


 **Outline** 

1. Waterways overview
2. History of waterways
3. Dredging
4. Oxnard West Drain
5. Guard Rail Replacement
6. 20 year plan
 - Repair types
 - Work completed
7. Future
 - Remaining work
 - Plan
8. Sound Wall

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 **Section 1** 

Waterways Overview

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 **Site Map** 



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Mandalay Bay Facts



- ◆ **7.8 miles of seawall**
 - 3.4 miles Boise Wall
 - 4.4 miles Zurn Wall
- ◆ **79.6 acres of waterways**
 - 23.5 acres Main Channel
 - 30.8 acres East Mandalay Bay
 - 25.3 acres West Mandalay Bay

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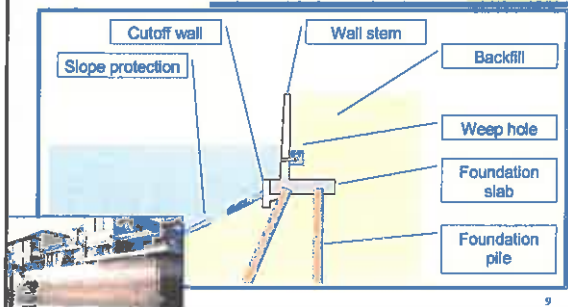
Map of Seawall Type



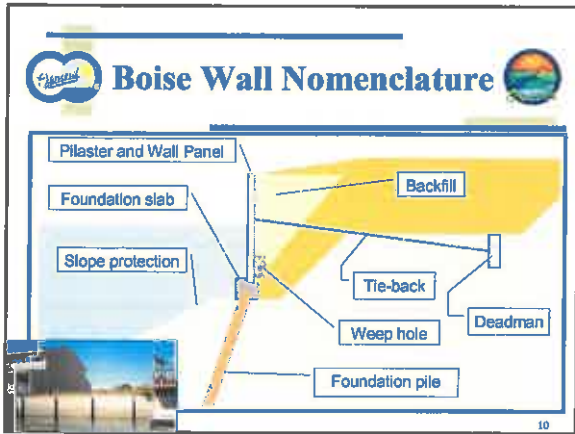
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Zurn Wall Nomenclature



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Section 2

History of Waterways

History

Jan 4, 1966	Tentative subdivision map of tract 1904 (Bahia Las Brisas) by resolution no. 3,870
1968-1971	Seawalls in Tract 1904-1/2/3 accepted by City
June 16, 1970	Assessment district created by resolution no. 5,121
Aug 22, 1972	First assessment by resolution no. 5,741
1976	Seawalls in Tract 2026-3 accepted by City
1978-1982	Dredging, PW78-11/11B
1981	Chanel Islands Blvd wall damaged by storm
1984-1986	Dredging, PW84-10/10A
1986-1987	Dredging, PW86-51



History



1987-1993	Annexation of Mandalay Bay Ph IV, Tract 4323-1/2/3
June 28, 1988	Assessment valuation changed by resolution no. 9,476, Harbor Island added to Waterway Maintenance District as Zone 2
1989-1992	Seawall Repair Phase 1, PW89-26
1993-1995	Seawall Repair Phase 2, PW93-20
1999-2003	Seawall Repairs, Harbor Offshore contract
2003-2004	Dredging, PW03-23

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Assessment District



Purpose

- Maintenance, repair, operation, cleaning, dredging and supervision of ...
 - Waterways
 - West channel of Channel Islands Marina until VC completes Phase II
 - Edison Canal
- Maintenance and repair required by discharge of the Oxnard West Drain
- Maintenance and operations of landscape

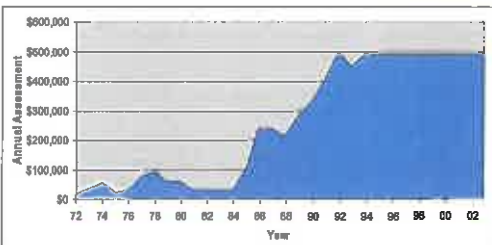
Assessment calculation

- Prior to 1978 (Proposition 13) - Based on a share of the total assessed valuation of the property and improvements
- 1978 to 1988 - Based on 1977-78 land value
- 1988 to present - Based on April 26, 1988 Engineer Report

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Assessment History



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Historical Work



Year	Const.	Engr.	Inspec.	Survey	Permit	Admin	Totals
1991		6					\$6
1992	26	7	11				\$44
1993	390	84	29				\$503
1994	2	37	10				\$49
1995	234	78	29	29		14	\$384
1996		10		6			\$16
1997	15	43	22	21			\$101
1998	171	26	17	12			\$226
1999	141	3		38			\$182
2000	693	35	30			7	\$765
2001	877	20	15	45	5	7	\$969
2002	879	35	22	12		7	\$955
2003	238	87	15	83	26	7	\$456
2004	1,260						\$1,260
Totals	\$4,926	\$471	\$200	\$246	\$31	\$42	\$5,916

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Section 3



Oxnard West Drain

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Oxnard West Drain Debris Control



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Background



- Length is 3.39 miles
- Watershed area of 2,800 acres (4.4 square miles)
- Design peak flow in a 50 yr storm is 1,770 cfs (gpm)
- Owned by Ventura County Watershed Protection District (VCWPD)
- Maintained by VCWPD and City of Oxnard Wastewater Division in cooperation with City Corps
- Regulated by National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Permit

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Debris Characterization Study



Household Items	28%
Landscape materials	15%
Sports Equipment	15%
Paper products	15%
Plastics	10%
Automotive products	5%
Styrofoam	5%
Personal effects	5%
Glass	5%
Cellophane	3%
Dead animals	2%

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VCWPD Study





Completed in January 2004

Recommendations

- Interagency coordination
- Installation of fence along CI Blvd
- Focused public education and outreach
- Further study for a treatment control device

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 **Current Efforts** 



- ◆ Installed booms late last year
- ◆ Coordinating with Port Hueneme to install fence along North side of channel
- ◆ Coordinating with VCWPD to determine best treatment control device


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 **Booms Installed** 





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 **United Water Facilities** 





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 **Section 4** 

Dredging

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 **Background** 



Permits

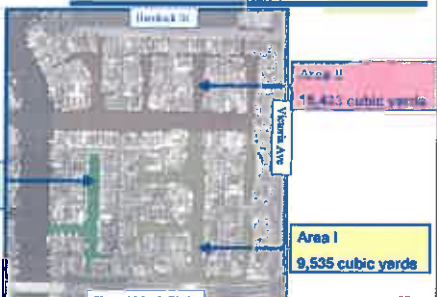
- ♦ Army Corps of Engineers
- ♦ California Coastal Commission
- ♦ Regional Water Quality Board

Contract status

- ♦ Bids received last month were non-responsive
- ♦ Will re-bid this month

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 **Eastern Mandalay Bay Dredging Project** 




Area III
2,795 cubic yards

Area II
18,425 cubic yards

Area I
9,535 cubic yards

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Western Mandalay Bay



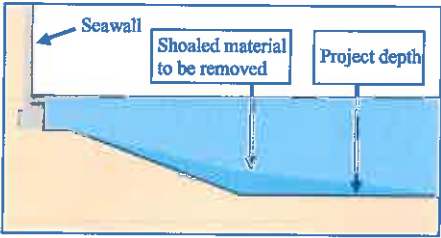
Approximately 7,500 cubic yards of material in 25 locations

● Indicates location of shoal area

Channel Islands Blvd

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Typical Channel Dredging Section



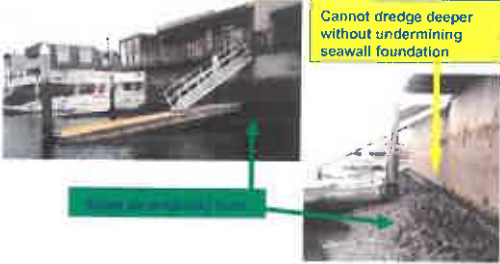
Seawall

Shoaled material to be removed

Project depth

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Dock Problem at Lowest Tides



Cannot dredge deeper without undermining seawall foundation

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CHANNEL DEPTH LIMITATIONS

- ◆ Large draft
- ◆ Deep keels
- ◆ Low tide extremes

Boats with a PT or more draft can hit bottom

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Proposed Dredging Method Neighborhood Friendly

Material Handling Area (MHA) Dewatering Equipment

Discharge Material Handling Equipment

Dredging and Dewatering Equipment

Mobile dewatering plant

Mixing tanks

Electric dredge Centrifuge/ conveyors Dewatered material



Homeowner Cooperation Will Be Needed



- Move Boats To Allow Dredge to Clean Under Docks
- Temporary Disruption To Navigation
 - Floating Pipeline
 - Suspended Cables To Operate Dredge
- Temporary Construction Impacts
 - Noise (minimized by electric equip. where possible)
 - Truck Traffic (scheduled during non-peak traffic hours)
 - 12, 16 or 24 Hour Operation (cost savings item)

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Section 5

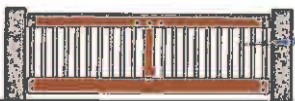


Guard Rail

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GUARDRAIL REPAIRS (REPLACEMENTS)



- ◆ Existing have termite & dry rot
- ◆ New rails will be treated wood



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Guardrail Replacement

Location of guardrail to be replaced

Hewlock Street

Chinook Island Blvd

New design to meet code

Section 6

20 Year Plan

20 Year Plan

- ◆ **Begun in 1999**
- ◆ **6 Types of repairs**
 - Zurn wall stem crack repair
 - Boise Wall Pilaster Repair
 - Weep Hole Repair
 - Wall Panel and Joint Repair
 - Foundation and Slope Protection Repair
 - Sink Hole Repair
- ◆ **Priority 1 work complete**

Zurn Wall Stem Crack Repair

Before repair After repair with urethane grout

Boise Wall Pilaster Repair

Typical deterioration Reinforce with rebar Form and pour concrete Finished repair

Weep Hole Repair

Backfill leaks from weep hole and gap between pilaster and wall panel

Weep holes repaired with filter point inserts. Pilaster gaps repaired with urethane grout

Wall Panel and Joint Repair

Typical Boise Wall panel crack

Zurn Wall joint repaired and sealed with urethane grout

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Foundation and Slope Protection Repair

Bottom of foundation slab exposed

Hump in Fabriform slope protection

Repair foundation area with polyvinyl sheet pile cutoff wall with concrete seal

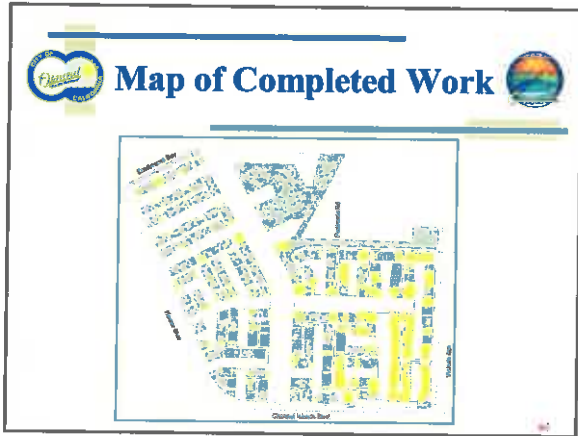
Sink Hole Repair

Small indication at surface

Excavate to uncover extent

Repair with sand/cement grout or gravel backfill

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Repairs completed since 1999

Item	1999	2000	2001	2002	2003	Totals
Number of Lots						
Cutoff Wall Repair			16	5	2	23
Slope Protection Repair	2	21	19	5		47
Backfill Repair		1		6		7
Plaster Repair		1	4	72	20	97
Weep Hole Repair		52	44	26		122
Crack Repair			4			4
Guardrail Repair					2	2
Maintenance Dredging		67	2	5		74
Total lots		142	89	119	24	376
Repair Cost (\$1,000's)	\$114	\$765	\$969	\$955	\$456	\$3,327

Section 7

Future Planning



Priority for Known Remaining Work



Repair/ Maintenance Item	Estimated cost in \$1,000s	Priority 1	Priority 2	Priority 3
Maintenance Dredging				
West Mandalay Bay	477		131	91
Clemshell maintenance	979			979
Water Quality Improvement				
Oxnard West Drain	490	450		
Drain Wall Repair				
Pilester	2,462			1,315
Wall panel	4,487			4,457
Sink hole	406			
Weep hole	547			
Scum Wall Repair				
Wall stem	658			448
Slope protection	1,218		1,218	
Joint repair	182			182
Weep hole	53			53
Guardrail replacement	190			25
Grand Total (rounded)	12,145	450	1,374	7,520

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Plan for CY2004



- Dredge and solve dock grounding issues
- Replace guard rails
- Work with VCWPD on a treatment control device for Oxnard West Drain
- Evaluate remaining work
 - Required for safety/structural integrity
 - Design that will increase life of walls
 - Most cost effective repair method
- Develop/refine cost estimates
- Evaluate funding options
- Recommend plan for next five years in Feb 05

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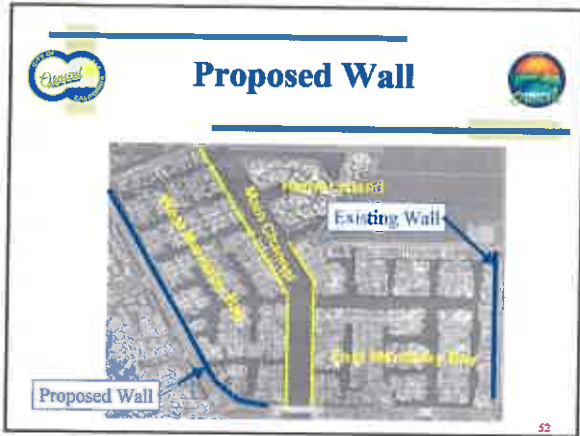


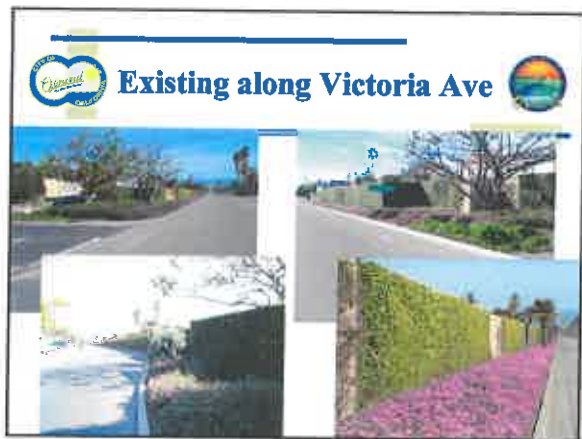
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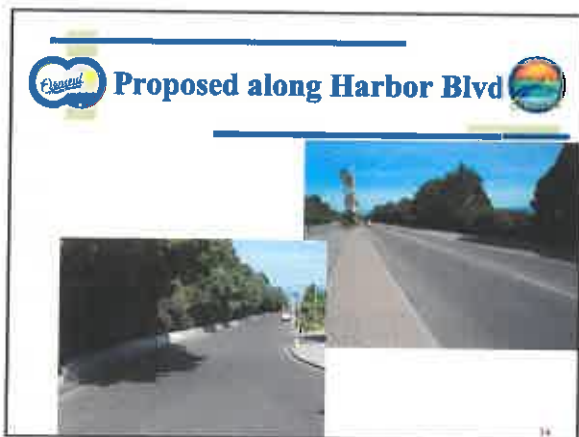


Sound Wall

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Traffic Counts



City Data Shows Local Counts

- Victoria Ave & Channel Islands Blvd 2001 Average Annual Daily Trips (AADT) =24,000
- Harbor Blvd & Channel Islands 2001 AADT =17,000

County Data Shows Trend

Location	1999	2000	2001	2002	2003	2003 Hourly peak	
						AM	PM
Victoria Ave s/o Gonzales Rd	33,800	36,000	35,300	39,300	41,500	3,460	3,520
Harbor Blvd s/o Gonzales Rd	17,200	15,000	15,700	16,200	19,000	1,420	1,820

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Sound Wall Issues



Walls are sometimes built around developments for...

- Separating land use, e.g. residential and commercial
- Separating neighborhoods or developments
- Gated communities
- Sound reduction, e.g. railroad tracks, freeways, etc.

Walls are paid for by the developer (home buyer)

Caltrans has some limited sound wall funding for *freeways only*

Wall on Victoria Ave was built in 1993/94 by homeowners and dedicated to the City.

- Maintained by the Waterway Maintenance District.
- City Council Resolutions 10,623 and 10,624

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Possible Procedures



1. Homeowners pay for wall and dedicate to City as on Victoria Ave.
2. City develops assessment district
 - A. Estimate project cost and assessment amounts
 - B. Get consensus from CIWHA to move ahead
 - C. Preliminary wall design and detailed cost estimate
 - D. Write engineers report setting up assessment cost distribution
 - E. Mail ballots to homeowners
 - F. 50% plus 1 vote passes the assessment
 - G. Sell bond using assessment as collateral
 - H. Final design and construction
 - I. Collect assessment to pay for bond

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 **Conclusion** 

Questions?
