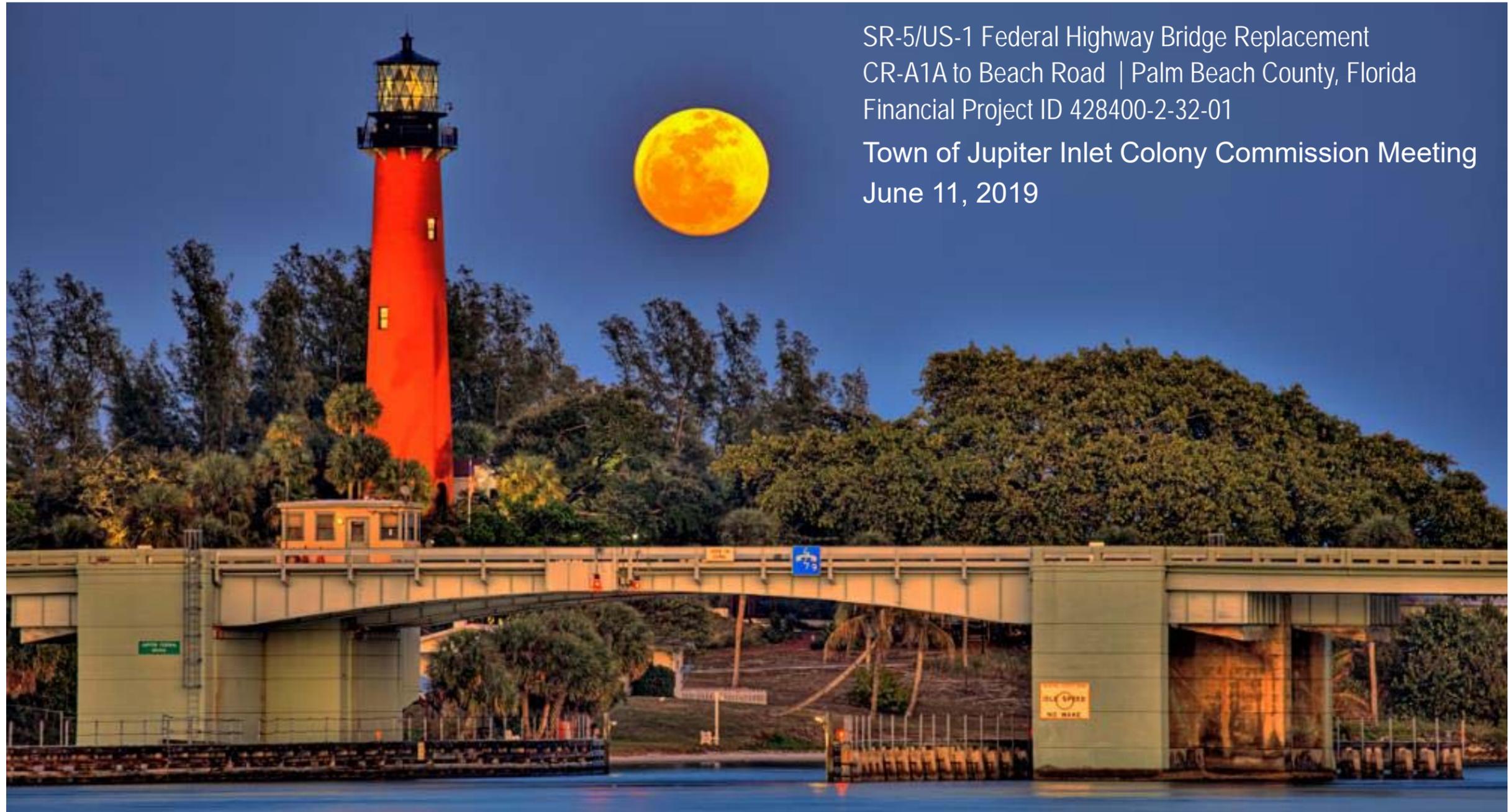


Jupiter Federal Bridge Replacement Project

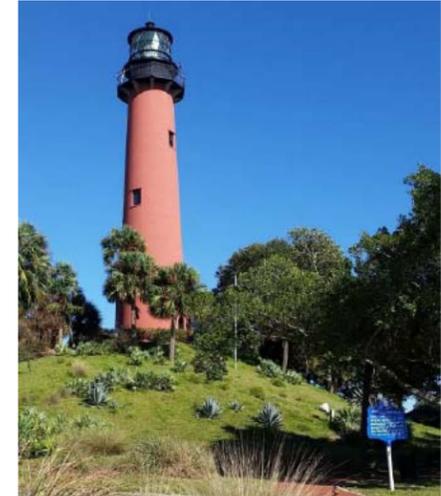


SR-5/US-1 Federal Highway Bridge Replacement
CR-A1A to Beach Road | Palm Beach County, Florida
Financial Project ID 428400-2-32-01

Town of Jupiter Inlet Colony Commission Meeting
June 11, 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



Rendering of new bridge - closed



Proposed Bridge Appearance

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



Existing bridge south approach spans



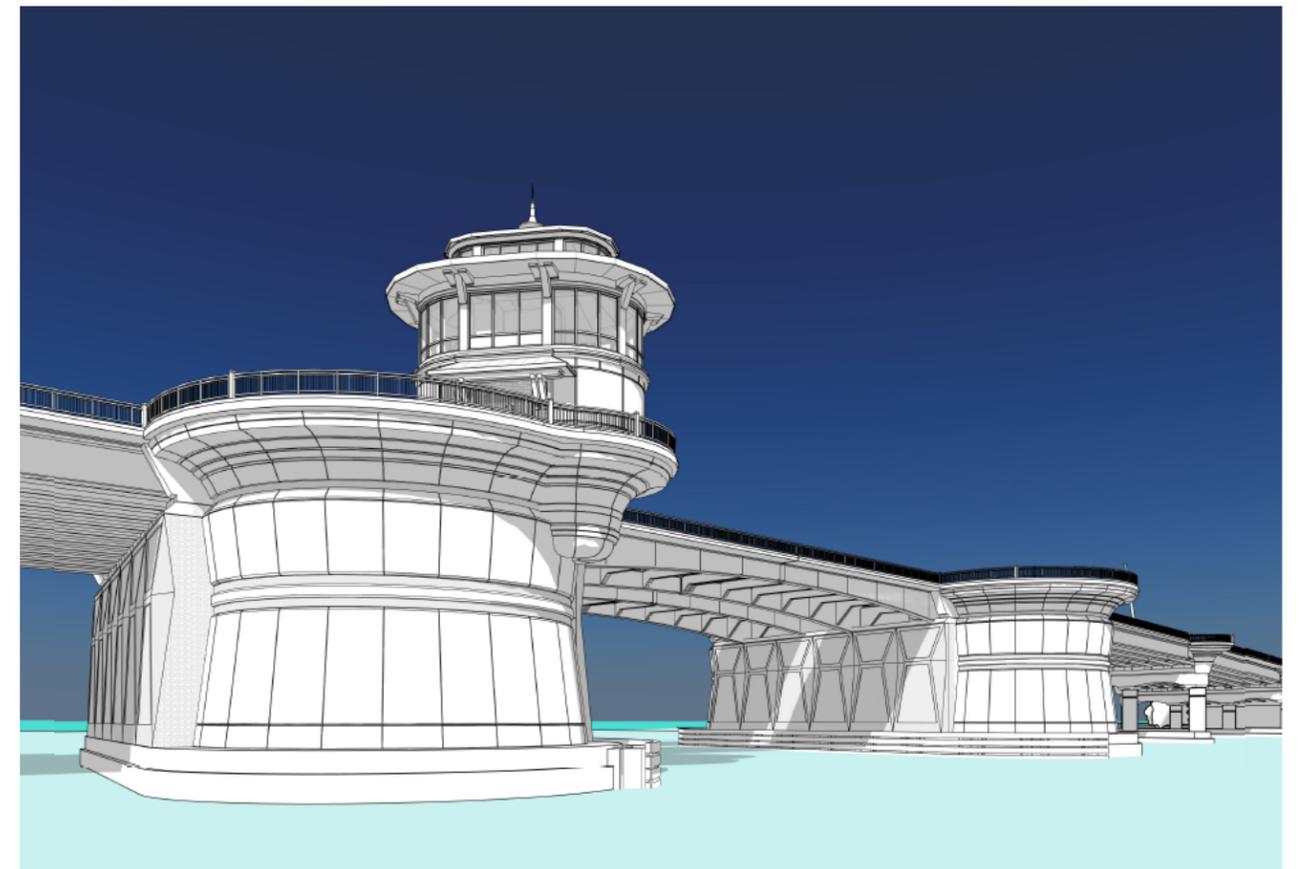
New bridge south approach spans
(observation deck not shown for clarity)

Bridge Aesthetic Coordination

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



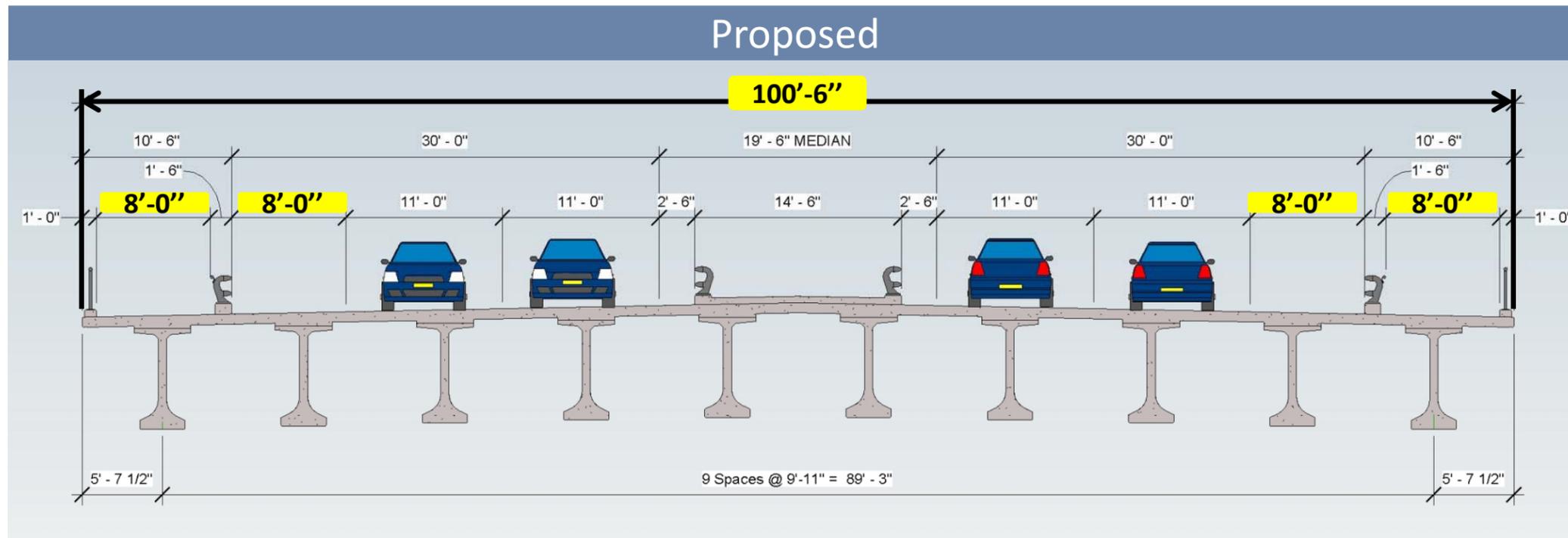
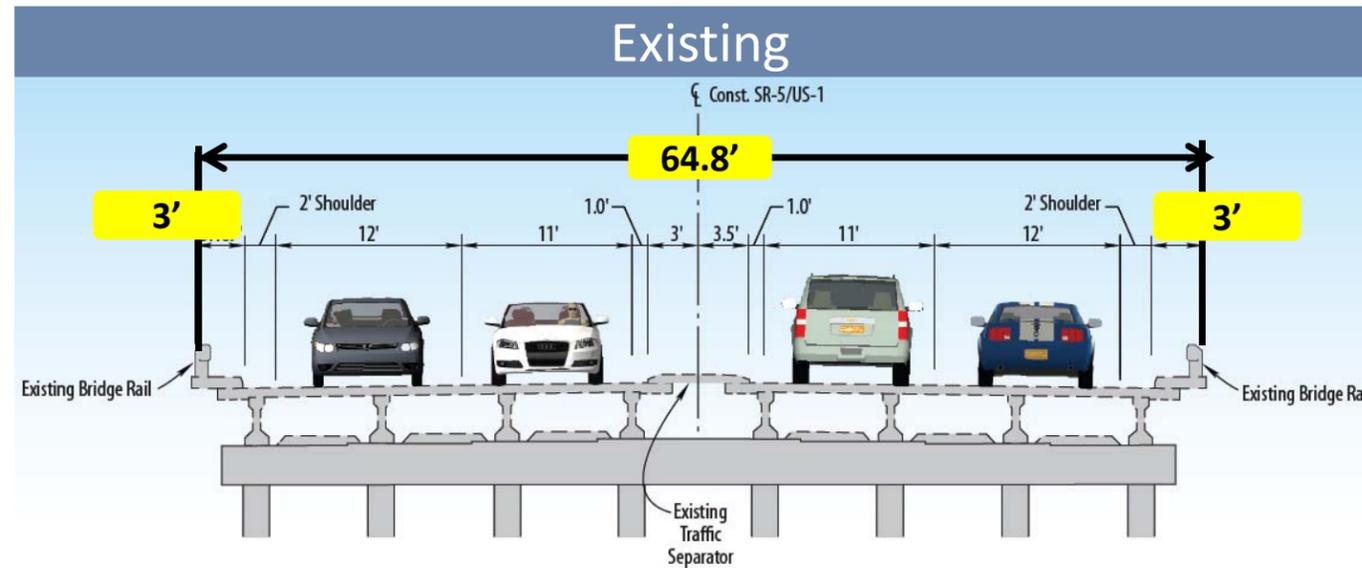
Presented to BAC at Meeting No. 6



Update in progress due to BAC feedback

Bridge Lane Configuration

- Improved facilities for pedestrians and bicyclists



Proposed Solid Bridge Deck

- Solid bridge deck:

- Quieter
- Improved ride for vehicles, bicyclists, and motorcyclists

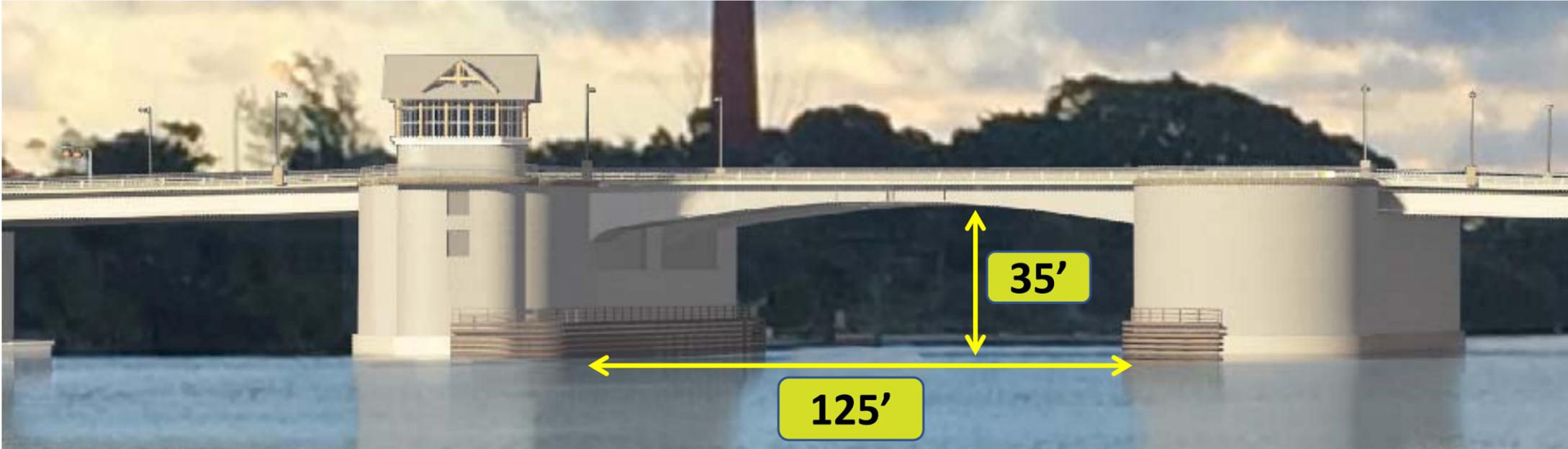
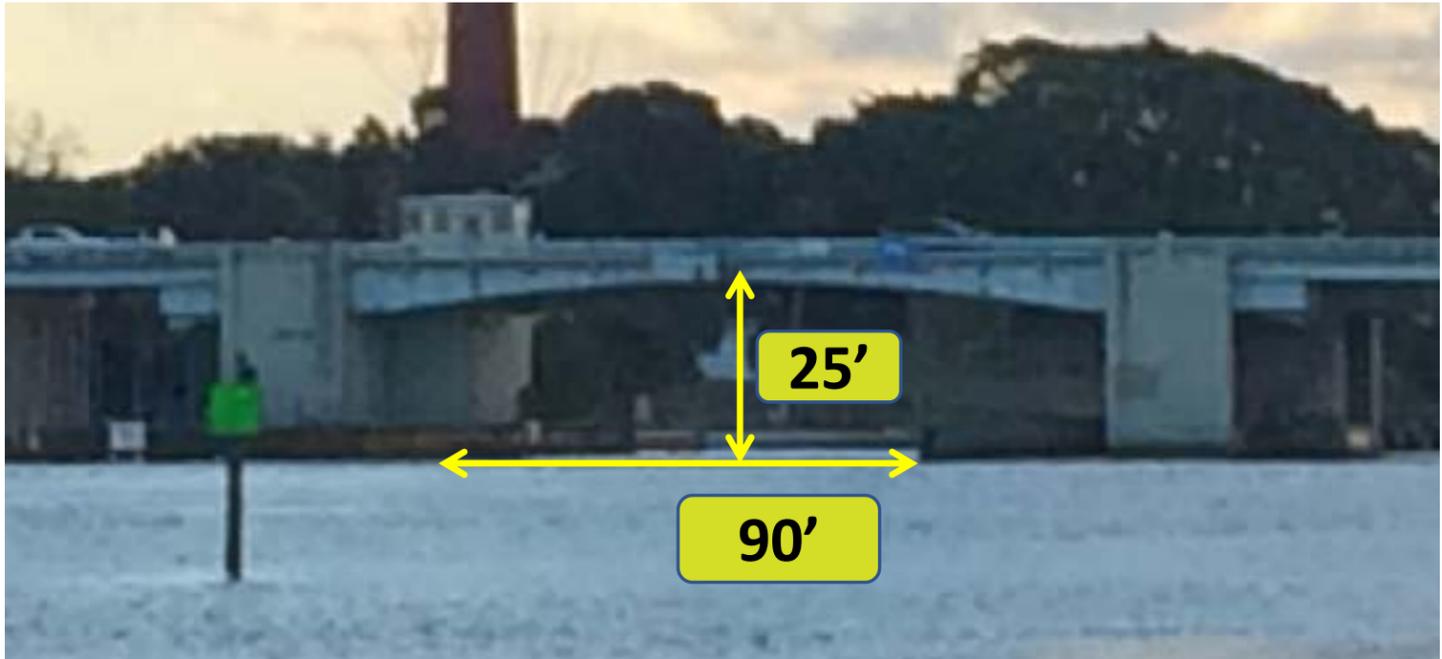


Opening grating on existing Jupiter-Federal bridge



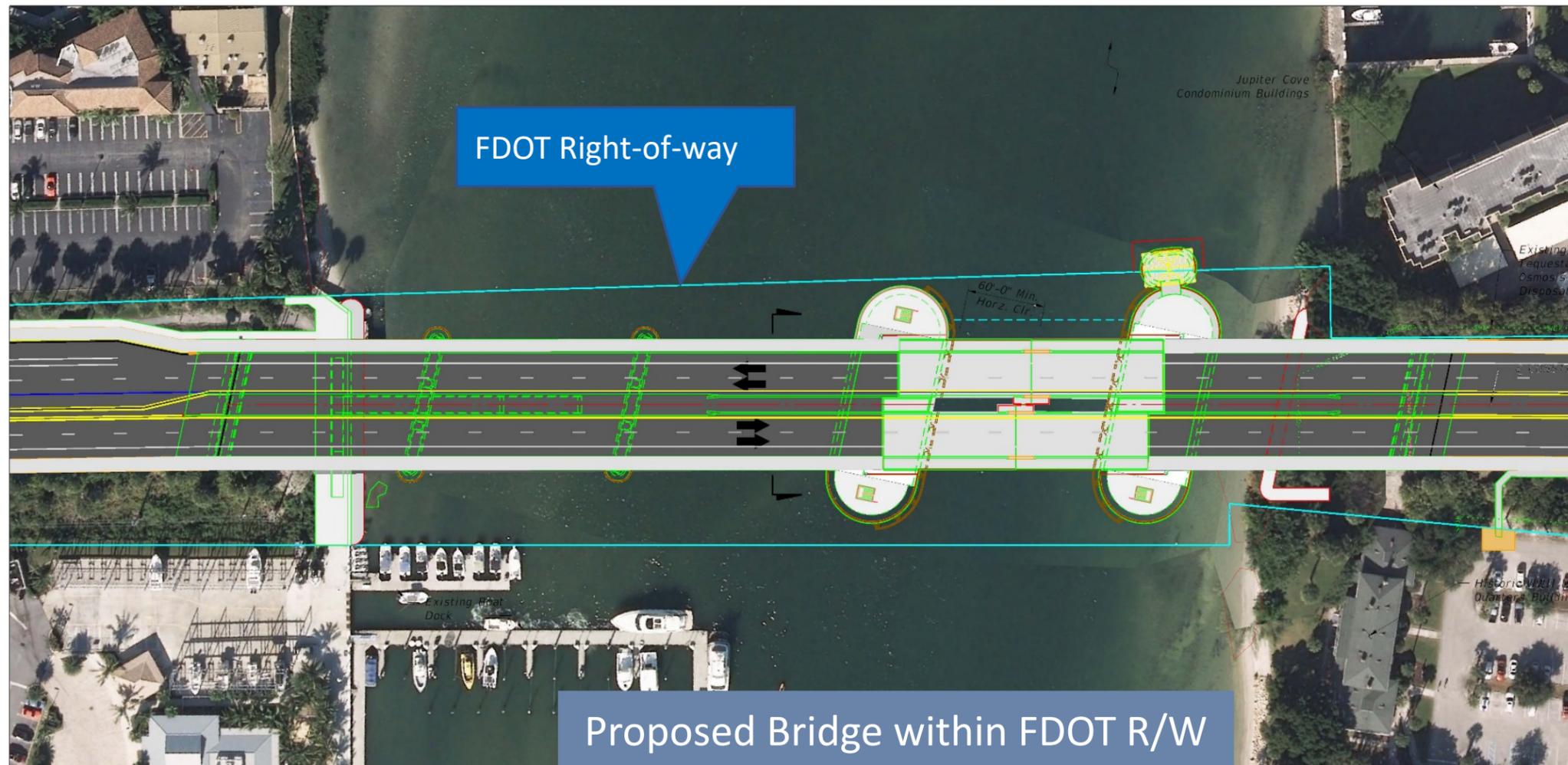
Proposed solid deck for new bascule span

Navigation Clearances



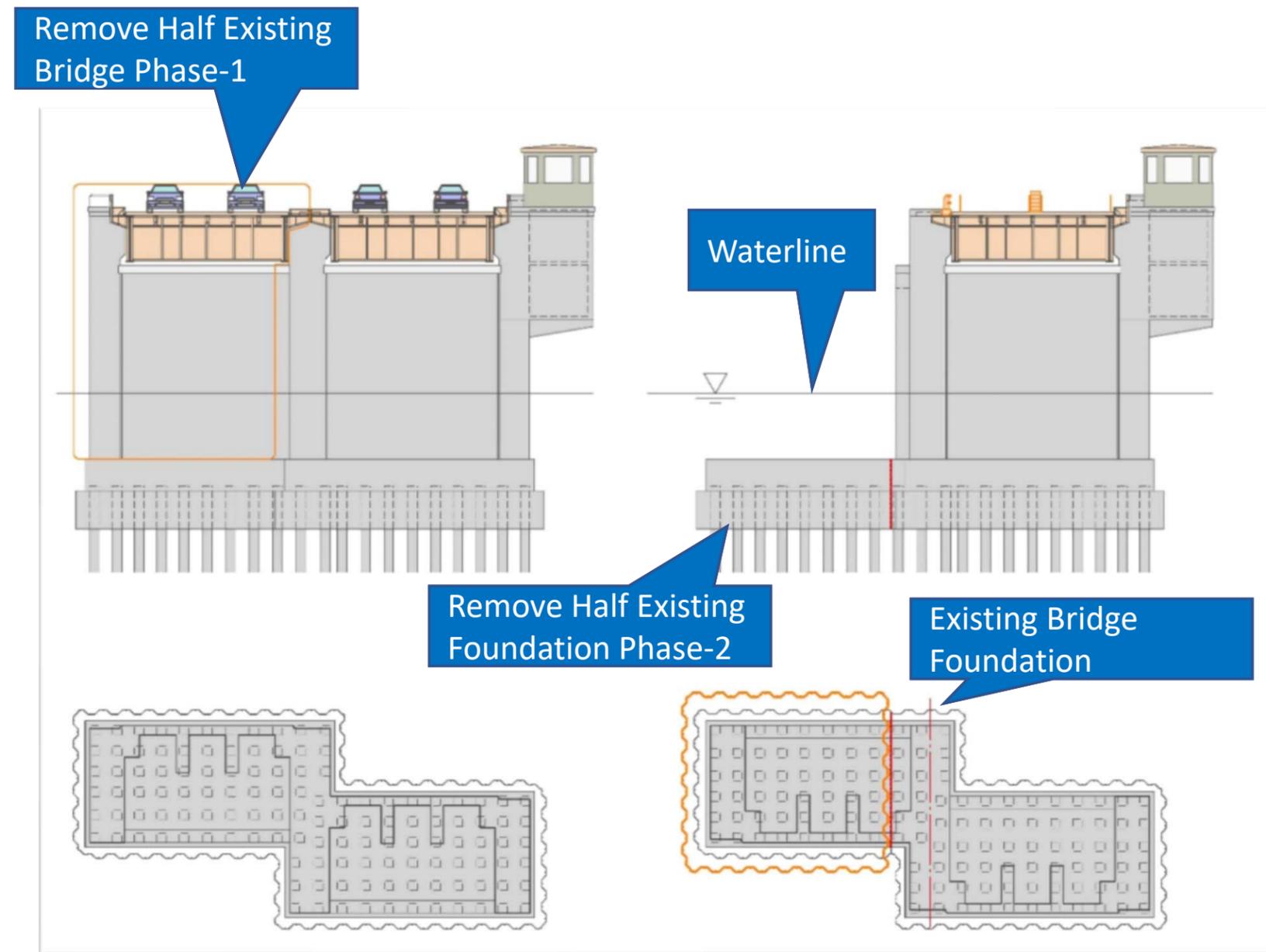
Placement of Proposed Bridge

- 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
- Evaluation of placing proposed bridge on existing bridge alignment included:
 - ❑ Detour traffic during construction of new bridge
 - ❑ Phased construction: place traffic to one side of existing bridge and build new bridge in phases



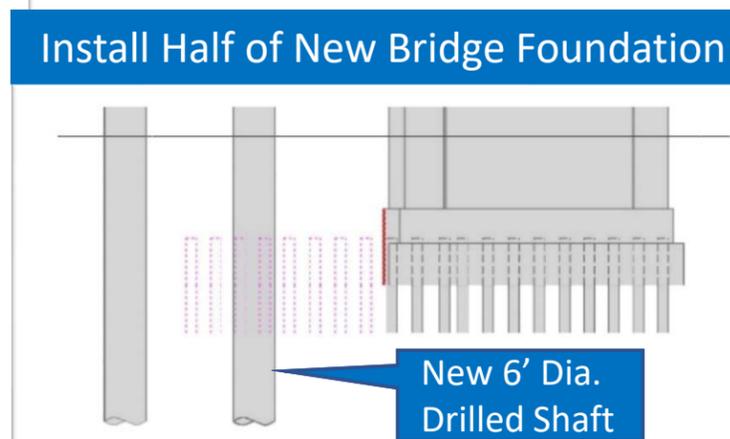
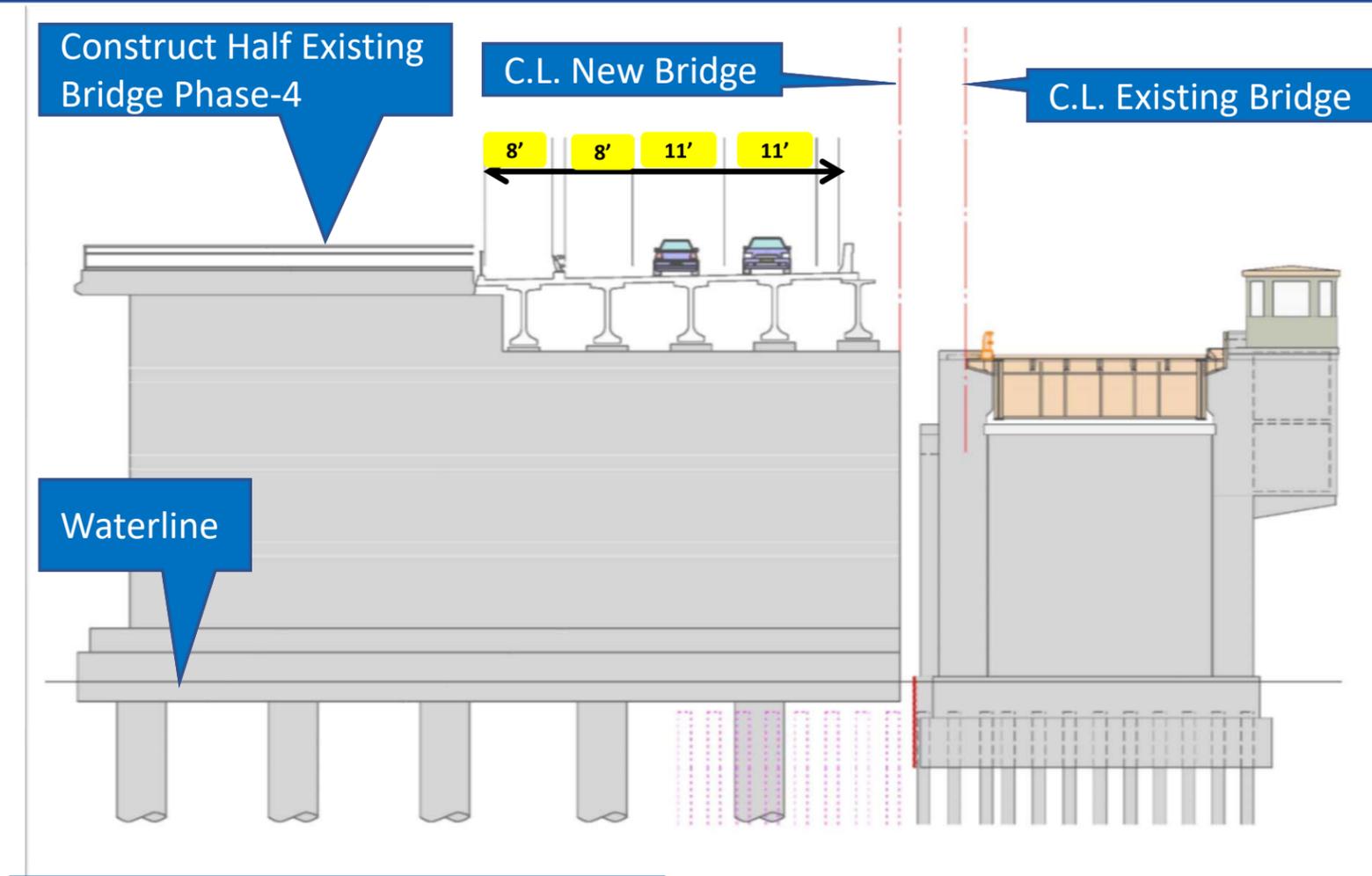
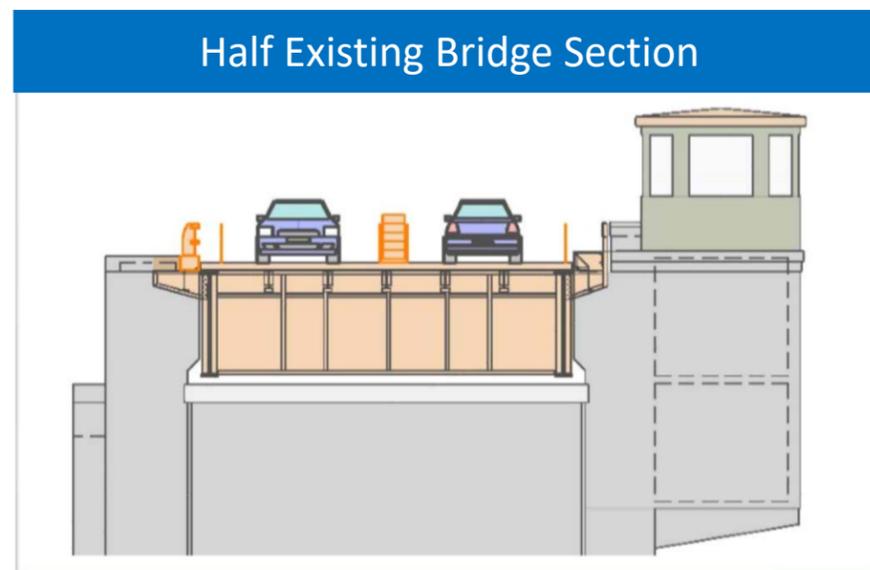
Conventional Phased Construction Evaluation

- ❑ Requires delicate removal of half existing bridge
- ❑ Rehabilitate remaining movable span to improve reliability
- ❑ 3 - 4 month detour during removal operation
- ❑ Risk of existing bridge settlement/malfunction prompting 9 – 12 months or more extended closures and construction delays



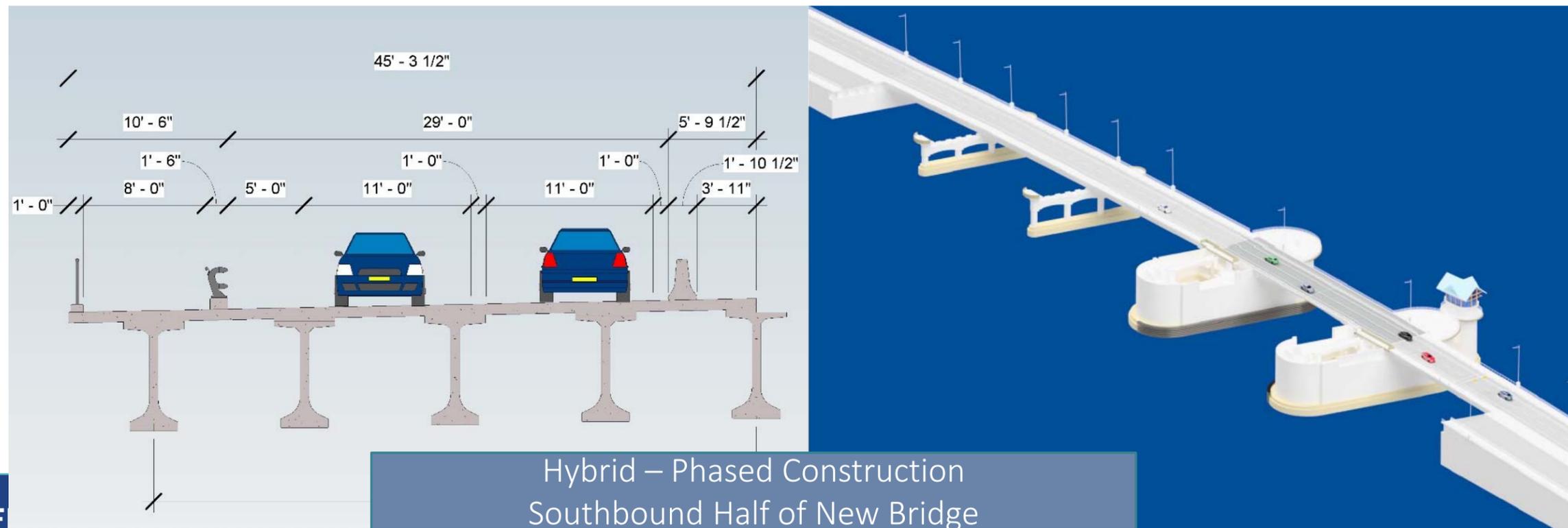
Conventional Phased Construction Evaluation

- ❑ Install new foundation adjacent to remaining half of existing bridge
- ❑ Construct half of the new bridge while maintaining traffic on the existing half: 24 – 27 months
- ❑ Significant increase in impacts to vehicular traffic during existing bridge openings (12 – 18/day)
- ❑ Limited space for work zone mobility
- ❑ Remove existing bridge adjacent to half of new bridge
- ❑ Construct remaining half of new bridge: 27 – 30 months schedule
- ❑ 60 – 63 month total schedule



Benefits of Hybrid Phased Construction

- Optimizes benefits of phasing and detour
- Consideration of all stakeholders
 - ❑ Avoids delicate removal of half existing bridge
 - ❑ Greatly reduces risk of existing bridge settlement/malfunction and extended closures and construction delays
 - ❑ Targets fast track construction of half of new bridge: 18 – 20 months; 12 months to construct remaining half of new bridge
 - ❑ 12 months of 2 lanes, bike and pedestrian facilities on half new bridge
 - ❑ Improved work zone mobility
 - ❑ Higher bridge with less frequent openings upon opening half of new bridge (7 – 10/day)
 - ❑ 42 – 45 month total schedule

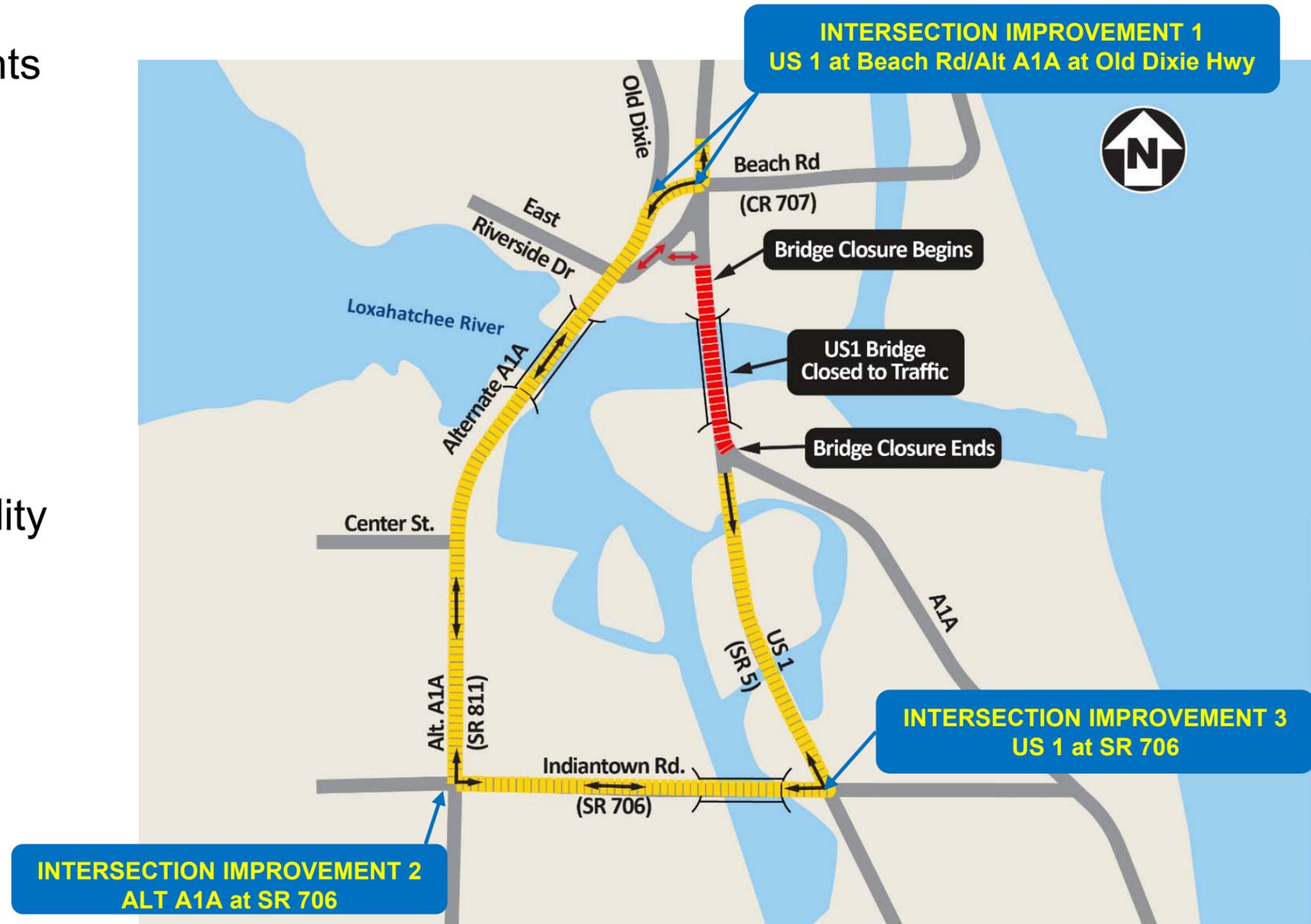


Construction Cost and Schedule

<u>Construction Cost and Schedule Estimates</u>			
Construction Phases	Conventional Phased	Hybrid Phased	Notes
Detour Duration	3 – 4 months	18 – 20 months	<ul style="list-style-type: none"> <input type="checkbox"/> Risk of conventional phased construction removal of half of existing bridge resulting in detour duration of 9 – 12 months or longer <input type="checkbox"/> Hybrid phased detour for full closure to build southbound half of new bridge
Two Lanes of Traffic Duration on Half <u>Existing Bridge</u>	27 – 30 months	N/A	<ul style="list-style-type: none"> <input type="checkbox"/> Conventional phased includes 27 – 30 months of two lane traffic on half existing bridge <input type="checkbox"/> Hybrid phased construction maintains two lanes of traffic on new bridge following detour <input type="checkbox"/> No bike, pedestrian facilities on existing bridge
Two Lanes of Traffic Duration on Half <u>New Bridge</u>	30 – 34 months	12 – 15 months	<ul style="list-style-type: none"> <input type="checkbox"/> Hybrid phased construction maintains two lanes of traffic on new bridge following detour <input type="checkbox"/> Two lanes, bike and pedestrian facilities on half new bridge <input type="checkbox"/> Higher bridge with less frequent openings upon opening half of new bridge
Total Duration	60 – 64 months	42 – 45 months	<ul style="list-style-type: none"> <input type="checkbox"/> Hybrid phased construction includes 9-12 months pre-detour phase
Construction Cost	\$122,000,000	\$135,000,000	<ul style="list-style-type: none"> <input type="checkbox"/> Hybrid phased construction includes innovations, incentives, and intersection improvements

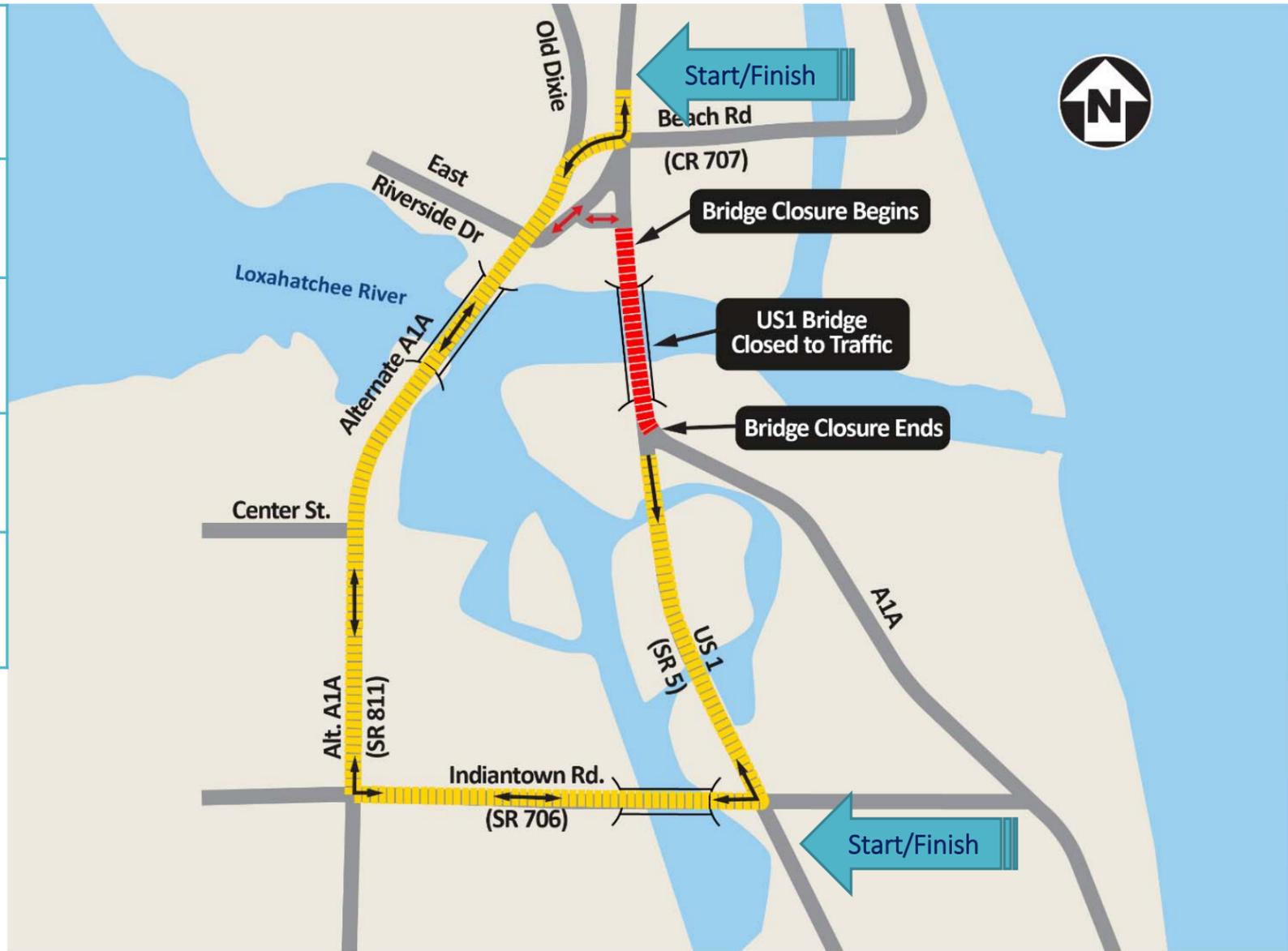
Intersection Improvements & Traffic Management

- 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 working with Palm Beach County to evaluate traffic management to maintain mobility during construction



Traffic Study Summary

Start/Finish AM/PM		Existing Condition (minutes)	During Detour (minutes)
Northbound Start: US 1 South of Indiantown Road Finish: US 1 North of Beach Road	AM	4.5	5.4
	PM	4.6	9.0
Southbound Start: US-1 North of Beach Road Finish: US 1 South of Indiantown Road	AM	4.0	5.8
	PM	3.8	5.3



- ❑ Study includes intersection improvements
- ❑ Traffic management will improve traffic flow
- ❑ Considerations for SR 706 bascule span operations peak limitations

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



Questions ?