

# Dinner Key Marina Rehabilitation Industry Day

October 3, 2018



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# Industry Day Outline

- Introductions
- Background – Hurricane Irma
- Design-Build Approach
- Scope Review - Trades
  - Structural, Fire Protection. Plumbing, Electrical, Communication, Sewage Pump Out
- Project Phasing
- Design-Build Procurement Process
- Data to be Provided
- Design-Build Team Minimum Qualifications
- Permitting
- Schedule
- Questions & Answers
- Marina Tour



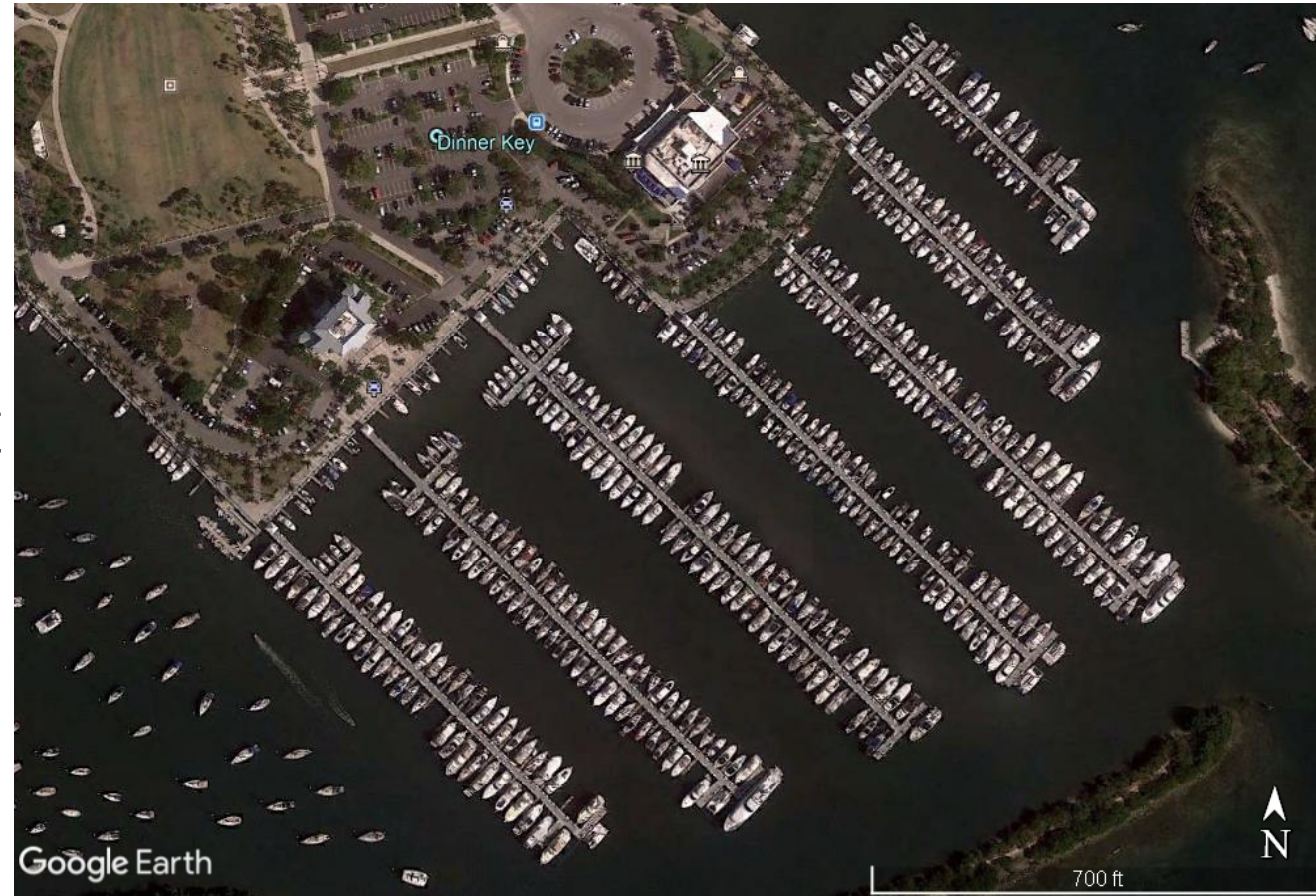
# Introductions

- City of Miami
  - Office of Capital Improvements (OCI)
  - Department of Real Estate Management (DREAM)
  - Procurement
  - Fire Dept.
- Moffatt & Nichol – consultant to City



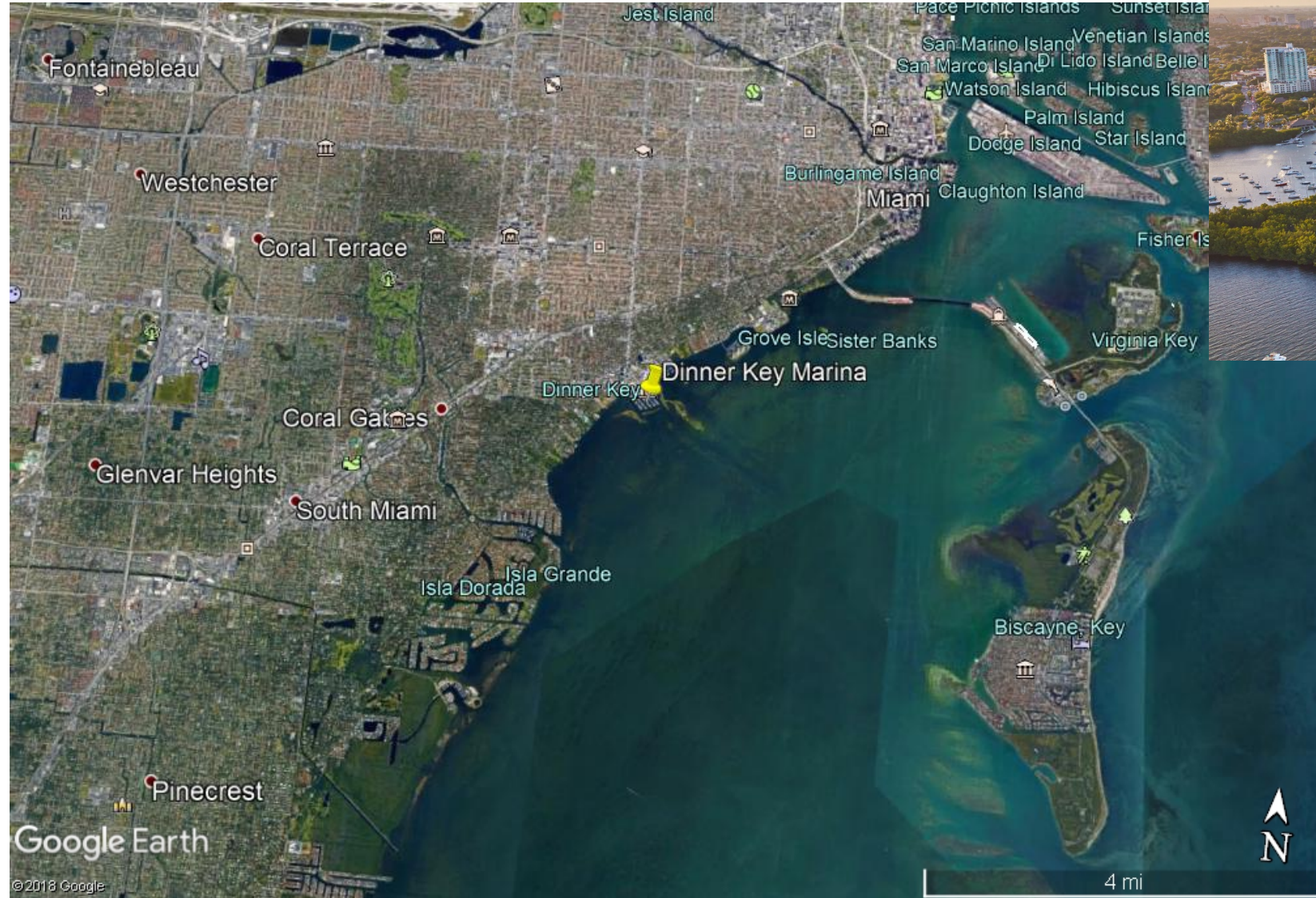
# Industry Day Goals

- Present Project Scope
- Review Schedule
- Receive Feedback from Industry
- Incorporate into design-build procurement
- Sign-Up for One-on-One Interviews
- Promote open communication and input





# Location



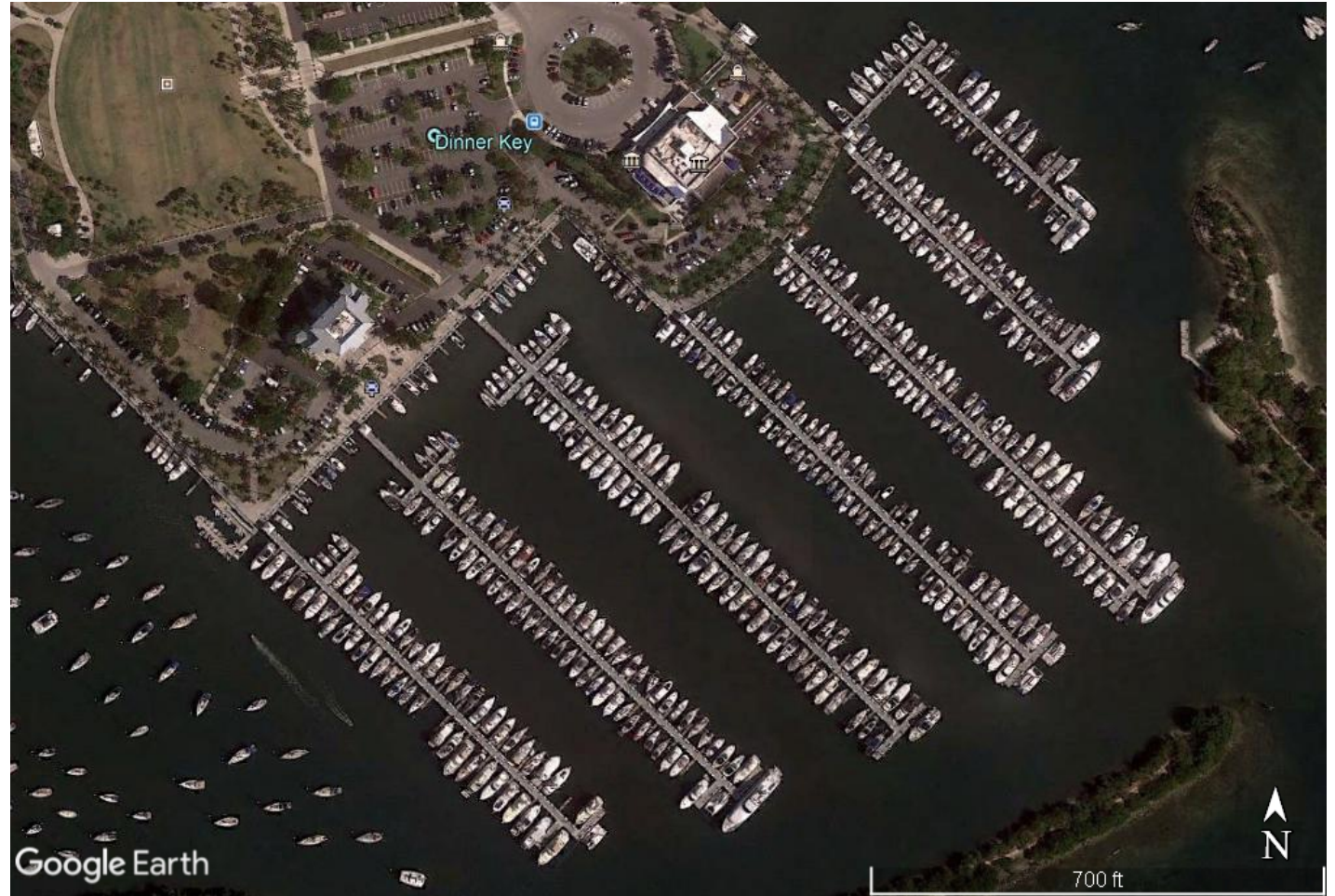


# Site History – 1950's



# Site History

- Area – Marine Use since 1918
- Original Marina – 1950's
- Constructed - 1986
- Currently 582 Wet Slips
- Hurricane Andrew - 1992
- Electrical Replaced 1994
- Hurricane Wilma -2005
- Replaced Decking & part of Pier 3; some utilities
- Ongoing Timber Structure Maintenance
- Maintenance Dredging -2010
- Sewage Pump Out - 2016





# Hurricane Irma – September, 2017





# Initial Post-Hurricane Photos





# Initial Post-Hurricane Photos





# Initial Post-Hurricane Photos



# Design-Build Approach - Rehabilitation

1. Moffatt & Nichol – conducted assessment July/August, 2018
2. Owner's Engineer – prepare design criteria package (DCP)
3. Repair/Replace Marina Fixed Docks & Utilities – in-kind
4. Design – Build Approach - restore operational marina as quickly as possible
5. Industry Day - Review scope of work by trade





PILING INSPECTION

# Structural - Pier Piling

- Main Piers – concrete 14" square piling
- Minor defects in tidal zone and below water
- Specifying Limited Pile Jacketing

Pier 3 PC12E Top



Pier 3 PC12E Top Below Water



# Structural - Pier Pile Caps

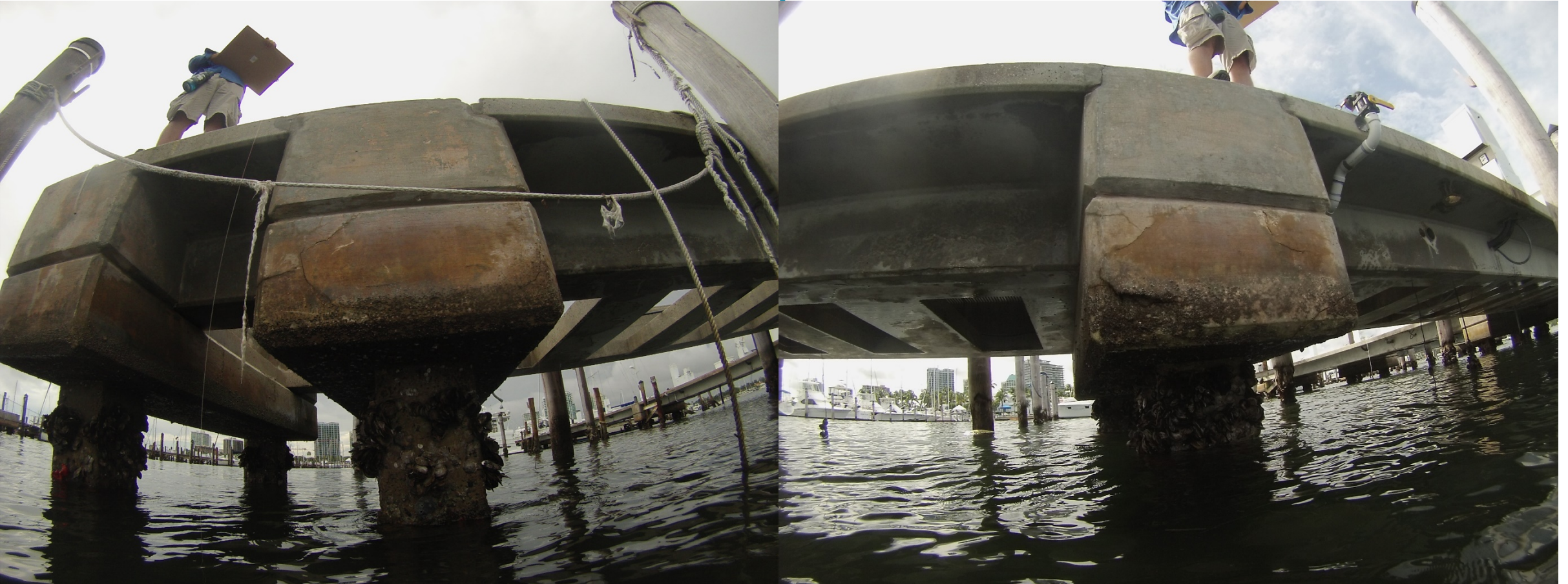


- Spalls and Cracks
- Impact Damage





# Structural - Pier Pile Caps



- Spalls and Cracks
- Impact Damage



# Structural – Pier Pile Cap Scope

1. Restoration of Cracks & Spalls
2. Limited Epoxy Injection - cracks
3. Remove Unsound Concrete – Treat Exposed Bar and place Repair Mortar (epoxy grout, smaller repairs)
4. Some formwork required
5. Specialty Engineer Requirements – monitor quantities
6. City – representative evaluations





# Structural - Pier Precast Prestressed Concrete Deck Slabs





# Structural - Pier Precast Prestressed Concrete Deck Slabs





# Structural - Pier Precast Prestressed Concrete Deck Slabs



# Structural – Pier Precast Concrete Deck Slabs

1. Slab Replacement – 20-30 slabs
2. Current Configuration – 40' long by 12' wide (similar to “W” cross section)
3. Replace “in-kind” or consider two slabs with unistruts for utilities
4. Secondary Pour – detailing; limit demolition
5. Repairs -remove Unsound Concrete – Treat Exposed Bar and place Repair Mortar (epoxy grout, smaller repairs)
6. Some formwork required
7. Specialty Engineer Requirements – monitor quantities
8. City – representative evaluations





# Structural – Pier Precast Concrete Deck Slabs

Slab Options  
Pier 3 Repairs



# Structural – Grating

Fiberglass

Span – existing dimensions

Fastening





# Structural - Pier Finger Docks





# Structural – Pier Timber Finger Docks

Three Types of Finger Pier Repair:

1. Full Replacement

– Replace piles, pile caps, bracing, stringers and deck.

2. Salvage Piles & Rebuild

– Replace bracing, pile caps, stringers and deck.

3. Repair

– Replace bracing, pile caps, as needed.





# Structural – Pier Timber Finger Docks

1. Removal and Replacement
2. Six & Eight Pile Configurations
3. Timber CCA Piles – wrapped; higher elevations
4. Timber superstructure – with cross bracing
5. Galvanized Steel Hardware
6. Pile Driving Monitoring – specialty engineer
7. Repairs – restore timber superstructure “in kind”
8. Specialty Engineer Requirements – monitor quantities
9. City – representative evaluations



# Structural - Timber Mooring Piles





# Structural - Timber Fender Piles



# Structural – Timber Fender & Mooring Piles

1. Removal and Replacement
2. Timber CCA Piles – wrapped; higher elevations
3. Pile Driving Monitoring – specialty engineer
4. Specialty Engineer Requirements – monitor quantities
5. City – representative evaluations





# Structural - Appurtenances

1. Cleats
2. Ladders
3. Canopy (Entrance) - repairs
4. Specialty Engineer Requirements – monitor quantities



# Marina Utilities

- Fire Protection
- Plumbing
- Electrical
- Sewage Pump Out
- Communications & Security





# Fire Protection





# Fire Protection





# Fire Protection – Scope Summary

1. Removal and Replacement
2. Upland – replace some Fire Department Connections
3. Utility Chase Routing – reuse mount brackets; or new mounts
4. Reuse existing sleeves – as much as possible
5. Min. Distribution Pipe Size – 6-inch GSP
6. Standpipes – no hoses
7. Summary of Meeting with City Fire Department
8. Double Detector Valves – replaced within last few years
9. Fire Alarm System – pole boxes
10. Panel – outside building
11. Gate Entry Requirements
12. Alarm Indicators – each dock



# Plumbing





# Plumbing



# Plumbing – Scope Summary

1. Removal and Replacement
2. Utility Chase Routing – reuse mount brackets; or new mounts
3. Coordinate Utility Pedestal Connection – RPV (code requirement)
4. Reuse existing sleeves – as much as possible
5. Consider PVC, HDPE and other materials; FBC and City of Miami Code





# Electrical





# Electrical





# Electrical – Design Criteria

- Flood Design Class – 1
- Design Flood Elevation (DFE)
  - 100 year FEMA Flood Elevation           XX ft
  - Pier Top of Deck Elevation                XX ft
  - City of Miami Requirement                XX ft
  - Authority Having Jurisdiction (AHJ)      XX ft

See next page for description of Flood Design Classes →

|                                                                                                        |                                                       | Flood Design Class 1 |
|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------|----------------------|
| Minimum Elevation* of Lowest Floor<br>(Zone A: ASCE 24-14 Table 2-1)                                   | Zone A not identified as Coastal A Zone               | DFE                  |
| Minimum Elevation of Bottom of Lowest Horizontal Structural Member<br>(Zone V: ASCE 24-14 Table 4-1)   | Coastal High Hazard Areas (Zone V) and Coastal A Zone | DFE                  |
| Minimum Elevation Below Which Flood-Damage-Resistant Materials Shall be Used<br>(Table ASCE 24-14 5-1) | Zone A not identified as Coastal A Zone               | DFE                  |
|                                                                                                        | Coastal High Hazard Areas (Zone V) and Coastal A Zone | DFE                  |
| Minimum Elevation** of Utilities and Equipment<br>(ASCE 24-14 Table 7-1)                               | Zone A not identified as Coastal A Zone               | DFE                  |
|                                                                                                        | Coastal High Hazard Areas (Zone V) and Coastal A Zone | DFE                  |

| ASCE 24-14 Table 1-1 Flood Design Class of Buildings and Structures                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Use or Occupancy of Buildings and Structures                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Flood Design Class |
| Buildings and structures that normally are unoccupied and pose minimal risk to the public or minimal disruption to the community should they be damaged or fail due to flooding. Flood Design Class 1 includes (1) temporary structures that are in place for less than 180 days, (2) accessory storage buildings and minor storage facilities (does not include commercial storage facilities), (3) small structures used for parking of vehicles, and (4) certain agricultural structures. [Note (a)] | 1                  |



# Electrical – Scope Summary

1. Removal and Replacement - shore power pedestals and distribution
2. Utility Chase Routing – reuse mount brackets; or new mounts
3. NEMA Flood Protection – cabinets for switchgear (upland)
4. Transformers on Docks – currently 50+; long runs with 480V
5. NEC 555.3 Ground Fault – code upgrades
6. FPL Coordination – allowance for service
7. Reuse existing sleeves – as much as possible
8. Lighting – consider solar; if possible





# Sewage Pump Out





# Sewage Pump Out





# Sewage Pump out – Scope Summary

1. Repair PVC lines and connections on docks
2. Install New Vacuum Pump Stations – and connections to docks
3. Provide Service to Pier 9
4. Install New Underground Force Main to Sanitary Sewer
5. Dismantle existing pump station



# Security Camera, Access, Communications – Scope Summary

1. Install Security Cameras
2. Card Access at Gates
3. WiFi
4. Telephone/Internet





# Project Phasing



# Design-Build Procurement Process

- Scoring System – combination qualifications/experience, approach to project and cost
- Bid Form – scope and quantities
- Design Criteria Package (DCP)
- DBIA Contract Format
- Selection Committee
- Oral Interviews
- Recommendation to City Commission



# Data to Be Provided by City

- Surveys – topographic/hydrographic/boundary & marine resource
- Underground Utility Information
- Available Design Drawings – original and repair projects
- Pile Driving Records
- Geotechnical – being scoped
- Template – Environmental Permit Conditions



# Design-Build Team – Minimum Qualifications

- Contractor – qualifications/experience
- Include trade contractors
- Design Team – qualifications/experience
- Key Team Members - experience
- General Contractor – license required
- Performance & Payment Bonding Capability
- Past Project References
  
- *Essential – qualified/experienced design/build team to work through partnering with City for expedited project delivery*





# Permitting

- Environmental Permitting – to be initiated by Moffatt & Nichol and City
- Agencies – U.S. Army Corps of Engineers, Florida DEP, and Miami-Dade DERM
- Design-Build Team – to complete DERM Class I Permit; final plans
- Process City Building Permits
- Florida Building Code - compliance
- City to pay for all Permits







# Questions?







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THANK YOU!

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