Real Estate Development Trends Create Alternative Sand Sources for our Beaches

Florida Shore and Beach Preservation Association

September 2015

COASTAL SYSTEMS INTERNATIONAL

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The return of the cranes

- Improving economy, beautiful beaches = rising property values
- How do developers maximize ROI?
- Going vertical with construction
  - Taller, denser structures
  - Deep foundation systems
- Vertical = more excavated sand

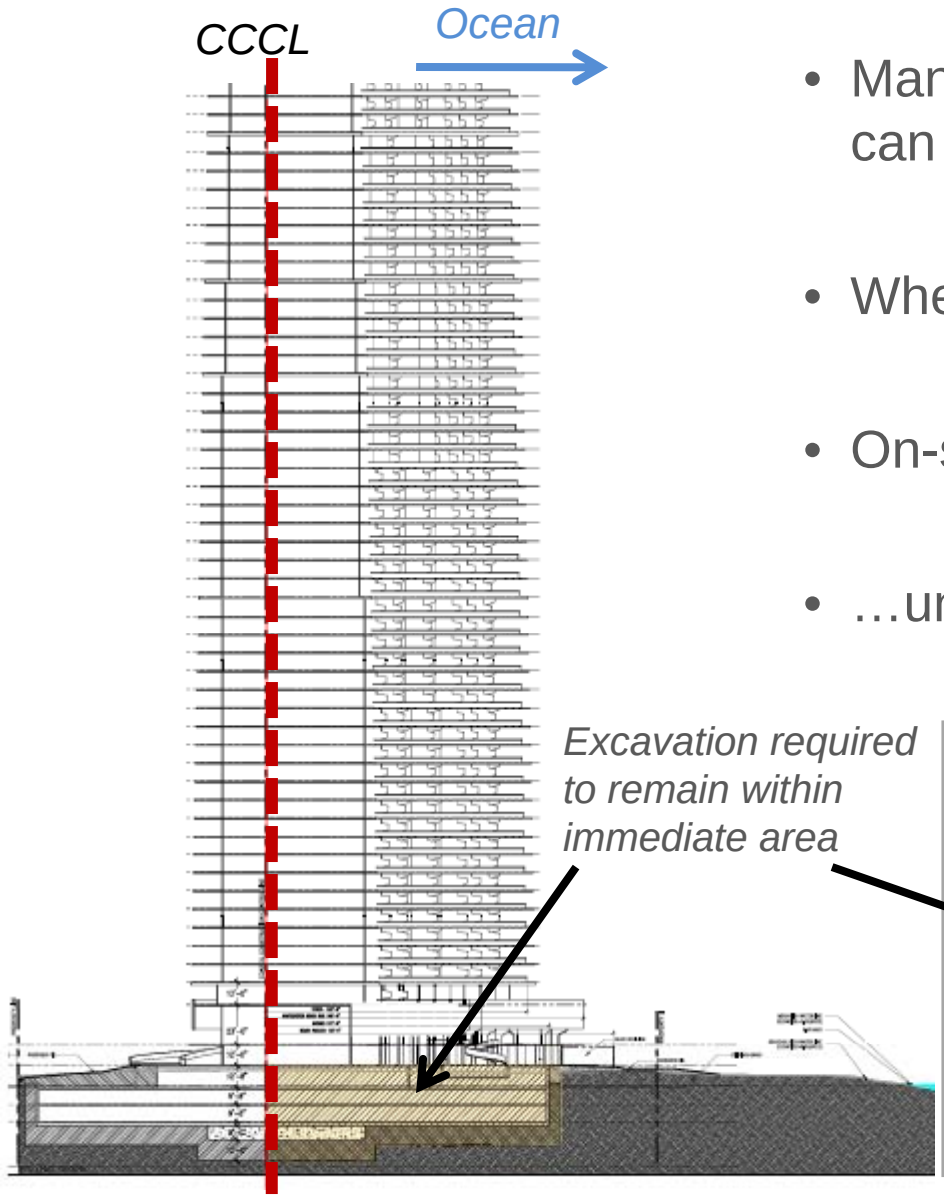
Why should cars have such great views?

Previous Trend

- Buildings highly engineered
- Advanced construction methods
  - Robotic lift systems
  - Water-proofing
- Parking structures can extend further below grade
- Valuable ocean views preserved

Current Trend

How much sand are we talking about?



- Many coastal development projects can generate **10,000 - 30,000 CY**
- Where can the sand go?
- On-site or within immediate area
- …unless otherwise authorized by DEP

Excavation required to remain within immediate area

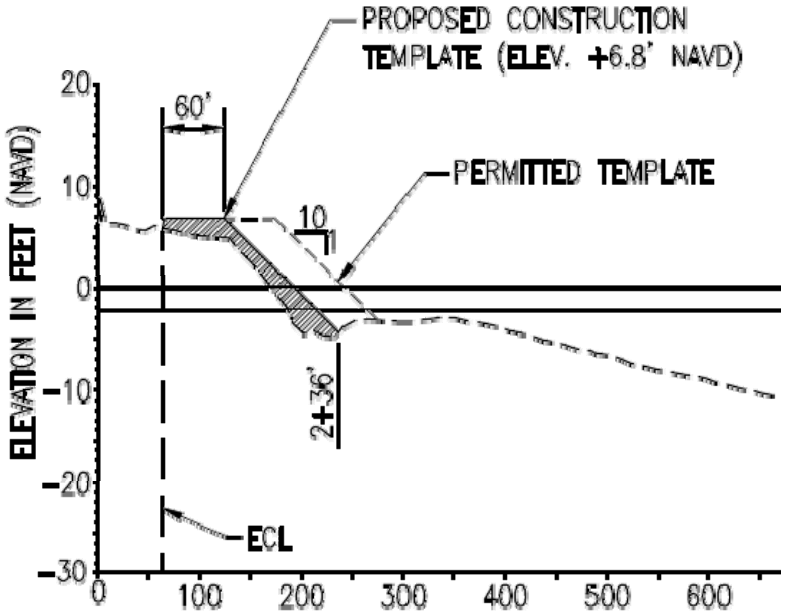
What is the CCCL?

- CCCL – areas subject to influence of 100-yr storm events
- Ensure reasonable use of private property
- Maintain sand within ***Coastal Cell***
- Coastal Cell bounded by barriers to longshore transport

Typical CCCL location

Opportunities for Strategic Beach Management

- Potential for free Native Florida beach sand
- Current JCP's
  - Re-fill templates
  - Cool *hot-spots*
- Dune & back berm restoration
- Less environmental impact than truck-haul



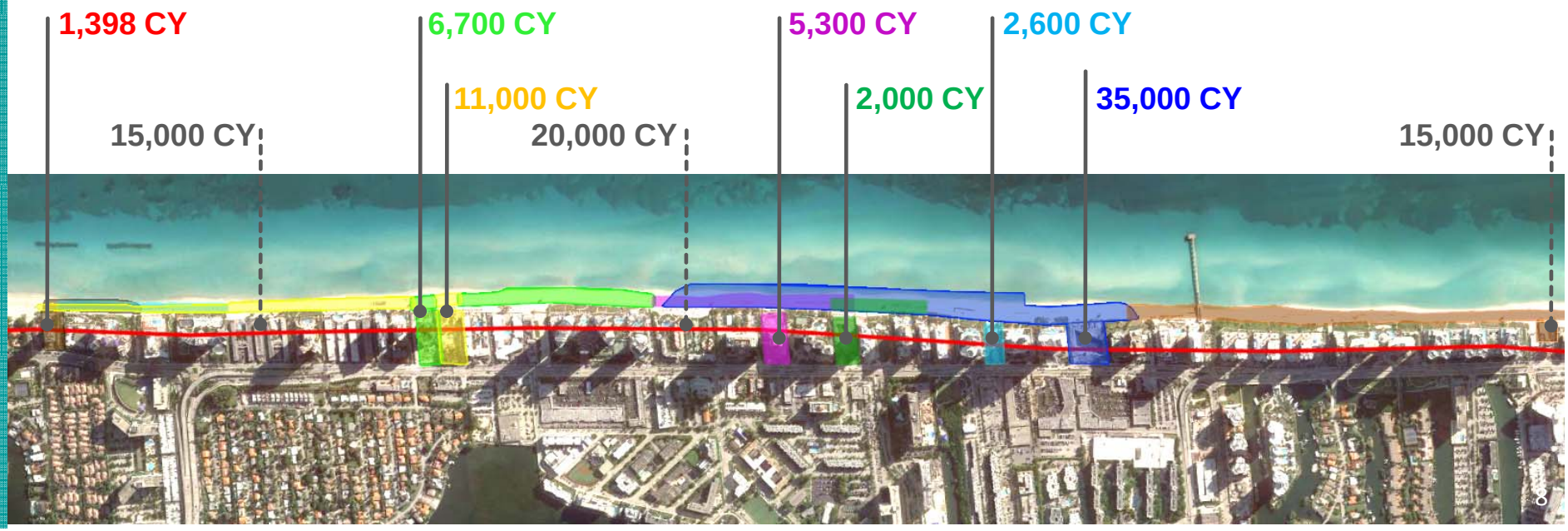
Hurdles?

- Stakeholders coordination
- Compatibility of sand
- Quality Assurance / Quality Control
- Understanding and managing expectations - *Public Opinion*

Case Studies – Group A

City of Sunny Isles Beach

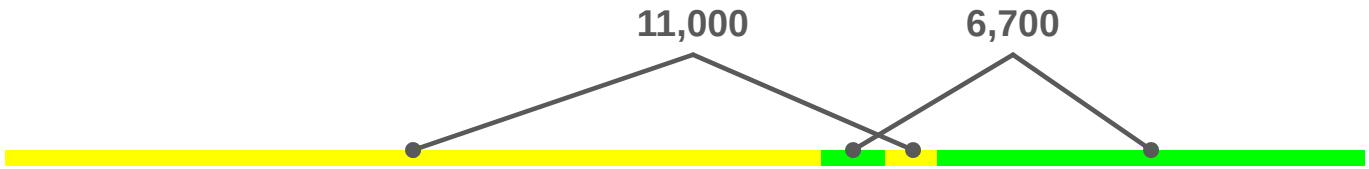
- 3 miles of shoreline
- 7 coastal development projects ~ 60,000 CY (2012 – 2015)
- 3 future projects in permitting ~ 50,000 CY (2016)

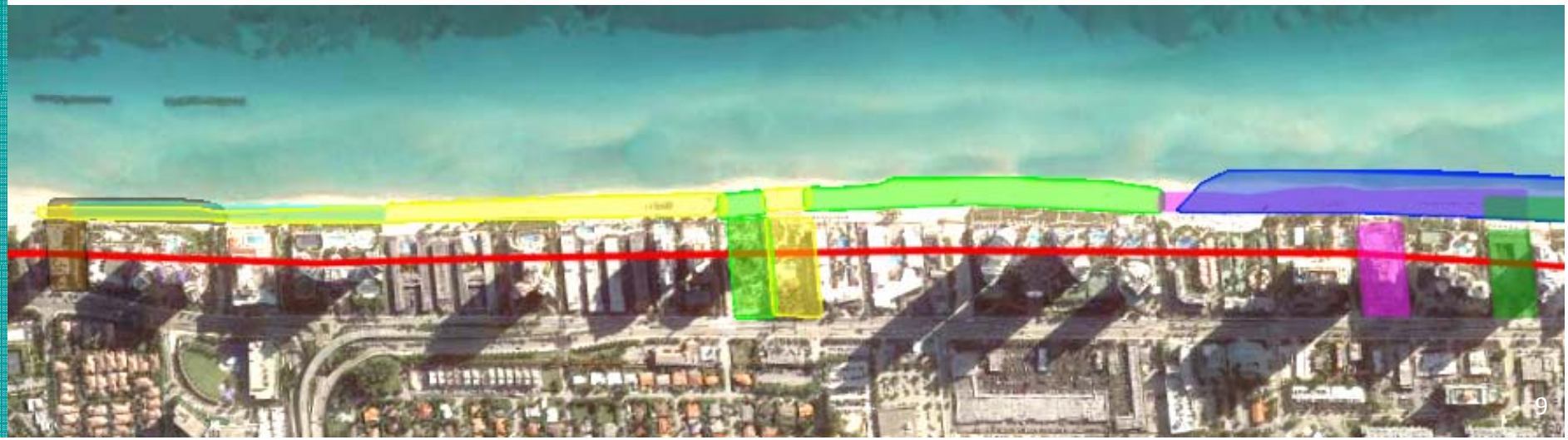


Case Studies – Group A

City of Sunny Isles Beach

- Property ownership concerns
- Developers prefer placing sand in front of their own properties

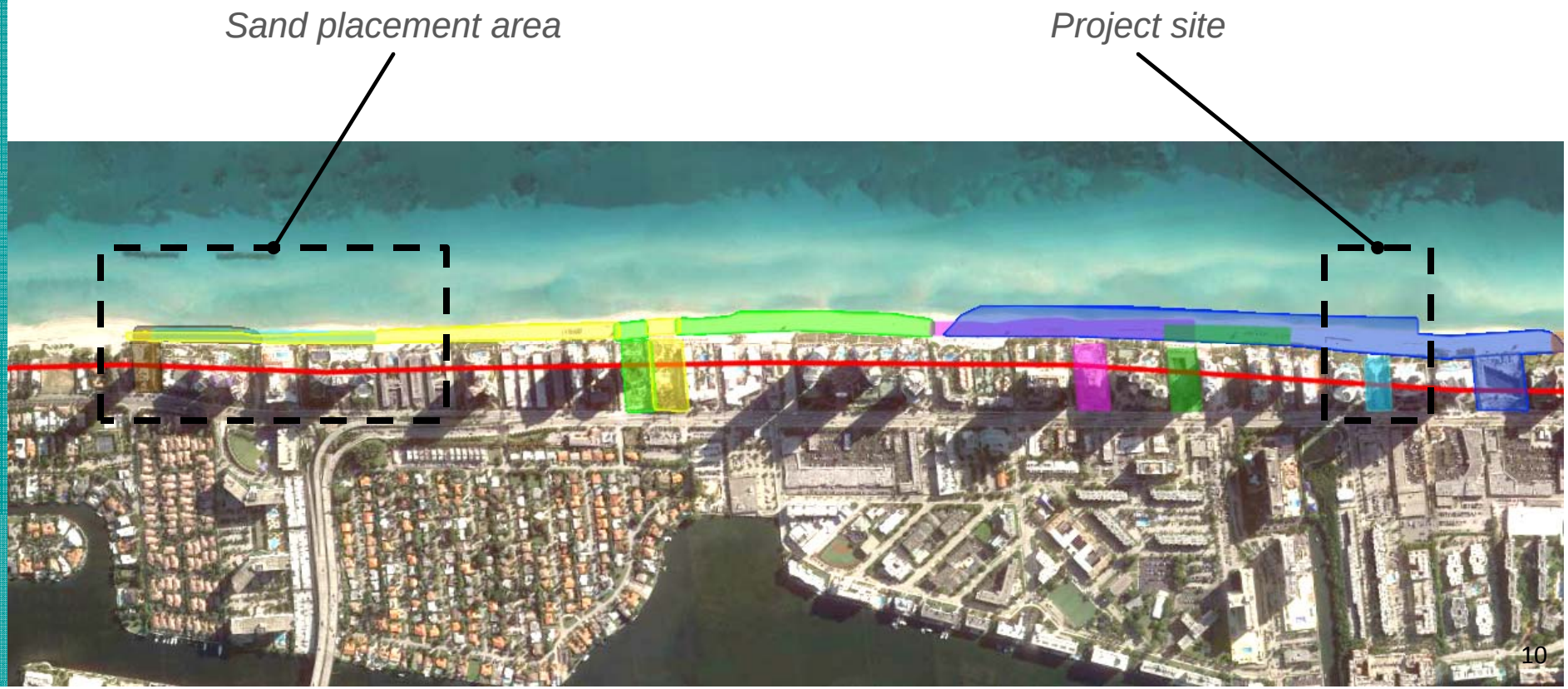




Case Studies – Group A

City of Sunny Isles Beach

- Coordination with municipalities for area of greatest need



Case Studies – Group B

City of Fort Lauderdale

- Sand from construction west of A1A
- Required meeting of the minds between Local and State officials
- **City** - preserve views **State** - beach habitat & storm resilience

Case Studies – Group B

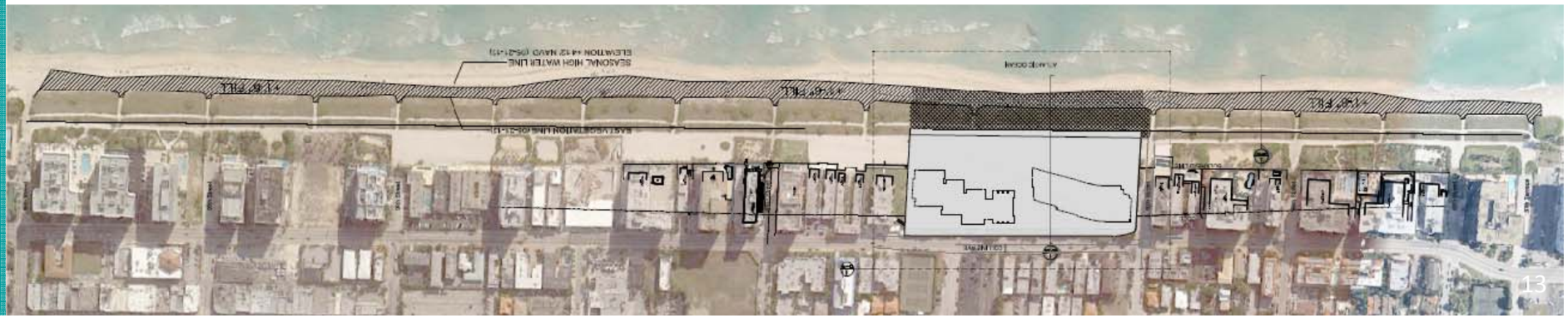
City of Fort Lauderdale

- Low-profile vegetation to preserve views
- Provides buffer between beach & A1A.

Case Studies – Group B

Town of Surfside

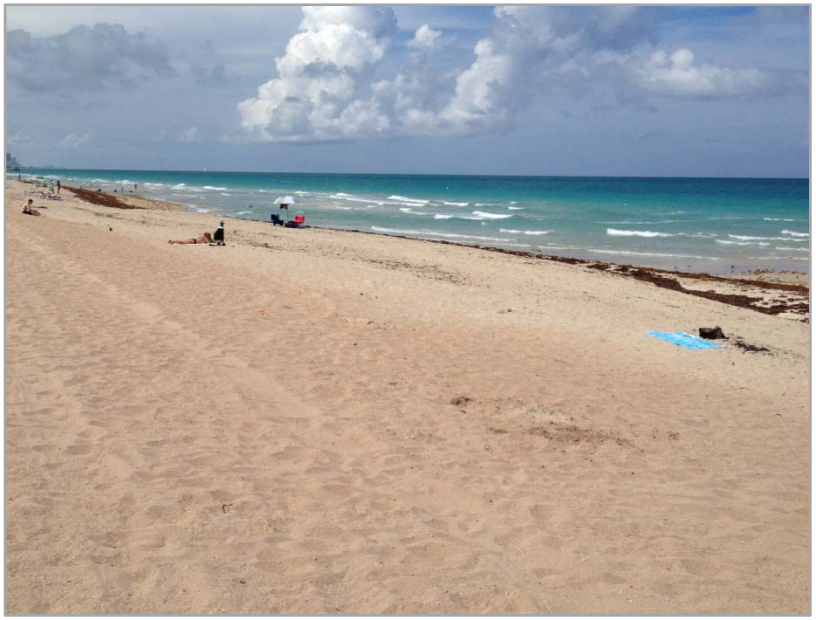
- 1 mile of shoreline
- 17,000 CY - beach
- 6,000 CY - dune
- 5,000 CY - on-site



Case Studies – Group B

Public Perception issues:

- *Color*
- *Texture*
- *Background arsenic levels*



Non-Compliance issues:

- *Debris found on placed sand*
- *Insufficient Documentation*
- *Remediation required*

Case Studies – Group B

- Remediation:
  - Turtle season – manual collection
  - Non-turtle season – mechanical sifting

- Lessons Learned:
  - On-Site owner representative
  - Document, Document, Document…

Case Studies – Group B

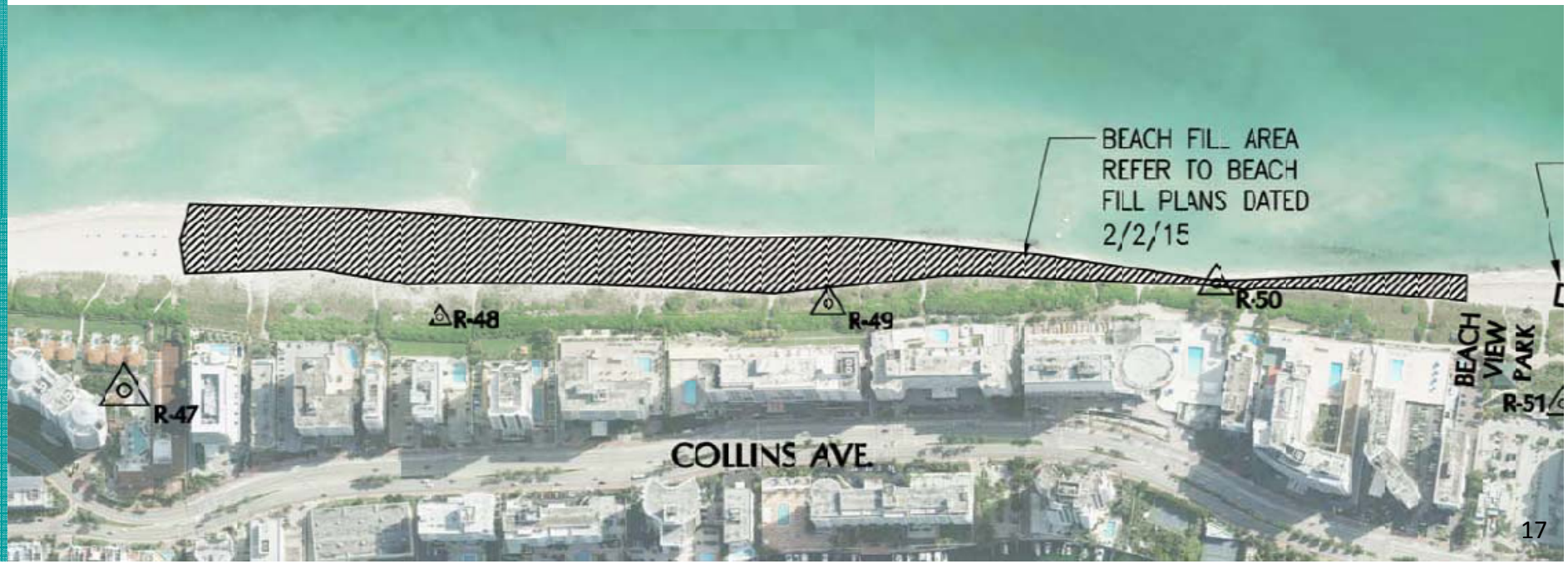
City of Miami Beach

- Public perception issues - color of sand
- Non-Compliance issues - debris (including glass)

Case Studies – Group B

City of Miami Beach

- ~20,000 CY placed along 0.7 miles of shoreline
- Placement not allowed below Seasonal High Water Line
- Attitudes have since shifted



Case Studies – Group C – Future Projects

- Cool erosion hotspots – where sand is most needed
- Enhanced Sediment QA/QC, similar to JCP projects

Conclusions

- Economical sand sources are diminishing
- Must take full advantage of all available beach quality sand sources for sustainable and cost-effective beach management
- Case studies only involve excavation east of the CCCL (required by FDEP)
- Opportunity to also utilize sand excavated for coastal development **west** of the CCCL

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