



# Concept Development and Evaluation

Project Visioning Team

Meeting #1



# Meeting Agenda



## ➤ Introduction & Updates

- Project Background
- Concept Development & Evaluation Process Overview

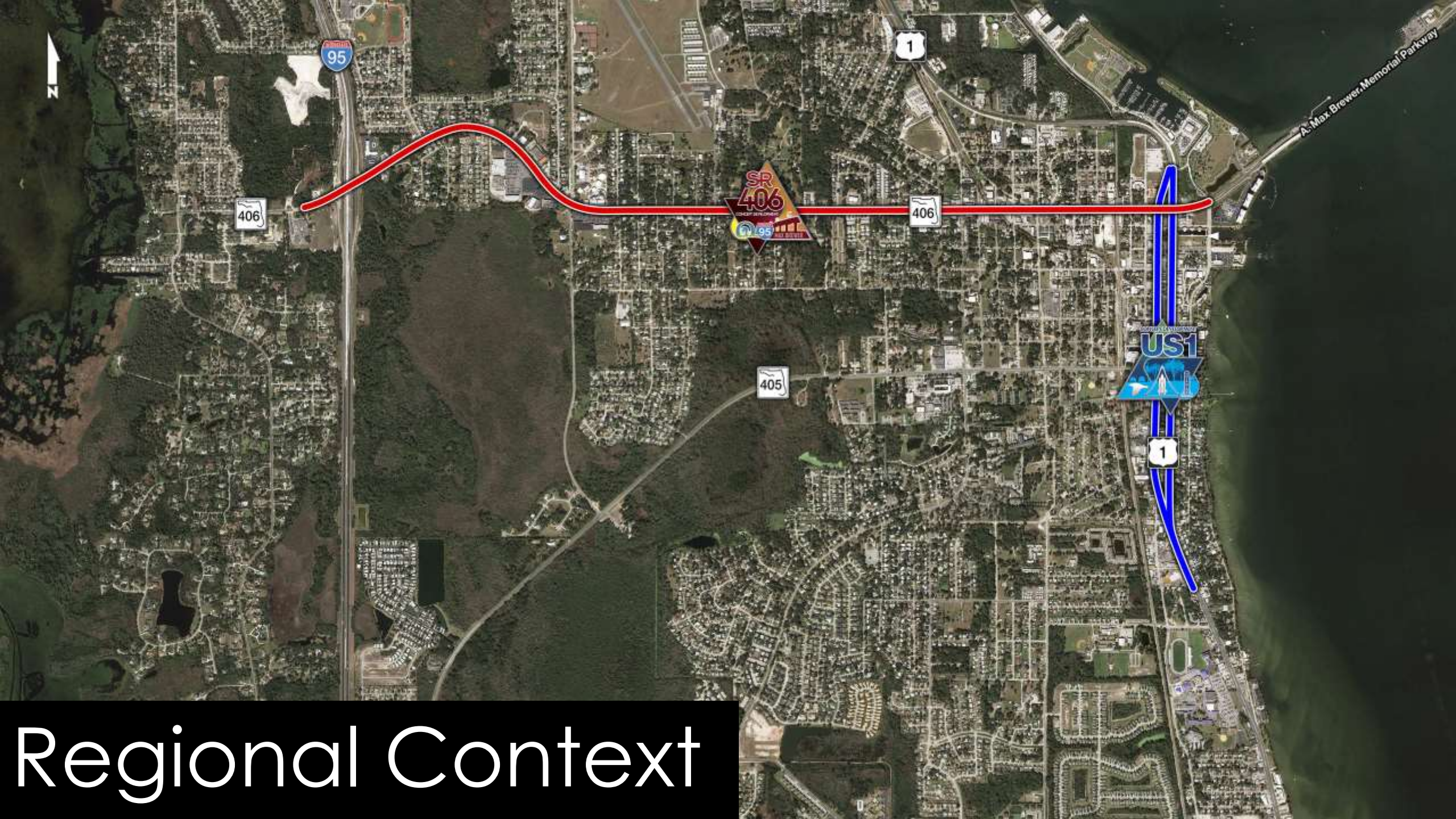
## ➤ US 1 Focus Session

- Corridor Planning Study Recap
- Existing Conditions Updates
- Open Discussion

## ➤ SR 406 Focus Session

- Corridor Planning Study Recap
- Existing Conditions Updates
- Open Discussion

## ➤ Next Steps & Project Schedule



# Regional Context

# Corridor Planning Study Recap



1. Project requested by the City of Titusville to coordinate the development of a future vision for US 1 and SR 406 that establishes a **multimodal approach** to providing for future transportation needs.
2. The Corridor Planning Studies **began in January 2015**. These projects received feedback on the vision of the corridor from local municipalities, agencies, stakeholders and the public to develop, review, and select potential improvement strategies.
3. The Corridor Planning Studies were **completed in September 2016** and provided recommended potential improvement strategies that were reviewed by both the PVT and the public prior to finalizing the project. These potential improvement strategies were recommended to carry forward into the Concept Development & Evaluation Phase.

# Corridor Planning Study Process

- Identify Issues & Opportunities
- Define Purpose & Need
- Define Goals & Objectives
- Local Agency Coordination
- Stakeholder and Public Outreach
- Select Viable Improvement Strategies

Completed in September 2016

# Concept Development & Evaluation Study Process

- Review and Update Issues & Opportunities
- Review and Update Purpose & Need (if applicable)
- Continue Local Agency Coordination and Stakeholder/Public Outreach
- Further Analysis of Potential Improvement Strategies
- Develop Detailed Concept Plans and Corridor Development Plan

In Progress

# Project Visioning Team Overview

- Two (2) meetings during key project milestones
- Connect with existing and new stakeholders
- Review of potential improvement strategies moving forward into concept development
- Gather input on concepts throughout the development process
- Share local knowledge and history



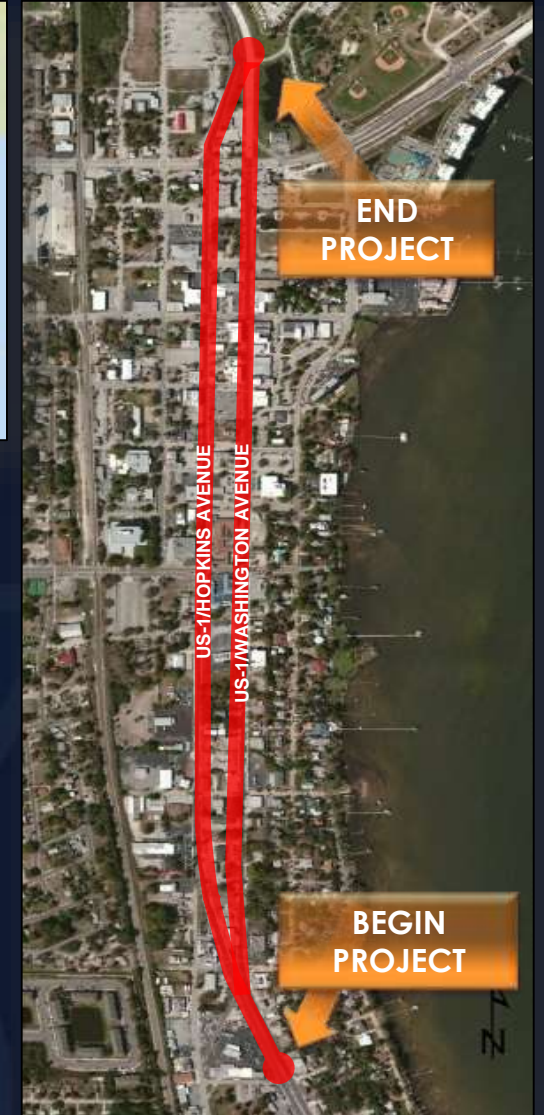


# US 1 Focus Session

Concept Development & Evaluation

# Study Area

- Laurel Place to Indian River Avenue
- 1.25 miles
- Urbanized, four-lane bidirectional (from Laurel Place to Grace Street) and two-lane, one-way pair segment (from Grace Street to Indian River Avenue)
- One-way pair section through historic downtown Titusville





# Purpose and Need

**Purpose:** To provide additional safe multimodal mobility options to support economic development goals, enhance the historic downtown corridor, and encourage a community atmosphere.

**Need:** Additional mobility options and enhancement of the safety of existing pedestrian facilities is needed based on the existing volume of pedestrians, the desire for more transit and bicycle use, and to support the downtown community by creating a bicycle and pedestrian friendly neighborhood as supported by the following observations:

- The corridor has been designated by the City as part of the community redevelopment area(CRA) district
- High volume of pedestrian activity
- High volume of pedestrian mid-block crossing
- Large transit dependent community
- Lack of ADA accommodations
- Lack of bicycle facilities

# Corridor Planning Study Recap: Potential Improvement Strategies

- Crosswalk Enhancements
- Pavement Markings
- Intersection Improvements
  - Grace Street Roundabout
  - SR 406 Roundabout



# Corridor Planning Study Recap: Spot Improvement Grace Street Roundabout

- Crossing for Parallel Bike/Ped Routes
- Gateway feature for City of Titusville
- Will promote slower speeds entering downtown
- 2040 PM Future Conditions Delay / Level of Service (LOS)
  - No-Build: 6.2/A
  - Roundabout: 6.1/A



# Corridor Planning Study Recap: Spot Improvement Roundabout at US 1/SR 406 Intersections

- Removal of two signals
- Reduce number of severe crashes
  - 111 crashes in 5 years
  - 33 crashes involved injury (59 total injuries, 0 fatalities)
- 2040 PM Future Conditions Delay (s) / LOS
  - No-Build:
    - NB: 9.6/A
    - SB: 14.2/B
  - Roundabout: 15.8/B




# Corridor Planning Study Recap: Spot Improvement

## Crosswalk Consistency



 Proposed Crosswalk Location

 Coast to Coast Trail

 Signalized Intersection

 Existing Rectangular Rapid Flashing Beacon (RRFB)

➤ Consistent pedestrian crosswalk treatments on side streets

➤ Continuous crosswalk locations across one-way pairs

# Existing Conditions Report Update

- Draft Existing Conditions Report
- Field Review on September 27, 2017
- Updated traffic counts

| US 1 AADT | South of Grace St. | US 1 NB-Grace St. to SR 405 | US 1 SB-Grace St. to SR 405 | US 1 NB-SR 405 to SR 406 | US 1 SB-SR 405 to SR 406 | North of SR 406 |
|-----------|--------------------|-----------------------------|-----------------------------|--------------------------|--------------------------|-----------------|
| YR 2015   | 22,000             | 13,000                      | 13,000                      | 12,000                   | 11,000                   | 18,000          |
| YR 2017   | 23,000             | 12,000                      | 12,000                      | 12,000                   | 12,000                   | 17,000          |

- Updated crash data – CARS data vs. Signal Four data
- Reviewed most recent planning documents with updates to:
  - Space Coast TPO 2040 Long Range Transportation Plan
    - \$1.2 Million in ITS Improvements from SR 406 to SR 405 along US 1 Corridor

# Future Conditions Report Update

- Updated future projections
  - Update from CFRPM 5.1 to CFRPM 6.1
  - New BEBR projection published
  - Updated historic trends
- Growth Rate Update from 1.46% to 0.69%

| US 1 AADT | South of Grace St. | US 1 NB-Grace St. to SR 405 | US 1 SB-Grace St. to SR 405 | US 1 NB-SR 405 to SR 406 | US 1 SB-SR 405 to SR 406 | North of SR 406 |
|-----------|--------------------|-----------------------------|-----------------------------|--------------------------|--------------------------|-----------------|
| YR 2017   | 23,000             | 12,000                      | 12,000                      | 12,000                   | 12,000                   | 17,000          |
| YR 2040   | 27,000             | 14,000                      | 14,000                      | 13,000                   | 13,000                   | 20,000          |

- Proposed Roundabouts still provide adequate operations under new traffic projections

# Activities before next PVT Meeting

1. Finalize Future Conditions Report Update
2. Roundabout screenings
3. Develop concepts for roundabouts and crosswalks
4. Internal FDOT coordination to review concepts
5. PVT Meeting #2 – Prior to public meeting



# Open Discussion



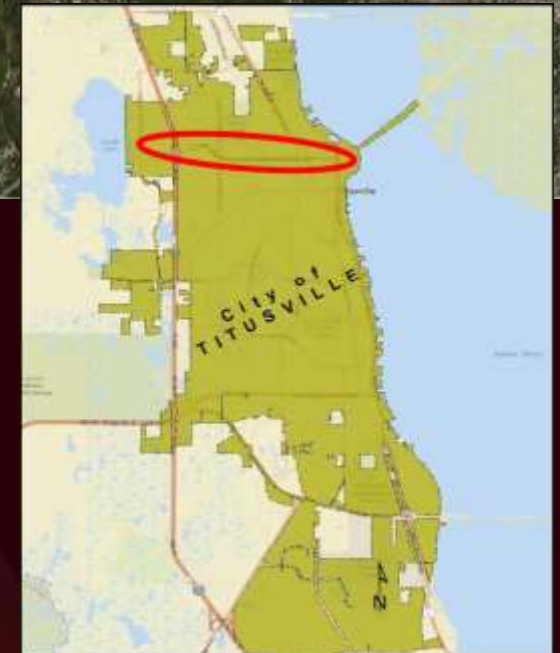


# SR 406 Focus Session

Concept Development & Evaluation

# Study Area

- North Area Adult Education Center (South Lake Elementary School) to Indian River Avenue
- 3 miles
- Urban character, four-lane divided section
- Primarily residential and commercial development
- Astronaut High School located off of Clarewood Boulevard



# Purpose and Need

**Purpose:** To provide improved multimodal mobility, with consistent roadway design that will enhance safety and connectivity while supporting economic and community development goals.

**Need:** Enhancing multimodal mobility is necessary to shift emphasis to non-vehicular modes that have been traditionally underserved in this corridor. Observations of the existing corridor characteristics reveal the following supporting data:

- Sporadic/underutilized on-street parking
- Inconsistent lane widths
- Properties with multiple & unused driveways
- Multiple full access medians that do not provide adequate storage for left turn refuge
- Large transit dependent community
- Minimal bus stop accommodations provided (lack of shelters, ADA issues)
- Lack of ADA accommodations
- Lack of bicycle facilities
- Lack of pedestrian crossing opportunities
- Desire by local stakeholders to enhance aesthetics
- Desire by City for gateway feature(s) entering Downtown Titusville

# Corridor Planning Study Recap: Proposed Improvement Strategies

## Corridor Improvements

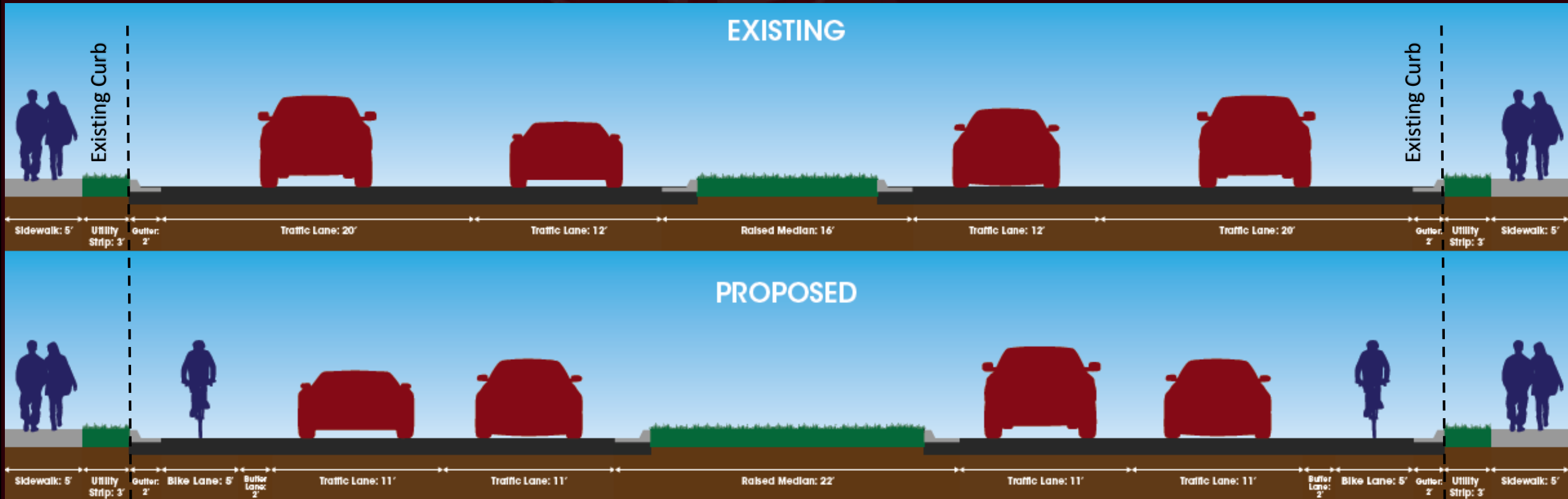
- Addition of Bike Lanes
- Road Diet

## Spot Improvements

- Singleton Avenue Roundabout
- Removal of Palm Ave Signal



# Corridor Planning Study Recap: Corridor Improvements I-95 to Singleton Avenue



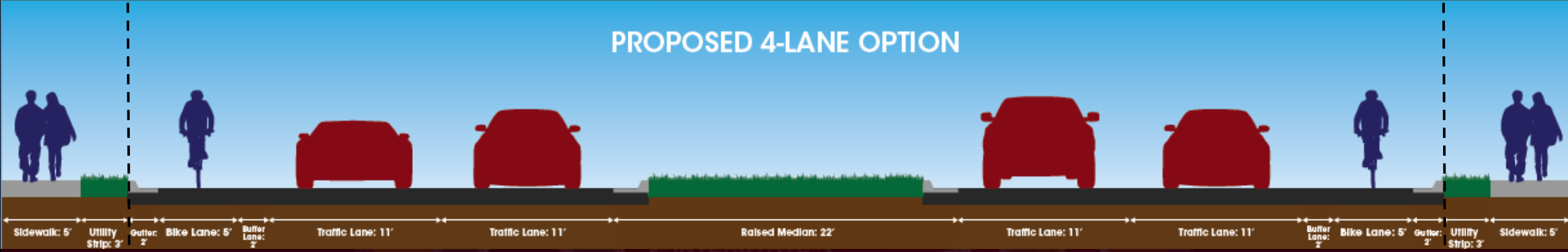
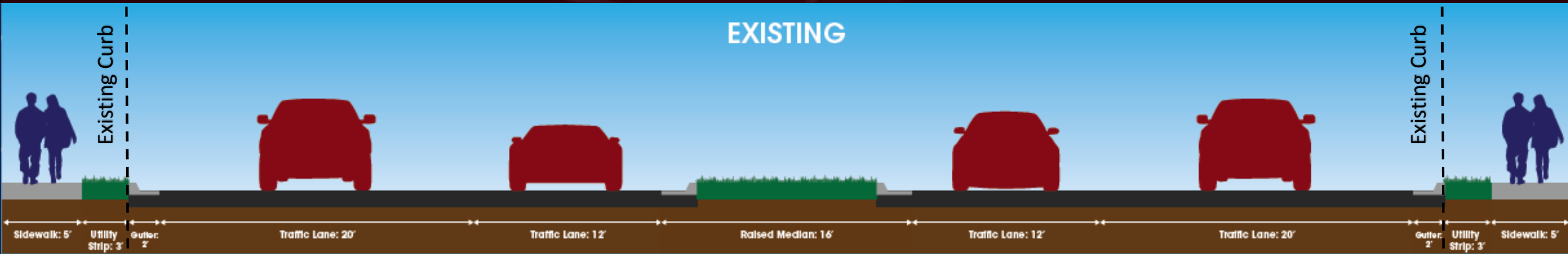
# Corridor Planning Study Recap: Spot Improvements

## Singleton Ave Roundabout

- Reduce number of severe crashes
  - 50 crashes in 5 years
  - 15 crashes involved injury
  - 24 total injuries, 0 fatalities
  - 1 Bike Crash
- 2040 PM Future Conditions Delay / LOS
  - No-Build: 47.9/D
  - Roundabout: 16.4/B
- Can be utilized as a gateway feature into the City of Titusville

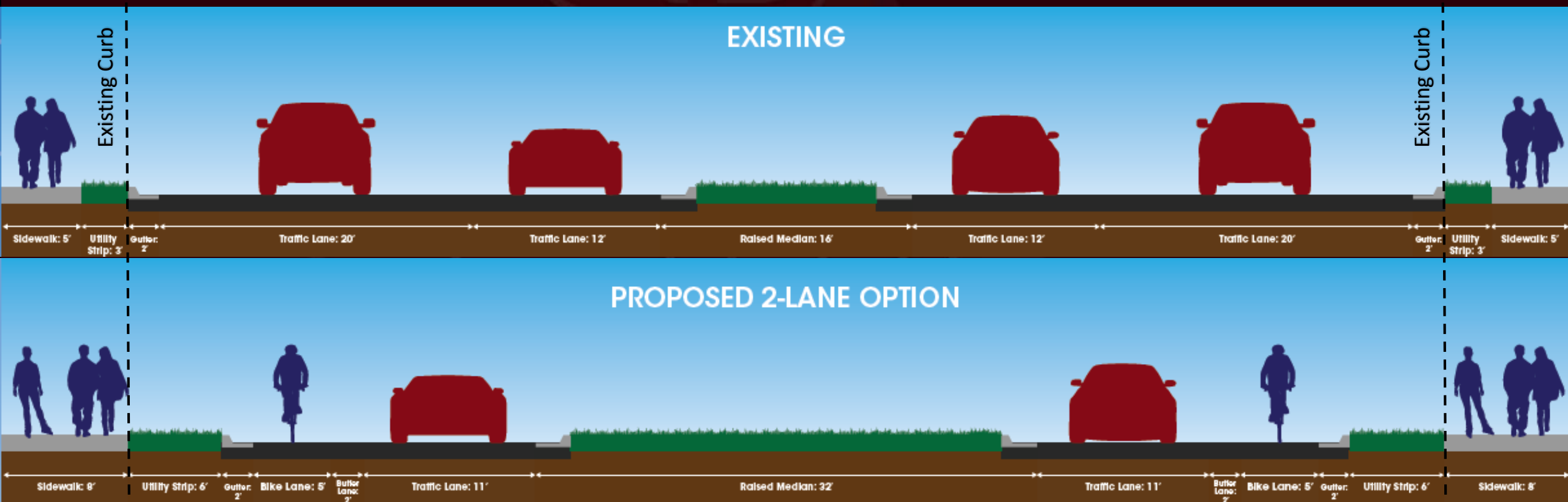


# Corridor Planning Study Recap: Corridor Improvements Singleton Avenue to Dixie Avenue





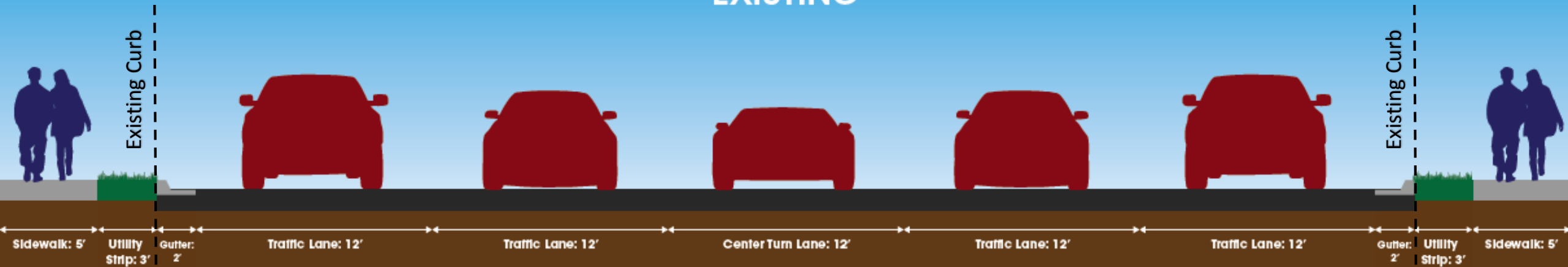
# Corridor Planning Study Recap: Corridor Improvements Singleton Avenue to Dixie Avenue (Road Diet)



➤ 2-lane divided roadway is not compatible with roundabout

# Corridor Planning Study Recap: Corridor Improvements Dixie Ave to US 1 (Road Diet)

## EXISTING



## PROPOSED 3-LANE OPTION



# Corridor Planning Study Recap: Spot Improvements

## Palm Avenue Signal Removal

- Signal not warranted
- Does not meet spacing standards with Hopkins Ave signal
- Poor signal coordination with US 1 observed
- **Being removed with resurfacing project scheduled for YR 2018**

2040 Project Volumes



# Corridor Planning Study Recap: Corridor Improvements Lemon Avenue to Max Brewer Bridge

## Special Detail Area

- Road Diet w/Enhanced 3-lane typical section
- SR 406 strategy is compatible with Coast-to-Coast Concept (shown)



# Existing Conditions Report Update

- Draft Existing Conditions Report
- Field Review on September 27, 2017
- Updated traffic counts

| SR 406<br>AADT | West of<br>I-95 | I-95 to<br>Singleton<br>Ave. | Singleton<br>Ave. to US<br>1 SB | US 1 SB to<br>US 1 NB |
|----------------|-----------------|------------------------------|---------------------------------|-----------------------|
| YR 2015        | 7,200           | 15,000                       | 17,000                          | 9,200                 |
| YR 2017        | 7,300           | 16,000                       | 16,000                          | 9,900                 |

- Updated crash data – CARS data vs. Signal Four data
- Updates to the corridor since finalizing previous study
  - Singleton Avenue Intersection Improvements
  - Coast to Coast Trail section from Indian River Avenue to Max Brewer Bridge is ready for Design.
  - Main Street and Indian River Avenue Trail improvements completed

# Future Conditions Report Update

- Updated future projections
  - Update from CFRPM 5.1 to CFRPM 6.1
  - New BEBR projection published
  - Updated historic trends
- Growth Rate Update from 0.87% to 0.68%

| SR 406 AADT | West of I-95 | I-95 to Singleton Ave. | Singleton Ave. to Park Ave. | Park Ave. to Palm Ave. | Palm Ave. to US 1 SB | US 1 SB to US 1 NB | US 1 NB to Indian River Ave. |
|-------------|--------------|------------------------|-----------------------------|------------------------|----------------------|--------------------|------------------------------|
| YR 2017     | 7,300        | 16,000                 | 16,000                      | 14,000                 | 10,000               | 9,900              | 7,000                        |
| YR 2040     | 8,400        | 18,000                 | 19,000                      | 16,000                 | 12,000               | 11,000             | 8,100                        |

- Proposed Roundabout and road diet still provide adequate operations under new traffic projections.
  - Roundabout will require 2-lanes entering/exiting west approach

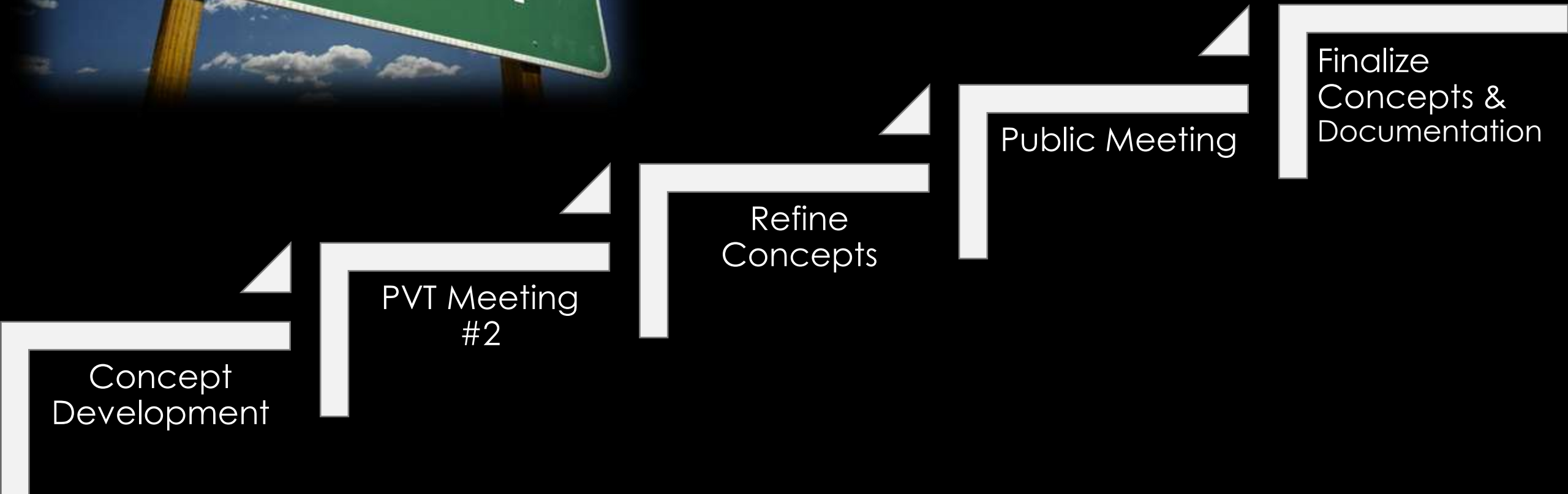
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5. PVT Meeting #2 – Prior to public meeting

# Open Discussion









# Project Development Process



# Questions/Comments?

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