



TAYLOR ENGINEERING, INC.

# **City of Venice Shoreline Stabilization**

## **City Council Meeting January 13, 2017**



Presented by: Jenna Phillips, M.S., E.I.

# PRESENTATION OUTLINE

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1. Project Performance
2. Hot Spot Recap
3. Jetty Park Overview
4. Stabilization/Access Alternatives
5. Cost Estimate
6. Discussion/Questions

# Overall Project Performance

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- National Award Winning Beach Project – ASBPA
- Actual life cycle maintenance (8 to 10 yrs) – met or exceeded predicted
- Prior to first maintenance, monitoring surveys showed 97% of original fill remained within project limits (even though the dry beach width decreased)
- Total maintenance fill volumes in 2005 and 2015 were well within expected losses (~672,200 CY and 720,000 CY, respectively)
- Project maintenance events triggered by performance at erosional hot spot locations where beach width < minimum design berm

# Hot Spots

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- Historically account for ~20 - 30% of total volume lost among three primary locations
  - North End Jetty Park
  - Flamingo Ditch
  - Deertown Gully
- Each hot spot subject to different coastal process factors

# North End Jetty Park

- Erosion caused by wave energy with focusing and turbulence along rock revetment
- No compensating sediment transport from the north
- Results in net loss of sediment (albeit with southwesterly winds, sediment accumulates in the lower beach but not replenished at the design berm elevation)



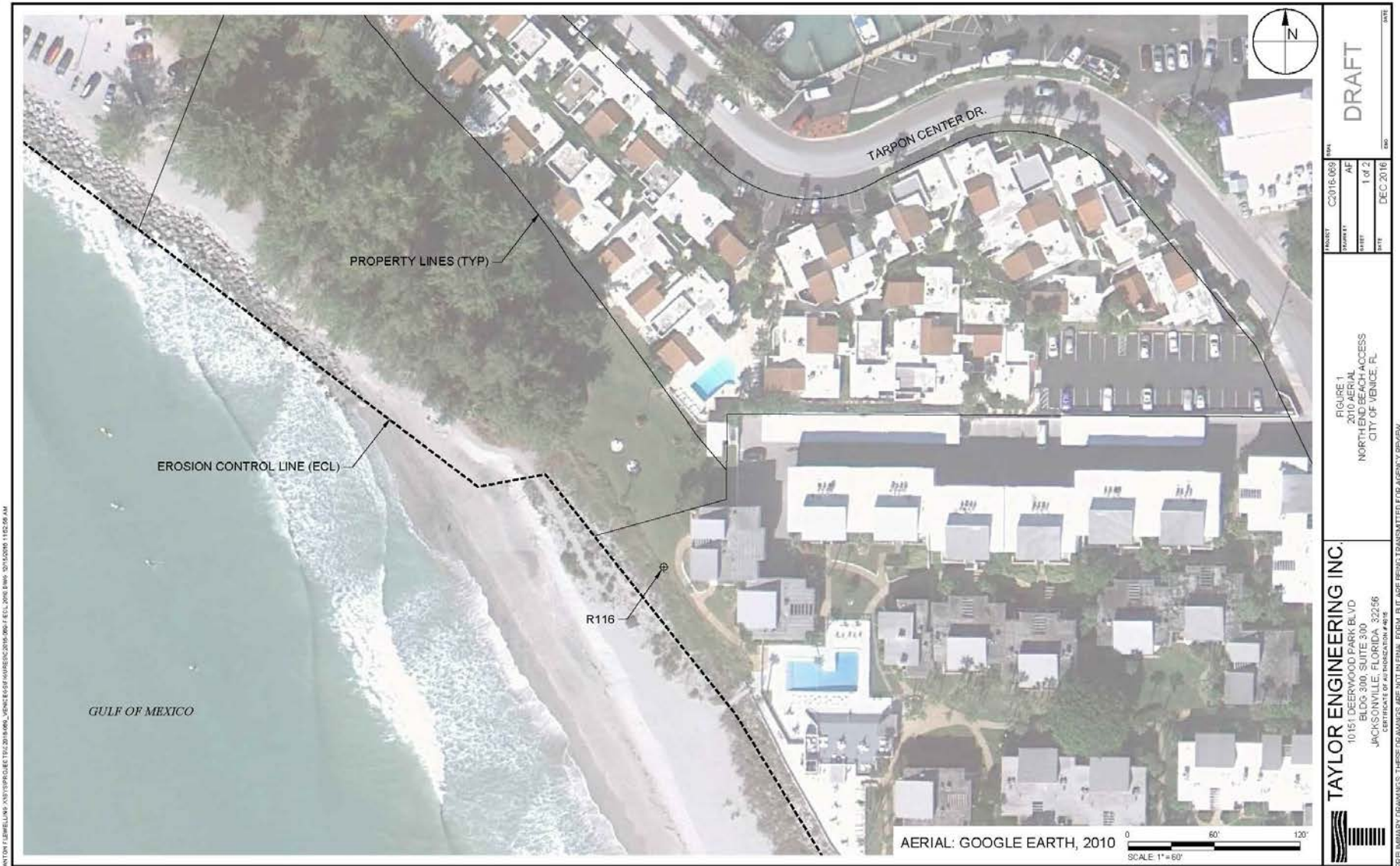
# North End Jetty Park

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- Two primary results of erosion:
  - 1) the minimum design beach width is not being maintained in this area
  - 2) at jetty park, impedes safe access for public from park to the beach
- Alternative technologies might be applied with varying degrees of success to address underlying erosional issues; particularly to deal with the loss of minimum design beach – becomes a question of B/C analysis
- More pragmatic solution (at least in short term) is to address the access concern between the parking lot along the north end and the beach park. Separate this issue from the much broader and more complicated aspect of underlying erosion/alternative technologies, etc.

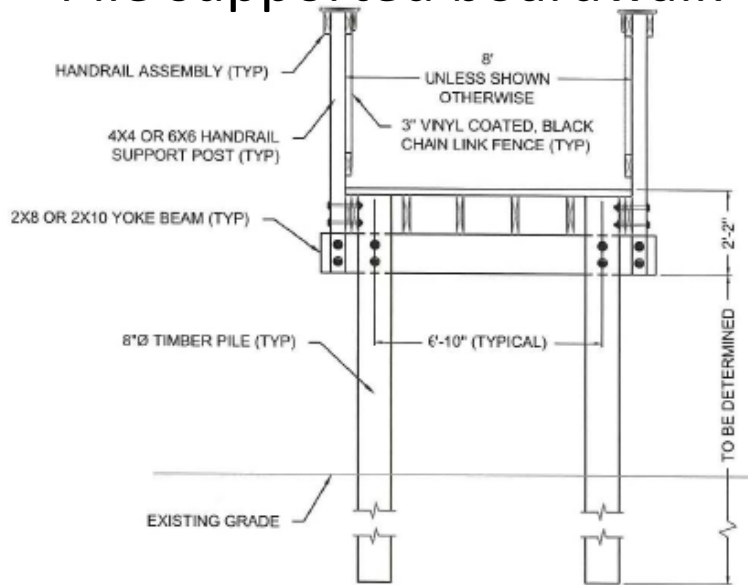


# 2010 Aerial North End Jetty Park



# Stabilization & Access Alternatives

- Pile supported boardwalk



- Selective repositioning of existing rock



- Reinforced pedestrian path (low profile protective sheetpile wall/geoweb or stabilized path)



- Periodic (as needed) sand transfer – via Snake Island, Truck haul, etc.



- *Hybrid solution*



# Order of Magnitude Costs

No.	Potential Alternatives	Average Cost
1	Pile Supported Boardwalk	\$49,500 - \$96,000
2	Reinforced Pedestrian Path w/Low Profile Retaining Wall (Geoweb and/or PMM)	\$150 - \$200K
3	Selective Repositioning of Rock	\$9,000 - \$17,000
4	Periodic Sand Transfer	\$100 - \$400K

A 'hybrid solution' including two or more of the above options is likely the most **advantageous!**



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***THANK YOU***  
***Questions?***