Beach Nourishment in Galveston, Texas
A Long Term Plan For Success

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Galveston Island Park Board of Trustees

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Acknowledgements

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• Political Leaders of the City of Galveston
• Honorable Mayor James D. Yarbrough
• The Texas General Land Office
  • Comm. George P. Bush
  • Former Land Comm. Mr. Jerry Patterson
• Galv. Park Board of Trustees Members
  • Park Board Chairs:
    • Dr. Craig Brown,
    • Mr. Melvin Williams,
    • Mr. Steve Kalbaugh,
    • Ms. Joyce Calver-McLean
  • Exec. Dir. Ms. Kelly de Schaun
Outline

• Overview of Galveston  Location / Population / Park Board
• Short History  1900 Storm / Seawall / Elevation
• Early 1990’s  Mirror Test
• Mid-Late 2000’s  Busy Hurricane Seasons

Property/Legal Issues  State Responded
• Blessings in Disguise  Council / Park Board Leadership
Policy / Planning
• Success  Beach Projects

Questions
Where is Galveston Island?

Texas

50 miles south of Houston on the upper Texas coast

Galveston Bay
Bolivar Peninsula

Gulf of Mexico

To Houston

Galveston Island
~32 Miles
0.5 – 3 miles wide
Texas

- Population:
  - 2008: 59,000
  - 2016: 48,444
  - Median Income: $36,165
  - 22.5% Below Poverty

Map:
- Galveston Bay
- Bolivar Peninsula
- Galveston Island
- Gulf of Mexico
- To Houston
Galveston Park Board of Trustees

- Formed by the Texas Legislature and a Special election in 1962
- Nine (9) member Board appointed by City Council
- Includes current Council Member as a liaison
- Board of Trustees hires an Executive Director
- Responsible for 32 miles of public beach and all tourism related activities including the CVB
Great Storm of 1900

The Galveston Daily News.

STORY OF THE HURRICANE WHICH SWEPT GALVESTON

Loss of Life Is Estimated at Between 4000 and 5000—Not a Single Individual Escaped Property Loss—The Total Property Loss From Fifteen to Twenty Million Dollars.
Construction of the Galveston Seawall
Begun in 1902
Completed in 1963
By Galveston County
General H.M. Robert
Early 1990’s

TOURISM ALTERNATIVE ECONOMIC IMPACT INDEX

GROWTH RATE COMPARISON

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<tbody>
<tr>
<td>Gulf Coast Region</td>
<td>2.15%</td>
<td>3.11%</td>
</tr>
<tr>
<td>Galveston City</td>
<td>-1.59%</td>
<td>-1.59%</td>
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Note: All growth figures represent compound annual growth rates and represent 2007 adjusted valuations.

Source: AngelouEconomics
1991 – 1995 Actions
But No Beach
Except at Low Tide
You can see:
Water
Pilings
Rocks
Sand
Search & Permits
Developed Local Support
Passed a Bond Issue

Thought I'd come on down an' grab a place 'fore all the new prime spots are taken!

GALVESTON! The little island that can!

BEACH RESTORATION PROJECT
Texas’s First Beach Fill

1995
Good Things Started to Happened

<table>
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<tr>
<th>Year</th>
<th>Growth Rate</th>
<th>Gulf Coast Region</th>
<th>Galveston City</th>
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<tbody>
<tr>
<td>1990 - 1994</td>
<td>-1.59%</td>
<td>-</td>
<td>-</td>
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<tr>
<td>1995 - 2007</td>
<td>3.73%</td>
<td>3.28%</td>
<td>-</td>
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Source: Angelou Economics

$1 invested, $4 return.
Mid- Late 2000’s

Beach Bummer: The Texas Supreme Court Guts the Open Beaches Act
Lines in the sand shifted...

Open Beaches Act
Public Easement

Line of Vegetation (LOV)

MLT or Water’s Edge
Lines in the sand shifted…
Lights were turned off...
Blessings In Disguise…

Scientific Approach

Legal Issues

Community support & cooperation

US Army Corps of Engineers
Engineer Research and Development Center

Coastal and Hydraulics Laboratory

Galveston Island, Texas, Sand Management Strategies
Ashley L. Frey, Andrew Morang, and David B. King

ERDC/CHL TR-18-13

July 2018
Sand Management Plan

Beach Nourishment Considerations

- Quantities
- Locations
- Time Frame

Sand Movement

Sand Management Plan

Guiding Principles

1.) Retain sediment in the system utilizing Regional Sediment Management (RSM) concepts.
2.) Defend what has been built, continual maintenance.
3.) Seek opportunities to conduct large scale nourishment projects.
Babe’s Beach

Retain sediment in the system utilizing Regional Sediment Management (RSM) concepts.
Dellanera Project
March 2015

Guiding Principle #2: Defend what has been built, continual maintenance.

Annual Maintenance of 20,000 CY
- 2017: $600,000
- $5 Million

CEPRA Project for Const.
- $458,000 Cubic Yards
- 75%
- $150,000 Local 25%
- $45 per cubic yard

Working w/ ERDC…
Historic Seawall

Guiding Principle #3
Seek opportunities to conduct large scale nourishment projects.

Total: ~$18 Million
1.2 Million Cubic Yards
~$15 per cubic yard

CEPRA Request in 2019= $3.2 million
100,000 CY’s
Construct 2020-'21
• $2,400,000 GLO 75%
• $800,000 Local 25%
Galveston

Total: ~$18 Million

1.2 Million Cubic Yards

~$15 per cubic yard

CEPRA Request in 2019 = $3.2 million

100,000 CY's

Construct 2020-'21

• $2,400,000 GLO 75%
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Guiding Principle #3

Seek opportunities to conduct large scale nourishment projects.
Goals of Sand Mgmt Plan Update:
- Reduce the price of sand (Task 1)
- Slow erosion processes through structural analysis (Task 2)

How to pay for it?
• $10 – $45 per CY

Next Steps…
- Reduce projects costs
- Increase efficiency

Sand Mgmt Plan Update:
Planning Assist. to the States (PAS)- $300,000
• USACE $150,000
• PB $60,000
• IDC $90,000
Integrated Approach

- Community Workshops & Outreach
- Beach Funding Steering Committee
- Public Communications Strategy
- Feeder Beach
- Babe’s Beach

Final Funding Plan
Develop Assessment Methodologies
Take Away and Parting Thoughts

• Beach Nourishment is as much a Planning Project as a Construction Project.
• Formalize Your Decision Process Establish Guidelines.
• Build Partnerships and Alliances.
• Always be planning for the next event.
• Difficult doesn’t mean impossible
• No doesn’t always mean No
• Seek to find the Yes Answer to the problem
Questions?

Thank you for your time and attention

Plan a trip to Galveston

It’s Where The Texas Coast Begins
Site of ASBPA National Coastal Conference Oct 2018

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