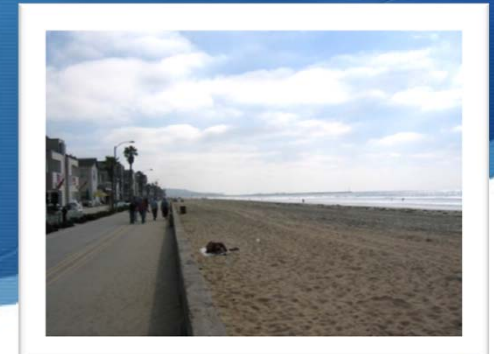




San Diego Regional Beach Sand Project – Ready for Sand!



WEDA Conference
Sept. 7, 2012

Overview

- ◆ Background
- ◆ Engineering & Planning
- ◆ Funding
- ◆ Permitting
- ◆ Bid Process
- ◆ Lessons Learned
- ◆ Construction Methods

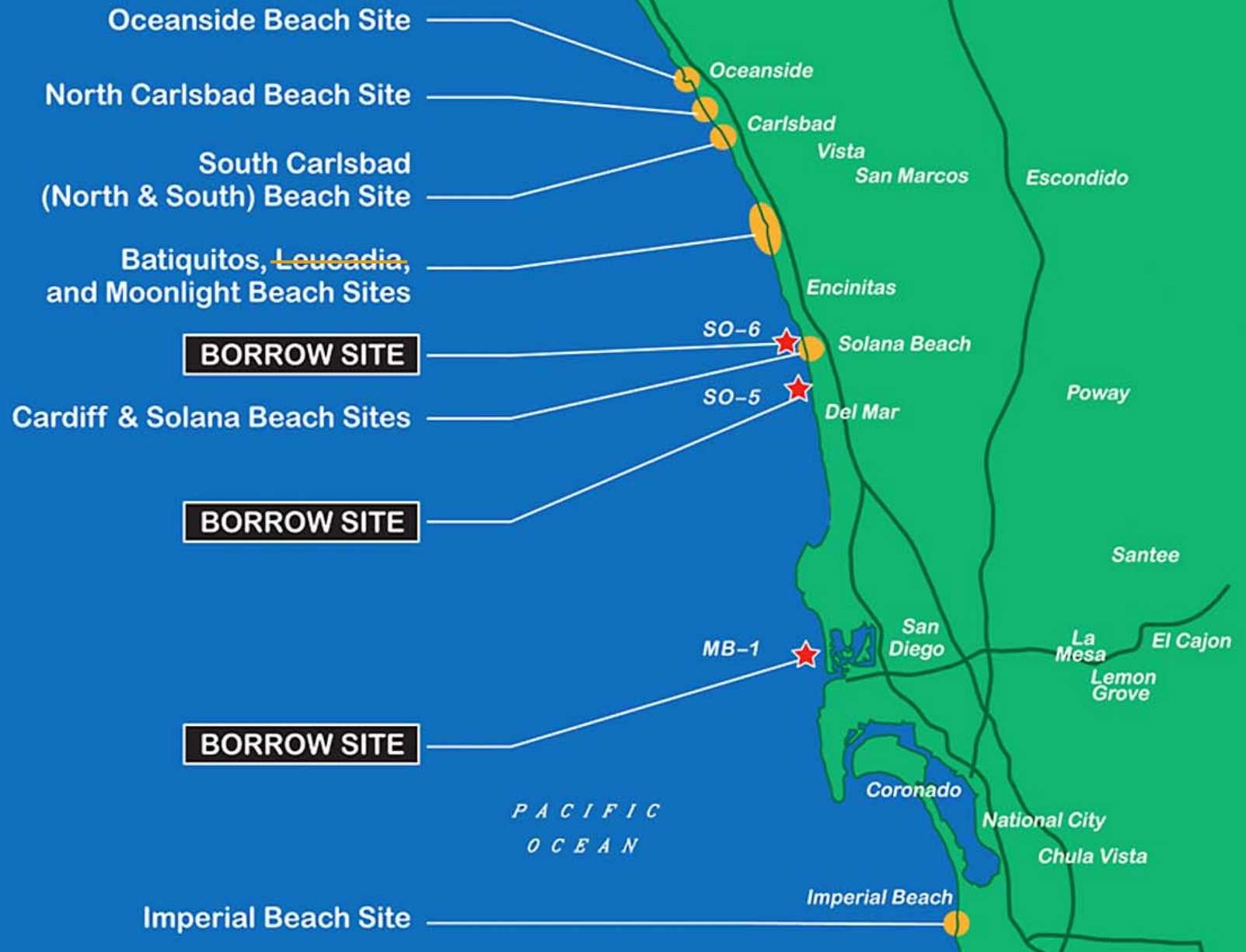


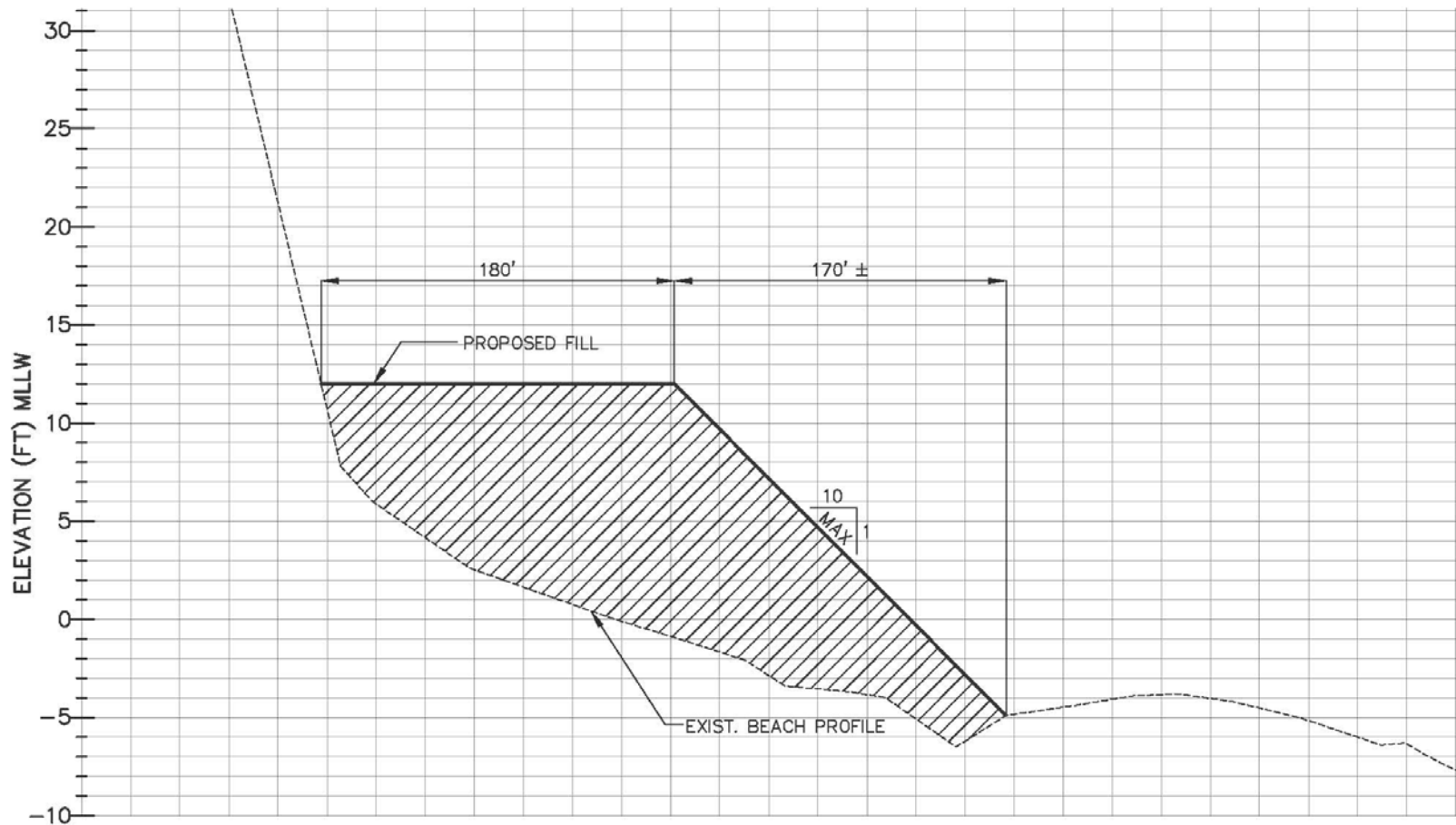
Background











SECTION C-C (TYPICAL)
SOUTH CARLSBAD (NORTH) BEACH FILL

SCALE: 1"=50' (HORIZ), 1"=5' (VERT)

Funding Sources Available for Regional Nourishment

- ◆ Local efforts
 - ◆ General and other city managed funds
 - ◆ Transient Occupancy Tax
 - ◆ Quality of Life Infrastructure Investments
- ◆ State funding
 - ◆ California Department of Boating and Waterways (local match required)
 - ◆ Proposition 84 – The Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006
 - ◆ Coastal Commission Beach Sand Mitigation Fund
- Federal funding
 - ◆ Coastal Impact Assistance Program (Federal funding through State)
 - ◆ USACE



2012 RBSP Funding

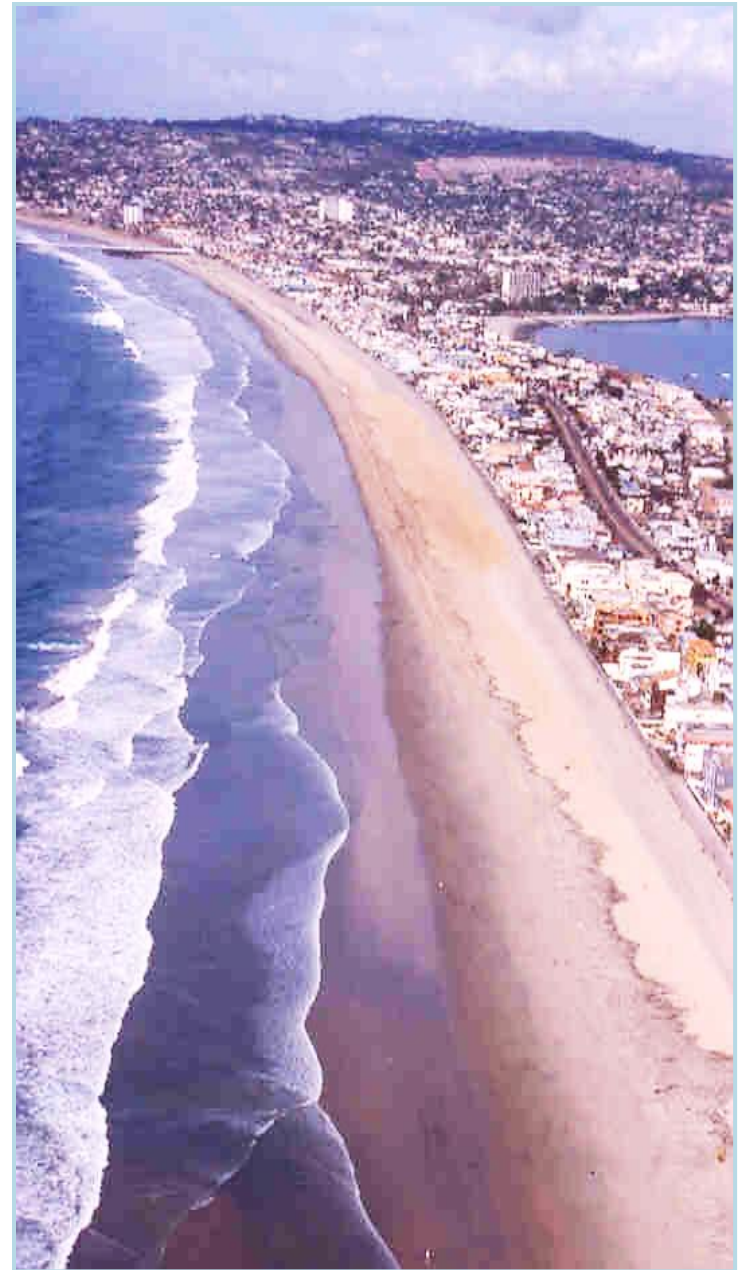
- ◆ California Department of Boating and Waterways
- ◆ Region's Coastal Cities
- ◆ Coastal Impact Assistance Program

Environmental Compliance

- ◆ SANDAG prepared an EIR/EA
 - ◆ SANDAG CEQA Lead Agency
 - ◆ Certified EIR in May 2011
 - ◆ USACE NEPA Lead Agency
 - ◆ Approved with 404 Permit in December 2011

Coordination

- ◆ Participating Cities
- ◆ Community Stakeholders
- ◆ Public
- ◆ Regulatory Agencies



Permitting

- 💧 19 agency permits required

- 💧 USACE

- 💧 CA Coastal Commission

- 💧 RWQCB

- 💧 State Lands Commission

- 💧 Surface Mining &
Reclamation Act

- 💧 State Parks

- 💧 Port of San Diego

- 💧 Participating Cities

Permitting Challenges

- ◆ Timing
 - ◆ CEQA/NEPA
 - ◆ Contracting
 - ◆ Construction
- ◆ Coordination
 - ◆ Agency meetings
- ◆ Agency Priorities
 - ◆ Grunion Spawning vs. Available Beach
 - ◆ Least Tern Nesting
 - ◆ City Events such as Life Guard Competitions, etc...

Regulatory/Resource Constraints

- ◆ No deviation from RBSP I footprints
- ◆ Avoid aquatic resources and provide large buffers – anchoring and pipe routes are limited
 - ◆ Kelp
 - ◆ Lobster fishing grounds
 - ◆ Grunion (nearly rendered construction impossible)
 - ◆ Tern foraging



Time to Construct

Sand Quantities For Each Alternative

Receiver Site	Probable Borrow Site	Quantity (cubic yards)
Oceanside	SO-6 and/or SO-5	292,000
North Carlsbad		200,000
South Carlsbad North	SO-5	140,000
Batiquitos		105,000
Leucadia		No Longer Included
Moonlight Beach		92,000
Cardiff		89,000
Solana Beach		140,000
Torrey Pines		No Longer Included
Imperial Beach	MB-1	416,000
TOTAL		1,474,000

2012 RBSP Project Challenges

- Regulatory/Resource Constraints – Grunion, fishing
- Contractor Bidding Climate - Different from 2001
- Funding Limited – Marginally sufficient
- Schedule – Construction to occur later than anticipated

Contractor Bidding Climate Changed Since 2001

- ◆ Uncertain economy, equipment availability, Fuel Costs, and Labor
- ◆ Consulted contractors for information
- ◆ Unexpected higher bids were received
 - ◆ Difficult to know their costs due to varied locations / equipment
 - ◆ Mobilization costs where greater than expected
- ◆ One bidder was close enough to SANDAG's budget to proceed:
 - Great Lakes Dredge & Dock Company (GLDD)

GLDD						Engineer's Estimate	
Item No.	Item Description	Unit	Quantity	Unit Price	Total Cost	Unit Price	Total Cost
1	General Mobilization & Demobilization	LS.	1	\$9,285,000	\$ 9,285,000		\$2,772,431
2	Site-Specific Mobilization and Deomobilization for Oceanside Beach	LS.	1	\$200,000.00	\$ 200,000		\$236,618
3	Site-Specific Mobilization and Deomobilization for North Carlsbad Beach	LS.	1	\$250,000.00	\$ 250,000		\$78,883
4	Site-Specific Mobilization and Deomobilization for South Carlsbad Beach	LS.	1	\$168,500.00	\$ 168,500		\$78,883
5	Site-Specific Mobilization and Deomobilization for Batiquitos Beach	LS.	1	\$144,000.00	\$ 144,000		\$78,883
6	Site-Specific Mobilization and Deomobilization for Moonlight Beach	LS.	1	\$192,000.00	\$ 192,000		\$65,736
7	Site-Specific Mobilization and Deomobilization for Cardiff Beach	LS.	1	\$167,500.00	\$ 167,500		\$65,736
8	Site-Specific Mobilization and Deomobilization for Solana Beach	LS.	1	\$284,000.00	\$ 284,000		\$65,736
9	Site-Specific Mobilization and Deomobilization for Imperial Beach	LS.	1	\$469,000.00	\$ 469,000		\$65,736
10	Dredge SO-6 and Place on Oceanside Beach	CY	292,000	\$8.60	\$ 2,511,200	\$11.55	\$3,372,600
11	Dredge SO-6 and Place on North Carlsbad Beach	CY	200,000	\$8.15	\$ 1,630,000	\$11.48	\$2,296,000
12	Dredge SO-6 and Place on South Carlsbad Beach	CY	140,000	\$7.55	\$ 1,057,000	\$9.94	\$1,391,600
13	Dredge SO-5 or SO-6 and Place on Batiquitos Beach	CY	105,000	\$6.85	\$ 719,250	\$8.72	\$915,600
14	Dredge SO-5 and Place on Moonlight Beach	CY	92,000	\$6.60	\$ 607,200	\$9.05	\$832,600
15	Dredge SO-5 and Place on Cardiff Beach	CY	89,000	\$5.75	\$ 511,750	\$7.78	\$692,420
16	Dredge SO-5 and Place on Solana Beach	CY	140,000	\$5.20	\$ 728,000	\$7.71	\$1,079,400
17	Dredge MB-1 and Place on Imperial Beach	CY	416,000	\$9.45	\$ 3,931,200	\$14.09	\$5,861,440
Base Bid					\$ 22,855,600		\$19,950,302

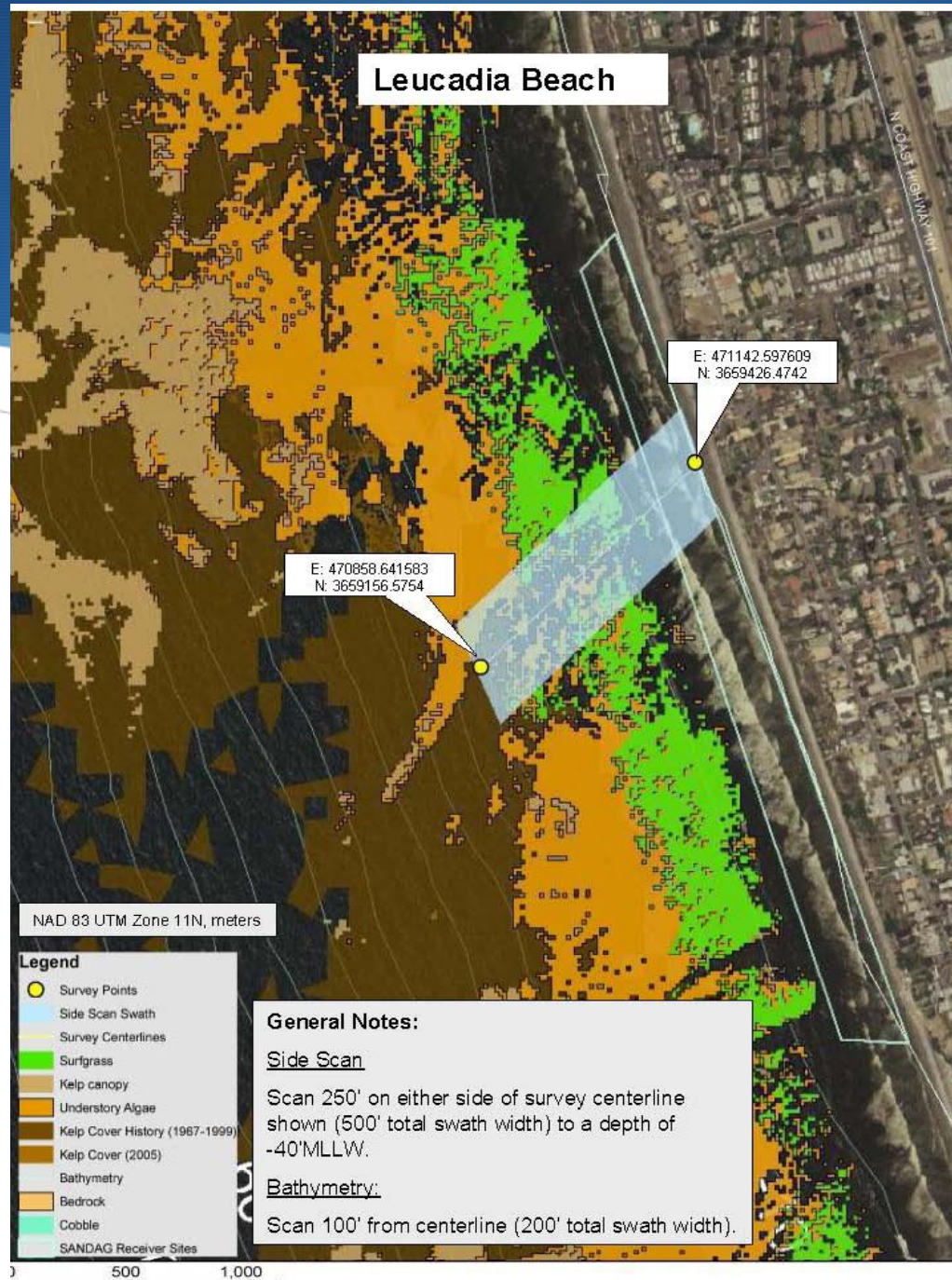
4 Bids Received Ranging from: \$22,855,600 to \$28,550,500

Potential Dredging Impacts

- ◆ Design Depth
- ◆ Habitat Removal / Recovery
- ◆ Equipment
 - ◆ Damage (Anchors, Chains, Pipelines, Propellers)
 - ◆ Accidental Spills
- ◆ Turbidity
 - ◆ Proximity to Kelp Beds
 - ◆ Proximity to Nesting Sites



Leucadia Beach



Limited Funding

- ✦ Eliminated two sites from construction
- ✦ Reduced project quantities by 11% to remain within budget
- ✦ Changed the basis of payment to be determined by the sand quantity in the bin of the dredge rather than on surveying of the borrow sites (reduced surveying costs)

Schedule Constrained

- 💧 Grunion spawning season - March-August
- 💧 Plover and Least Tern nesting – March-Sept
- 💧 Avoid lobster fishing season – From Oct 3 on
- 💧 Avoid certain beaches in summer for intense use
 - 💧 Moonlight Beach and Batiquitos Beach
- 💧 Dredging starts later in time; avoids most of grunion season & summer beach use; site order optimized to minimize conflicts with lobster fishing

A decorative blue curved graphic at the top of the slide, consisting of a dark blue upper arc and a lighter blue lower arc, both curving downwards.

Construction Methods

Dredge Mobilizes From Virginia



Order of Construction Dredging

1. Imperial Beach – Sept 4 to October 4, 2012
2. Oceanside – October 4 to October 21, 2012
3. Moonlight Beach – October 21 to October 26, 2012
4. Cardiff State Beach – October 26 to October 31, 2012
5. Batiquitos Beach – October 31 to November 6, 2012
6. Solana Beach – November 6 to November 12, 2012
7. North Carlsbad Beach – November 15 to November 26, 2012
8. South Carlsbad Beach – November 26 to December 4, 2012

Shore Crew Installs Pipe Landing



Pipeline is Delivered, Staged, and Connected



Dredge Hooks Up to Discharge Line



Discharge Line Being Hooked Up



Sand Slurry is Pumped Onshore



Containment Dike is Erected



Sand Slurry Ponds Behind The Containment Dike



Monitors Watch For Sand Quality and Cultural Artifacts in the Slurry



Dozers Shape The Sand Into The Beach Fill Template



Before

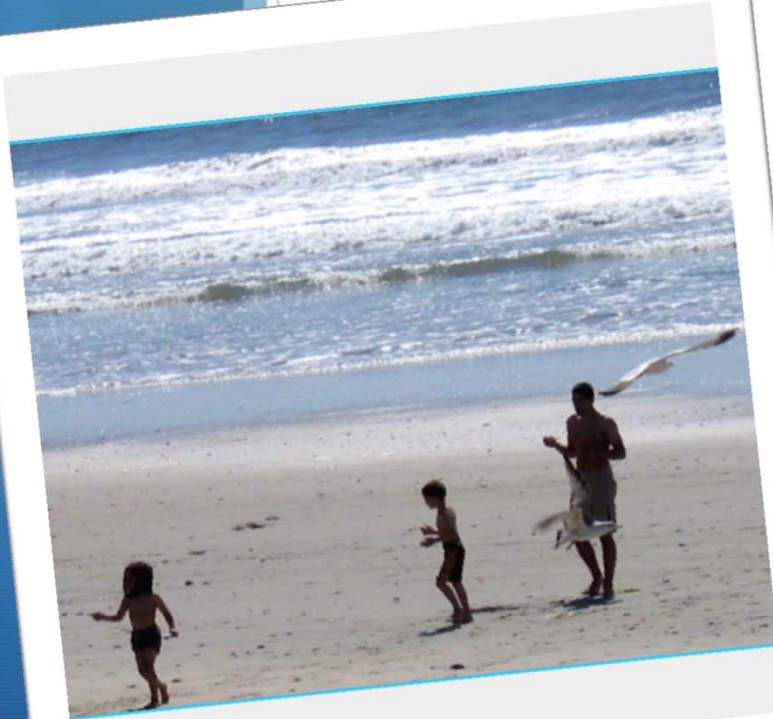


After





2012 Regional Beach Sand Project



Questions?