Florida Upland Sand Resources
For Beach Renourishments

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Upland Sand Sources for Beach Renourishments
Geological Background

Source: Lane, E. 1994 *Florida’s geological history and geological resources* Florida’s Geological Society
Variety in Mines

- Location
- Capacity
- Sand Quality
  - Color
  - Grain Size
  - Composition
- Processing Capabilities
- Northern Florida
- Thorough processing procedure and able to remix to specifications
- Slightly more yellow than south Florida mines
- Expects to be mining 30+ years
- Located on a rail line
- Central Florida
- Capacity of 30+ years
- Split using hydro-cyclones then sorted through a triple plume classifier
- Fines and coarse are remixed to meet specifications
- Located in SW Florida
- Onsite geotechnical laboratory
- Capacity of 30+ years
- Recently used for beach projects
Gravity Classifier  Dewatering Screws  Lab  Sediment Testing

Stewart’s Immokalee Sand Mine
Feasibility Evaluation

- Location

[Map showing locations in Florida]
Feasibility Evaluation

- Sand Specifications:
  - Grain Size
  - Sorting
  - Color
  - Fines %
Proof of mine’s capability to produce beach compatible material
  - Physical sample
  - Compatibility analysis
  - Description of sand processing

Work restrictions around panther habitat areas

Separate upland sediment QA/QC plan
  - Coordinated with FDEP to reduce the # of samples
 Permit Multiple Sand Sources

- Quality Control/Quality Assurance
Offshore vs. Upland Sand Source

- Project size?
- Project location?
- What resources are available?
- Desired sand specifications?
- Availability of dredges?
- Availability of trucks?
- Accessibility?
- Disruptive?
- Price?
Benefits to Upland Construction Methods

- Sediment quality control
- Construct multiple reaches at once
- Schedule control
- No pipeline on the beach
- Lower mobilization costs
- Impact to local economy
Challenges to Upland Construction Methods

- Permit turbidity monitoring requirements not written for this construction method
- Need access points (conveyors not much)
- Truck routes
- Traffic
- Road Damage
More lead time
  – Management of deposit
  – Efficient stockpiling
  – Dewatering

Uniform beach sand specification would allow pre-production of beach sand
- There are beach compatible upland sand sources suitable for beach renourishment projects that may serve to complement offshore resources.
  - Feasibility analysis to select mines
  - Permit
  - Project flexibility
  - Longer lead times will reduce cost