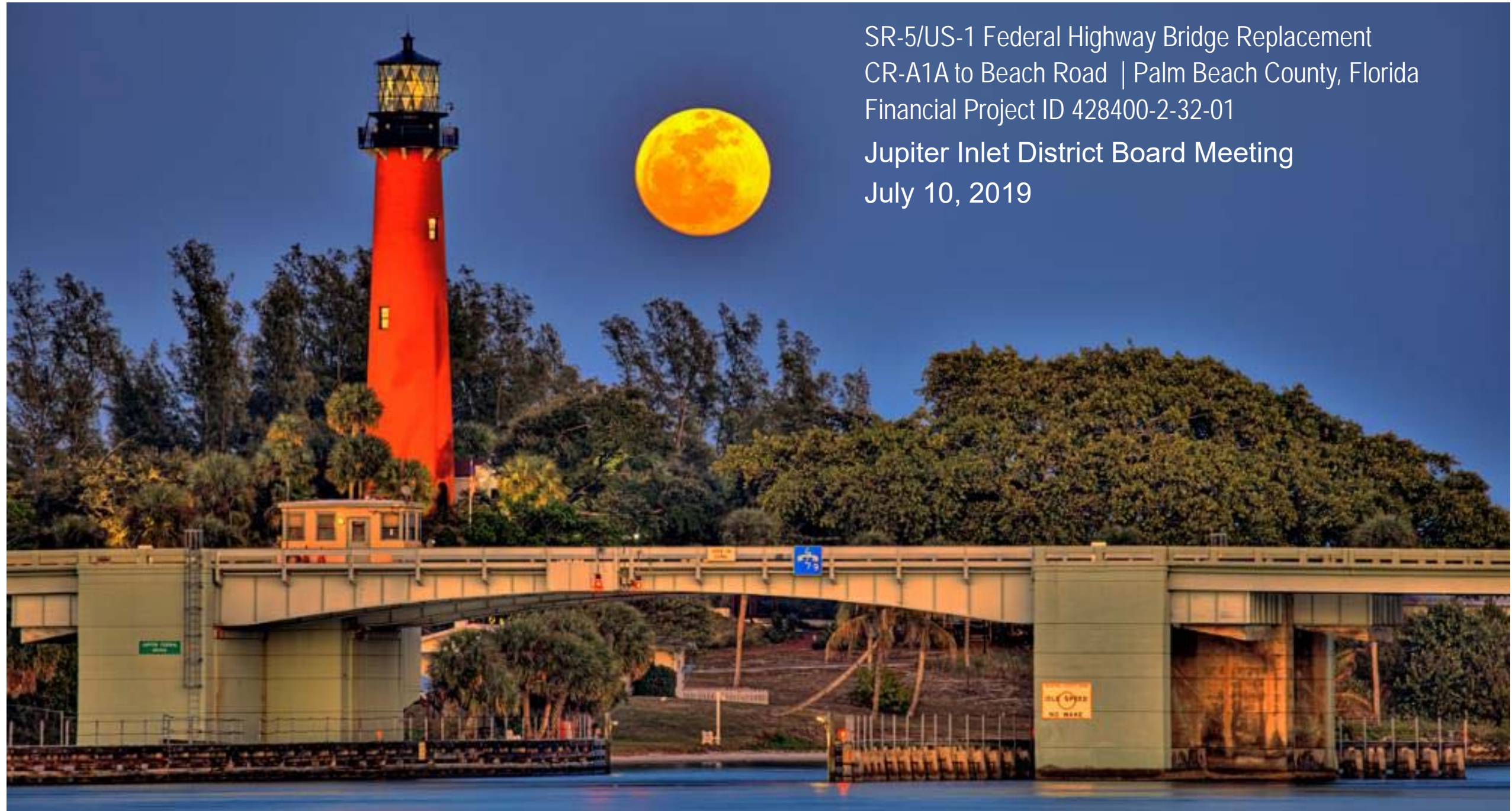


Jupiter Federal Bridge Replacement Project



SR-5/US-1 Federal Highway Bridge Replacement
CR-A1A to Beach Road | Palm Beach County, Florida
Financial Project ID 428400-2-32-01
Jupiter Inlet District Board Meeting
July 10, 2019

Meeting Agenda

- Replacement Bridge Update
- Construction Approach Evaluation
- Intersection Improvements & Traffic Management
- Construction Cost and Schedule Estimates



Proposed Replacement Bridge

- Existing bridge from Sawfish Bay Park
- New bridge includes twin double leaf bascule span – similar to existing bridge



Proposed Bridge Appearance

- Cleaner appearance
- Less viewshed obstruction
- Bridge piers placed to improve channel flow and reduce shore erosion



Existing bridge south approach spans



New bridge, south approach spans
(observation deck not shown for clarity)

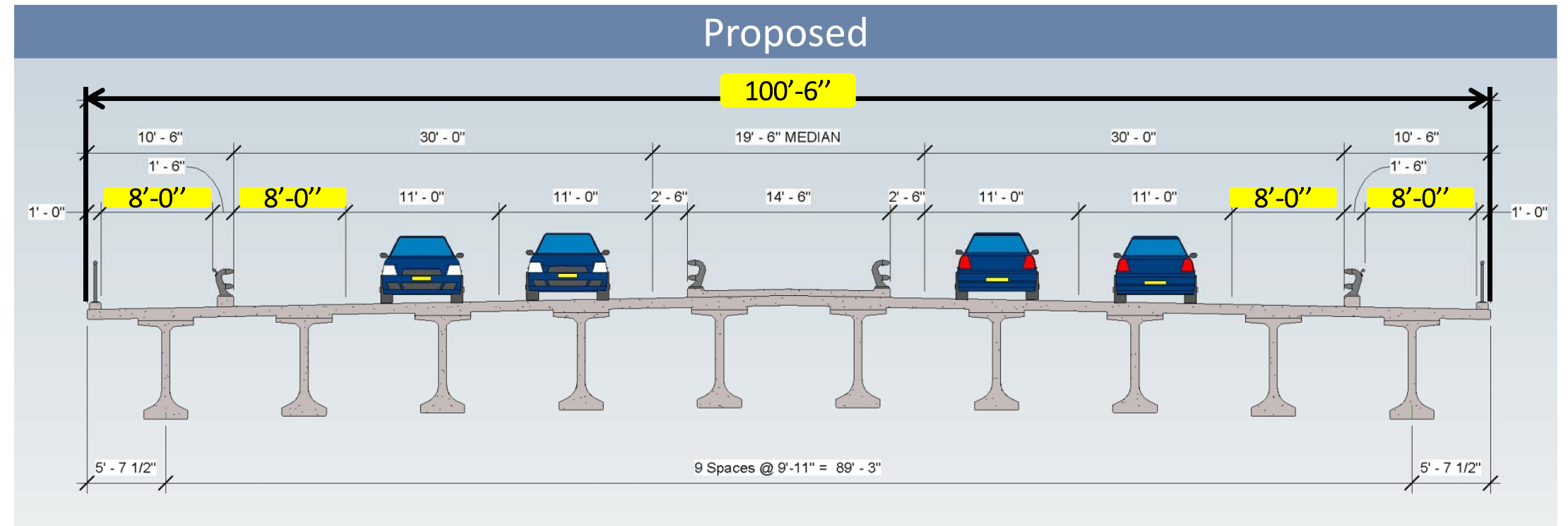
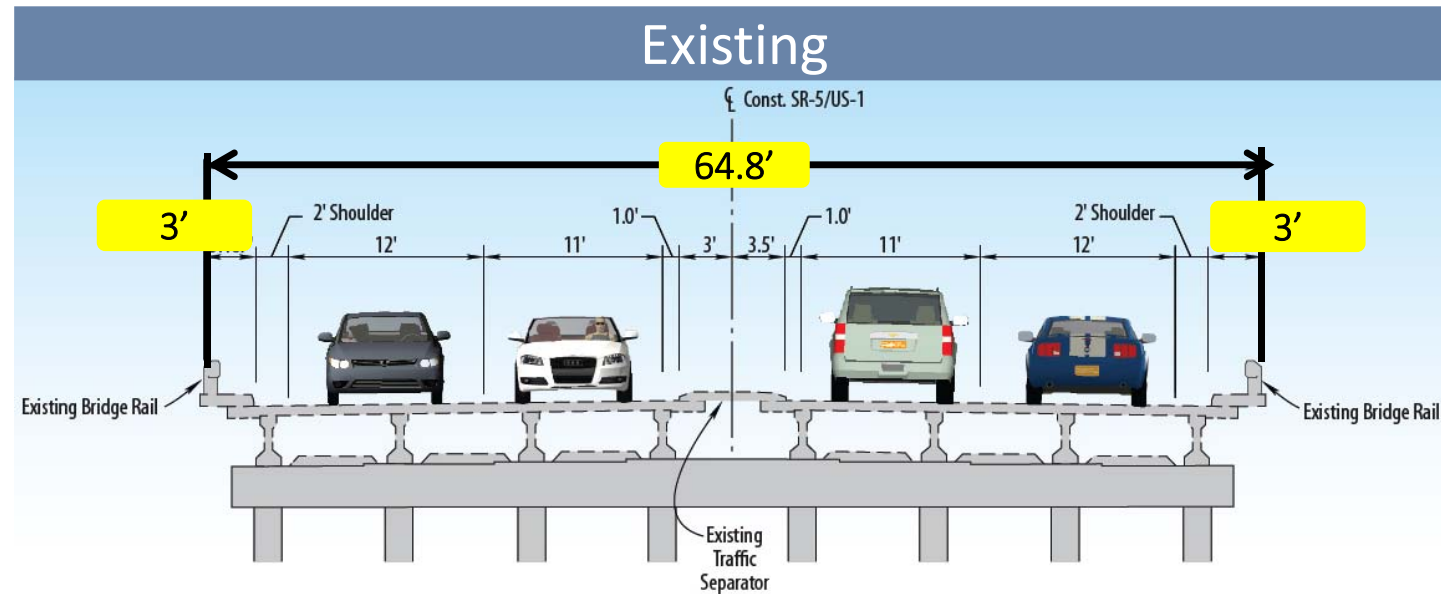
Bridge Aesthetic Coordination

- Conducted Six Bridge Aesthetics Committee (BAC) meetings
- Provided input and direction for bridge aesthetics

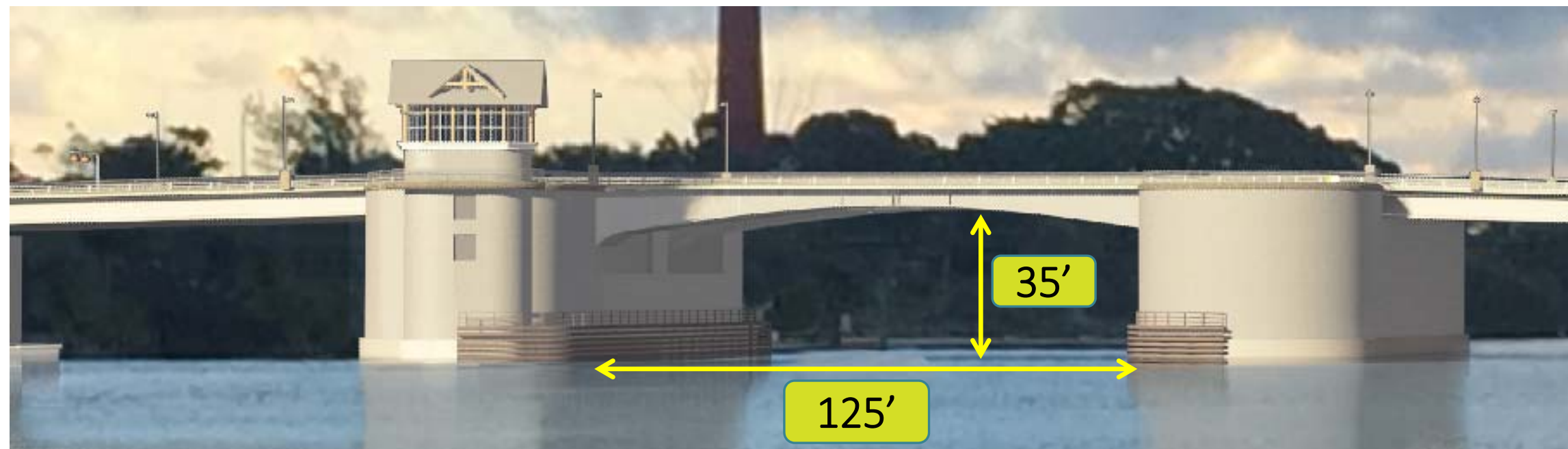
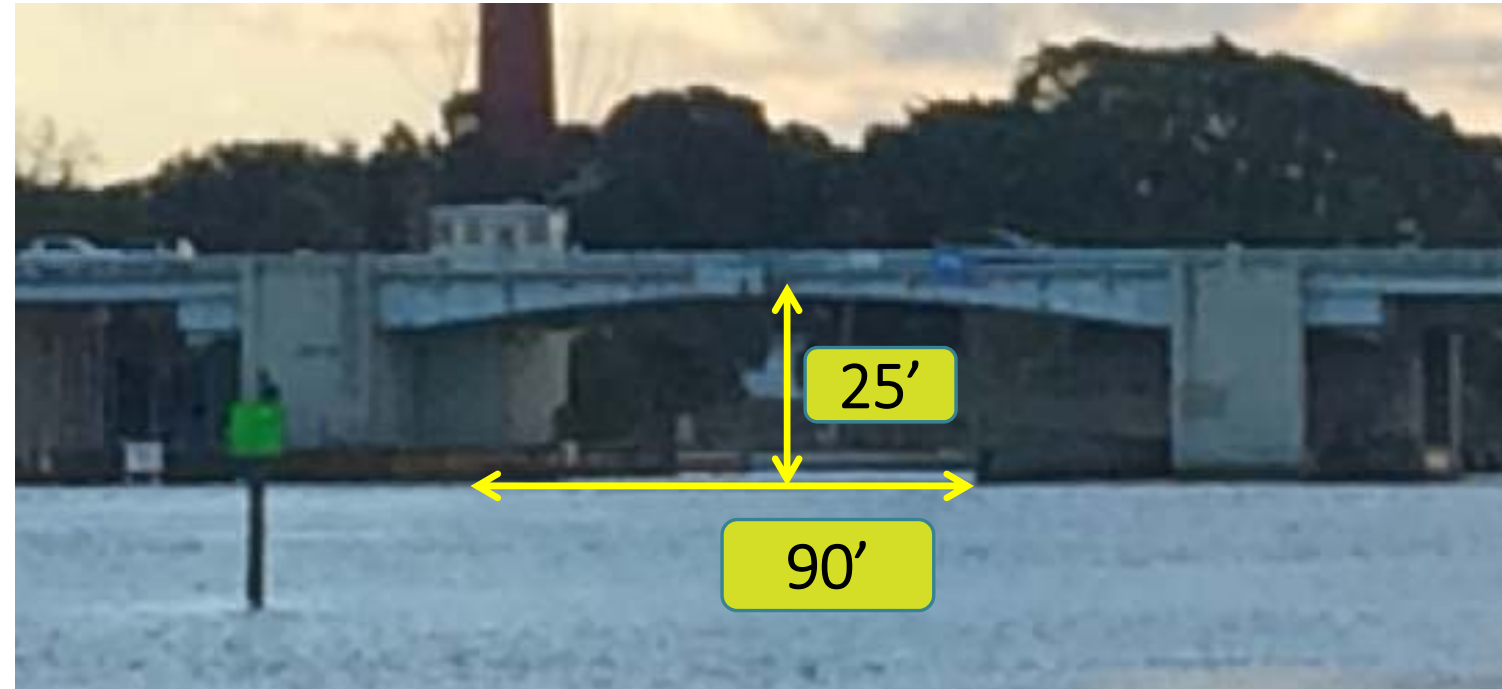


Bridge Configuration

- Separated pedestrian sidewalk
- Dedicated bicycle lane
- Solid bridge deck
 - ▣ Quieter
 - ▣ Improved ride for vehicles, bicyclists, and motorcyclists

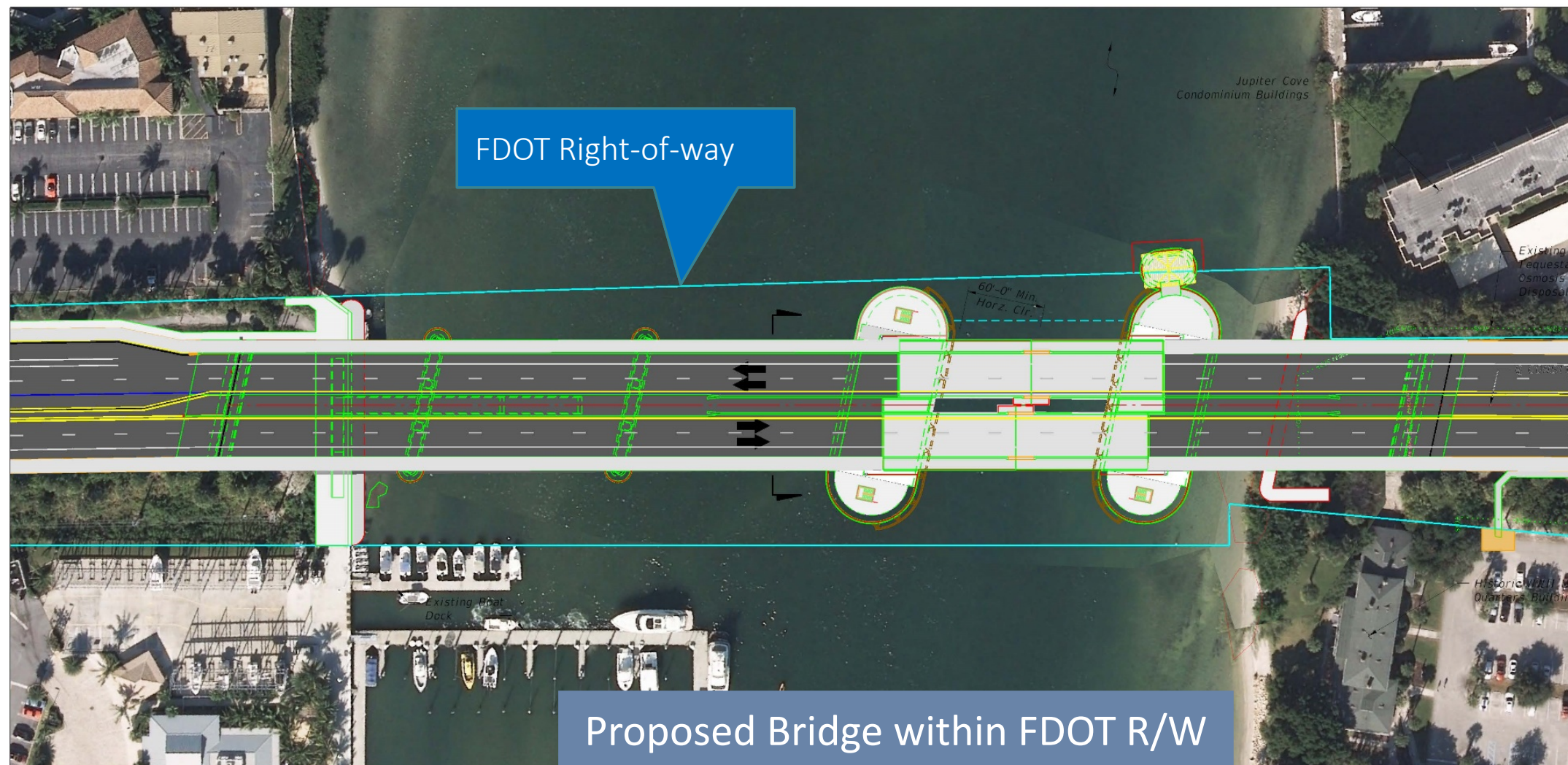


Navigation Clearances



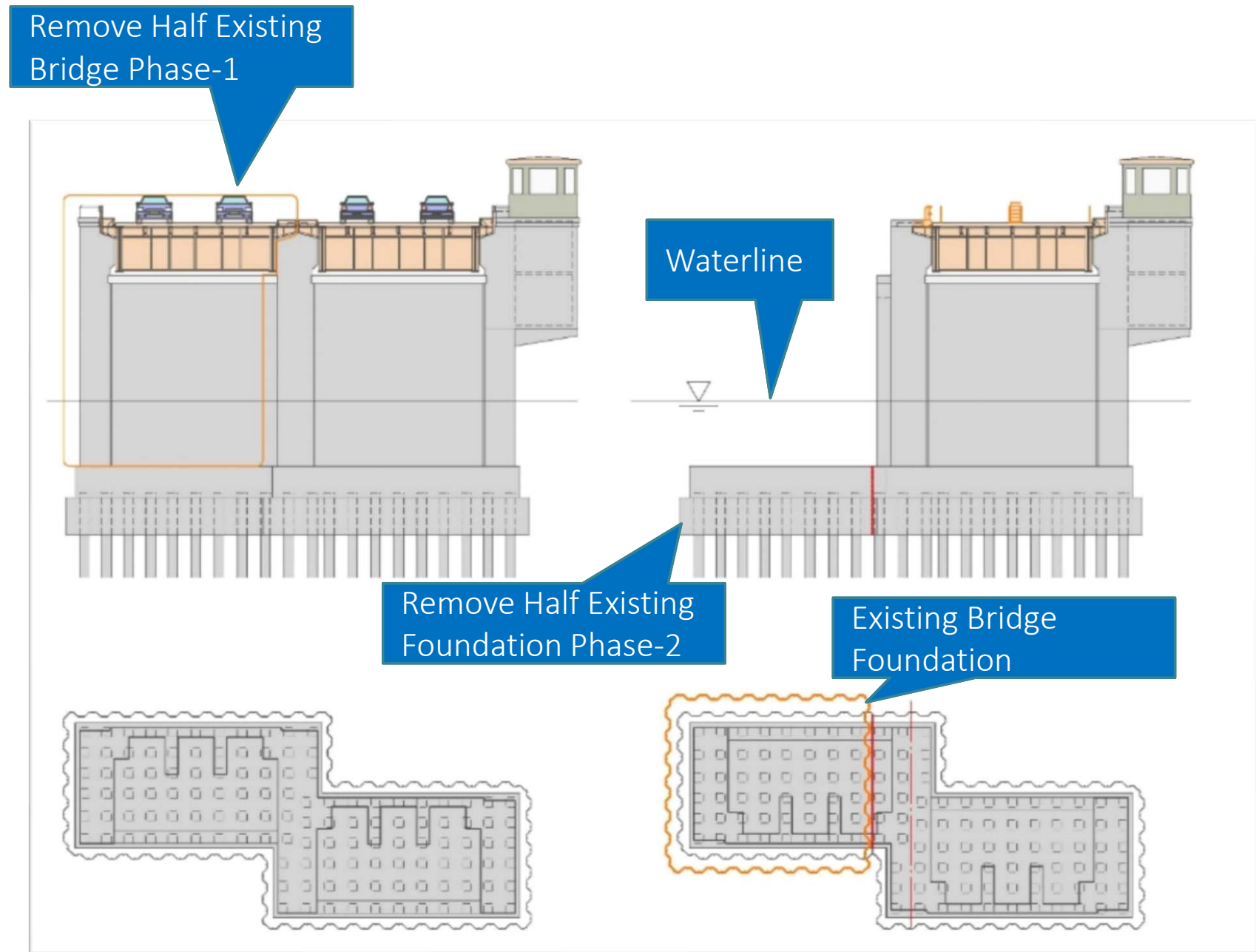
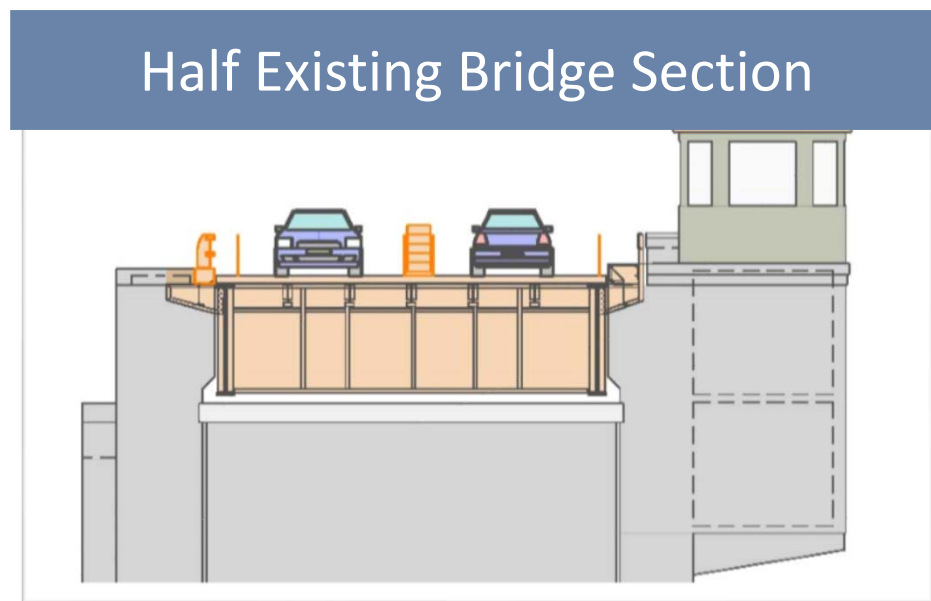
Placement of Proposed Bridge

- Right-of-way constraints prohibit placement of proposed bridge adjacent to existing bridge alignment
- Placement of proposed bridge on existing bridge alignment is only option:
 - ❑ Detour traffic during construction of new bridge
 - ❑ Phased construction: place traffic to one side of existing bridge and build new bridge in phases



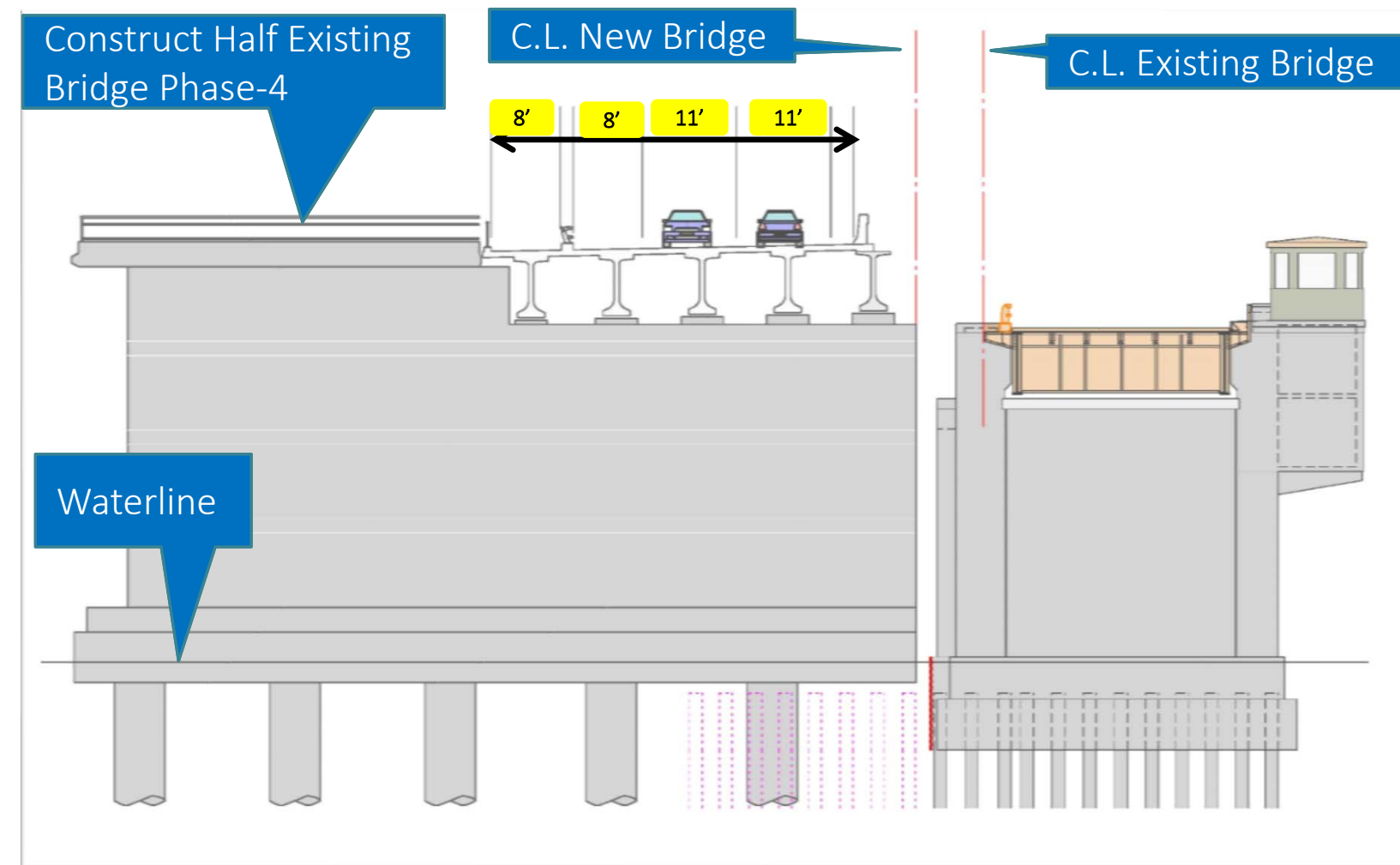
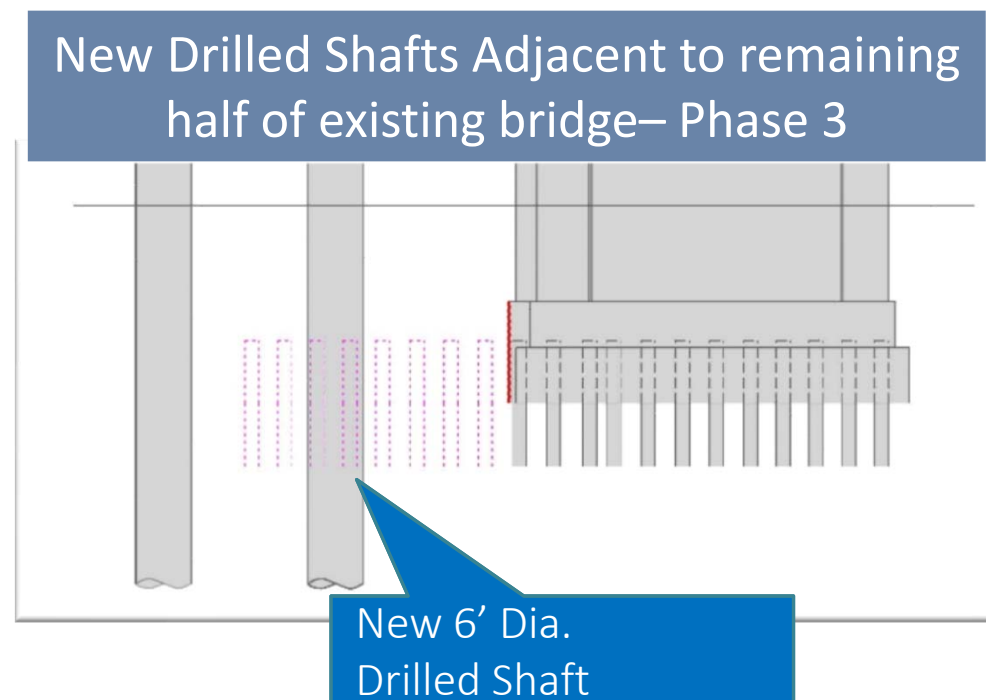
Phased Construction Evaluation

- ❑ Requires delicate removal of half existing bridge
- ❑ 3 - 4 month detour during removal operation
- ❑ Rehabilitate remaining movable span to improve reliability
- ❑ Extraction of existing foundation piles adjacent to new foundation
- ❑ Risk of existing bridge settlement/malfunction prompting extended closures and construction delays



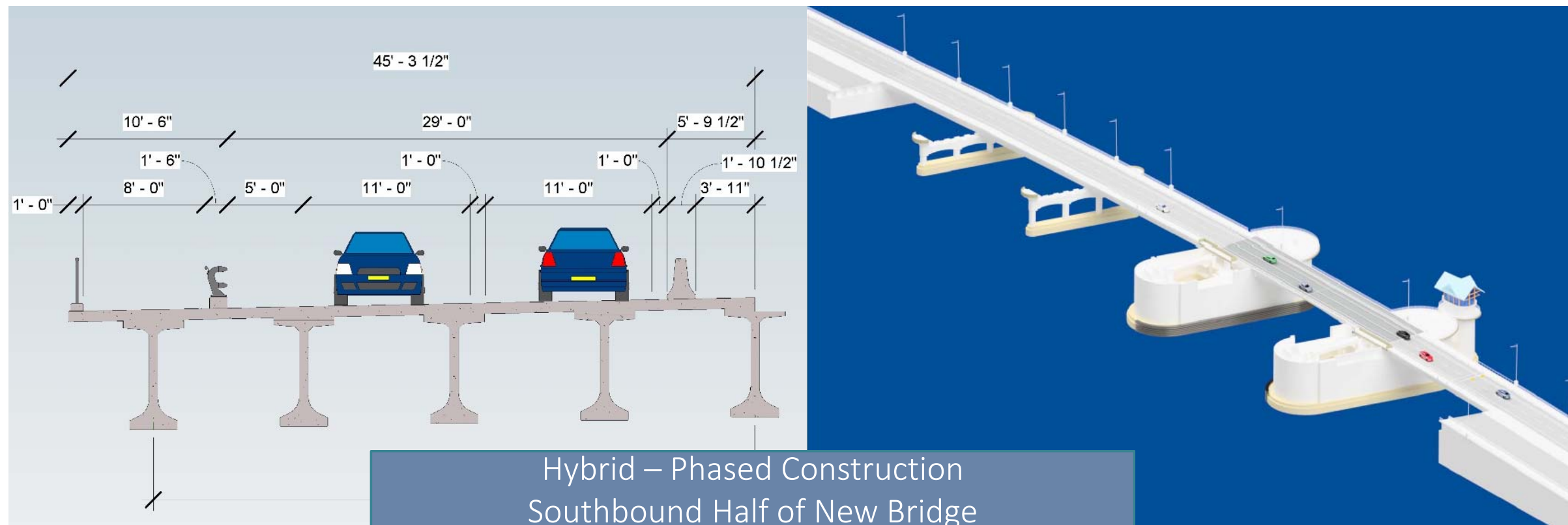
Phased Construction Evaluation

- ❑ Install new 6' diameter drilled shafts adjacent to remaining half of existing bridge
- ❑ Construct half of the new bridge while maintaining traffic on the existing half
- ❑ Significant increase in impacts to vehicular traffic during existing bridge openings (~12 – 18/day)



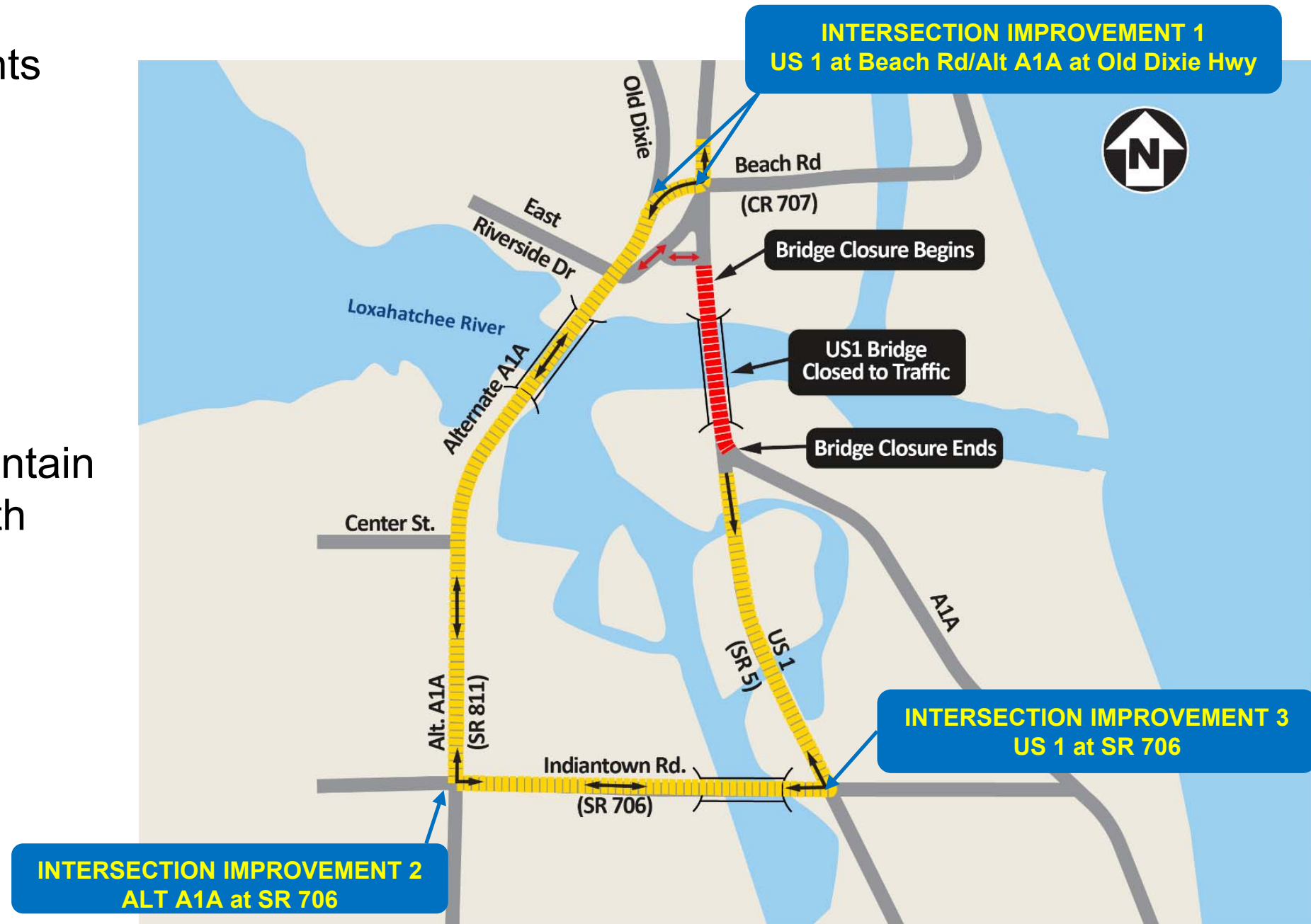
Hybrid-Phased Construction

- Optimizes benefits of phasing and detour
- Consideration of all stakeholders
 - ❑ Avoids delicate removal of half existing bridge
 - ❑ Targets fast track construction of half of new bridge
 - ❑ Higher bridge with less frequent openings upon opening half of new bridge
 - ❑ Bicycle/Pedestrian facility provided upon opening of half of new bridge



Intersection Improvements & Traffic Management

- Evaluating viability of intersection improvements along detour route
- Mitigate community impacts during detour
- Conducted detailed traffic studies at following intersections:
 - ❑ US 1 at Beach Rd/Alt A1A at Old Dixie Hwy
 - ❑ ALT A1A at SR 706
 - ❑ US 1 at SR 706
- FDOT is evaluating traffic management to maintain mobility during construction in coordination with Palm Beach County



Construction Schedule

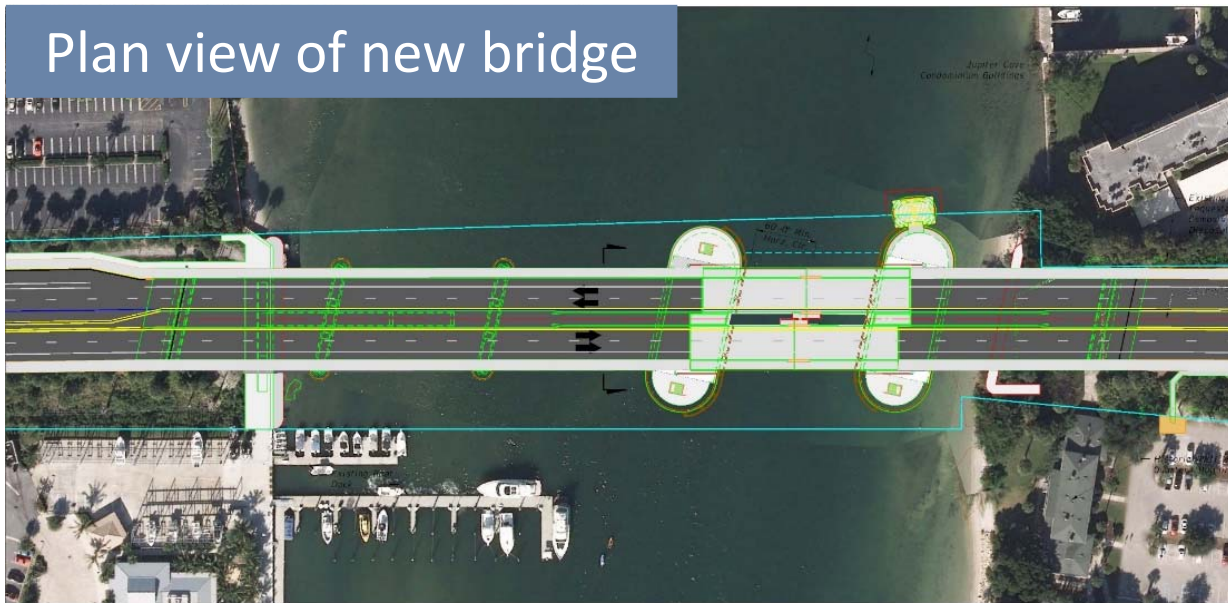
<u>Construction Schedule Estimates</u>		
Construction Phases	Conventional Phased	Hybrid Phased
Pre-Detour Construction	Not applicable	12 months
Detour Duration	Minimum 3 – 4 months (Risk for extended unplanned detour)	18 – 20 months
Two Lanes of Traffic Duration on Half <u>Existing Bridge</u>	27 – 30 months	N/A
Two Lanes of Traffic Duration on Half <u>New Bridge</u>	30 – 34 months	12 – 15 months
Total Duration	60 – 64 months	42 – 45 months
Cost Estimates	\$122M	\$135M

Recommendation: Hybrid Phased Construction

Benefits of Hybrid Phased Construction

- ❑ Avoids delicate removal of half existing bridge
- ❑ Significantly reduces risk of existing bridge settlement and extended unplanned detours
- ❑ First phase achieves new higher bridge with two lanes and 44% less openings
- ❑ Expedites construction of bicycle & pedestrian facilities
- ❑ Higher bridge with less frequent openings upon opening half of new bridge
- ❑ Improves work zone mobility and safety
- ❑ Provides opportunity for temporary navigation channel
- ❑ Reduce total construction duration by approximately 18 months

Plan view of new bridge



Rendering of new bridge



Project Status/Schedule



- Anticipated construction activity schedule*:
 - ❑ Summer 2021 - Intersection Improvements begin
 - ❑ Late Summer 2021 - Pre-detour phase bridge construction begins
 - ❑ Spring/Early Summer 2022 – Detour phase begins
- Contractor schedule incentives for detour phase completion (18 – 20 months) is under evaluation

*Final schedule developed by contractor



SR-5/US-1 Federal Highway Bridge Replacement (Financial Project ID 428400-2-32-01)

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