



Physical Monitoring Overview

*Beach Management Agreement (BMA) Annual
Stakeholder Meeting*

December 4, 2015





**BMA Annual
Stakeholder
Meeting**

Physical Monitoring Data

- **Aerial Photography**
- **Regional Beach and Bathymetric Surveys**
- **Construction Surveys and Sand Sampling**
- **Data Analysis and Reporting**
- **Project Certification**





**BMA Annual
Stakeholder
Meeting**

Aerial Photography

- **Collected 2 times per year**
- **Flight Window Based on Tide, Water Clarity, Cloud Cover and Sea Conditions**
- **Town and County Initiatives**
- **Tied to Biological Monitoring Protocol**



**BMA Annual
Stakeholder
Meeting**

Regional Beach and Bathymetric Surveys

- **Collected on Annual Basis**
- **Post Storm**
- **Construction Projects**

2015 Regional Surveys

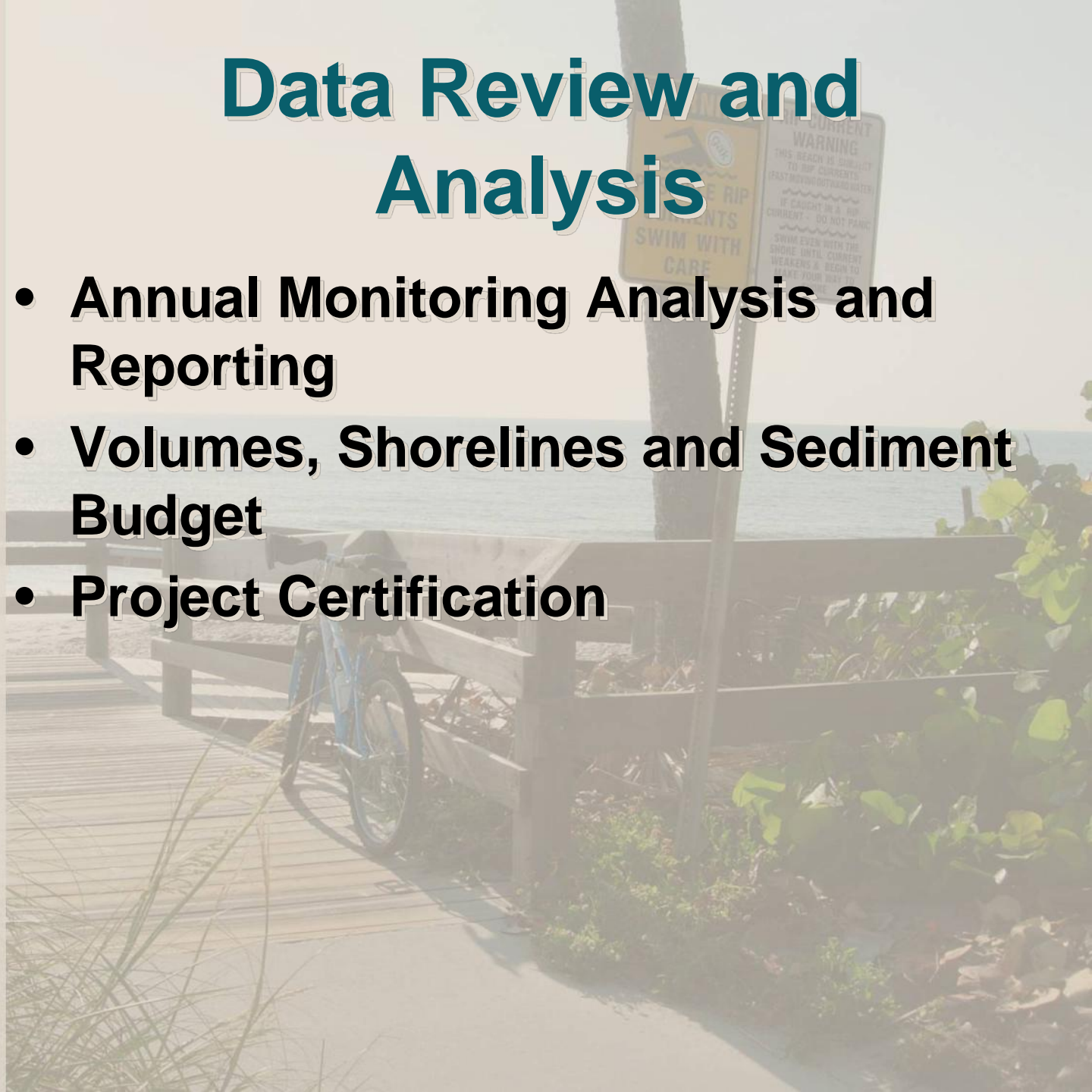
- **North of Town (Inlet) (R-60 to R-75)**
- **Town (R-76 to R-134)**
- **County (R-135-R-164)**



Data Review and Analysis

BMA Annual
Stakeholder
Meeting

- Annual Monitoring Analysis and Reporting
- Volumes, Shorelines and Sediment Budget
- Project Certification



Programmatic Improvements



**BMA Annual
Stakeholder
Meeting**

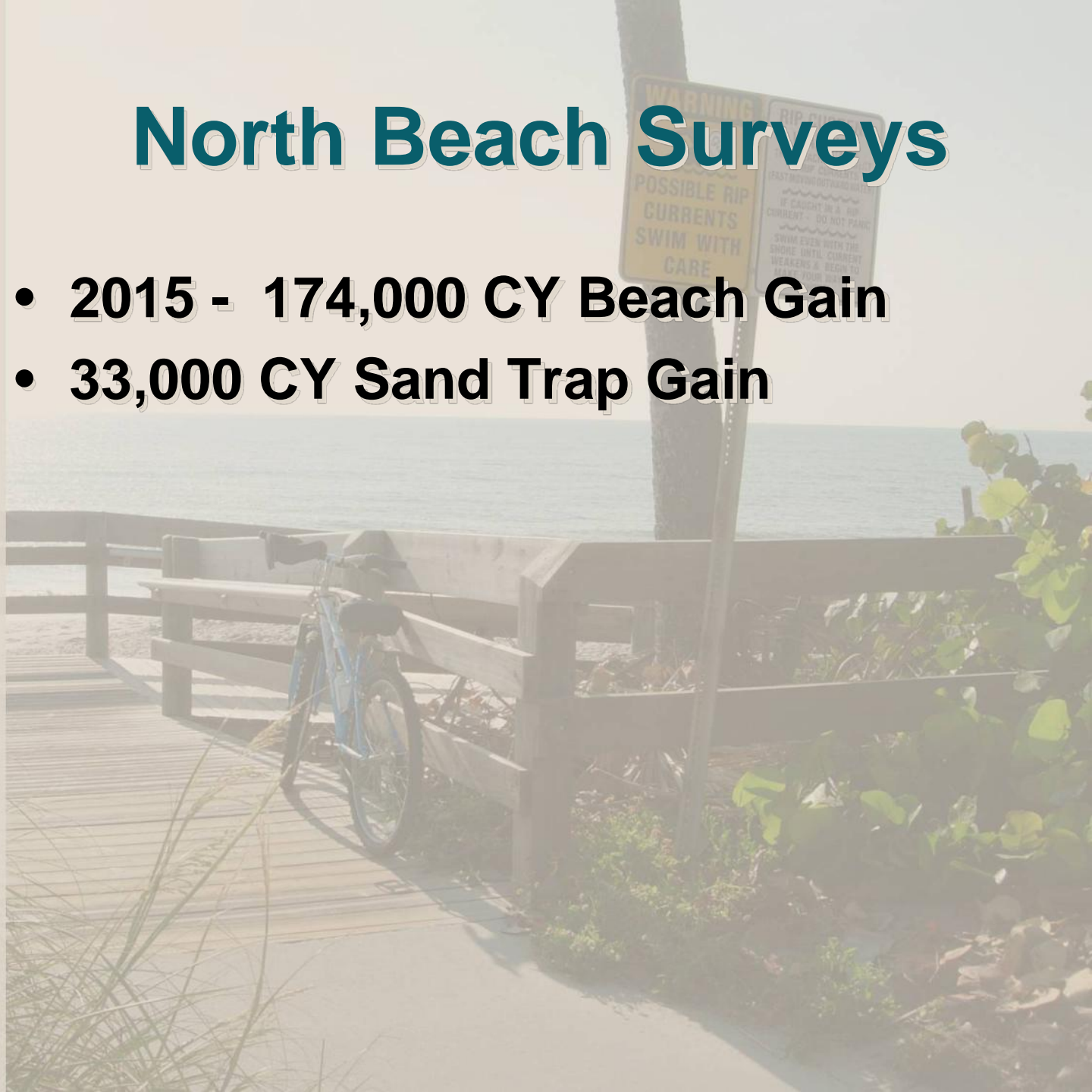
- **North Beaches and Inlet Sand Trap**
- **Morphodynamic Analysis**
- **Assessment of Project Alternatives
(Adaptive Management)**
- **Reach 7 Interim Profiles**

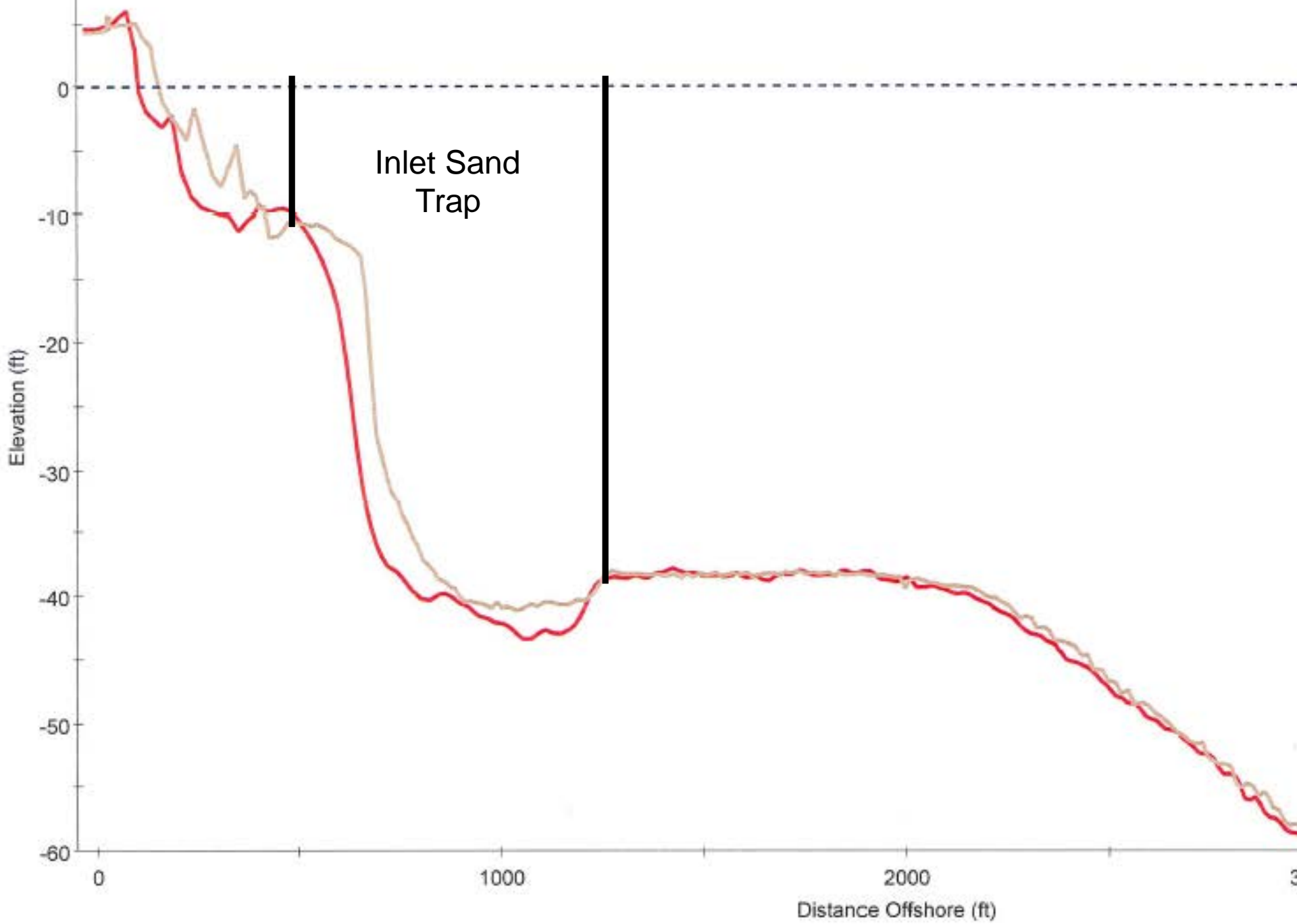


**BMA Annual
Stakeholder
Meeting**

North Beach Surveys

- **2015 - 174,000 CY Beach Gain**
- **33,000 CY Sand Trap Gain**



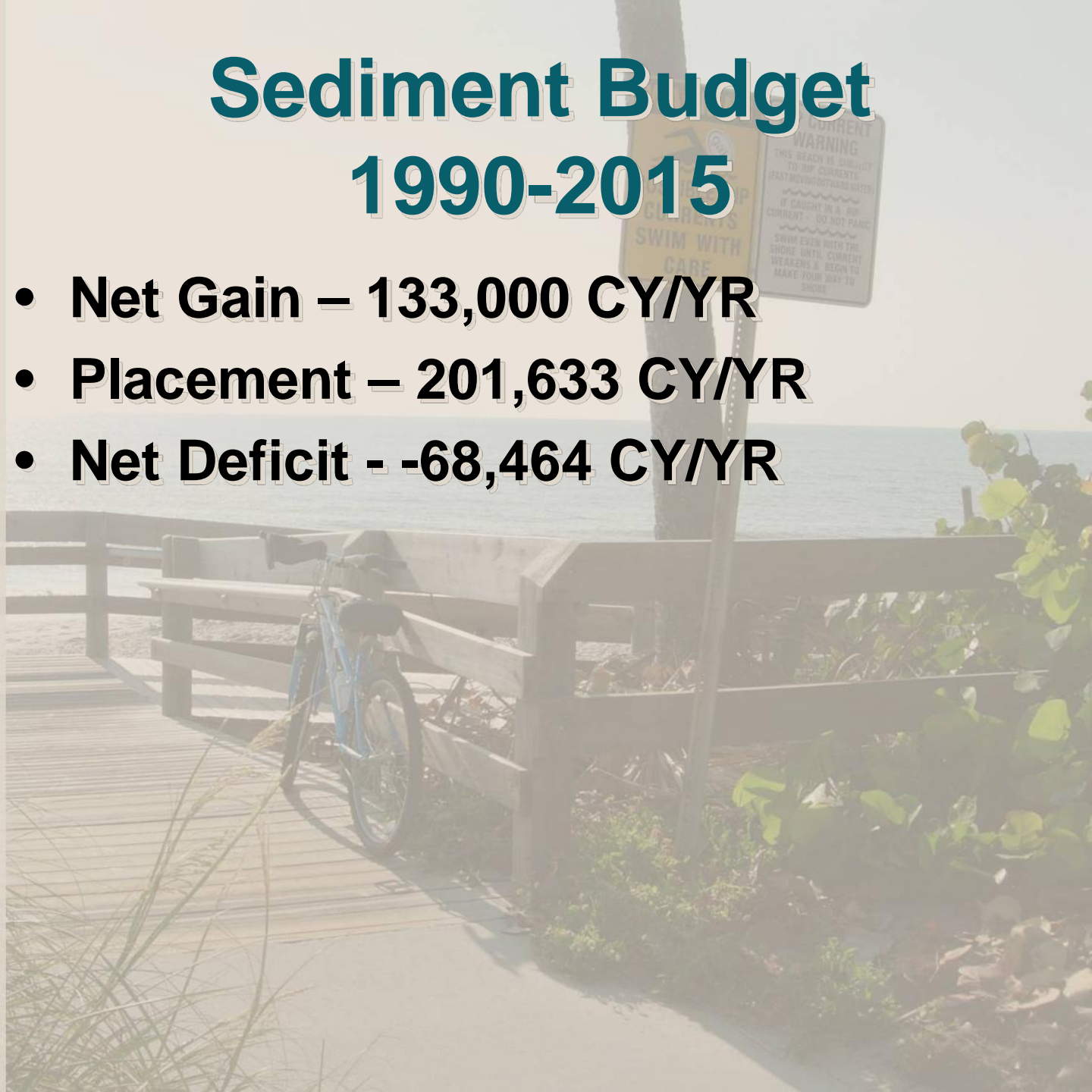




Sediment Budget 1990-2015

BMA Annual
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- **Net Gain – 133,000 CY/YR**
- **Placement – 201,633 CY/YR**
- **Net Deficit - -68,464 CY/YR**





**BMA Annual
Stakeholder
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2015 Construction Projects

- **North Mid-Town Project Segment
(364,745 CY)**
- **South Mid-Town Project Segment
(597,842 CY)**
- **Phipps Park (Truck Haul)
(68,832 CY)**
- **Reach 8 Dune (Truck Haul)
(34,902 CY)**



**BMA Annual
Stakeholder
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Town Wide Surveys

- **Comparison - 1990-2015**

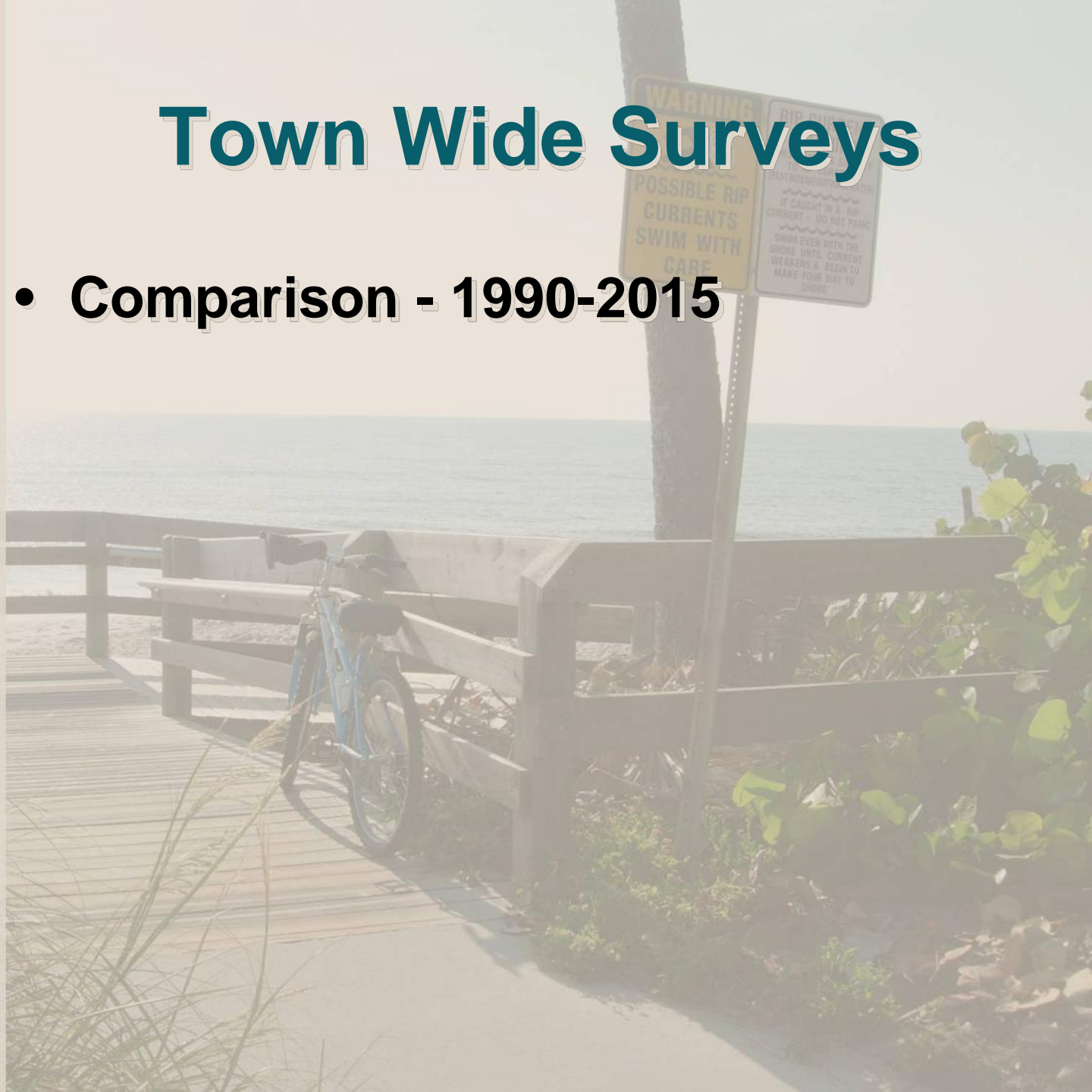
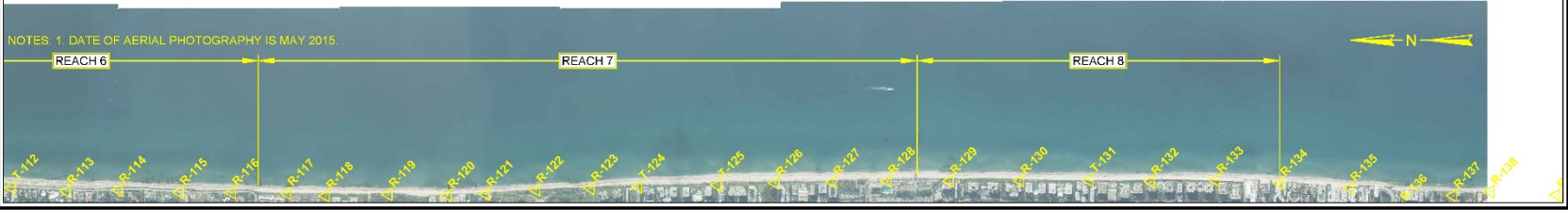


PHOTO: 2015; SOURCE: CALIFORNIA BUREAU OF LAND MANAGEMENT; DATE: 2015; SCALE: 1:50,000; PROJECT: PHIPPS PROJECT AREA; REACH: 6, 7, 8; DATE: 2015; DATE OF AERIAL PHOTOGRAPHY IS MAY 2015.



**AUG. 1990-AUG. 2015 VOLUME CHANGES ABOVE -26.2' NAVD
(CY PER LINEAL FEET)**

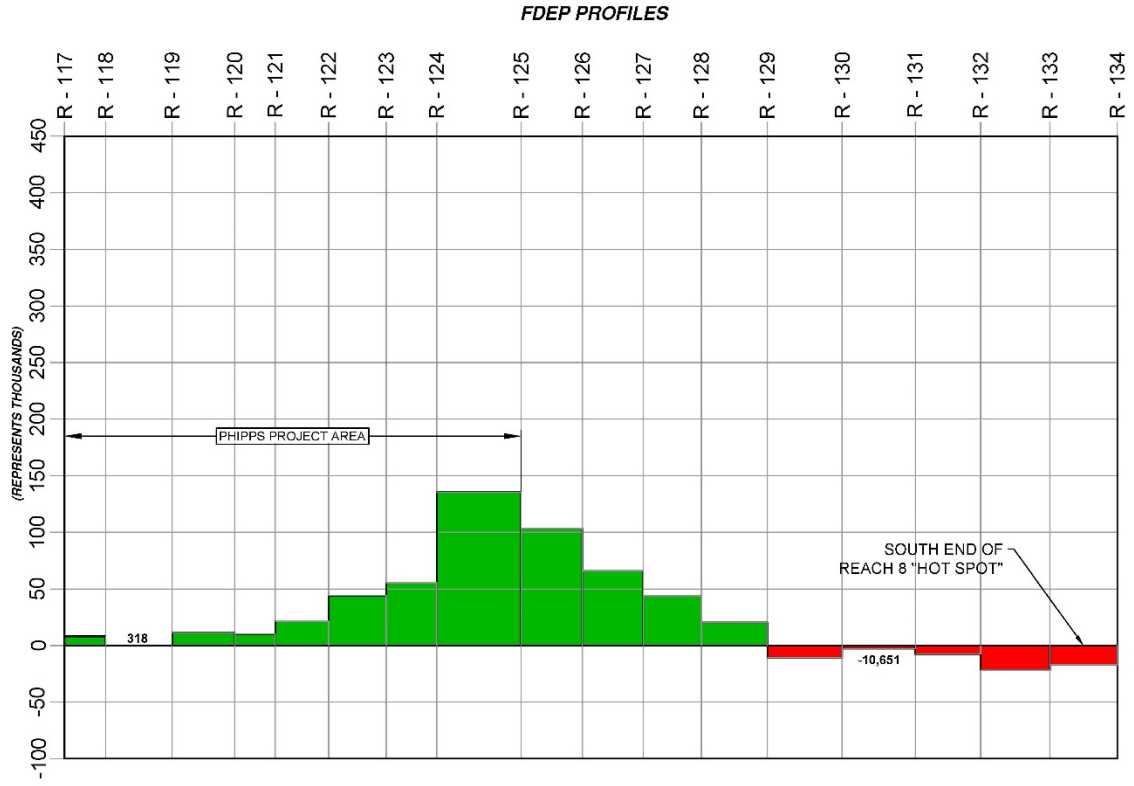
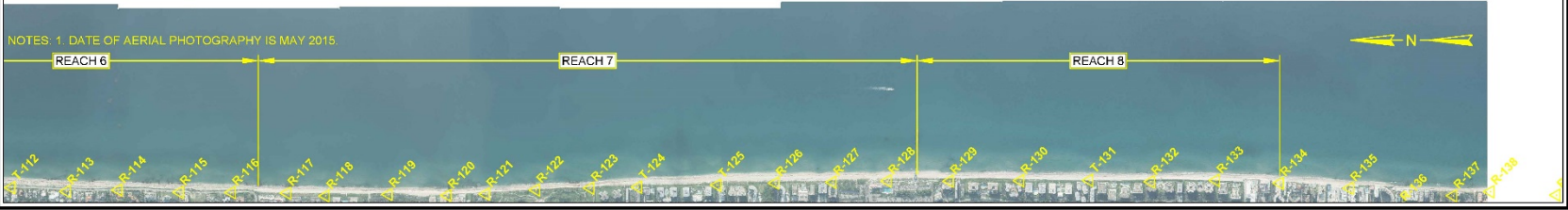


Figure 3d
Aug. 1990-Aug. 2015 Volume Changes

DATE: 08/20/15
 LOCATION: CAJON PASS, CALIFORNIA
 PROJECT: CAJON PASS, CALIFORNIA
 DRAWN BY: J. B. SMITH
 CHECKED BY: J. B. SMITH
 SCALE: AS SHOWN
 SHEET NO.: 30



**AUG. 1990-AUG. 2015 VOLUME CHANGES ABOVE -26.2' NAVD
(CY PER LINEAL FOOT)**

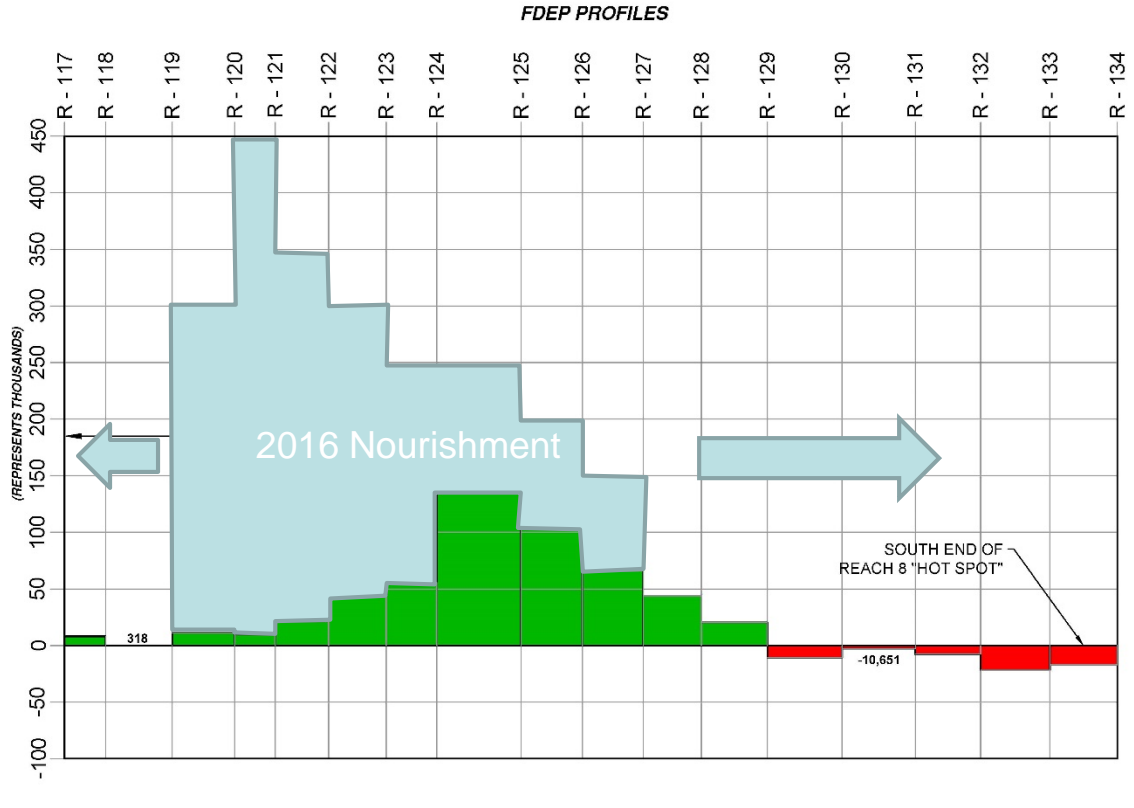


Figure 3d
Aug. 1990-Aug. 2015 Volume Changes



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