million in annual operations and maintenance costs. (*Id.* at p. 2.) The State Auditor went on to conclude that "the actual costs ... are likely to be significantly greater when adjusted for inflation" and emphasized that the $800-million-plus-$50-million-annual-cost figure "does not reflect all of the mitigation costs the State may incur in satisfying its financial obligations under the QSA." (*Ibid.*) The State Auditor also recognized that "by performing restoration activities now that are also designed to reduce the need to undertake mitigation activities in the future, the State could potentially decrease its future mitigation costs." (*Id.* at pp. 2, 23.) The State Auditor noted that these mitigation costs will ramp up quickly once the $133 million mitigation funding provided by IID, SDCWA, and CVWD is used up—a milestone that currently is on track to occur around the year 2025. (*Id.* at pp. 2, 23.)

Most recently, a report authored by the Pacific Institute highlighted the significant costs that failure to restore the Salton Sea will exact on the environment at the Sea and in the Imperial

and Coachella valleys. The report forecast that, if no restoration plan is implemented when deliveries of mitigation water come to an end in 2017, in a span of 15 years the salinity of the Sea will triple, the volume of the Sea will decrease by more than 60 percent, and 100 square miles of dust-generating playa will be exposed to the wind, exacerbating the already severe air quality problems in the region. (Pacific Institute Report, *supra*, at p. iv.) The report estimated that the public-health costs associated with failure to restore the Sea would be at least $3 billion through 2047 and could reach $37 billion, in addition to tens of billions of dollars in ecological damage at the Sea, reduced property values, and diminished agricultural productivity. (*Id.* at pp. v-vi.)

D. IID and Farmers in the Imperial Valley Have Fulfilled All of Their Obligations Under the QSA, at Significant Cost and Difficulty

Even as the State has failed to fulfill its commitment to restore the Sea, IID, along with farmers in the Imperial Valley and their partner QSA water agencies, have fulfilled all of their QSA-related obligations, despite the significant costs and challenges they have faced in doing so. Since the execution of the QSA in 2003, IID has conserved, transferred, and/or reduced its use, to the benefit of other California water agencies, in excess of 2.7 million acre-feet. As the Salton Sea mitigation water requirement winds down during the next critical three-year period, IID is scheduled to conserve and transfer nearly 800,000 acre-feet more to its QSA partners while delivering another 390,000 acre-feet of water to the Sea for mitigation purposes. Under the QSA, IID is scheduled to provide 12.3 million acre-feet of conserved water for transfer through 2047 (the balance of the initial 45-year term).

1. Performance by IID and Farmers in the Imperial Valley

IID and farmers in the Imperial Valley have fully and faithfully lived up to all of their obligations under the QSA. IID has delivered water to SDCWA, CVWD, and MWD in

accordance with the schedule of deliveries set forth in the agreements. It has done so even though that commitment has required fallowing over 200,000 acres of farmland in the Imperial Valley since execution of the QSA, with thousands more acres of farmland that will be fallowed during the next critical three-year period until the delivery of mitigation water to the Salton Sea ceases. This significant amount of fallowing reduces overall economic activity and job opportunities available in the region, which already suffers from some of the highest unemployment rates in the nation. "El Centro, the largest city in the Imperial Valley and a stronghold of lettuce growers... has nearly the highest unemployment rate in the country" at "a jobless rate of 21.1%, second only to the 26.5% rate in Yuma, Ariz.," which is only minutes away from El Centro. (El Centro's 21.1% Unemployment Rate Second Highest in U.S., *L.A. Times*, July 1, 2014.) Fallowing land in the Imperial Valley has far-reaching economic impacts to many, including the agricultural workers and service providers of this industry.

IID and farmers in the Imperial Valley have implemented extensive water conservation measures, in order to ensure that Colorado River water is used in the most efficient, cost-effective manner possible. IID has also been a committed partner of the Bureau of Reclamation and other Colorado River basin states in working toward cooperative, basin-wide solutions to the problems the River faces in an era of increasing supply challenges.

2. QSA Mitigation Efforts and Facilitation of Restoration

Along with SDCWA and CVWD, IID has funded all mitigation measures required by the QSA, under the auspices of the Joint Powers Authority. To date, the Joint Powers Authority has "primarily used the three water agencies' mitigation funds to pay for delivery of mitigation water into the sea" (which, as discussed above, is scheduled to end in 2017), as well as a handful of other projects, including the four-step air-quality monitoring and mitigation scheme outlined in the EIRs and research into other ways to reduce fugitive dust emissions from exposed playa at

the Sea. (State Auditor Report, *supra*, at p. 10.) The Joint Powers Authority also has used the mitigation funding provided by IID, CVWD, and SDCWA to study the impacts on wildlife of high salinity levels and increased concentrations of selenium in the Sea and its tributaries. The State Auditor reported that IID and its partner agencies are on track to complete their mitigation funding obligations within approximately 10 years, at which point mitigation funding will become the sole and exclusive obligation of the State. (State Auditor Report, *supra* at p. 1.)

The Joint Powers Authority operates on an annual budgeting cycle, so it has not yet approved or funded mitigation plans for the years after deliveries of mitigation water end. Yet it is clear that the mitigation costs that will become necessary absent restoration will be substantial. The Resources Agency has estimated that mitigation will cost $800 million in 2006 dollars (equivalent to nearly $950 million in 2014 dollars), and possibly more. (State Auditor Report, *supra*, at p. 17.) That figure, moreover, actually understates the severity of the mitigation challenges facing the Sea if no restoration plan is implemented. The bulk of the money would be spent to prevent and mitigate fugitive dust emissions from exposed playa, but there is no guarantee that those efforts will succeed, and the $800 million figure does *not* include any significant funding for salinity control or saline habitat—both of which are essential to the ecological health of the Sea. IID will continue to bear mitigation costs as required by the JPA Agreement, but its obligation, along with those of CVWD and SDCWA, are capped at $133 million (in 2003 dollars), with all mitigation costs beyond that amount to be borne by the State alone.

In addition to funding Salton Sea mitigation through the Joint Powers Authority, IID has gone above and beyond its legal obligations to lay the groundwork for the State to fulfill its commitment to restore the Sea. In 2013, IID in partnership with Imperial County launched the

Salton Sea Restoration and Renewable Energy Initiative ("Initiative") to jumpstart stalled restoration work at the Sea. The Initiative seeks to develop renewable energy resources at the Sea and to play a constructive role, as envisioned by AB 71, in working with the State to identify beneficial restoration projects at the Sea that can be implemented and funded. While IID believes the Initiative can help build momentum toward restoration of the Sea, the fact remains that the obligation to restore the Sea belongs to the State alone, and it has not yet fulfilled that obligation.

3. QSA Litigation

IID has also been a staunch defender of the QSA in the courts. For more than a decade, it has expended significant financial resources defending the QSA against a wide variety of legal challenges. In 2003, shortly after the QSA was executed, IID filed an action in California Superior Court seeking to validate the agreements pursuant to Code of Civil Procedure § 22762 and Water Code § 860. That action was ultimately consolidated with lawsuits challenging the environmental impacts of the QSA transfers under CEQA, brought by Imperial County and the Imperial County Air Pollution Control District (among others). After seven years of litigation, the Superior Court invalidated the QSA on the ground that the JPA Agreement violated constitutional prohibitions barring the State from incurring debts and prohibiting the courts from ordering the Legislature to make appropriations. In 2011, the California Court of Appeal reversed and remanded the case. (*See In re QSA Cases*, *supra*, 201 Cal.App.4th 758.) On remand, in June of 2013, the trial court issued an order validating the QSA. Several parties appealed that ruling, and the appeals remain pending before the Court of Appeal. (*See In re Quantification Settlement Agreement Cases*, No. C074592, Cal. Ct. App. (3d Dist.).)

Throughout the QSA litigation, IID has consistently argued—and still maintains—that, notwithstanding the potential environmental effects of the QSA, the legal challenges to the

transfers lack merit under California law. But, IID has emphasized, that is true *only because* the QSA included, as indispensable elements, robust mitigation measures and an unequivocal commitment by the State to restore the Sea. The QSA litigation, in short, provides additional support for the conclusion that if the QSA is to continue—as IID believes it should—it must continue *in its entirety*, including through the fulfillment of the State's commitment to restore the Salton Sea.

III. THE BOARD SHOULD EXERCISE ITS "CONTINUING AUTHORITY" TO MODIFY ITS 2002 ORDER AND REQUIRE THE STATE TO FULFILL ITS STATUTORY OBLIGATION TO RESTORE THE SALTON SEA AS A CONDITION OF THE QSA TRANSFERS.

In its 2002 Order, the Board repeatedly emphasized that it retains the authority to revisit the impacts of the QSA transfers in light of future developments. In particular, the Board made clear that it would reassess the impacts of the QSA transfers after the 15-year period during which mitigation water would be delivered to the Salton Sea. That period of time, the Board concluded, would be sufficient to determine whether a feasible Salton Sea restoration plan could be devised and implemented.

Given the State's failure to make any significant progress on fulfilling its restoration obligations, it is time for the Board to revisit the 2002 Order. Over the past 15 years, multiple studies have demonstrated that restoration of the Salton Sea is both feasible and essential to maintaining the environment and public health at the Salton Sea and in the Imperial and Coachella valleys. In light of those studies, as well as the State's unequivocal statutory commitment to restore the Sea as part of the QSA, the Board should take steps to ensure that the State follows through on its commitment. The Board should initiate a collaborative, cooperative process that would bring together all of the QSA parties and Salton Sea Authority member agencies to agree upon a restoration plan that can realistically be presented to the Board,

implemented, and funded in time to prevent the environmental and public-health crisis that the Sea otherwise faces. IID stands ready to be an active and engaged partner in that process. Whatever the outcome, there can be no doubt but that the State *must* restore the Sea as a condition of the QSA transfers.

The QSA was crafted to solve a statewide problem—namely, California's urban reliance on excess on the Colorado River to meet its water supply needs. Absent the QSA transfers, water users junior to IID would have faced significant reductions and shortages, and immense strain would have been placed on environmental resources elsewhere in the State—particularly in the Sacramento-San Joaquin River Delta. The QSA has been largely successful in averting these threats, and the State and the water agencies receiving conserved water have reaped the benefits of the transfers. But just as the QSA has statewide benefits, so too must its costs—the threat of significant, irreversible environmental and public-health impacts at the Salton Sea and in the Imperial and Coachella valleys—be borne by the State as a whole, as the QSA envisioned.

A. The Board Has Both the Authority and the Duty to Impose New or Modified Conditions on the QSA Transfers to Protect the Environment

The Legislature has vested the Board with "plenary power and duties of management and oversight of valuable water resources." (*United States v. State Water Resources Control Bd.* (1986) 182 Cal.App.3d 82, 148; *see also Light v. State Water Resources Control Bd.* (2014) 226 Cal.App.4th 1463, 1485 [the Board possesses "full authority to exercise the adjudicatory and regulatory functions of the state in the field of water resources" (internal quotation marks and citation omitted)]; Water Code §§ 174, 179.) This includes the "broad authority to control and condition water use," which "includes protection of the environment." (*Light*, *supra*, 226 Cal.App.4th at p. 1485.) The Board also possesses all "'powers … that may be necessary or

convenient for the exercise of its duties authorized by law.'" (*Id.* at p. 1482 [quoting Water Code § 186, subd. (a)].)

Sections 1701 and 1736 of the Water Code set forth the Board's authority and duty as they relate to the approval of petitions for changes in a water rights permit. Section 1701 provides that an "applicant, permittee, or licensee" (such as IID in this instance) "may change the point of diversion, place of use, or purpose of use" from that specified in a water rights permit, and that such change "may be made only upon permission of the Board." The QSA transfers fall under this provision because they entail all three of those triggering types of changes: During the period of up to 75 years in which the QSA transfers are in effect,[14] water transferred by IID to SDCWA or MWD (1) will be diverted at Parker Dam instead of Imperial Dam; (2) will be used in urban Southern California rather than the Imperial Valley; and (3) will be used for a variety of purposes (including residential and industrial use) rather than for primarily agricultural purposes.

Section 1736 sets forth the standards the Board must apply in deciding whether to approve or reject a petition for a long-term transfer, defined in Section 1735 as any transfer involving a "change of point of diversion, place of use, or purpose of use ... for any period in excess of one year." Section 1736 provides that the Board may approve such a petition only "where the change would not result in substantial injury to any legal user of water and would not unreasonably affect fish, wildlife, or other instream beneficial uses." (*See also United States v. State Water Resources Control Bd.*, *supra*, 182 Cal.App.3d at p. 103 [Board generally must

[14] Under Water Code § 1737, "[f]ollowing expiration of the long-term transfer period, all rights shall automatically revert to the original holders of the right without any action by the board." (*See also* Water Code § 1011, subd. (c) ["Notwithstanding any other provision of law, upon the completion of the term of a water transfer agreement, or the right to the use of that water, that is available as a result of water conservation efforts ... the right to the use of the water shall revert to the transferor as if the water transfer had not been undertaken."].)

"consider the amounts of water required for recreation and the preservation and enhancement of fish and wildlife resources and needed to remain in the source for the protection of beneficial uses" (internal quotation marks and citation omitted)].)

Section 1736, like the other sections of the Water Code delineating the Board's power, grants the Board not merely a one-time power, but rather the "continuing authority," as well as the statutory duty, to oversee water use and to ensure compliance with the law. (*United States v. State Water Resources Control Bd.*, *supra*, 182 Cal.App.3d at p. 129; *see also id.* at p. 152 [Board possesses the "power and duty to reopen ... permits to protect fish and wildlife wherever feasible" (internal quotation marks omitted)]; *Environmental Defense Fund, Inc. v. East Bay Mun. Util. Dist.* (1980) 26 Cal.3d 183, 190 [Board retained jurisdiction over water permits to adapt to future changes in conditions]; *cf. Nat'l Audubon Soc'y v. Superior Court* (1983) 33 Cal.3d 419, 447 [public trust doctrine "imposes" on the Board "a duty of continuing supervision over the taking and use of ... appropriated water" in California]; App. 23 & fn. 5 [2002 Order, noting that Section 1736 "effectively codifies the SWRCB's duty to consider public trust uses" when adjudicating change petitions (citing *National Audubon Society*)].)

Consistent with these principles, the Board in its 2002 Order repeatedly and expressly "reserve[d] continuing authority to consider whether it would be appropriate to add, delete, or modify the mitigation measures required by this order to protect the Salton Sea" in light of later developments. (App. 51; *see also, e.g.*, App. 50, fn. 11; 51, fn. 12; 57; 64; 68; 78; 81; 91; 95.) In addition, the Board specifically identified 15 years—the period during which deliveries of mitigation water to the Sea would continue—as the timeframe after which it would be appropriate to revisit the 2002 Order. (*See* App. 70 ["Because the SWRCB is reserving continuing authority to amend the conditions specified in this order after 15 years, we may

consider other actions to mitigate" the impacts of the QSA transfer "in the future."]; App. 51, fn. 12 ["Because we are reserving continuing authority, we need not speculate at this time on how or under what circumstances the SWRCB should address degradation that may occur 15 years from now."].) Indeed, the case law is clear that the Board possesses the "power and duty to reopen … permits to protect fish and wildlife 'wherever feasible,' even *without* a reservation of jurisdiction." (*United States v. State Water Resources Control Bd.*, *supra*, 182 Cal.App.3d at p. 152 [quoting *Nat'l Audubon Soc'y*, 33 Cal.3d at p. 446-47].)

In light of these authorities, it is clear that the Board has the authority under the Water Code to revisit its 2002 Order and add or modify conditions on the QSA transfers. It is also clear that the Board has a statutory duty to ensure that the QSA transfers do not have an unreasonable adverse effect on the environment at the Salton Sea and in the Imperial and Coachella valleys. Revisiting the 2002 Order is particularly necessary and appropriate before the end of the 15-year period in 2017, during which the mitigation measures contained in the 2002 Order are in effect. IID is filing this petition now, in 2014, in order to ensure that a restoration plan is identified and implemented before deliveries of mitigation water conclude at the end of 2017. It will not be sufficient to try to respond retroactively to environmental and public-health impacts at the Sea and in the Imperial and Coachella valleys after they have already taken place.

B. The Board Should Require the State to Fulfill Its Statutory Commitment to Restore the Salton Sea as a Condition of the QSA Transfers

Section 1736, as discussed above, requires the Board to determine whether a proposed long-term transfer would "unreasonably affect fish, wildlife, or other instream beneficial uses." That formulation calls for an inquiry into the reasonableness of mitigation or restoration measures accompanying a proposed long-term transfer such as the QSA. And "the test of reasonableness is dependent upon the totality of the facts and circumstances involved in the

context of each case." (*Betchart v. Dep't of Fish & Game* (1984) 158 Cal.App.3d 1104, 1108 [internal quotation marks and citation omitted]; *see also Ford & Vlahos v. ITT Commercial Fin. Corp.* (1994) 8 Cal.4th 1220, 1235 [reasonableness inquiry "is intensively factual and the answer depends upon all of the circumstances" (internal quotation marks omitted)].)

In the 2002 Order, the Board determined that the "impacts to fish and wildlife that rely on the Salton Sea are reasonable given the importance of the transfer to the State," but *only* "so long as" the mitigation measures set forth in the EIRs and ordered by the Board were implemented. (App. 29.) As discussed above, *see supra* Section II.B.3, those mitigation measures were crafted against the background presumption that the State would fulfill its obligation to restore the Sea. For that reason, the principal mitigation measure the parties contemplated—continued water deliveries to the Salton Sea—is set to expire in 2017. In other words, the mitigation measure in the 2002 Order without which this Board would not have approved the QSA transfers will cease to be operative in just three years. At the same time, little progress has been made on restoration, which, like mitigation, always has been an indispensable part of the overall structure of the QSA. In light of that reality, as well as the multiple studies that have concluded that restoration of the Salton Sea is both feasible and necessary to avert an environmental and public-health crisis, the Board should require the State to fulfill its unequivocal commitment to restore the Sea as a condition of the QSA transfers.

1. The State Has Made an Unequivocal Statutory Commitment to Restore the Salton Sea

The State has made an unequivocal statutory commitment to undertake the restoration of the Salton Sea. Section 2931 of the Fish & Game Code, added by SB 277 as part of the QSA legislation in 2003, provides that "[i]t is the intent of the Legislature that the State of California undertake the restoration of the Salton Sea ecosystem and the permanent protection of the

wildlife dependent on that ecosystem." (Fish & Game Code § 2931, subd. (a).) The statute further mandates that "[t]his restoration shall be based on the preferred alternative developed as a result of the restoration study" undertaken by the Resources Agency. (*Id.*, subd. (b).) These statements setting forth the State's responsibilities with regard to the Sea could hardly be clearer.

As California courts repeatedly have emphasized, the "fundamental rule of statutory construction" in California is that "a court should ascertain the intent of the Legislature so as to effectuate the purpose of the law." (*Baker v. Workers' Comp. Appeals Bd.* (2011) 52 Cal.4th 434, 438-39 [internal quotation marks omitted].) This intent is the "controlling issue" in cases of statutory interpretation. (*Milligan v. City of Laguna Beach* (1983) 34 Cal.3d 829, 831.) And the key task of ascertaining the intent of the Legislature is easy where, as here, the statute contains an "express declaration of the intent of the Legislature." (*In re Johnson* (1980) 107 Cal.App.3d 780, 786 [internal quotation marks omitted].)

In enacting SB 277, the Legislature unequivocally made "the restoration of the Salton Sea ecosystem and the permanent protection of the wildlife dependent on that ecosystem" the governing law of the State. (Fish & Game Code § 2931, subd. (a).) The Legislature reaffirmed that mandate just last year in enacting AB 71, which states that "[i]n restoring the Salton Sea, it is the intent of the Legislature," among other things, "to protect fish and wildlife that are dependent on the Salton Sea ecosystem," "[r]estore the long-term stable aquatic and shoreline habitat for fish and wildlife that depend on the Salton Sea," "[m]itigate air quality from restoration projects," and "[p]rotect water quality," and "[m]inimize noxious odors and other water and air quality problems." (Fish & Game Code § 2940.) That statutory language not only reaffirms the State's policy of restoring the Salton Sea, but sets multiple concrete criteria delineating what the restoration is designed to accomplish.

Other aspects of the QSA legislation, enacted in 2003, confirm that the Legislature (as it expressly stated) committed the State to undertake the restoration of the Salton Sea. The QSA legislation requires, among other things, that IID, in particular, along with other agencies, make substantial monetary contributions to the cause of Salton Sea restoration—an obligation that would make no sense except as part of a comprehensive plan to restore the Salton Sea. SB 654 required IID, CVWD, and SDCWA to contribute $30 million to the Salton Sea Restoration Fund directly. IID and the other water agencies have fulfilled their obligations under the QSA and the QSA legislation, but the State has not held up its end of the bargain.

2. The Factual Context and Legislative History Surrounding the QSA Legislation Confirm that Its Primary Purpose Was to Ensure that Salton Sea Restoration Would Take Place in Exchange for the Substantial Benefits the QSA Transfers Provided to the State as a Whole

The statutory text alone suffices to make clear the Legislature's intent to commit to restore the Salton Sea. But if there were any doubt on that point, the factual context and legislative history surrounding the QSA legislation confirm the point beyond all doubt. (*See, e.g.*, *City of Los Angeles v. County of Kern* (2014) 59 Cal.4th 618, 628 ["Where, as here, no single textually determined construction presents itself, we are well advised … to consult other interpretive aids, including legislative history and the context of the enactment."].)

It is not a coincidence that the Legislature committed in the QSA legislation to undertake the restoration of the Salton Sea. That commitment was, in fact, the *sine qua non* without which agreement on the QSA could not have been reached. The QSA legislation was proposed and enacted after negotiations had ground to a halt, primarily because of concerns that the proposed transfers would doom the Salton Sea and create and exacerbate a panoply of environmental problems at the Sea and in the Imperial and Coachella valleys. (*See, e.g.*, G. Martin, Peace at Last in Key Water Battle, *S.F. Chronicle*, Sept. 30, 2003, at p. A1 [stating that "[i]t became

apparent over the past year that no deal could be struck unless the ecological integrity of the Salton Sea was assured"]; M. Cohen, Salton Sea Must Be Addressed in Water Deal, *San Diego Union-Tribune*, Feb. 20, 2003 ["In part because neither the state nor the federal government put forward a viable solution for the sea, the water transfer collapsed."].) The title of an April 2002 article in the *Sacramento Bee* summed up the situation as concisely as possible: "Salton Sea Impact Threatens to Sink Crucial Water Deal." (D. Kasler & S. Leavenworth, Salton Sea Impact Threatens to Sink Crucial Water Deal, *Sacramento Bee*, Apr. 28, 2002 ["As badly as state regulators want the Imperial water transfer, they fear it could accelerate the decline of the Salton Sea, creating monstrous dust storms and killing scores of birds and fish in California's largest lake."].) It became clear, in other words, that legislators would not permit the State as a whole to shunt its water problems off on the Imperial and Coachella valleys and the Salton Sea, reaping the benefits of reduced water consumption in that region without helping to pay for the accompanying environmental challenges.

At this point, the Legislature faced a choice. It could allow the proposed QSA to fall apart—a course of action that would have doomed California's ability to voluntarily reduce its consumption of Colorado River water, which in turn likely would have prompted the federal government to unilaterally reduce water deliveries to California water agencies. That, in turn, posed a threat of monumental proportions to the entire State, as those agencies would seek to compensate for their losses of Colorado River water by attempting to increase their water imports from elsewhere in California. The Legislature's only other option was to step in and act, in effect, as guarantor for the QSA—to provide assurances to parties, and to the communities in the Imperial and Coachella valleys and around the Salton Sea in particular, that it would bear the

lion's share of the environmental costs that would inevitably accompany the QSA transfers. The Legislature chose this second option.

Given this background, it is no surprise that in debates leading up to the enactment of the QSA legislation, legislators repeatedly announced, in unusually clear and explicit terms, that their central goal was to get the transfer negotiations back on track by firmly committing the State to restoration, thereby alleviating the environmental concerns about the effects of transfers on the Salton Sea and the Imperial and Coachella valleys that had derailed progress on the QSA. The sponsors of the QSA legislation explained that it was "necessary to implement the QSA," a goal the sponsors described as "key to the implementation of the California Colorado River Water Use Plan, the framework for reducing the state's annual use of Colorado River water to its entitlement of 4.4 million acre-feet." (App. 138.) The sponsors noted that "the deadline of December 31, 2002 ... for execution of the QSA was not met," and that a primary cause of the impasse was that "the proposed transfer of water ... has raised concerns about the decrease of inflow to the Salton Sea" and accompanying environmental challenges. (*Ibid.*) This was a major source of concern for the Legislature, because it was "important for California to honor its commitment to reduce Colorado River water use," and to achieve this goal the Legislature considered it a "necessity" that the QSA "be executed by a date certain" and that it entail "a water transfer from Imperial Irrigation District to San Diego." (App. 177.)

The sponsors of the QSA legislation went on to explain—repeatedly and in no uncertain terms—that in order to address the environmental concerns that had derailed the QSA, the State had agreed to restore the Sea:

> The QSA *commits the state to restoration* of the environmentally sensitive Salton Sea and provides full mitigation for its water supply programs. ... One of the features of the final version of the QSA is a *commitment on the part of the state to restore the Salton Sea.* Earlier versions merely committed to maintaining the

> present rate of deterioration of the Salton Sea for the next fifteen years. [¶] *This bill states that it is the responsibility of the State of California to restore the Salton Sea.* (App. 98-99 [emphasis added].)

This was not stray or unconsidered language. Virtually identical language, stating that the QSA and the legislation "commit[ted]" the State to Salton Sea restoration, that restoration was a "responsibility of the state," and that the State would restore the Sea even though "it will be very expensive," appeared multiple times throughout the legislative history of all three bills that together composed the QSA legislation. (App. 97-98, 103-104, 109, 114, 118, 120-121, 138-139, 143-144, 150, 191.) To emphasize: "[e]arlier versions" of the QSA had failed to win agreement because they committed to preserve the Sea only "for the next fifteen years," so the State, in view of the urgency of brokering an agreement, stepped in to guarantee the long-term health and stability of the Sea and the Imperial and Coachella valleys. (App. 99.) It is rare to find legislative history with such a degree of specificity and clarity regarding the aims and objectives of resulting legislation.

The Legislative Analyst reached the same conclusion in analyzing the context and purpose of the QSA legislation. "During the negotiations surrounding the QSA, a critical issue was the financial responsibility for any negative environmental impacts on the Sea from the water transfer. In order to facilitate the signing of the QSA, the state (as a signing party to the QSA and in statute) agreed to assume most of the financial responsibility for the restoration of the Sea." (LAO Report, *supra*, at p. 8.) Thus, on the very first page of its report and again repeatedly throughout the report, the Legislative Analyst recognized that "[t]he State of California has legal and contractual obligations to restore the [Salton] Sea." (*Id.* at p. 1; *see also id.* at pp. 3 ["Due to a series of statutes and contractual agreements regarding the use of Colorado River water in Southern California, the state has an obligation to restore the Sea."]; 7 ["[T]he state's obligation to restore the Sea, and its related financial obligation to pay for most of the

restoration, has its basis in both contractual agreements and statute."]; 35 ["The state has a statutory and contractual obligation to restore the Sea."].) The Legislative Analyst's report—which, like legislative history and statutory context, is a proper source of "extrinsic aid to help determine legislative intent" (*Shippen v. Dep't of Motor Vehicles* (1984) 161 Cal.App.3d 1119, 1126; *accord Day v. City of Fontana* (2001) 25 Cal.4th 268, 273)—confirms that the State has the obligation to restore the Sea.

It was not just legislators and the Legislative Analyst who recognized that the Legislature agreed to undertake the restoration of the Salton Sea in order to offset the anticipated environmental effects of the QSA transfers, and in so doing push the QSA parties toward the finish line in negotiating a deal. Virtually every informed observer writing about the legislative negotiations reached the same conclusion. A plethora of news reports throughout the fall of 2003 described the acceptance of the long-term reduction in agricultural return flows to the Salton Sea resulting from the QSA transfers as a "concession" that had been made as "a trade-off for Salton Sea restoration." (M. Gardner, Davis Signs Bill to Clear Environmental Hurdles on Water Deal, *San Diego Union-Tribune*, Sept. 30, 2003; *see also, e.g.*, G. Martin, Vote Ends Long-Running Water Wars, *S.F. Chronicle*, Oct. 4, 2003 [noting that the QSA "provides for restoration of the Salton Sea"]; Colorado River Deal Could End Water Wars, *San Jose Mercury News*, Sept. 12, 2003 [noting that the agreement "sets up a restoration plan for the environmentally threatened Salton Sea"].) Indeed, in summarizing the purpose and effect of the QSA legislation in one sentence, the *Los Angeles Times* described it as: "creat[ing] a way to *pay for restoration of the Salton Sea … to offset the environmental harm of transferring water* from

the Imperial Valley to San Diego." (Bills Signed Into Law by Gov. Davis, *L.A. Times*, Oct. 13, 2003 [emphases added].[15])

The key principle underlying the QSA compromise was that, just as the entire State would reap the benefits of the QSA—by allowing California to live within its share of Colorado River water without placing a dramatic strain on water resources and the environment in the rest of the State—so should the entire State, and not just the people in the Imperial and Coachella valleys and around the Salton Sea, bear the substantial burdens the QSA water transfers would entail.

Unfortunately, in the years since the QSA, the fundamental bargain that permitted it to come into existence has not been kept. Although the State has benefited immensely from the QSA transfers, and IID and other agencies have borne the costs (so far) of mitigating the effects of those transfers in order to give the State the time and opportunity to implement a restoration plan, the State has failed to act.

3. The Parties Expressly Premised the QSA Transfer Agreements on the State's Fulfilling Its Statutory Commitment to Restoration

At the time the QSA was signed, IID and the other QSA parties recognized the indispensable role played by the State's commitment to restoration (as well as the rest of the QSA Legislation) in bringing the parties back to the negotiating table. For that reason, the parties included language in the QSA making clear that the agreement was expressly contingent

---

[15] IID acknowledges that its prior legal counsel made statements in certain court filings that are in tension with these authorities. (*See* Imperial Irrigation District Phase 1A Response Trial Brief at p. 23, *QSA Coordinated Civil Cases* (Cal. Super Ct., JCCP No. 4353, Oct. 29, 2009) ["The QSA-JPA Agreement does not contain any contractual promise by the State, or any other party, to restore the Salton Sea."].) Counsel responsible for these statements no longer represents IID and such statements were not adopted by courts, lacked relevant citations, contradict the multiple authorities cited above, and do not reflect the position of IID.

upon the State's restoring the Salton Sea. The QSA parties, and IID in particular, in entering into the QSA and crafting the mitigation measures that would accompany the transfers, also detrimentally relied on the State's commitment.

The three-party QSA provides that "[t]his Agreement and the Related Agreements"—*i.e.*, the other QSA agreements—"are premised on, among other things, the special considerations set forth in Section 6.2." (App. 331.) These special considerations include "[t]he continuation of the QSA Legislation in full force and effect and without material modification." (App. 334.) The term "QSA Legislation" is defined elsewhere in the agreement as encompassing the three bills enacted by the Legislature and signed into law in the fall of 2003: SB 277, SB 317, and SB 654. (App. 314.) SB 277, in turn, announces the Legislature's intent that the State of California undertake the restoration of the Salton Sea.

In other words, the QSA is "premised" on the Legislature's commitment to undertake the restoration of the Salton Sea "continu[ing] ... in full force and effect and without material modification." (App. 331, 334.) That conclusion accords not only with the negotiating history outlined above, but also with common sense: it is obvious that the intent of the QSA parties was to premise their agreement on the QSA legislation *actually being enforced.* That commitment was the centerpiece of the QSA legislation, without which the QSA never would have come into being. In light of that clear intent, there can be no question but that the State's commitment to restore the Salton Sea is a core premise on which the entire QSA rests. The QSA parties' intent thus confirms the plain text of the QSA, establishing that the QSA was premised on the State restoring the Sea. (*See, e.g.*, *Hartnell Community College Dist. v. Superior Court* (2004) 124 Cal.App.4th 1443, 1451 [if a contract term "is ambiguous, its interpretation depends on the parties' intent"].)

The three-party QSA specifically defines the consequences in the event that any of the premises set forth in Section 6.2 are not satisfied: it provides, in a section labeled "Failure of Consideration," that "a material failure of any special considerations set forth in Section 6.2"—which include the continuation "in full force and effect" of the QSA legislation—"shall constitute an irreparable injury to each Party and shall also constitute irreparable harm to the public interest." (App. 334.) As a result of this provision, a failure of any one of the premises in Section 6.2 has the effect of discharging the contracting parties from their obligations under the contract. "Failure of consideration is the failure to execute a promise, the performance of which has been exchanged for the performance by the other party." (*Rutherford Holdings, LLC. v. Plaza Del Rey* (2014) 223 Cal.App.4th 221, 230 [internal quotation marks and citation omitted].) Moreover, a "failure of consideration is a ground for either rescinding or terminating a contract." (*Scheel v. Harr* (1938) 27 Cal.App.2d 345, 352; *accord* Civil Code § 1689(4); 1 Witkin, Summary of Cal. Law [10th ed. 2005] *Contracts* § 814; Restatement [Second] Contracts § 274.) The State's failure to undertake the restoration of the Salton Sea, therefore, seriously jeopardizes the continuing force of the QSA parties' obligations under the agreements.

The QSA parties had good reason to make restoration a prerequisite of the QSA. As discussed above (*see supra* Section II.B.3), the parties relied on the State's representations regarding restoration in creating and amending the mitigation plan accompanying the QSA transfers. In the end, the mitigation plan, and the Board's 2002 Order, required 15 years of deliveries of mitigation water—less than had been initially proposed, and less than would have been required in the absence of the State's commitment to restoration. This "detrimental reliance on the [State's] promise" to restore the Sea provides yet a further, independent basis for the

Board to conclude that restoration must accompany the QSA transfers. (*Toscano v. Greene Music* (2004) 124 Cal.App.4th 685, 692.)

The Board, of course, is not a court, and is not in a position to hear a contract dispute.[16] What it does have the authority to do, under Water Code § 1736, is to impose reasonable conditions on long-term transfers. In light of the plain text of the QSA legislation, the factual background against which the state undertook its restoration commitment, the QSA parties' express and detrimental reliance upon that commitment, and the demonstrated public-health and environmental impacts that will result if the transfers go forward with that commitment being unsatisfied, the Board should exercise its authority under § 1736 to require the State to fulfill its statutory obligation to restore the Salton Sea as a condition of the QSA transfers.

4. Restoration of the Salton Sea Is Feasible and Necessary to Prevent Severe Public-Health and Environmental Consequences

In its 2002 Order, the Board recognized the crucial role of Salton Sea restoration. But it also recognized that, at that time, it was too early to impose restoration as a condition of the QSA transfers—indeed, the QSA legislation had not yet even been enacted. The Board noted that "[t]he feasibility of restoring the Salton Sea is the subject of an ongoing study by the Secretary of the Interior and the Salton Sea Authority," and that implementation of a 15-year mitigation plan would "provide time to study the feasibility of long-term restoration actions and begin implementation of any feasible restoration projects." (App. 6-7.) Part of that has happened: a

[16] By filing this petition, IID does not waive, and in fact hereby expressly reserves, all of its rights to seek any contractual or other relief to which it may be entitled at law or in equity. IID has filed this petition because it believes that the Board, as the entity possessing plenary authority to regulate water use and water transfers in California, is well situated to resolve the legal and factual questions regarding restoration of the Sea, particularly in light of

. its reservation of continuing authority over the QSA transfers in the 2002 Order. It is IID's hope that cooperative dialogue and proceedings before the Board can obviate any possible litigation regarding restoration of the Sea.

number of studies have revealed that restoration is feasible and achievable at a realistic cost. These studies also have revealed that the Sea and the Imperial and Coachella valleys face an environmental crisis if restoration does not occur, and that restoration will eliminate or reduce the need for substantial mitigation expenditures. But implementation has not progressed. Under these circumstances, requiring the State to fulfill its commitment to restore the Sea as a condition of the QSA transfers is the only reasonable approach.

Numerous analyses of restoration have now been conducted, by both governmental and nongovernmental entities. These analyses uniformly have concluded that restoration of the Sea can be achieved, primarily by reducing the size of the Sea; creating special habitat zones to support fish, birds, and other organisms; and establishing a salt deposit area and a water barrier around exposed playa to minimize adverse air-quality impacts. The Salton Sea Authority has released a detailed plan for Salton Sea restoration that includes all of these elements, as well as water treatment facilities and a Colorado River water storage area, and would cost an estimated $2.2 billion to carry out, a large portion of which may come from local funding sources such as the development of renewable energy resources. (Salton Sea Authority Plan, *supra*, at pp. ES-6 through ES-12.) The Resources Agency has identified eight separate alternatives with construction costs ranging from $2.3 billion to $5.9 billion. (LAO Report, *supra*, at pp. 17-19.) Reclamation's report arrived at similar conclusions and its estimates were in that same range. (Reclamation Report, *supra*, at p. xxi.)

These analyses also establish that the *failure* to undertake restoration will result in significant environmental impacts to the Salton Sea that cannot be fully mitigated. Absent restoration, the Resources Agency determined, there will be a "decline and ultimate loss of open water fish populations," which in turn will "reduce and possibly eliminate use of the Salton Sea

by fish-eating birds," including those listed as endangered, threatened, or as species of concern under federal and state law. (Preferred Alternative Report, *supra*, at p. 4.) The Salton Sea Authority reached the same conclusion: "If no remedial actions are taken, the Sea will become so saline within 15 years ... that the sport fishery and the fish that serve as a food source for the birds will be effectively eliminated." (Salton Sea Authority Report, *supra*, at p. ES-2.)

Of greater immediate concern to the residents of the Imperial and Coachella valleys is the stark reality that, absent restoration, dust emissions from exposed Salton Sea playa will increase dramatically from less than 1,000 tons of dust per year to anywhere between 4,000 and 38,000 tons of dust per year. (Pacific Institute Report, *supra*, at p. 18; *accord* State Auditor Report, *supra*, at p. 18 ["State and federal experts agree that the high winds around the sea are likely to pick up significant amounts of fine dust from the dry seabed, increasing the amount of particulate matter in the air and further reducing the air quality in an already degraded basin."].) It is almost impossible to overstate the threat these new dust emissions would pose to the Salton Sea region. Already, the Salton Sea air basin does not meet state or federal particulate matter pollution (PM-10) standards, and fugitive dust emissions account for almost 70 percent of PM-10 emissions in the region. (Pacific Institute Report, *supra*, at pp. 13-14.) The projected new dust emissions would have a significant adverse impact on the health of tens of thousands of residents in the Imperial and Coachella valleys, given the well-documented scientific evidence demonstrating a close causal link between increased particulate emissions and increased mortality rates, as well as increased incidence of cardiac disease, heart attacks, lung cancer, and asthma. (*Id.* at p. 12.)

The consequences of a failure to restore the Salton Sea do not relate solely to the environment and public health—they are financial in nature as well. Between the significant costs associated with increased mortality rates and health expenditures, a loss of valuable

ecological resources at the Sea, reduced property values, decreased agricultural productivity, and other costs, failure to restore the Sea will carry a total price tag of at least $13 billion and up to $70 billion, dwarfing the costs of restoration. (Pacific Institute Report, *supra*, at pp. v-vi.)

These costs can be partially, though not entirely, covered by any mitigation expenditures arising from the transfers, but mitigation itself—the cost of which the State is "unconditionally obligate[d] … to pay" (*In re QSA Cases*, *supra*, 201 Cal.App.4th at p. 775)[17]—will be very high, potentially on the same order of magnitude as the cost of restoration. Reclamation estimated that the cost of mitigating the air-quality impacts *alone* of the QSA transfers would be at least $1.4 billion. (Restoration Report, *supra*, at p. xvi.) The State Auditor likewise recognized that although "the future costs of mitigation are uncertain," the Department of Fish and Wildlife had estimated the cost of mitigation at approximately $800 million (in 2006 dollars), and that even this estimate "was based on conditions that were known at the time it was developed and does not reflect all of the mitigation costs the State may incur in satisfying its financial obligations under the QSA." (State Auditor Report, *supra*, at p. 17.) These are just upfront costs—for mitigation, no less than for restoration, "all of the alternatives under consideration would require significant annual operational costs." (LAO Report, *supra*, at p. 20.) And as expensive as this mitigation effort will be, there is no guarantee it will be successful. Its prospects for success are certainly weaker than the prospects of restoration would be, and even a partial failure of mitigation would leave the Salton Sea region facing billions of dollars in environmental and public-health costs, as described above.

---

[17] The State repeatedly has recognized this obligation, most recently in a brief in the ongoing litigation before the Court of Appeal. (*See In re Quantification Settlement Agreement Cases*, No. C074592, Respondents' Brief of the State of California by and Through the Department of Water Resources and the Department of Fish and Wildlife (April 16, 2014), at p. 9 ["[T]he state owes the obligation and cannot argue lack of appropriation as a defense."].)

This is not to say that restoration will be inexpensive. No doubt, it will be a costly endeavor. But the same will also be true of mitigation if no restoration plan is implemented—and the State has already agreed to bear that expense. There is no cost-free option. The choice is between, on the one hand, the State paying upward of a billion dollars to *mitigate*, though not fully avoid, the negative environmental and public-health impacts and costs of the QSA transfers, and, on the other hand, the State paying somewhat more (though precisely how much more remains to be seen) to restore the Sea and protect the public health and ecological value of the Sea, as was promised when the QSA was signed. The expense of restoration, moreover, would be borne by the State as a whole—in reflection of the State's interest in reducing Colorado River water use through the QSA transfers—while the costs of an unsuccessful or incomplete mitigation effort would be borne entirely by the Salton Sea region and the Imperial and Coachella valleys. That is the precise outcome the QSA was carefully structured to avoid.

IV. REQUESTED RELIEF

IID recognizes the difficulties and challenges involved in restoring the Sea. It also recognizes that, although the obligation to restore the Sea belongs to the State alone, the process for identifying and implementing a restoration plan should be a collaborative and cooperative one, with input from key affected parties. To that end, IID believes the first step in achieving restoration is to bring together the State and all such affected parties for an open and collaborative dialogue. The SWRCB should order the QSA parties and Salton Sea Authority member agencies to meet and confer in good faith in an effort to achieve consensus around a realistic, feasible restoration plan and mechanism for funding it. The SWRCB unquestionably possesses the authority to order the parties to enter into such a dialogue, because doing so would be both "necessary [and] convenient for the exercise of [the Board's] duties authorized by law." (Water Code § 186.) If possible, this process should be chaired or overseen by a member of the

SWRCB, in order to provide guidance and leadership to the parties. IID stands ready to work as an active, engaged partner, and will do its utmost to ensure that this collaborative process achieves its goal.

The process must not be open-ended: the crisis the Salton Sea faces is imminent, and dialogue on its own will not solve the problem. Thus, the Board should set a hard-and-fast, short-term time limit of no more than six months for the collaborative dialogue. This dialogue should, at a minimum, focus on how the State will meet its obligation to fund a restoration plan and explain how the plan will avoid the most significant environmental and public-health threats the Sea and the Imperial and Coachella valleys face. As discussed above, a variety of detailed restoration plans, along with price estimates, have been put forth by a number of different government agencies and nongovernmental organizations. Although IID does not at this time advocate any particular restoration plan, the broad contours of restoration (as detailed in the numerous restoration plans released to date), and the goals that restoration must achieve, are clear.

In order to ensure that restoration of the Sea begins before it is too late, the Board should notice and schedule the public hearing now, and also should establish procedures and set a timeline for the other steps in the process. Setting the dates now will provide the parties with both certainty and an appropriate sense of dispatch to guide their dialogue.

IID suggests the following sequence, which will allow the process to move forward in an expeditious manner with full input from affected parties:

First, the Board should hold an initial status conference or workshop within the next month—*i.e.*, before the end of 2014. At this initial status conference or workshop, the Board should order the parties to commence the dialogue discussed above, and provide any guidance

the Board finds appropriate for the conduct of that dialogue—including, at a minimum, a timeline and procedures for the steps to follow.

Second, at the initial status conference or workshop, the Board should notice and schedule a second status conference or workshop for approximately six months from the date of filing of this petition, so that the parties may inform the Board of the results of their dialogue.

Third, again at the initial status conference or workshop, the Board also should notice and schedule a public adjudicatory hearing—to be held approximately nine months from the date of filing of this petition—at which the parties would present their legal and factual submissions to the Board, informed by the results of their dialogue, and interested members of the public also would have an opportunity to comment. At the public hearing, the parties would have the opportunity to present evidence and to call and cross-examine witnesses, and the Board could weigh that evidence, along with the parties' submissions and public comment regarding the QSA and restoration of the Salton Sea.

Finally, following these other processes and resolution of the plan for restoration, the Board should issue an order modifying its 2002 Order to add State implementation and funding of that restoration plan as a condition of transfers under the QSA.

In carrying out this process, the steps that led to the 2002 Order can serve as a model: following public notice and an opportunity for public comment, the Board held a 15-day public hearing focusing on approximately a dozen different issues relating to the proposed QSA. (App. 13-17.) A similar structure would be appropriate here, although with a narrower scope, and would allow for the Board to take action that is prompt, deliberative, and well-informed. For the reasons set forth above, IID believes restoration of the Sea is, and always has been, an indispensable component of the QSA, and IID would stand ready at that point to make its full

legal and factual case before the Board. IID will demonstrate that the public interest and the necessity of avoiding overwhelming environmental, public-health, and economic impacts at the Salton Sea and in the Imperial and Coachella valleys require the State to comply with its commitment to implement and fund a Salton Sea restoration plan. Accordingly, IID respectfully requests that the SWRCB modify the conditions on the QSA transfers contained in the 2002 Order to add the condition that the State implement and fund Salton Sea restoration as provided herein.

V. CONCLUSION

IID respectfully urges that this petition be approved and that the Board implement the relief outlined above.

//

//

//

//

//

//

//

//

//

//

//

//

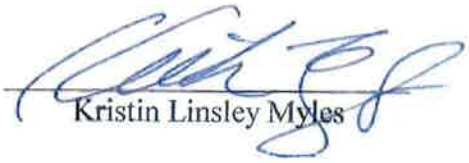
//

//

DATED: November 18, 2014

Respectfully submitted,

MUNGER, TOLLES & OLSON LLP

By: 
Kristin Linsley Myles

Ronald L. Olson
Kristin Linsley Myles
Matthew A. Macdonald
Joshua Patashnik

LAW & RESOURCE PLANNING ASSOCIATES, P.C.

Charles T. DuMars
Patrick J. Redmond

DOWNEY BRAND LLP

David R.E. Aladjem

IMPERIAL IRRIGATION DISTRICT

Ross G. Simmons
Joanna Smith Hoff

Attorneys for Petitioner
IMPERIAL IRRIGATION DISTRICT

Salton Sea Authority

Commission Memorandum

To: Salton Sea Authority Board of Directors

From: Roger Shintaku, General Manager

Date: January 22, 2015

Re: Selection of Salton Sea Authority Treasurer, and Resolution 15-01

CM No. VIII.A – 1-22-15

BACKGROUND:

At the December 18, 2014 Board meeting, the Salton Sea Authority Board of Directors was requested by Staff to consider proposed Salton Sea Authority Resolution No. 14-02, entitled, "Resolution of the Board of Directors of the Salton Sea Authority Designating Officials Authorized to Sign Warrants and Checks, Transfer Funds, and Access Safe Deposit Box."

The proposed Resolution included Mr. Peter Nelson's name as Treasurer of the Authority. Mr. Nelson informed the Board at the December 18, 2014 Board meeting that he would no longer serve as the Coachella Valley Water District ("CVWD") Board member on the Salton Sea Authority.

The Board then appointed incoming Board member Mr. G. Patrick O'Dowd (CVWD) as an authorized signatory for signing checks for the Authority.

Attached please find proposed Salton Sea Authority Resolution 15-01, entitled, "Resolution of the Board of Directors of the Salton Sea Authority Designating Officials Authorized to Sign Warrants and Checks, Transfer Funds, and Access Safe Deposit Box," for your consideration, which anticipates that the Board approve Mr. G. Patrick O'Dowd as the Salton Sea Authority Treasurer, replacing Mr. Peter Nelson.

RECOMMENDATION:

The Salton Sea Authority Staff recommends that the Salton Sea Authority Board approve Mr. G. Patrick O'Dowd as the Salton Sea Authority Treasurer and, further, approve proposed Resolution No. 15-01, entitled, "Resolution of the Board of Directors of the Salton Sea Authority Designating Officials Authorized to Sign Warrants and Checks, Transfer Funds, and Access Safe Deposit Box."

Respectfully submitted,

Roger Shintaku
General Manager

Salton Sea Authority

SALTON SEA AUTHORITY
RESOLUTION NO. 15-01

RESOLUTION OF THE BOARD OF DIRECTORS OF THE SALTON SEA AUTHORITY DESIGNATING OFFICIALS AUTHORIZED TO SIGN WARRANTS AND CHECKS, TRANSFER FUNDS, AND ACCESS SAFE DEPOSIT BOX

BE IT RESOLVED by the Board of Directors of the Salton Sea Authority (Authority), assembled in regular meeting this 22nd day of January, 2015, that the Rabobank is instructed to honor Authority warrants or checks written on accounts in the name of the Salton Sea Authority executed by any two of the following designated officials: John J. Benoit, President; G. Patrick O'Dowd, Treasurer; and Roger Shintaku, General Manager; and

BE IT FURTHER RESOLVED that Rabobank is instructed to honor any transfer of funds by means of written instructions by order of any two designated officials: John J. Benoit, President; G. Patrick O'Dowd, Treasurer; and Roger Shintaku, General Manager; and

BE IT FURTHER RESOLVED that all warrants and checks, and instructions to transfer funds will require at least one original signature of those persons herein defined whose signatures appear at the foot of this resolution; and

BE IT FURTHER RESOLVED that the second signature for warrants and checks, and instructions to transfer funds may be an original signature or a facsimile signature (stamp) appearing at the foot of this resolution; and

BE IT FURTHER RESOLVED that the Rabobank is instructed to honor access to safe deposit box(s) executed by any two of the following designated officials: John J. Benoit, President; G. Patrick O'Dowd, Treasurer; and Roger Shintaku, General Manager, whose signatures appear at the foot of this resolution; and

BE IT FURTHER RESOLVED that prior authorizations to sign warrants and checks, transfer funds and access safe deposit box(s) are hereby rescinded; and

BE IT FINALLY RESOLVED that the Secretary is hereby directed to furnish a certified copy of this resolution to Rabobank.

John J. Benoit
President

G. Patrick O'Dowd
Treasurer

Roger A. Shintaku
General Manager

STATE OF CALIFORNIA)
SALTON SEA AUTHORITY) ss.
OFFICE OF SECRETARY)

I, MATTHEW DESSERT, Secretary of the Salton Sea Authority, a Joint Powers Agency of the State of California, DO HEREBY CERTIFY that the foregoing is a true and correct copy of Resolution No. 15-01 adopted by the Board of Directors of said Salton Sea Authority at a special meeting thereof duly held and convened on the 22nd day of January, 2015, at which meeting a quorum of said Board was present and acting throughout.

Dated this 22nd day of January, 2015

_____

Matthew Dessert
Secretary of the Salton Sea Authority
and of the Board of Directors thereof