

# STRATEGIC PLAN



APPROVED BY THE  
COUNTY OF ORANGE BOARD OF SUPERVISORS  
NOVEMBER 22, 2016



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## I) ORANGE COUNTY BOARD OF SUPERVISORS



**LISA A.  
BARTLETT**  
Chairwoman  
*Supervisor*  
Fifth District



**MICHELLE  
STEEL**  
*Vice Chair  
Supervisor*  
Second District



**ANDREW  
DO**  
*Supervisor*  
First District



**TODD  
SPITZER**  
*Supervisor*  
Third District



**SHAWN  
NELSON**  
*Supervisor*  
Fourth District

## II) WASTE MANAGEMENT COMMISSION

### CHAIR

David J. Shawver  
At-Large

### VICE CHAIR

Joe J. Carchio  
2<sup>nd</sup> District

### 1<sup>ST</sup> DISTRICT

Deepak J. Krishan  
Michele Martinez

### 2<sup>ND</sup> DISTRICT

Rob Johnson  
Tina Nieto

### 3<sup>RD</sup> DISTRICT

Mike Alvarez  
Donald R. Froelich  
Steve Chavez Lodge

### 4<sup>TH</sup> DISTRICT

Charles Kim  
Christine Marick  
Chad P. Wanke

### 5<sup>TH</sup> DISTRICT

Cynthia Conners  
Joe Soto  
Mark Tetterer

### CITY MANAGERS' REPRESENTATIVE

Doug Chotkevys

### DIRECTOR, OC WASTE & RECYCLING

Dylan Wright  
Ex Officio

### III) EXECUTIVE SUMMARY

The County of Orange owns one of the premier disposal systems in the nation. OC Waste & Recycling is responsible for managing the County's disposal system which includes three active regional landfills and four permanent household hazardous waste collection centers. OC Waste & Recycling also maintains or monitors 20 closed disposal sites. As a result of careful planning, improved landfilling techniques and a reduction in in-County daily tonnage, current projections reflect landfill capacity in excess of 50 years - far exceeding the State's minimum requirement of 15 years.

In 2002, the Board of Supervisors approved the Regional Landfill Options for Orange County Strategic Plan (RELOOC) which assessed disposal system capabilities at the time and identified goals and strategies needed to ensure viable long-term disposal options for the County. The primary focus of RELOOC was to ensure sufficient disposal system capacity for a 40-year period.

The goals established under RELOOC are still relevant and in alignment with the department's mission. However, with the support and guidance of the Board of Supervisors and the diligent efforts of department staff, the strategies established in 2002 have been largely completed. In addition, significant changes in the solid waste industry have resulted in a paradigm shift from landfill capacity alone to landfill capacity, waste disposal alternatives and rate stability. As such, it is necessary to update RELOOC to include new strategies responsive to the new paradigm.

This updated strategic plan, the OC Waste & Recycling Strategic Plan, is the product of the cumulative efforts of department staff, the Board of Supervisors, the County of Orange Waste Management Commission, and other stakeholders. Annually, the department will report progress on strategies and submit any recommended plan updates to the Board of Supervisors for approval. In-depth assessments will be performed periodically as changes in the industry warrant.

As a result of this collaborative process, the following new strategies were established:

1. Obtain necessary permits and approvals to extend Olinda Alpha, Frank R. Bowerman, and Prima Deshecha through full build-out
2. Continue waste importation post-2016
3. Maintain Waste Disposal Agreements (WDAs)
4. Review current disposal rate structure and analyze alternative revenue options
5. Develop a renewable technology implementation plan (RTIP)
6. Develop an enhanced master capital expenditures planning system
7. Continue to implement best management/operational practices
8. Be a regional leader for waste reduction, reuse and recycling

## **IV) VISION AND MISSION**

### **A) VISION**

To be the best waste management system in America

### **B) MISSION**

- To provide waste management services,
- To protect the environment, and
- To promote recycling in order to ensure a safe and healthy community for current and future generations.

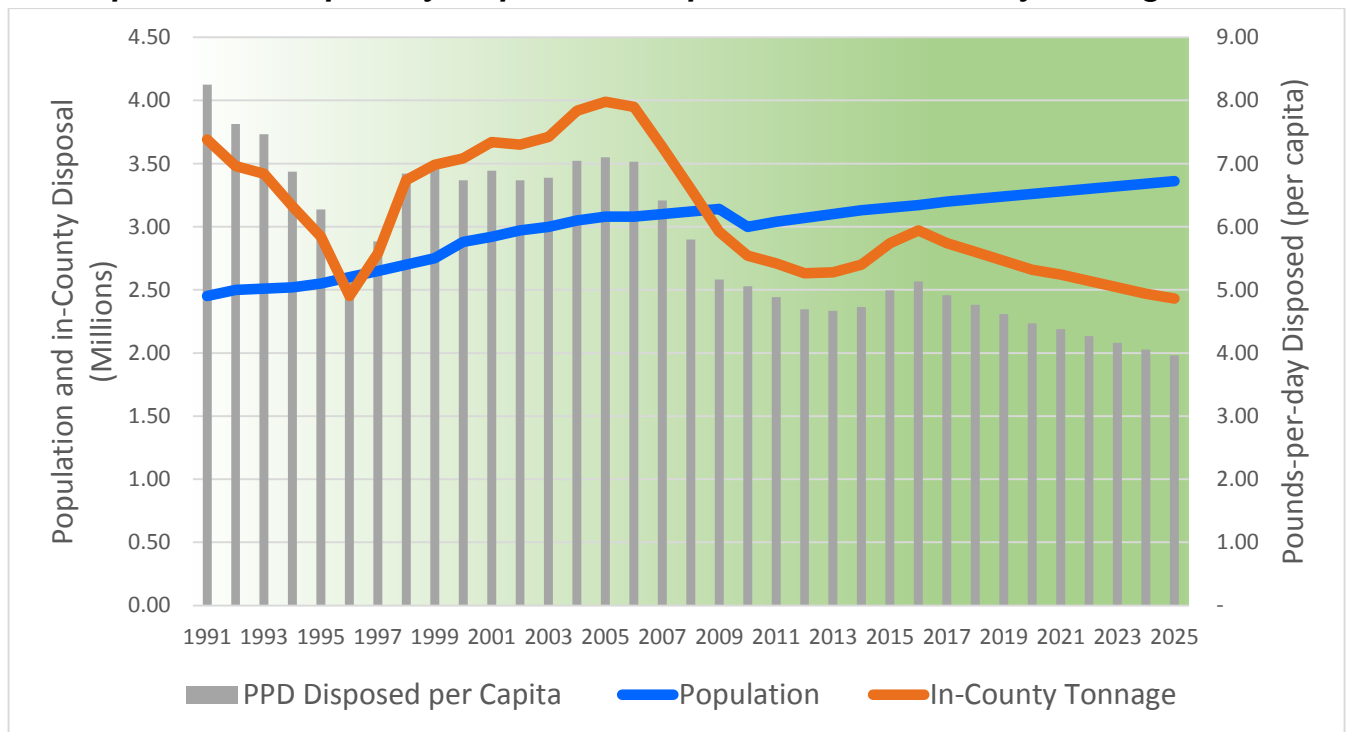
## V) INDUSTRY ANALYSIS

### A) TONNAGE TRENDS

Prior to 1997, the County did not have Waste Disposal Agreements (WDAs) with Orange County cities and landfill fees were adjusted annually. Through 1996, an increasing quantity of Orange County city waste was being sent to non-County landfills. With the execution of the County's first WDAs in mid-1997, in-County waste returned to the system. Disposal tonnage continued to increase until 2006 due to the growing economy, the housing boom, and population growth. The economic downturn in 2007, combined with new County recycling programs, resulted in a 30% loss of in-County tonnage over the next few years.

In-County disposal has shown only a slight increase since the economy stabilized. Due to continued County recycling efforts and new legislative actions described below, disposal volumes are not anticipated to return to pre-2007 levels, and OC Waste & Recycling is planning accordingly. In order to help ensure a stable revenue source despite lower tonnage levels, OC Waste & Recycling will continue to maintain existing WDAs and extend the importation of waste, in addition to reviewing the existing rate structure.

**Graph 1: Pounds-per-day Disposed vs Population and In-County Tonnage to 2025**



*\*Note: After the establishment of the WDAs in 1997, there was a spike in in-County tonnage as waste previously exiting the system was recaptured.*

## B) LEGISLATIVE, REGULATORY AND WASTE DIVERSION PROGRAM IMPACTS

The State of California continues to pass legislation in support of additional recycling with greater restrictions on air emissions and a strong emphasis on developing the organics recycling industry. Recent and future State mandates are anticipated to result in the continued reduction in landfilled waste, greater operating costs at our landfills, and the need to develop new waste processing facilities. Key legislation includes the following:

- (1) AB 939 (1989) – Cities were required to reach 50% diversion by 2000, implement recycling programs, and to report disposal to the State.
- (2) AB 32 (2006) – The Global Warming Solutions Act, requires that the California Air Resource Board (CARB) develop a scoping plan, identifying strategies to reduce greenhouse gas emissions. CARB’s scoping plan targeted the handling of green waste and other organics in an effort to reduce landfill gas emissions.
- (3) AB 341 (2011) – The State set a Statewide (not city-by-city) landfill diversion goal of 75% by 2020 and redefined what constituted diversion for this determination. AB 341 also implemented mandatory commercial and multi-family recycling programs.
- (4) AB 1594 (2014) – Green waste used as daily landfill cover will no longer receive recycling credit beginning in 2020. This applies to a significant portion of the over 550,000 tons of green waste OC Waste & Recycling accepts each year. A large portion of this material will need to be sent to a composting or other organics processing facility to continue being considered “recycled.”
- (5) AB 1826 (2014) – Required mandatory commercial organics (food and green waste) recycling to be phased in beginning 2016.

Existing organics facilities are insufficient to process the additional demand that will be created by AB 1594 and AB 1826, and the State is supporting the development of additional composting and anaerobic digester facilities to accept the material as demand grows. Anticipated declines in disposal tonnage increase OC Waste & Recycling’s need to diversify its revenue sources, potentially through the development of organics processing and treatment facilities.

## **VI) SYSTEM OVERVIEW**

Since 2002, as approved by the Board of Supervisors, development of the solid waste disposal system has been guided by the Regional Landfill Options for Orange County Strategic Plan (RELOOC). RELOOC established overarching goals and short and long-term strategies to address the County's solid waste disposal needs and ensure economic viability of the solid waste disposal system. The strategies established by RELOOC, except for those that are ongoing, have been completed as seen in [Appendix 1](#). As such, new strategies are included in this strategic plan update.

### **A) LANDFILLS**

OC Waste & Recycling manages three active landfills conveniently located in the northern, central and southern regions of the County: Olinda Alpha Landfill is located near the City of Brea, Frank R. Bowerman (FRB) Landfill is located near the City of Irvine and the Prima Deshecha Landfill is located partially in a County unincorporated area, the City of San Juan Capistrano and the City of San Clemente. Together these landfills provided safe disposal for approximately 4.8 million tons of waste in 2015-16 (including both in-County and imported waste). OC Waste & Recycling also maintains or monitors 20 closed landfill sites.

### **B) HOUSEHOLD HAZARDOUS WASTE COLLECTION CENTERS (HHWCCS)**

OC Waste & Recycling operates four regional HHWCCs located in the cities of Anaheim, Huntington Beach, Irvine, and San Juan Capistrano. HHWCCs offer convenient drop-off locations for the County's residents, meet all regulatory requirements, and offer a Materials Reuse Program area for residents to obtain partially used qualified materials. These programs are an effective way to manage household hazardous waste while reducing illegal and improper disposal of hazardous wastes.

### **C) RENEWABLE TECHNOLOGIES**

OC Waste & Recycling currently hosts landfill gas-to-electricity facilities at three of our landfill sites. These facilities, with a combined output of 54 MW to the grid, currently generate electricity sufficient to power approximately 48,000 Orange County homes.



In order to meet the increasing State recycling, organics diversion and greenhouse gas emissions reduction requirements, the Department is studying technologies to convert landfill gas and organic solid waste to renewable energy and products. In addition, landfill real estate is being evaluated to host renewable energy technologies such as solar photovoltaics. In 2015, OC Waste & Recycling undertook a comprehensive study to identify short range actions and a longer term strategy for renewable technologies implementation in order to help provide the best regional solid waste management services possible. This Renewable Technology Implementation Plan (RTIP) supports Strategy #3 and is anticipated to be completed by the end of 2016.

The map in [Appendix 2](#) depicts the location of the active landfill sites and household hazardous waste collection centers.

**D) CURRENT AND PROJECTED CAPACITY**

Under current projected conditions, the system has landfill capacity until the turn of the century as indicated in Table 1.

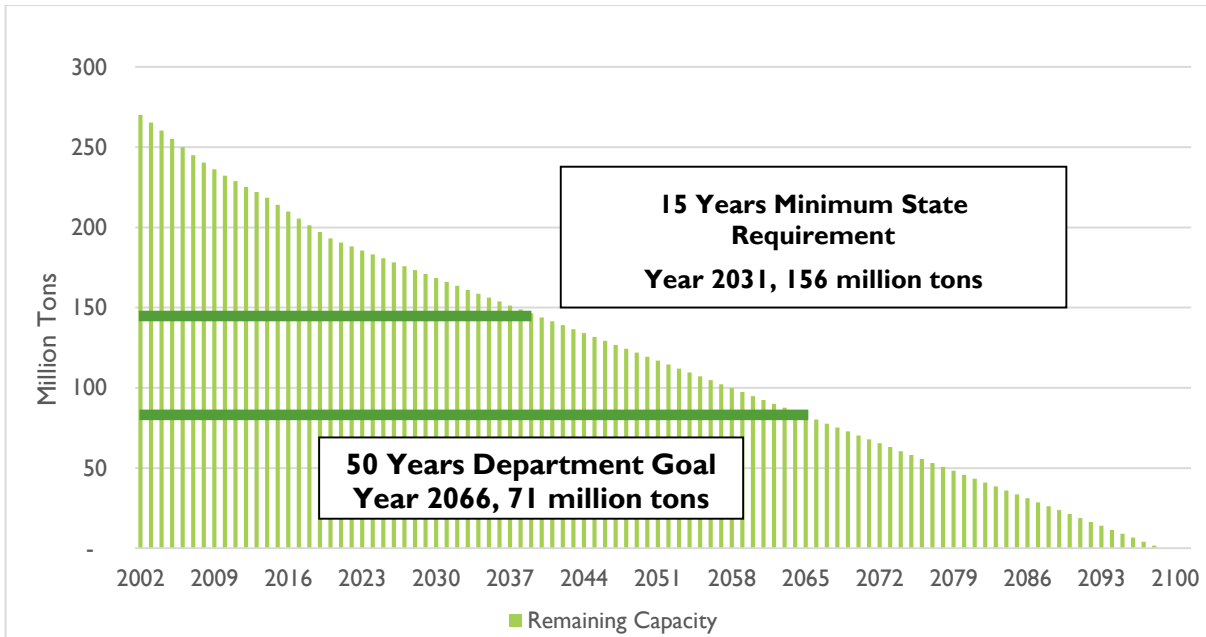
Table 1: Landfill Closure Dates: Permitted and Estimated Capacity

Region	Landfill	Date Opened	Permitted Closure Date	Estimated Closure by Capacity Date
North	Olinda Alpha	1960	2021	2028
Central	Frank R. Bowerman	1990	2053	2072
South	Prima Deshecha	1976	2067	2099

*Note: Assumes current level of imported waste through 2025. Continuation of importation will be reassessed based on Board policy, available capacity and financial need at that time.*

At the end of fiscal year 2015-16, the disposal system had approximately 212 million tons of remaining capacity. In 15 years (2031), the disposal system is projected to have 156 million tons of remaining disposal capacity. OC Waste & Recycling’s current goal is to maintain 50 years of system life so that by 2066, the disposal system is expected to have 71 million tons of remaining capacity. Graph 1 shows the projected capacity through the life of the disposal system.

Graph 1: Remaining Capacity of the Disposal System



Ensuring disposal capacity for current and future generations is a key component of OC Waste & Recycling’s mission. The regional landfill system is a valuable asset, providing an essential public service that contributes to the health and well-being of Orange County residents.

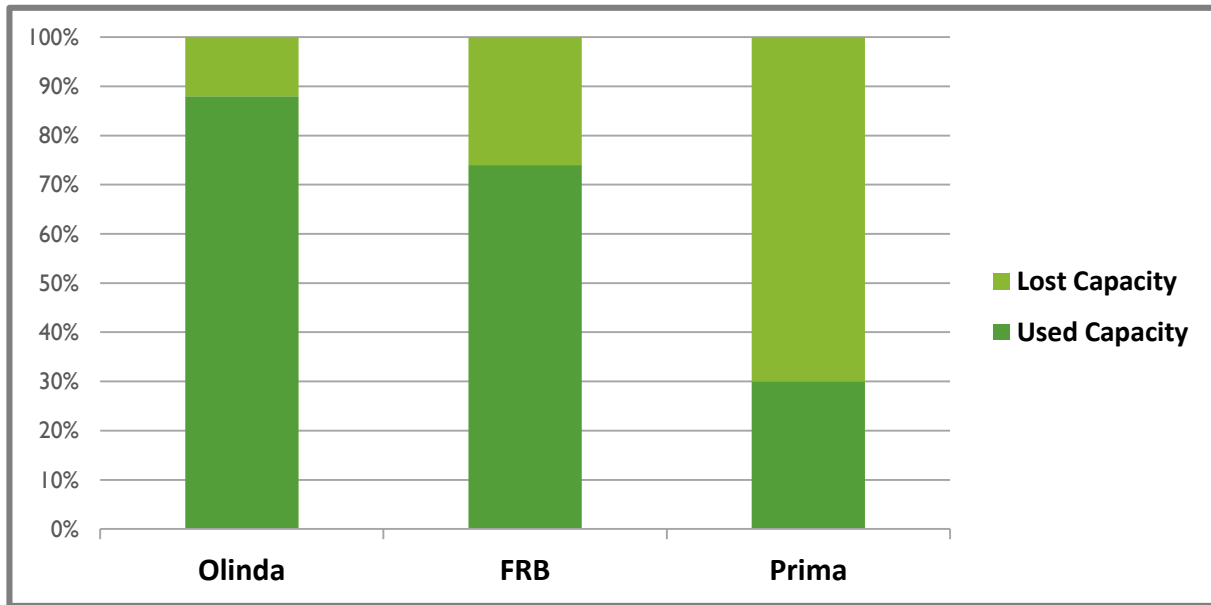
With rapid development of new communities and continued urbanization, siting and development of new landfills within Orange County is unlikely. Therefore, OC Waste & Recycling is taking proactive steps to maximize capacity at all three active landfills. The Olinda Alpha Landfill is currently permitted to close in 2021, and Zone 1 of the Prima Deshecha Landfill is permitted to close in 2019. OC Waste & Recycling will work to extend Olinda Alpha, FRB and Prima Deshecha permitted closure dates.

As shown in Table 2 and Graph 2, substantial capacity will be lost if the landfills are closed by current permitted closure dates. Premature closures will result in significant underutilization of the County’s long-term investment by not optimizing asset value and will leave future generations with fewer local disposal options.

**Table 2: Lost Capacity Based on Closure of Landfills on Permitted Dates**

Landfill	Permitted Closure Date	Estimated Closure by Capacity Date	Lost Capacity (million tons)	% Loss
Olinda Alpha	2021	2028	9.4	12%
Frank R. Bowerman	2053	2072	39.0	26%
Prima Deshecha	2067	2099	59.4	63%

**Graph 2: Lost Capacity Based on Closure of Landfills on Permitted Dates**



## E) LANDFILL PHASING PLANS

To maximize landfill capacity and ensure the highest possible use of available airspace, a strategic phasing plan systematically guides development at each one of the County’s three landfills. Landfill phasing is the process of planning, permitting, designing and initiating construction for the next disposal phase of the landfill before the current phase reaches its capacity.

OC Waste & Recycling has prepared comprehensive general development plans for all three landfills in order to maximize capacity at each landfill while minimizing the operational footprint to surrounding native areas and habitats. The plans estimate construction requirements, amount of capacity gained and general timelines through the life of each landfill.

Careful planning and conscientious execution of each phase of the general development plan has enabled the department to adequately prepare for infrastructure needs based on current disposal and operational requirements (i.e. cells are not constructed too late or too soon); facilitated operational efficiencies; helped ensure that large and complex landfill infrastructure is developed in a safe and environmentally sensitive manner; and minimized overall expenditures.

**Appendix 3** reflects the current landfill phasing plans and related schedules. The Olinda Alpha Landfill does not have construction phases as the site is only planned for vertical, not horizontal, expansion.

## VII) GOALS AND STRATEGIES

OC Waste & Recycling's four (4) strategic goals are as follows:

**Goal #1** – To maintain a financially sound, flexible long-term plan for local solid waste disposal and management services.

**Goal #2** -- To maintain protection of Orange County's public health, safety and its environment (air, water and habitat).

**Goal #3** -- To sustain the economic viability of the Orange County solid waste disposal system by ensuring consistent and reliable public fees/rates and adequate revenues to maintain efficient, cost effective and high quality OC Waste & Recycling operations.

**Goal #4** -- To provide a fair, objective, open, planning process that is: presented in non-technical, easily understood terms, applicable to an evaluation matrix, responsive to and involves stakeholders and the public, and results in public understanding.

The eight (8) strategies below support the goals listed above:

### **Strategy #1 – Obtain Necessary Permits and Approvals to Extend Olinda Alpha, Frank R. Bowerman and Prima Deshecha through Full Build-Out**

- ❖ Objective: To optimize the value of the County's disposal system and ensure long-term capacity. *Aligns with and advances Goals #1 and 3.*
- ❖ Action: Begin coordination of CEQA review and analysis of host city impact.
- ❖ Target Completion Date: At least 2 years prior to permit revision.

### **Strategy #2 – Continue Waste Importation Post-2016**

- ❖ Objective: To provide funds to help stabilize in-County disposal rates, repay bankruptcy related obligations, and enable potential revenue sharing to remain market competitive and ensure landfill capacity optimization. *Aligns with and advances Goals #3 and 4.*
- ❖ Action: Assess options for continued importation post-2025. Current waste importation has been extended through 2024-2025.
- ❖ Target Completion Date: At least two years prior to the end of current WDAs and importation agreements.

### **Strategy #3 – Maintain Waste Disposal Agreements (WDAs)**

- ❖ Objective: To ensure a stable revenue source for disposal system operations and expansions and to provide a predictable, competitive disposal rate for Orange County residents and businesses. *Aligns with and advances Goals #1 and 3.*
- ❖ Action: Current WDAs have been extended through 2024-2025. Begin the preparation and negotiations for new WDAs.

- ❖ Target Completion Date: At least two years prior to expiration of existing WDAs.

#### **Strategy #4 – Review Current Disposal Rate Structure and Analyze Alternative Revenue Options**

- ❖ Objective: To ensure appropriate and optimal revenue diversification. *Aligns with and advances Goals #3 and 4.*
- ❖ Action: Consider alternative revenue sources and evaluate current service levels for possible rate structure revitalization.
- ❖ Target Completion Date: Annually.

#### **Strategy #5 – Develop a Renewable Technology Implementation Plan (RTIP)**

- ❖ Objective: To develop a plan that includes a waste conversion technology element to facilitate compliance with state waste diversion mandates and a landfill gas to energy element to further diversify revenues and support disposal rate stabilization. *Aligns with and advances Goals #2, 3, and 4.*
- ❖ Action: Utilize the Renewable Technology Implementation Plan (RTIP) to develop short term and long term renewable technology options. Monitor and promote legislation and public education that advances alternative technology.
- ❖ Target Completion Date: December 2016 (Draft).

#### **Strategy #6 – Develop an Enhanced Master Capital Expenditures Planning System**

- ❖ Objective: To increase agility in long range planning for capital projects based on fluctuations in disposal tonnages. *Aligns with and advances Goals #1 and 3.*
- ❖ Action: Utilize the planning tool to efficiently adjust project planning based on key variables.
- ❖ Target Completion Date: First version completed September 2016. Upgrade anticipated completion December 2017.

#### **Strategy #7 – Continue to Implement Industry Best Management/Operational Practices**

- ❖ Objective: To increase efficiency and reduce costs. *Aligns with and advances all Goals.*
- ❖ Action: Identify operational improvements and pursue industry best practices.
- ❖ Target Completion Date: Ongoing.

**Strategy #8 – Provide Regional Leadership for Waste Reduction, Reuse and Recycling in Orange County.**

- ❖ Objective: To expand our existing public outreach and education program utilizing surcharge funds. *Aligns with and advances Goal #2.*
- ❖ Action: Monitor and promote legislation and programs that encourage waste reduction, reuse and recycling.
- ❖ Target Completion Date: Ongoing with annual review.

**APPENDIX 1 - 2002 RELOOC SHORT AND LONG TERM STRATEGIC PLAN UPDATE**

<b>Short Term Strategy #1</b>	<b><i>Fully use the existing landfill system capacity by maximizing operations efficiency at existing landfills.</i></b>	
	<b>Action</b>	<b>Completed</b>
	Continue to review landfill operations for use of new equipment and practices for optimum compaction to maximize capacity. Report on current and planned practices for optimizing compaction during annual review of RELOOC Strategic Plan.	✓
	Monitor on an ongoing basis the availability, applicability, and cost effectiveness of alternative daily and final covers and liners that maximize capacity. Report on alternative daily and final cover uses (current and planned) during annual review of the RELOOC Strategic Plan.	✓
	Conduct a feasibility study of bio-cell technology (breaking down solid waste to create greater capacity) at Prima Deshecha Landfill within two years of Board of Supervisors concurrence on the Strategic Plan Phased Approach.	✓
	Implement bio-cell technology at Prima Deshecha Landfill, if deemed feasible, within five years of feasibility determination. Implementation includes application to regulatory agencies, CEQA analyses, and revisions to operating permits and landfill operational procedures.	Not feasible

<b>Short Term Strategy #2</b>	<b><i>Fully use the existing landfill system capacity by vertically expanding Frank R. Bowerman Landfill to maximize landfill site capacity.</i></b>	
	<b>Action</b>	<b>Completed</b>
	Initiate a CEQA/EIR process upon Board of Supervisors approval of the Strategic Plan Phased Approach (scheduled for 2002).	✓
	Complete the CEQA process and Board of Supervisors certification of the EIR, and approval of the project to expand the FRB Landfill (scheduled for 2004).	✓
	Finalize Agreement with City of Irvine for vertical expansion of FRB Landfill coinciding with the EIR certification and approval of the Strategic Plan.	✓
	Revise landfill operating permits for vertical expansion of FRB Landfill within two years of the EIR certification and approval of the Strategic Plan.	✓



<b>Short Term Strategy #3</b>	<b><i>Fully use the existing landfill system capacity by vertically and horizontally expanding Olinda Alpha Landfill to maximize landfill site capacity.</i></b>	
<b>Action</b>		<b>Completed</b>
Initiate a CEQA/EIR process upon Board of Supervisors approval of the Strategic Plan Phased Approach (scheduled for 2002).		✓
Complete the CEQA process and obtain Board of Supervisors certification of the EIR and approval of the project to expand and extend the life of the Olinda Alpha Landfill (scheduled for 2004).		✓
Finalize Agreement with City of Brea for expansion and extension of 2013 closure date for Olinda Alpha Landfill coinciding with the EIR certification and approval of the Strategic Plan.		✓
Revise landfill operating permits for expansion and extension of 2013 closure date for Olinda Alpha Landfill within two years of the EIR certification and approval of the Strategic Plan.		✓

<b>Short Term Strategy #4</b>	<b><i>Fully use the existing landfill system capacity by promoting diversion, recycling, and market development with the public and haulers.</i></b>	
<b>Action</b>		<b>Completed</b>
Develop a plan to expand public outreach programs implemented by IWMD and coordinate with cities to provide education on how programs by cities and practices by citizens to reduce, recycle, and reuse solid waste will result in maximizing In-County landfill capacity. The expanded public outreach program should be developed within two years of Board of Supervisors approval of the RELOOC Strategic Plan		✓
Develop a plan to support practices in the County by commercial haulers and self-haulers to increase solid waste diversion such as identifying new waste streams that can be recycled. Seek input from haulers through the Waste Industry Technical Advisory Committee (formed to advise the IWMD Director) and report on practices and ways to support those practices during annual review of the RELOOC Strategic Plan.		✓
Develop a plan to monitor and promote legislation and incentives that develops existing and creates new markets for recycled products. Support legislation that will benefit Orange County's market for recycled products through advocacy with legislators. Develop a plan to educate and offer incentives to Orange County residents to purchase recycled products. Report on education/advocacy efforts and legislation reviewed and supported during annual review of RELOOC Strategic Plan.		✓

<b>Short Term Strategy #5</b>	<b><i>Seek to resolve the community's concerns related to the extended use of the landfills.</i></b>	
	<b>Action</b>	<b>Completed</b>
	Negotiate conditional agreements to address impacts with host Cities affected by the RELOOC Phase 1 strategies conditioned on Board of Supervisors approval. Conditional agreements with host cities to be approved by the Board of Supervisors concurrent with approval of the RELOOC Strategic Plan.	✓
	Upon Board of Supervisors approval and certification of the EIR for landfill expansion at the FRB and Olinda Alpha landfills, finalize host City agreements including any modifications to mitigations and associated compensation resulting from the EIR process.	✓

<b>Short Term Strategy #6</b>	<b><i>Annually review the RELOOC Strategic Plan and modify, as appropriate, in response to disposal industry trends and advances in technology.</i></b>	
	<b>Action</b>	<b>Completed</b>
	Monitor disposal industry trends/options such as the development of regional rail haul sites, planning studies for the required inter-modal/transfer facilities, and identification of out-of-County disposal contract options. Report on disposal industry trends/options and impacts, if any, on Orange County's solid waste disposal system during the annual review of RELOOC Strategic Plan.	✓
	Monitor alternative technologies and evaluate applicability of potential technologies to Orange County's solid waste system. Recommend that the County's Legislative Platform include a support position for innovative and alternative technologies to reduce waste. Investigate existing disincentives that are preventing the advancement of emerging and alternative technologies and develop strategies for addressing those disincentives. Report on alternative technologies evaluated and potential for use in Orange County during the annual review of RELOOC Strategic Plan.	✓
	Annually review the RELOOC Strategic Plan concurrent with the annual review of IWMD's 15-year Financial Plan with the Waste Management Commission and City Manager's Solid Waste Working Group.	✓
	Recommend modifications or additions to the RELOOC Strategic Plan, if appropriate, based on annual review findings.	✓

<b>Long Term Strategy #1</b>	<b><i>Determine if there is a need to increase the daily amount of solid waste permitted at the Prima Deshecha Landfill five years prior to the closure of Olinda Alpha.</i></b>	
	<b>Action</b>	<b>Completed</b>
	Assess cost and level of control implications associated with exporting waste out-of-County and the benefit of retaining waste in-County for as long as possible.	✓
	If the above assessment determines that waste should be retained in-County for as long as possible, re-evaluate capacity and demand projections for the County and determine the required increase in permitted daily waste disposed at the Prima Deshecha Landfill in order to accommodate in-County waste at the two remaining landfills.	✓
	<b><i>If an increase in permitted daily tonnage at the Prima Deshecha Landfill is deemed necessary, the following actions would be required:</i></b>	
	Assess impacts on surrounding cities affected by increased tonnage identified through a Community Involvement Program.	✓
	Negotiate and revise Agreements to address mitigations with affected cities.	✓
	Revise landfill operating permits, including the preparation of required environmental documents.	✓

<b>Long Term Strategy #2</b>	<b><i>Identify strategies to support, develop and implement feasible, viable, alternative technologies or other approaches to maximize landfill capacity for possible consideration in future Waste Disposal Agreements.</i></b>	
	<b>Action</b>	<b>Completed</b>
	Prepare a plan to educate the public about the use of technology for waste disposal and the important role and responsibility the public has in supporting the location and operation of safe new technology in Orange County. The public education process for alternative technologies should be implemented concurrent with the public outreach program to be developed as part of Short-term Strategy Number 4.	✓
	Subsequent to any RELOOC Strategic Plan annual review that identifies potentially viable alternative technologies or other approaches to maximize landfill capacity in Orange County, determine economic viability of and the actions or steps necessary to support, develop and/or implement those approaches.	✓
	Modify the RELOOC Strategic Plan, as appropriate, prior to renegotiation of any Waste Disposal Agreements to reflect the implementation of feasible, viable, alternative technologies or other approaches to reduce dependence on landfills.	✓

<b>Long Term Strategy #3</b>	<b><i>Complete a study to determine the feasibility of expanding FRB Landfill into the adjacent Round Canyon prior to renegotiation of the 2017-2027 Waste Disposal Agreements.</i></b>	
<b>Action</b>		<b>Completed</b>
Assess impacts on biological resources and existing reserves and identify potential mitigation requirements of regulatory agencies.		✓
Obtain input from the environmental community concerning the Natural Community Conservation Plan (NCCP) and related environmental issues through an Involvement Program.		✓
Determine ability/opportunity to mitigate impacts on biological resources and existing reserves and take action, if appropriate, to secure lands for biological mitigation.		✓
Assess impacts on the City of Irvine due to expansion of the FRB Landfill into Round Canyon identified through a Community Involvement Program.		✓
Assess the timing of the feasibility study and associated actions to maximize coordination with current and anticipated regional environmental planning efforts.		✓
<b><i>If a decision were made to expand FRB into Round Canyon, the following additional actions would then be required:</i></b>		<b><i>No expansion</i></b>
Renegotiate Agreement with City of Irvine to address required mitigation.		N/A
Take appropriate action to purchase Round Canyon for potential landfill expansion.		N/A
Revise County Recreational Plan regarding Limestone Canyon Regional Park.		N/A
Amend the NCCP for Round Canyon and take other actions deemed necessary for mitigation of impacts to biological resources and existing reserves.		N/A
Revise landfill operating permits, including the preparation of required environmental documents.		N/A
<b><i>If a decision is made not to expand FRB into Round Canyon, any lands purchased for biological mitigation could be sold or retained as open space.</i></b>		<b><i>No expansion</i></b>

# APPENDIX 2 – MAP OF ORANGE COUNTY LANDFILLS AND HOUSEHOLD HAZARDOUS WASTE COLLECTION CENTERS



## HHWCC LOCATIONS



## OC LANDFILL LOCATIONS

- Olinda Alpha Landfill**

1942 North Valencia Avenue, Brea, CA 92823
- Frank R. Bowerman Landfill**

11002 Bee Canyon Access Road, Irvine, CA 92602
- Prima Deshecha Landfill**

32250 La Pata Avenue, San Juan Capistrano, CA 92675

REDUCE REUSE RECYCLE

## APPENDIX 3 -- LANDFILL FACILITY INFORMATION AND CAPACITY PHASING PLAN

### **Olinda Alpha Landfill (OAL)**

The North Region consists of the active Olinda Alpha Landfill which is located entirely within unincorporated Orange County, just north of the City of Brea. The landfill is permitted to accept up to 8,000 tons of solid waste per day, with a maximum annual average daily tonnage of 7,000 tons per day. Olinda Alpha Landfill has a current permitted closure date of 2021, although it currently has available capacity until 2028. The landfill receives 7,000 tons daily with approximately 3,450 from in-County and 3,550 through importation.

OC Waste & Recycling intends to seek a permit extension to allow for the continuation of landfill operations through approximately 2034.

#### **Facility Information:**

Owner:	County of Orange, OC Waste & Recycling
Address:	Olinda 1942 N. Valencia Ave., Brea, CA 92823
Operating Days:	Monday through Saturday (307 days/year)
Operating Hours:	6:00 a.m. to 4:00 p.m.
SWFP No.	30-AB-0035
SWFP Issue Date:	5/27/2010
Last 5-year Review:	05/29/2015
Next 5-Year Review Due:	05/28/2020
Permitted Closure Date	2021
Capacity Closure Date:	2028
Available Airspace (6/30/2016)	31.7 million cubic yards
Available Capacity (6/30/2016)	19.3 million tons
Maximum Permitted Daily Capacity:	8,000 TPD for 271 days per year 10,000 TPD for 36 days per year
Maximum Average Annual Daily:	7,000 TPD or 2,149,000 tons annually
Cooperative Agreement/MOU	City of Brea, July 14, 2009; Amended April 26, 2016
Daily Waste Disposed	Average:
In-County	3,450 tons
Imported	3,550 tons
Land Use/Conditional Use Permit:	Permit No: N/A
Waste Discharge Requirements:	Order No: R8-2010-0006 Effective:01/29/2010
Permitted Waste Type:	Municipal Solid Waste, Class III Landfill
Future Land Use:	Open Space, Renewable Technologies
Additional information	Broadrock LFGTE Plant – 34 MWh
Restrictions:	EIR based on achieving elevation of 1,415 AMSL

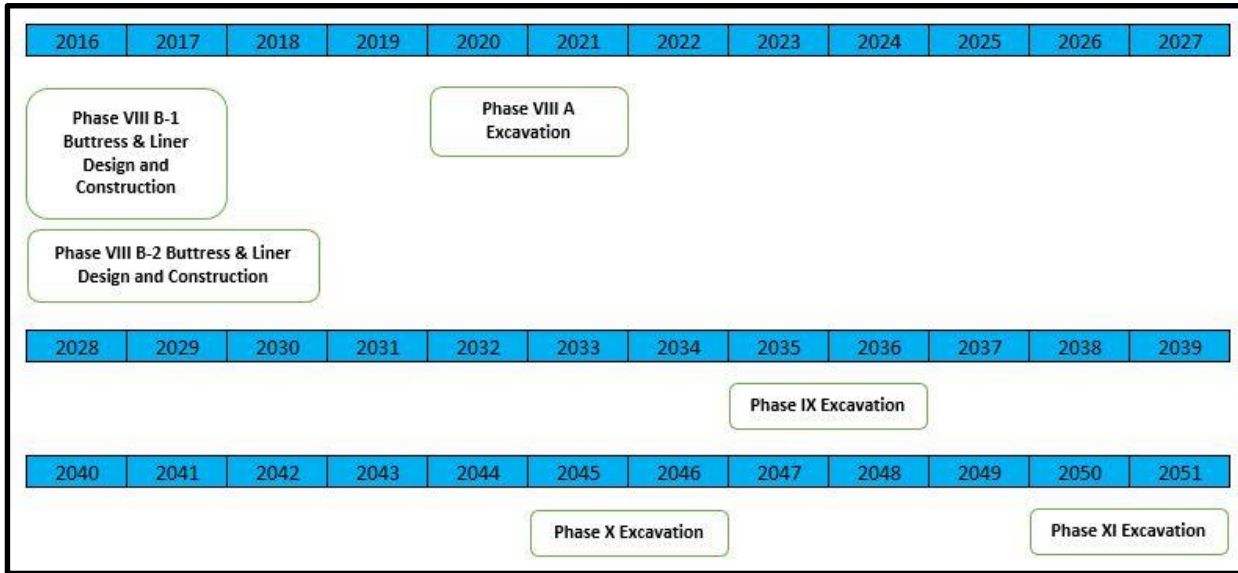
**Frank R. Bowerman (FRB) Landfill**

The Central Region consists of the active Frank R. Bowerman Landfill which is located entirely within unincorporated Orange County, just north of the City of Irvine. The landfill is permitted to accept up to 11,500 tons of solid waste per day, with a maximum annual average daily tonnage of 8,500 tons. The site has a current permitted closure date of 2053, although the available disposal capacity is projected to be 2075. FRB Landfill receives approximately 6,500 tons of waste daily with 4,600 tons from in-County and 1,900 through importation.

**Facility Information:**

Owner:	County of Orange, OC Waste & Recycling
Address:	11002 Bee Canyon Access Road, Irvine, CA 92618
Operating Days:	Monday through Saturday (307 days/year)
Operating Hours:	7:00 a.m. to 5:00 p.m.
SWFP No.	30-AB-0360
SWFP Issue Date:	09/22/2008
Last 5-year Review:	09/20/2013
Next 5-Year Review Due:	09/22/2018
Permitted Closure Date	2053
Capacity Closure Date:	2072
Available Airspace (6/30/2016)	185.2 million cubic yards
Available Capacity (6/30/2016)	115.2 million tons
Maximum Permitted Daily Capacity:	11,500 TPD
Maximum Average Annual Daily:	8,500 TPD
Cooperative Agreement/MOU	City of Irvine, August 15, 2006; Amended April 12, 2016
Daily Waste Disposed	Average (Based on the month of September 2016)
In-County	4,586 tons
Imported	1,887 tons
Land Use/Conditional Use Permit:	Permit No: N/A
Waste Discharge Requirements:	R8-2010-0071
Permitted Waste Type:	Municipal Solid Waste, Class III Landfill
Future Land Use:	Open Space, Renewable Technologies
Additional information	Bowerman Power – 20MWh
Restrictions:	EIR based on achieving elevation of 1,350 AMSL

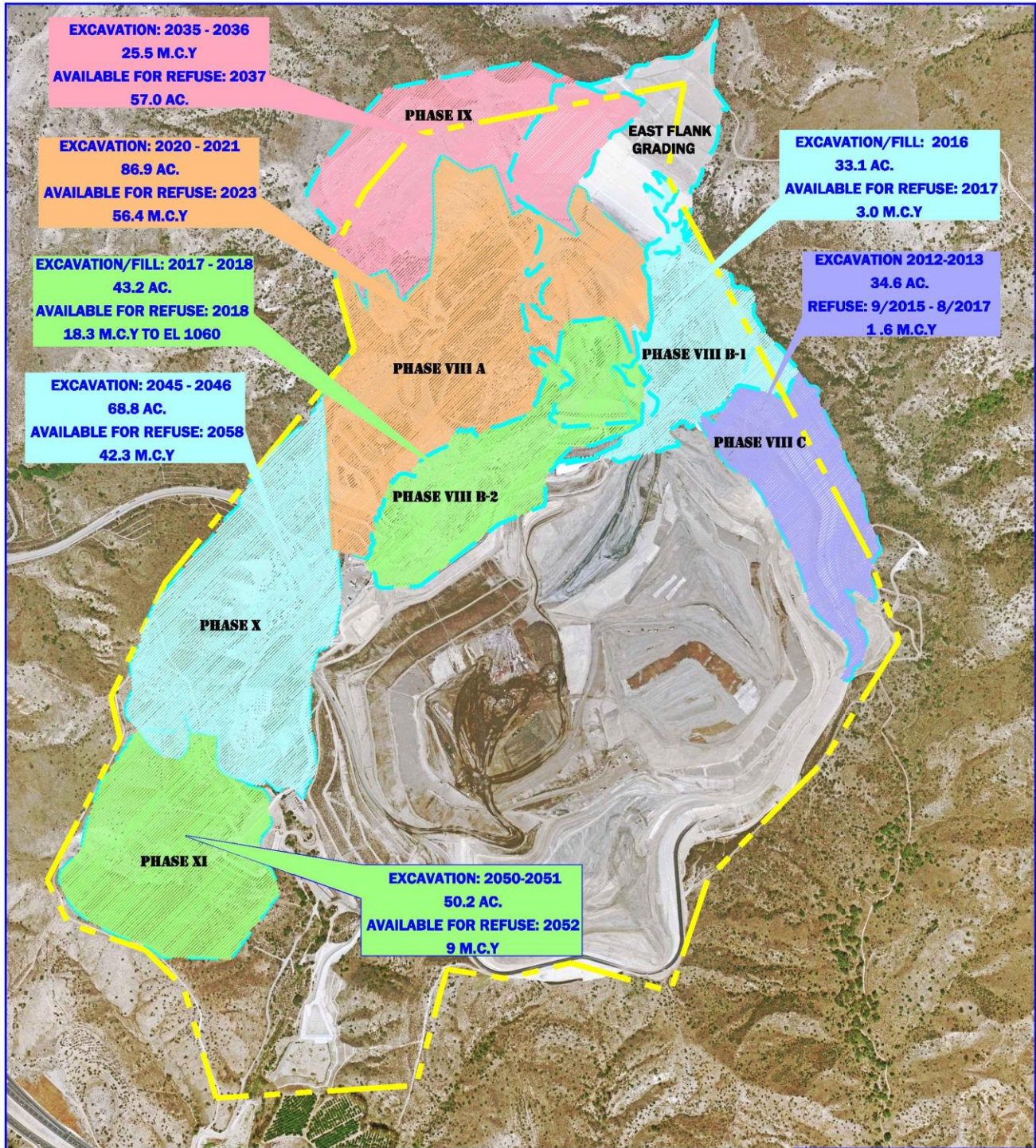
**Frank R. Bowerman Landfill  
General Phasing Plan 2016-2050**



**Estimated Design & Construction Phasing Projects and Costs  
FY 15/16 - FY 23/24**

FISCAL YEAR	PHASING PROJECT
15/16	Phase VIII B-1 Design
15/16	Phase VIII B-1 Buttress & Liner Construction
16/17	Phase VIII B-1 Buttress & Liner Construction
16/17	Phase VIII B-2 Design
16/17	Phase VIII B-2 Buttress & Liner Construction
17/18	Phase VIII B-2 Buttress & Liner Construction
20/21	Phase VIII A Buttress & Liner Design
21/22	Phase VIII A Buttress & Liner Design
21/22	Phase VIII A Buttress & Liner Construction
22/23	Phase VIII A Buttress & Liner Construction
<b>TOTAL</b>	





SCALE: 1"=1,000'

**LEGEND:**  
--- PHASE LIMIT  
--- PROPERTY LINE

OC Waste & Recycling

**FRANK R. BOWERMAN  
LANDFILL**

**LANDFILL PHASING PLAN**

DESIGNED BY			SHEET
DRAWN BY			1 OF 1
SCALE	DATE	CHECKED BY	
AS SHOWN	06/30/16	DRAWING NO.	
		N/A	

## **Prima Deshecha Landfill**

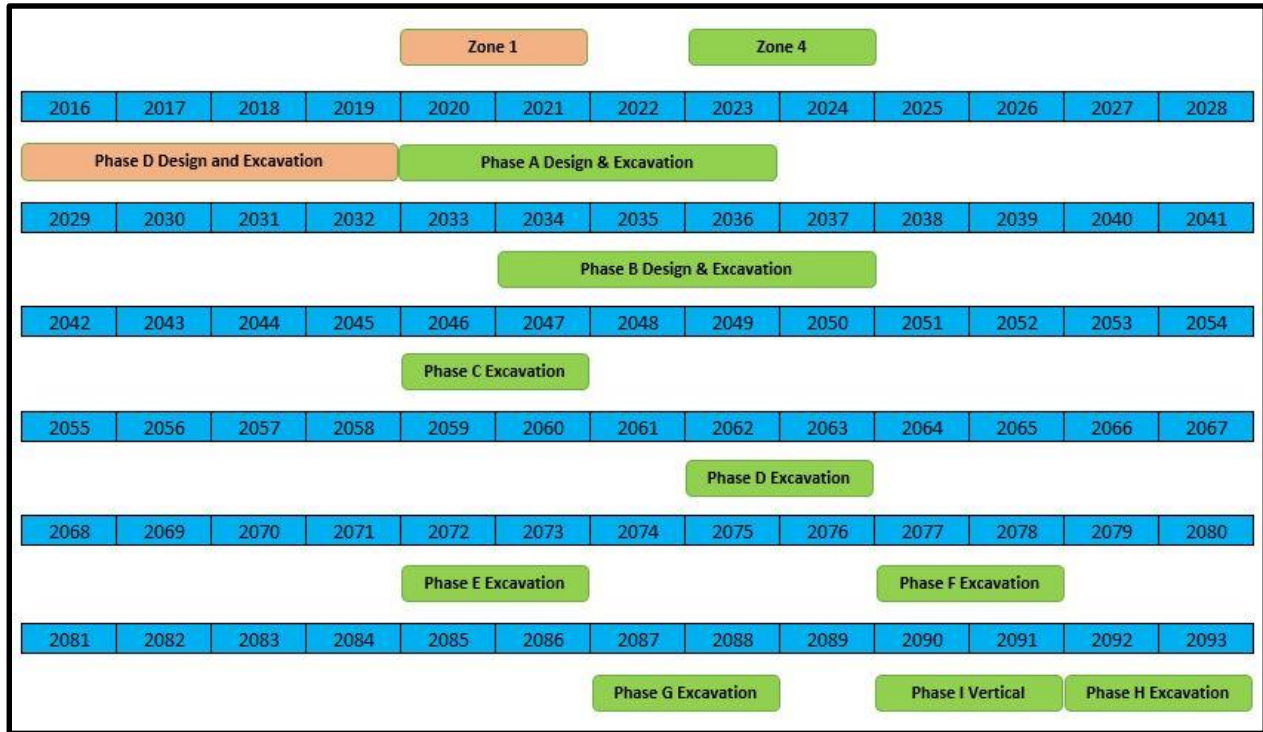
The South Region includes the active Prima Deshecha Landfill which is located within the unincorporated area of the County, the City of San Clemente, and the City of San Juan Capistrano. The site has a current permitted closure date of 2067. However, the closure date based on available capacity is projected to be 2099. The landfill is permitted to accept up to 4,000 tons of solid waste per day. However, Prima Deshecha Landfill is currently receiving approximately 1,457 tons per day with 1,165 tons from in-County and 292 tons through importation.

Zone 1 is permitted through 2019. OC Waste & Recycling intends to seek a permit extension to allow for the continuation of landfill operations through approximately mid-2040.

### **Facility Information:**

Owner:	County of Orange, OC Waste & Recycling
Address:	Prima Deshecha Landfill 32250 La Pata Avenue San Juan Capistrano, CA 92675
Operating Days:	Monday through Saturday (307 days/year)
Operating Hours:	7:00 a.m. to 5:00 p.m.
SWFP No.	30-AB-0019
SWFP Issue Date:	11/8/2011
Last 5-year Review:	11/7/2011
Next 5-Year Review Due:	11/8/2016
Permitted Closure Date	Zone 1: 2019; Zone 4: 2067
Capacity Closure Date:	2099
Available Airspace (6/30/2016)	Zone 1: 18.5 million cubic yards Zone 4: 118.5 million cubic yards
Available Capacity (6/30/2016)	Zone 1: 10.5 million tons Zone 4: 66.8 million tons
Maximum Permitted Daily Capacity:	4,000 tons per day; 350 tons/day of digested dewatered bio-solids from POTWs
Maximum Average Annual Daily:	4,000 tons per day
Cooperative Agreement/MOU	City of San Juan Capistrano, 9/12/1995; Amended 4/26/2016
Daily Waste Disposed	Average
In-County	1,165 tons
Imported	292 tons
Land Use/Conditional Use Permit:	July 2001 (original 1995)
Waste Discharge Requirements:	R9-2003-0306
Permitted Waste Type:	Municipal Solid Waste, Class III Landfill
Future Land Use:	Open Space, Renewable Technologies
Additional information	CR&R Materials Recovery Facility onsite Fortistar Methane Group Gas-to-Energy Plant (6MW)
Restrictions:	EIR based on achieving elevation of Zone 1: 600; Zone 4:1010

## Prima Deshecha Landfill General Phasing Plan 2016-2090



### Estimated Design & Construction Phasing Projects and Costs FY 15/16 - FY 23/24

FISCAL YEAR	PHASING PROJECT
15/16	Zone 1 - Phase D Design
16/17	Zone 1 - Phase D Mass Excavation
17/18	Zone 1 - Phase D Mass Excavation
20/21	Zone 4 - Phase A Design
22/23	Zone 4 - Phase A Mass Excavation
22/23	Zone 4 - Phase A Mass Excavation
<b>TOTAL</b>	

