

# US-1 Bridge Replacement Project from CR A1A to CR 707



US-1 Bridge Replacement Project From CR A1A to CR 707  
Palm Beach County  
Financial Project ID 428400-2-52-01  
Public Information Workshop – Jupiter Community Center  
March 5, 2020  
Project Website:  
<https://www.fdot.gov/projects/jupiterus1bridge/main>





# US-1 Bridge Replacement Project from CR A1A to CR 707

- ❑ Project Overview & Need
- ❑ Replacement Bridge Features
- ❑ Construction Approach
- ❑ Intersection Improvements & Traffic Management
- ❑ Environmental Considerations
- ❑ Bridge Aesthetics
- ❑ Stakeholder Engagement
- ❑ Project Status & Schedule





# Adjacent Properties and Features





# Project Need

- ❑ Replacement of the existing bridge is needed to address the following:
  - ❑ Structural deficiencies of the existing bridge built in 1958
  - ❑ Lack of facilities for pedestrians and bicyclists
  - ❑ Substandard horizontal and vertical clearances at the navigable waterway channel



# Proposed Replacement Bridge

- ❑ Views of existing and new 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



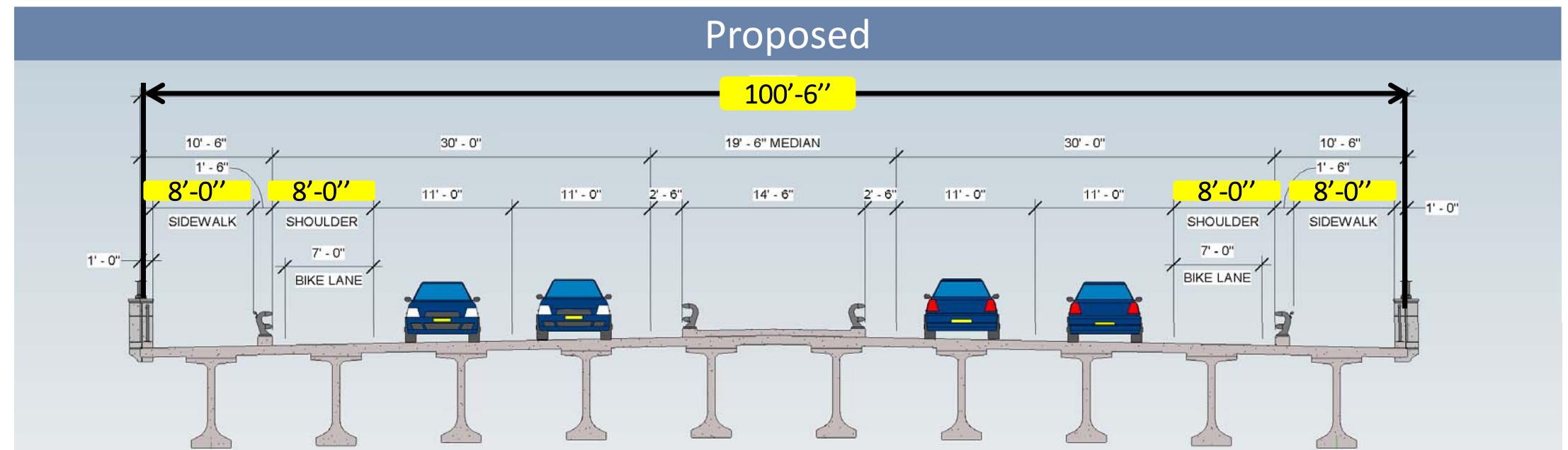
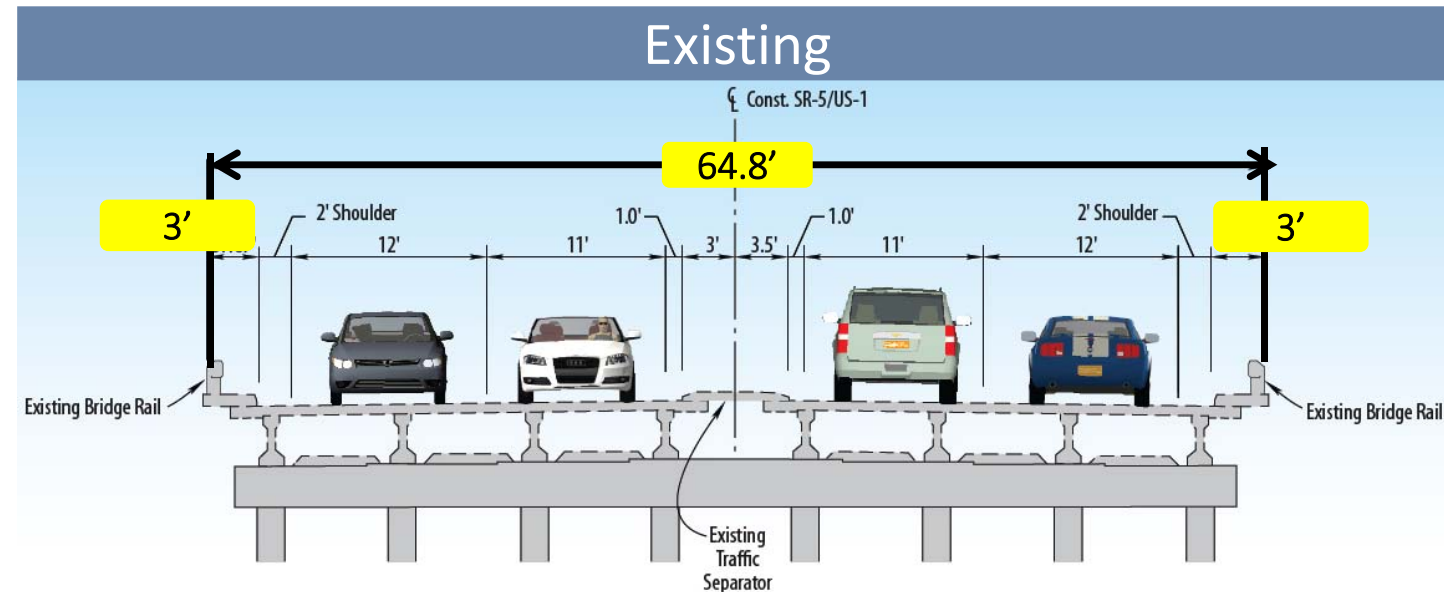
Existing bridge south approach spans



New bridge south approach spans

# Bridge Typical Sections

- ❑ Separated 8 ft pedestrian sidewalks on both sides
- ❑ 8 ft shoulder with 7 ft buffered bicycle lane on both sides
- ❑ Solid bridge deck
  - Quieter
  - Improved ride for vehicles, bicyclists, and motorcyclists





# Bridge Configuration

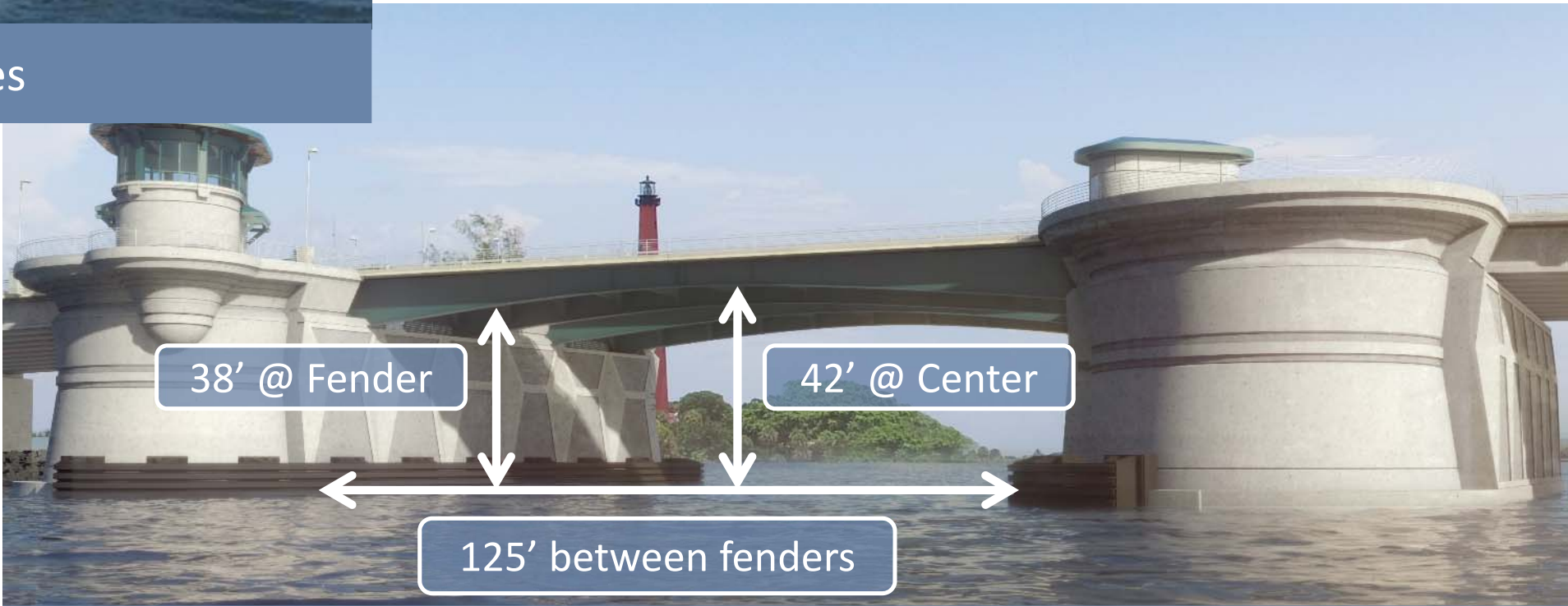




# Improved Navigational Clearances



Existing Bridge Navigational Clearances



Proposed Bridge Navigational Clearances



# Bridge Aesthetics

- ❑ Conducted Seven Bridge Aesthetics Committee (BAC) meetings
- ❑ BAC provided input and direction for bridge aesthetics

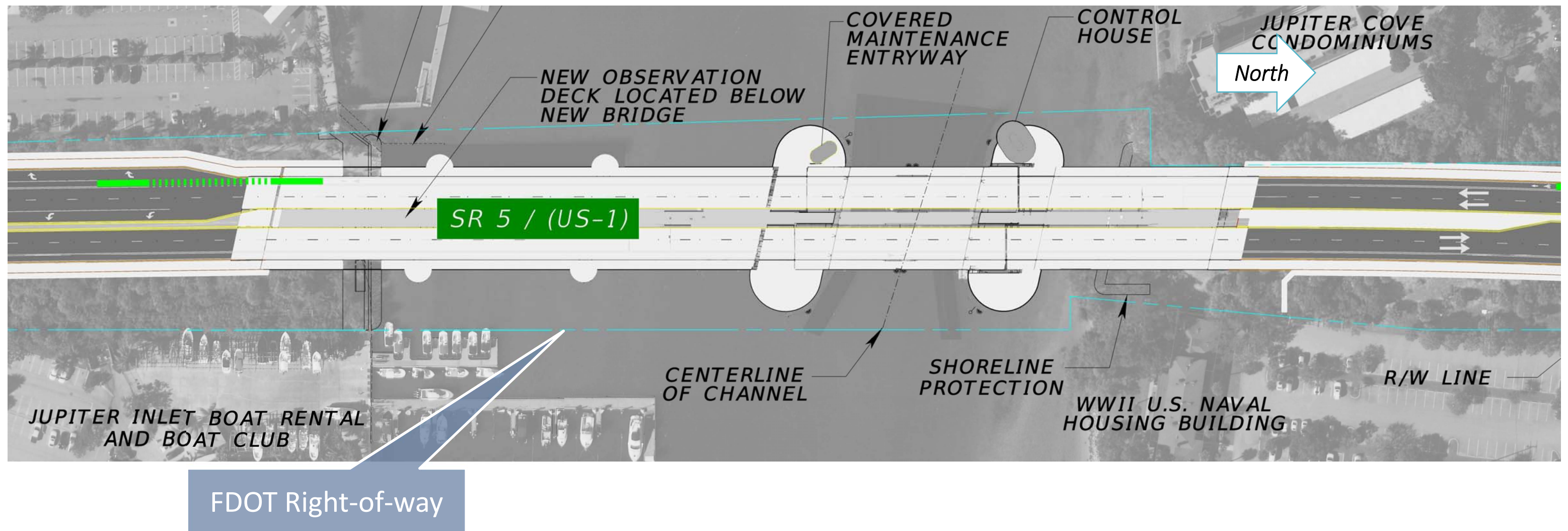




# Bridge Construction Approach

## Three construction methods were evaluated to replace the bridge

1. Temporary Bridge: used during demolition of existing bridge and construction of new bridge.
  - ❑ Not feasible due to right-of-way constraints



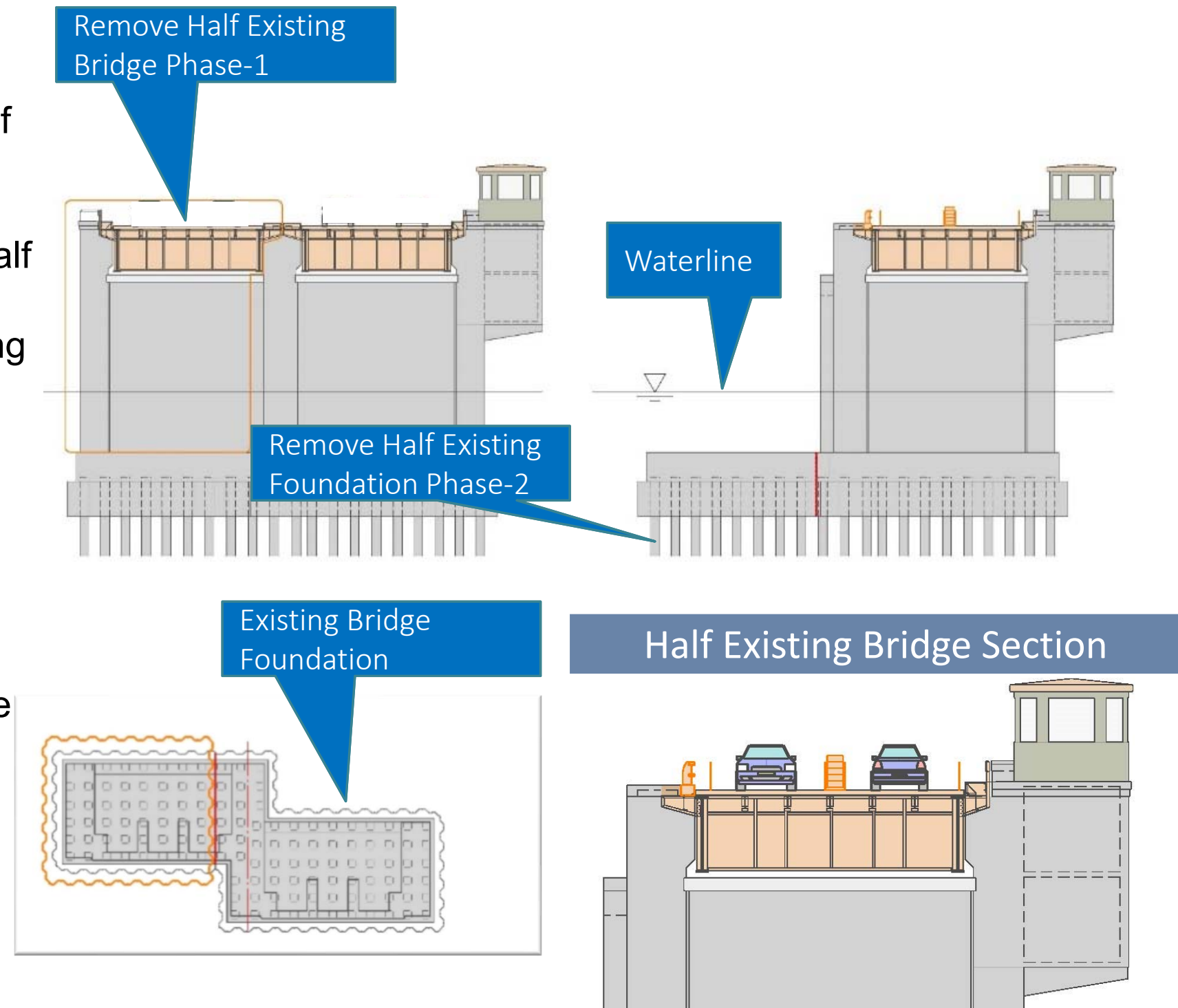


# Bridge Construction Approach

2. **Conventional Phased Construction:** Remove half of the bridge leaving one lane in each direction while constructing half of the new bridge.

- ❑ Risk of existing bridge settlement/malfunction
  - Removal of half existing bridge with **no** traffic on other half
  - Removal of half of existing bridge foundation
  - Install new 6' diameter drilled shafts adjacent to remaining half of existing bridge
  - Extended closures, unplanned detours, and construction delays
- ❑ **Minimum** 4 months detour during removal operation
  - Significant risk for longer duration
- ❑ **Significant** increase in impacts to vehicular traffic during existing bridge openings
  - 30 months of two lanes of traffic on half of existing bridge
  - 60 months total construction duration

Construction cost estimate - \$129M

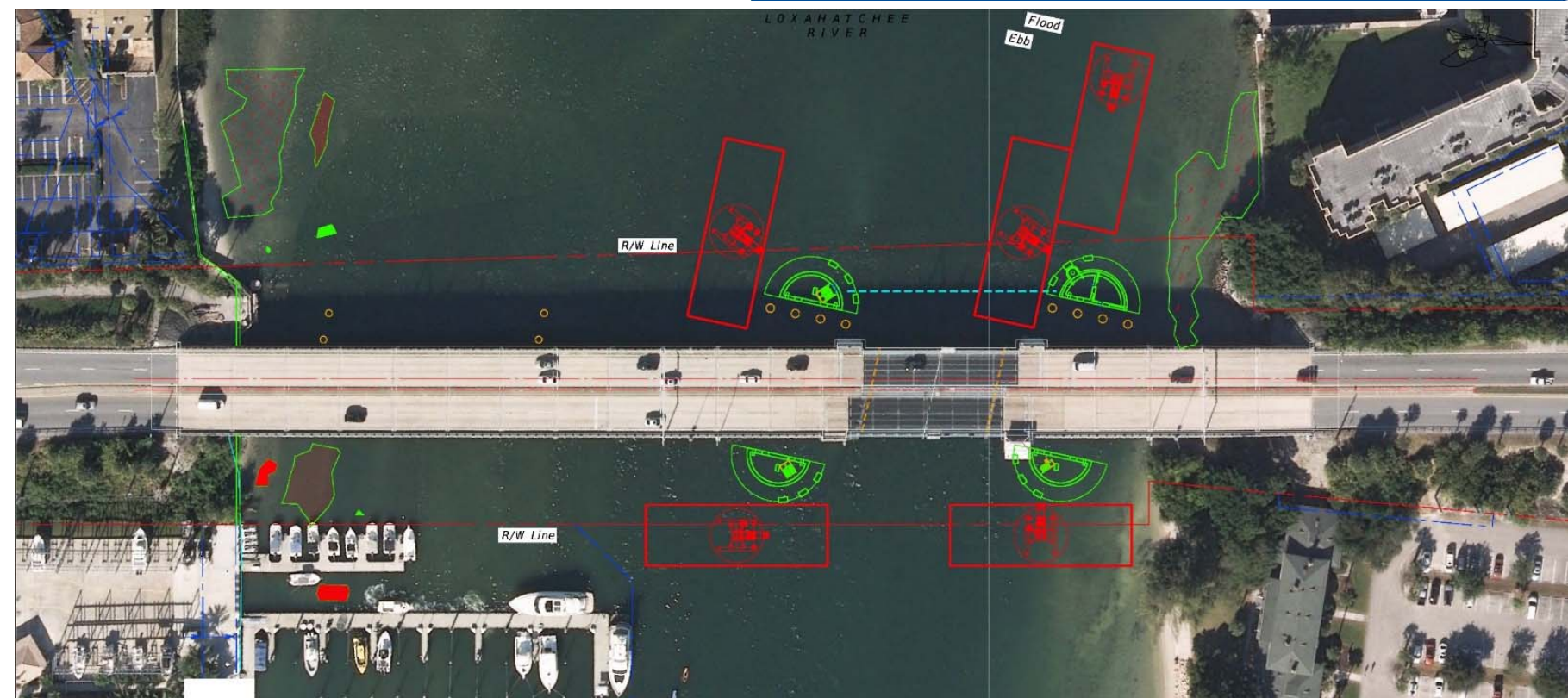
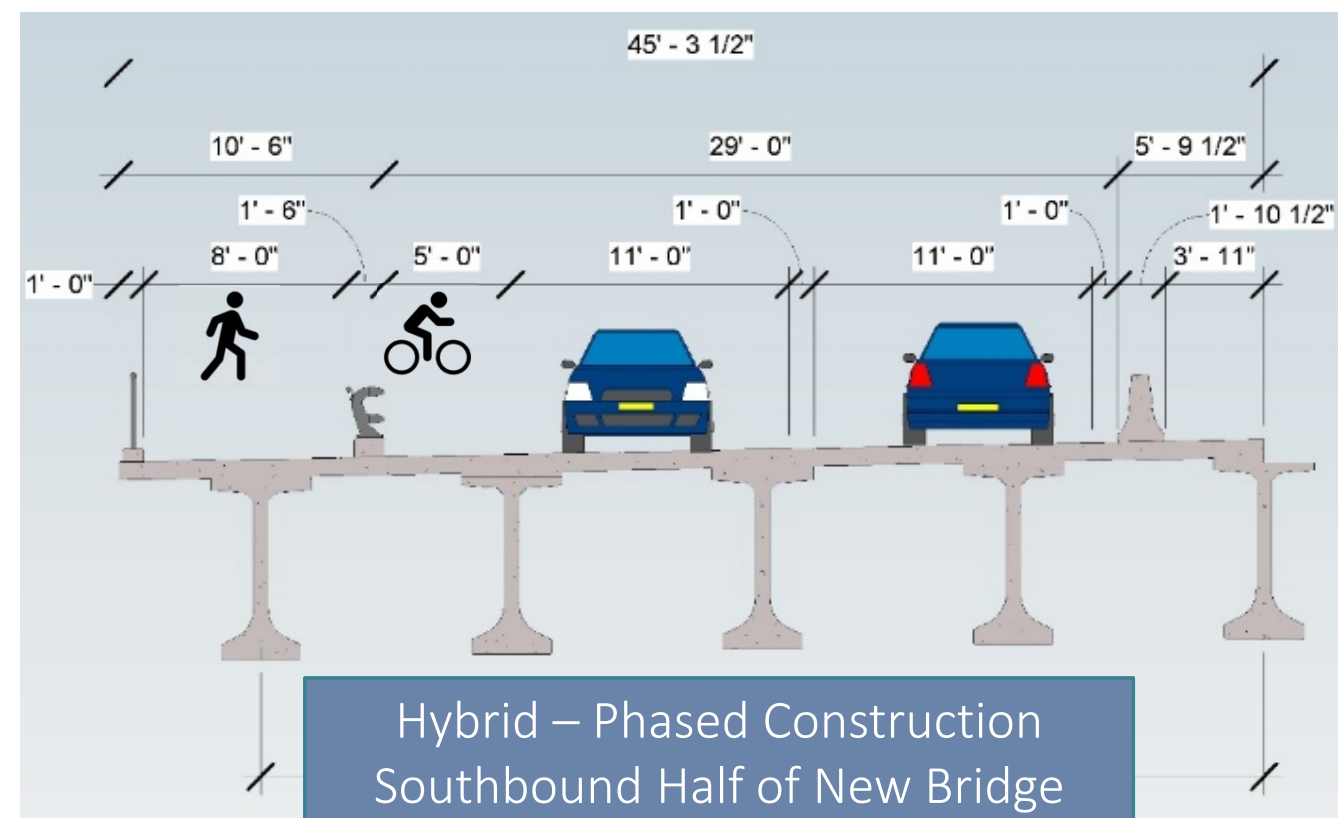
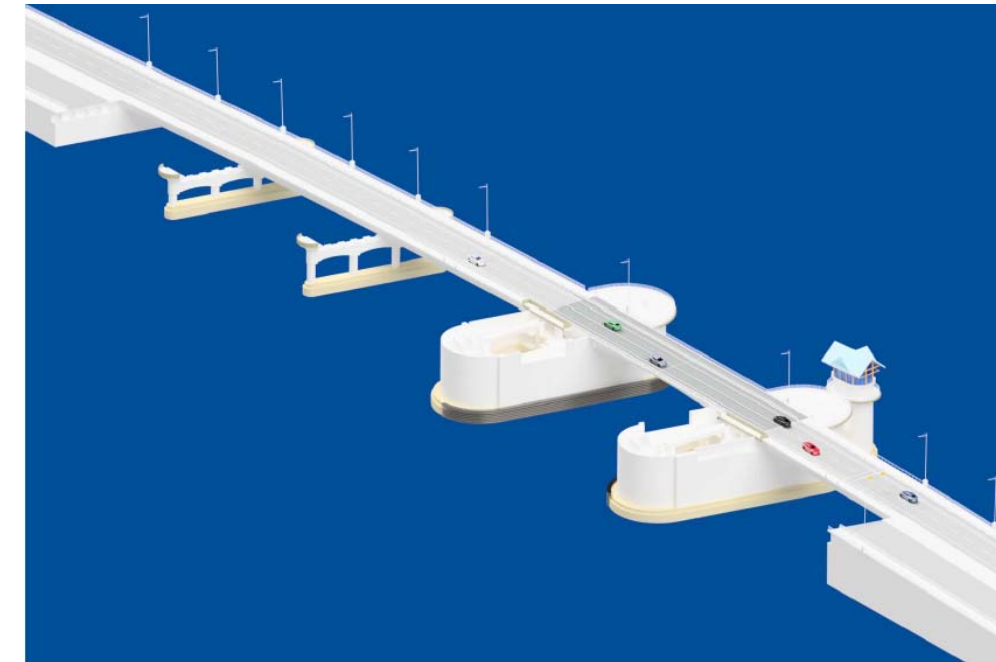




# Bridge Construction Approach

**3. Hybrid Phased Construction:** The Preferred construction method for this project is removing the existing bridge in its entirety and detouring traffic to Alt A1A

- ❑ Pre-detour - Implement intersection improvements and install Intelligent Transportation Systems features
- ❑ Pre-detour - Construct as much of new bridge as possible with all four lanes of traffic on existing bridge
- ❑ 20 month detour - Construct half of new bridge
- ❑ Detour complete – Construct remaining half of new bridge
- ❑ 42 months total construction duration (compared to 60 months with Option 2)



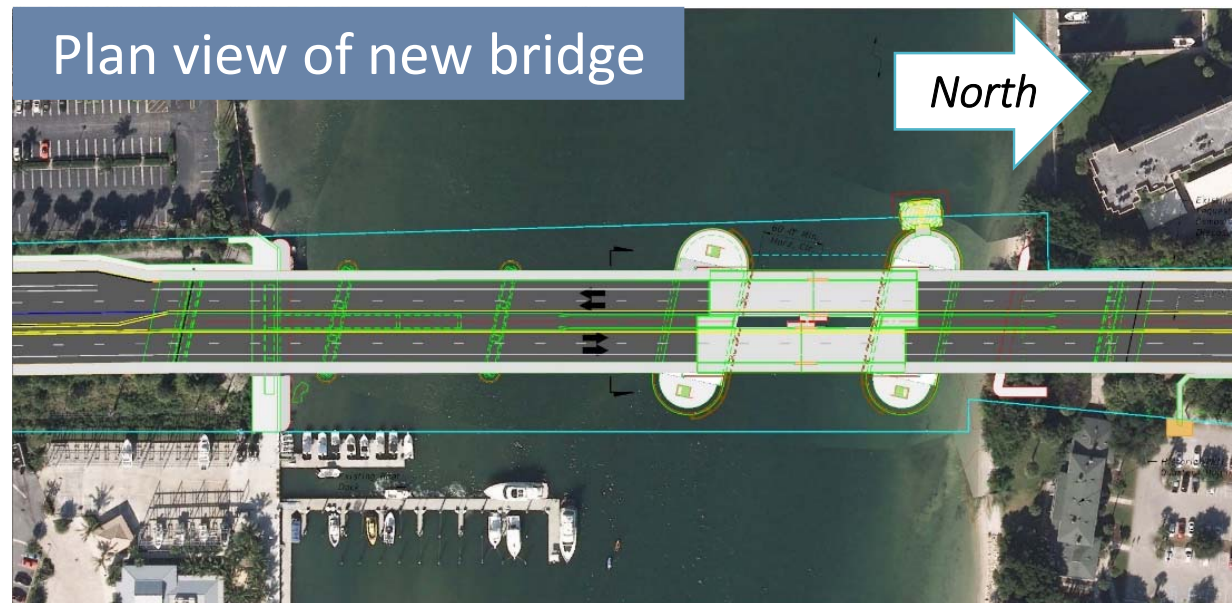


# Hybrid Phased Construction

## Benefits of Hybrid Phased Construction

- ❑ Avoids delicate removal of half existing bridge
- ❑ Significantly **reduces risk** of existing bridge settlement and extended unplanned detours
- ❑ Expedites new higher bridge with two lanes and 44% less openings
- ❑ Accelerates construction of bicycle & pedestrian facilities and left turn lane to CR A1A
- ❑ Improves work zone mobility and safety
- ❑ Reduces total construction duration by approximately 18 months

Construction cost estimate - \$133M





# Intersection Improvements & Traffic Management



- ❑ Mitigate community impacts during detour
- ❑ Intersection improvements along detour route
- ❑ Conducted detailed traffic studies at following intersections:
  - US-1 at Beach Rd/Alt A1A
  - Alt A1A at Old Dixie Hwy
  - Alt A1A at SR 706
  - US-1 at SR 706
- ❑ New Intelligent Traffic Systems features along detour route
- ❑ Traffic management to maintain mobility during construction in coordination with Palm Beach County





# Intelligent Transportation System Improvements



Proposed **Permanent** Intelligent Transportation Systems for all signals within detour route:

- ❑ **Bluetooth travel time devices**
  - Provide Palm Beach County with real time travel time information for distribution to the public
- ❑ **Closed Circuit Television (CCTV) Cameras**
  - Real time view of the project corridor to detect traffic incidents that may cause a lane blockage
- ❑ **Microwave Vehicle Detection System (MVDS)**
  - Lane by lane traffic data for optimize traffic signal timing
- ❑ **Dynamic Messaging Sign (DMS)**
  - Provides information such as lane blockage information, travel time information as well as the status of the drawbridge along US-1 for the NB and SB approach to the bridge
- ❑ **FDOT SMART Work Zone**



# ALT A1A Bridge Work

- Minor repairs to Alt A1A Bridge will be performed during US-1 Bridge Project under same contract
  - Work will be performed prior to detour phase
  - Work includes substructure repairs
  - No impacts to vehicular or navigational traffic

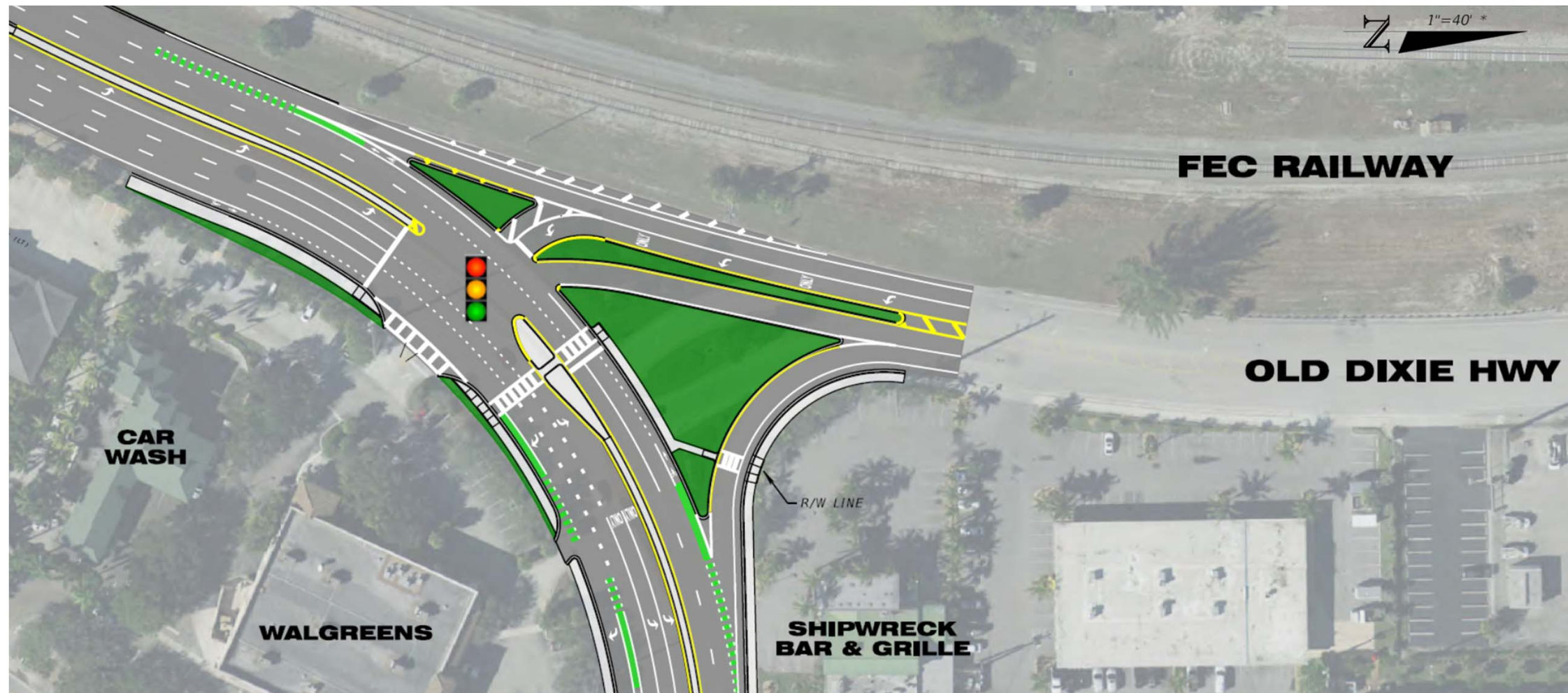




# Intersection Improvements

## Alt A1A at Old Dixie Hwy (SR 811)

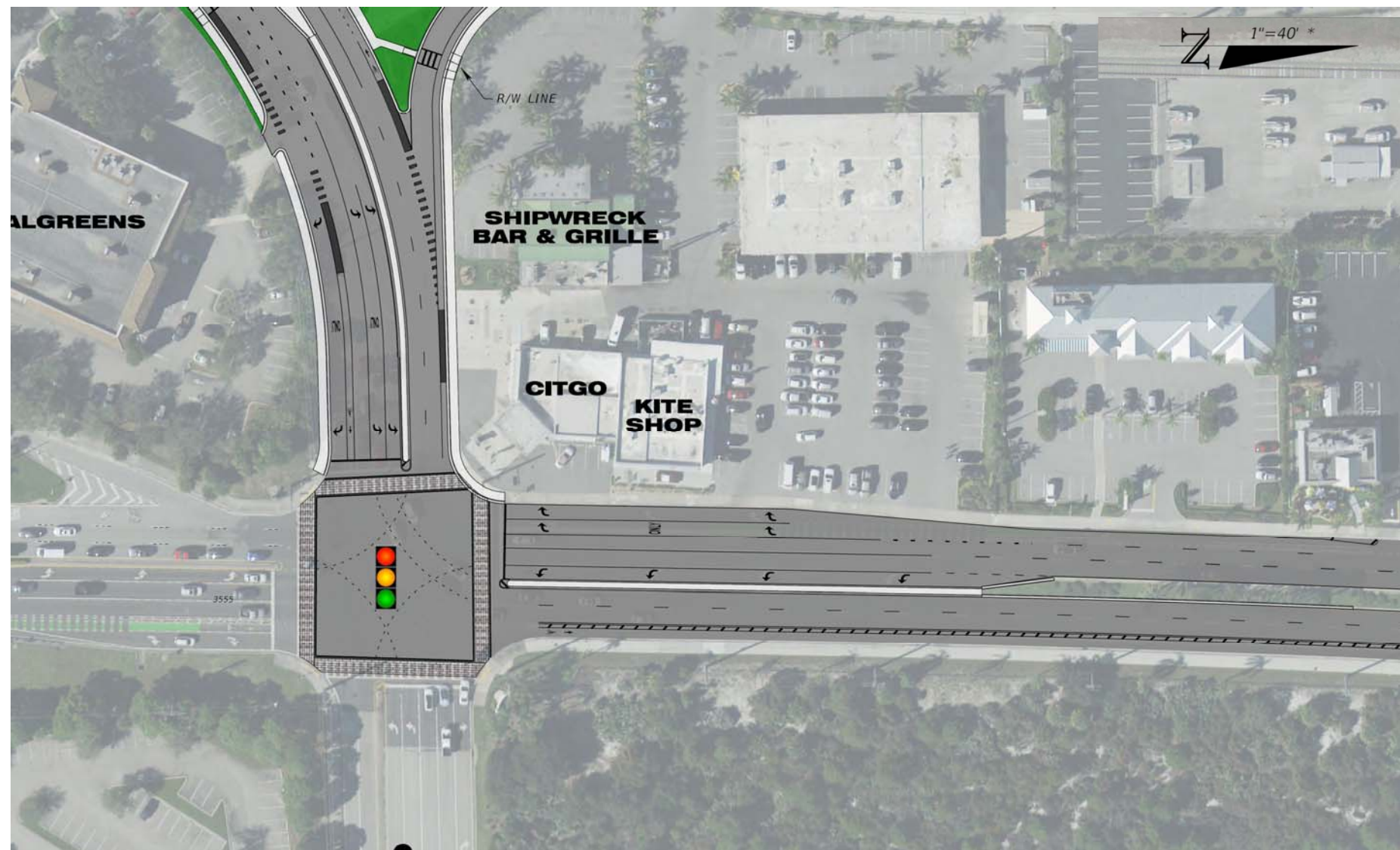
- ❑ Shift the intersection to the southwest
- ❑ Lengthen left turn lane from northbound Alt A1A to northbound Old Dixie Hwy
- ❑ Addition of signal
- ❑ Implemented prior to detour
- ❑ Improvement will be permanent





# Intersection Improvements Alt A1A (Beach Rd) at US-1

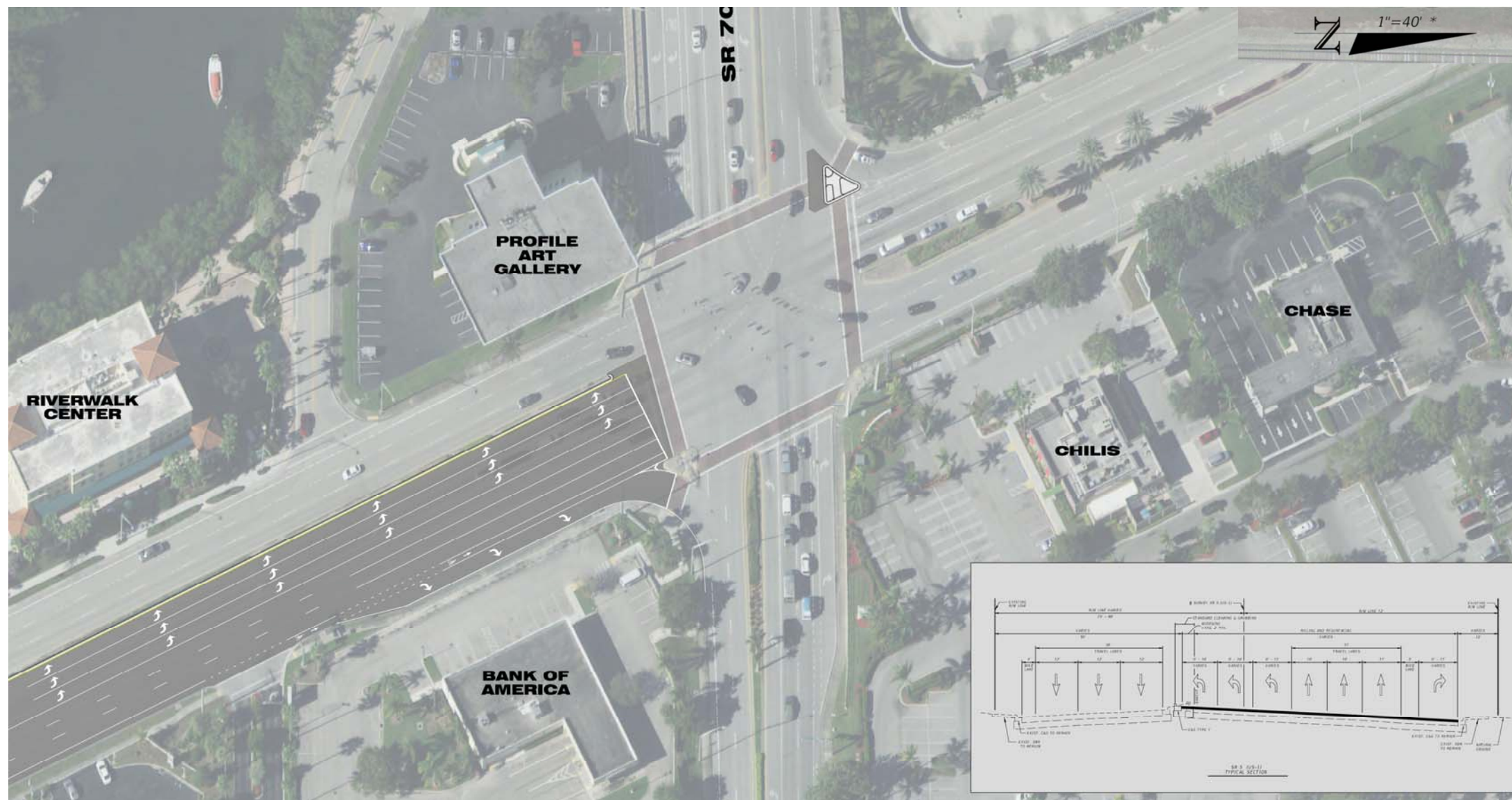
- ❑ Two right turning lanes from southbound US-1 to westbound Alt A1A
- ❑ Implemented prior to detour
- ❑ Reverted back to current condition following completed bridge – all four lanes open to traffic





# Intersection Improvements US-1 at SR 706

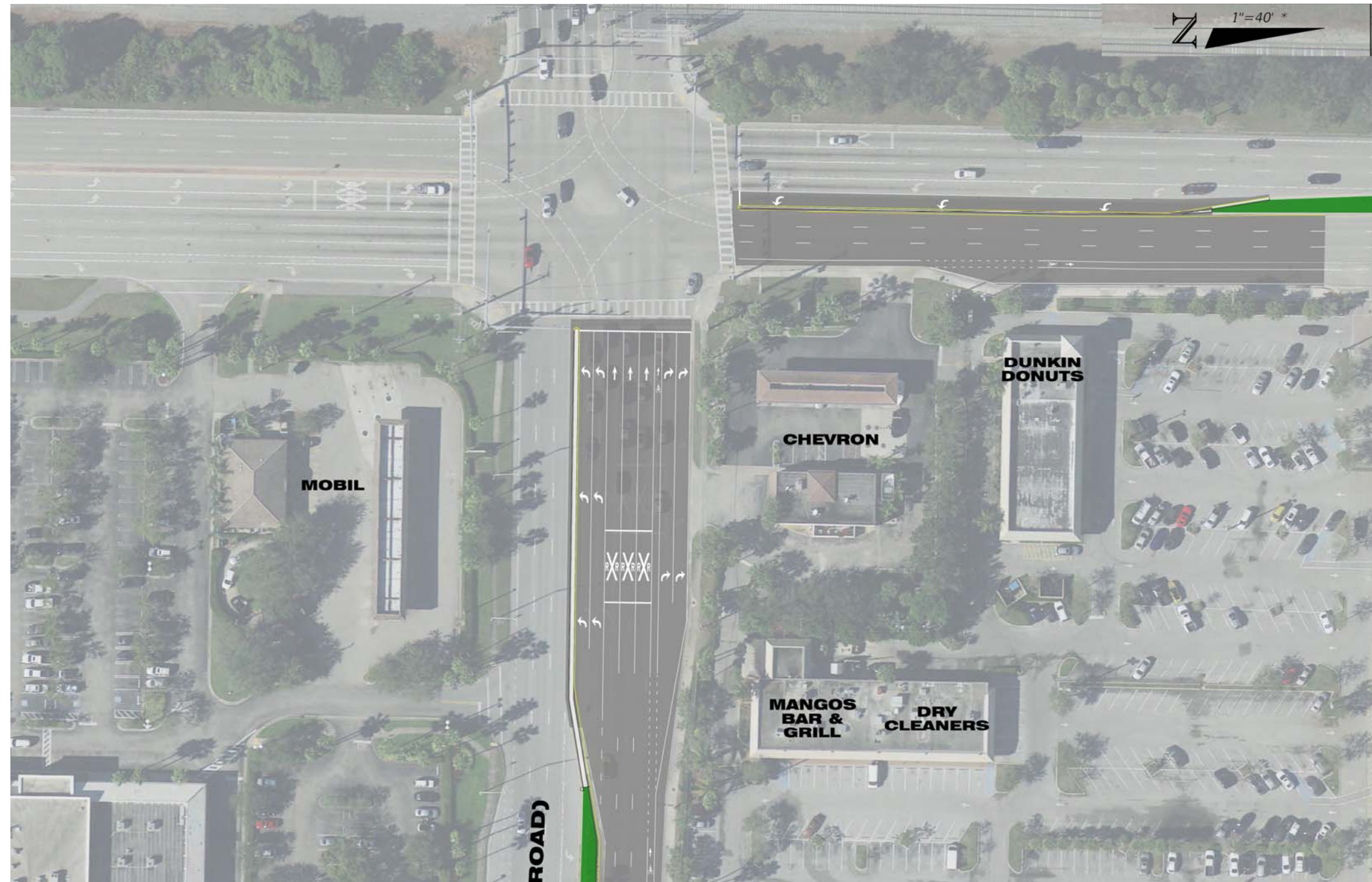
- ❑ Three left turning lanes from northbound US -1 to westbound SR 706 (two left turning lanes currently)
- ❑ Implemented prior to detour
- ❑ Reverted back to current condition following completed bridge – all four lanes open to traffic





# Intersection Improvements SR 706 at Alt A1A

- ❑ Two left turning lanes from southbound Alt A1A to eastbound SR 706 (single left turning lane currently)
- ❑ Two right turning lanes from westbound SR 706 to northbound Alt A1A
- ❑ Implemented prior to detour
- ❑ Reverted back to current condition following completed bridge – all four lanes open to traffic





# Environmental Considerations

## ❑ Sociocultural Resources

- Protection of Jupiter Inlet Lighthouse and WWII Married Men's Quarters Building
- Relocation of the Jupiter Inlet Museum operations
- New bridge will enhance community cohesion, emergency response, and mobility



## ❑ Natural Resources

- Seagrass and mangroves impact mitigation
- Lighting design to protect sea turtles
- Limit nighttime noise producing activities to protect sensitive aquatic species





# Stakeholder Engagement



STAKEHOLDER	DATE	STAKEHOLDER	DATE
Town of Jupiter Staff	January 12, 2016 September 12, 2016 October 11, 2017 March 15, 2018	Village of Tequesta Staff	March 25, 2019 July 22, 2019
Town of Jupiter Council	April 16, 2019 June 18, 2019	Village of Tequesta Utility Coordination	October 4, 2018
Town of Jupiter Individual Council Meetings	February 8, 2016 (4) April 21, 2016 (2) April 25, 2016 (2) October 11, 2017 (4) March 15, 2018 (4) May 29, 2019(4) May 30, 2019 (1)	Town of Juno Beach Individual Council Meetings	June 26, 2019 (5)
Town of Jupiter Town Manager and Town Engineer	October 11, 2017 March 15, 2018	Jupiter Community Redevelopment Agency (CRA)	January 11, 2017
Town of Jupiter Town Engineer	February 8, 2019	Jupiter Inlet District	August 10, 2016 October 19, 2016 July 10, 2019
Town of Jupiter Staff	September 12, 2016 March 20, 2019	Jupiter Inlet Village	April 26, 2016 October 19, 2016
Town of Jupiter Police Department	April 26, 2016	US Bureau of Land Management (BLM) and Jupiter Inlet Lighthouse	May 6, 2016 September 23, 2016 May 3, 2017
Town of Jupiter Utilities	September 18, 2019	US Bureau of Land Management	February 27, 2019
Village of Tequesta Council Meeting	May 9, 2019	Loxahatchee River Management Coordinating Council (LRMCC)	March 27, 2017
		North County Intergovernmental Committee (NCIC)	May 22, 2017
		United States Coast Guard (USCG)	August 17, 2016 April 5, 2019 July 26, 2019



# Stakeholder Engagement



STAKEHOLDER	DATE	STAKEHOLDER	DATE
Palm Beach County Fire Rescue	April 26, 2016	Interagency Meeting	January 17, 2019
Palm Beach North Chamber of Commerce	March 9, 2018	FPL and TECO	December 6, 2018
Palm Beach MPO / TPA and Committees	February 3, 2016 (CAC & TAC) February 4, 2016 (BGPAC) February 18, 2016 (MPO Board) September 7, 2016 (CAC & TAC) September 8, 2016 (BTPAC) December 12, 2016 (MPO Board)	Index Investment (1000 North Developer)	February 2, 2017
Bridge Aesthetics Committee	July 19, 2016 September 12, 2017 November 4, 2017 December 13, 2017 June 27, 2017 February 25, 2019 July 22, 2019	Jupiter Restaurants	March 14, 2017
Cultural Resources Committee	May 4, 2016 August 23, 2016 August 30, 2017 June 28, 2018	Jupiter Cove, Jupiter Dunes, Ocean Trails and Ocean Parks Homeowners' Associations (HOAs)	December 5, 2016
Environmental Technical Advisory Team (ETAT)	April 26, 2019	Jupiter Inlet Colony HOA	December 20, 2016 June 11, 2019
		Jupiter Cove HOA	January 30, 2017
		Jupiter Cove HOA Staff	December 5, 2016 August 6, 2019
		Jupiter Harbour HOA	January 15, 2017 February 15, 2017
		Passages Condos	December 3, 2018
		Public Hearing	October 24, 2017
		Design Public Meeting	Scheduled for March 5, 2020



# Project Status/Schedule



## Estimated construction activity schedule\*:

**Summer 2021** Intersection improvements begin

**Late Summer 2021** Pre-detour phase bridge construction begins

**Spring/Early Summer 2022** 20 Month detour phase begins\*\*

**Fall 2023** Detour phase ends (one lane in each direction on half of new bridge open to traffic)

**Early 2025** New bridge construction completed (all four lanes of new bridge open to traffic)

**Early/Mid 2025** Construction complete

**\*Final schedule developed by selected contractor**

**\*\*Incentives to contractor for on-time and early completion of detour**





West Elevation of New Bridge in Closed Position



West Elevation of New Bridge in Open Position

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

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