



10th Street Corridor Study

From US 192 to Narcoossee Road



[Final Completion in Summer 2022]



What is the 10th Street Corridor Study?

This partnership project is a transportation planning study for the 10th Street corridor located in the City of St. Cloud, Florida. This project will analyze 10th Street from US 192 (13th Street) to Narcoossee Road (about 4 miles) and recommend ways to make transportation safer and easier, whether you're walking, bicycling, driving, or riding a bus.

Examples of potential improvements include adding sidewalks, bike lanes, crosswalks, pedestrian scale lighting, speed management infrastructure, and drainage structures. The recommendations will support the project goal areas of safety, health, economy, and community. Public outreach is also a key element of this study.

This document provides a concise but comprehensive summary of the key findings from the study and serves as the final report for the 10th Street Corridor Study and is organized into the following Chapters, which will be released upon completion:

Chapter 1: Defining Success

Chapter 2: Alternatives Assessment (scheduled completion Spring 2022)

Chapter 3: Concept Design and Recommendations (scheduled completion Summer 2022)

For the most up to date information about the Study, visit: www.MetroPlanOrlando.org/10thStreetStudy

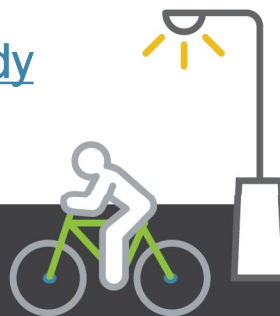


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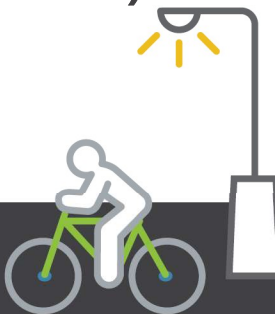
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Chapter 1: Defining Success

September 2021



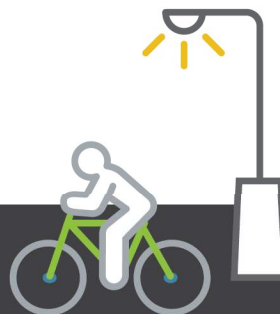
Section 1.1

Project Overview

Project Overview



- Limits: 10th Street from US 192 to Narcoossee Rd
- Context: Serves as the primary east-west gateway to downtown St. Cloud and provides an alternate route to US 192 for local vehicles, bicycles, and pedestrians
- Objective: Develop a set of implementable improvements, building on the themes identified in the Envision St. Cloud Master Plan and the Medical Arts Campus Plan, to:
 - Enhance multimodal connectivity and accessibility
 - Create a safe and supportive environment for walking and biking
 - Determine recommended safety and multimodal improvements
 - Consider minor roadway widening, sidewalks, bike lanes, lighting and drainage improvements



Scope & Schedule

2021												2022					
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun

January 2021 – June 2022

01 Project Management & Public Participation Plan

January 2021 – August 2021

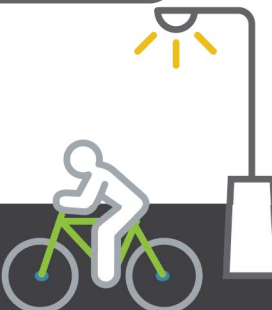
02 Defining Success

July 2021 – December 2021

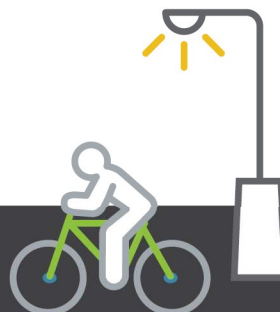
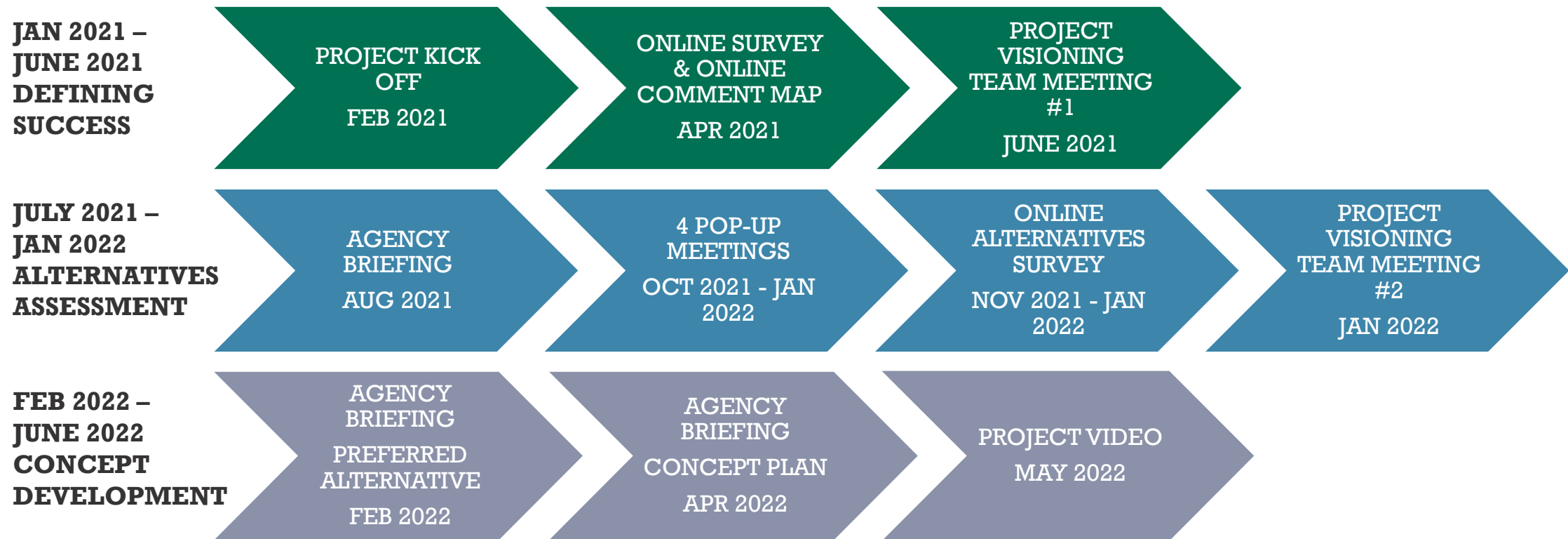
03 Alternatives Assessment

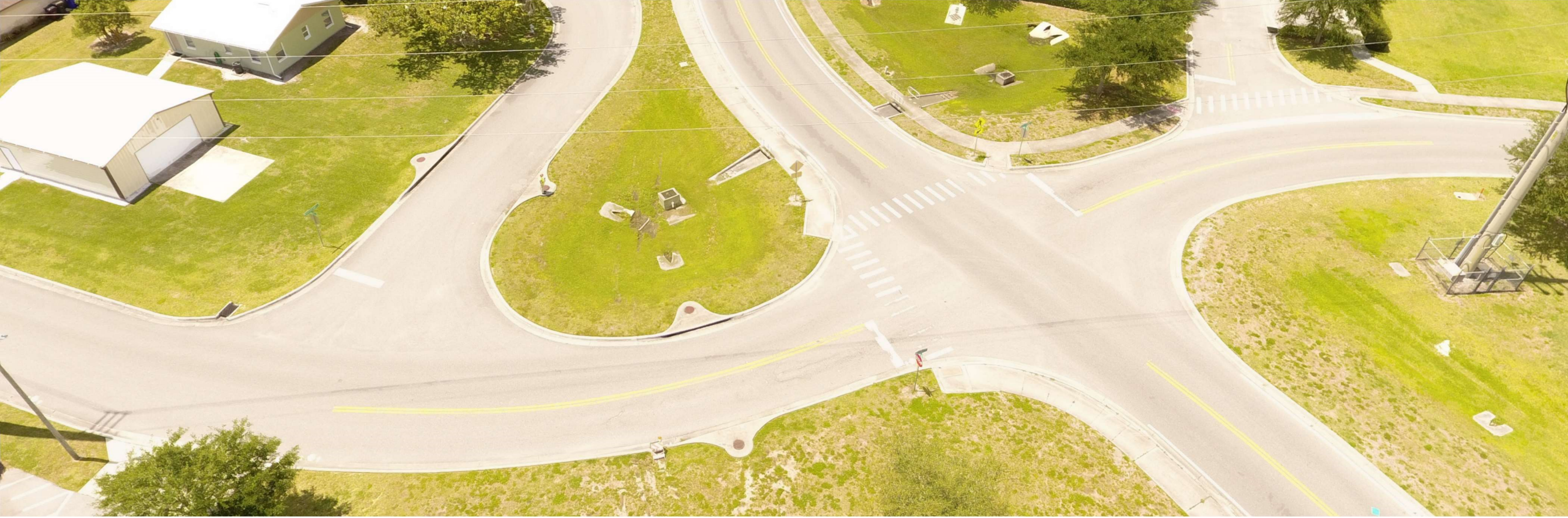
November 2021 – June 2022

04 Concept Development



Outreach Schedule

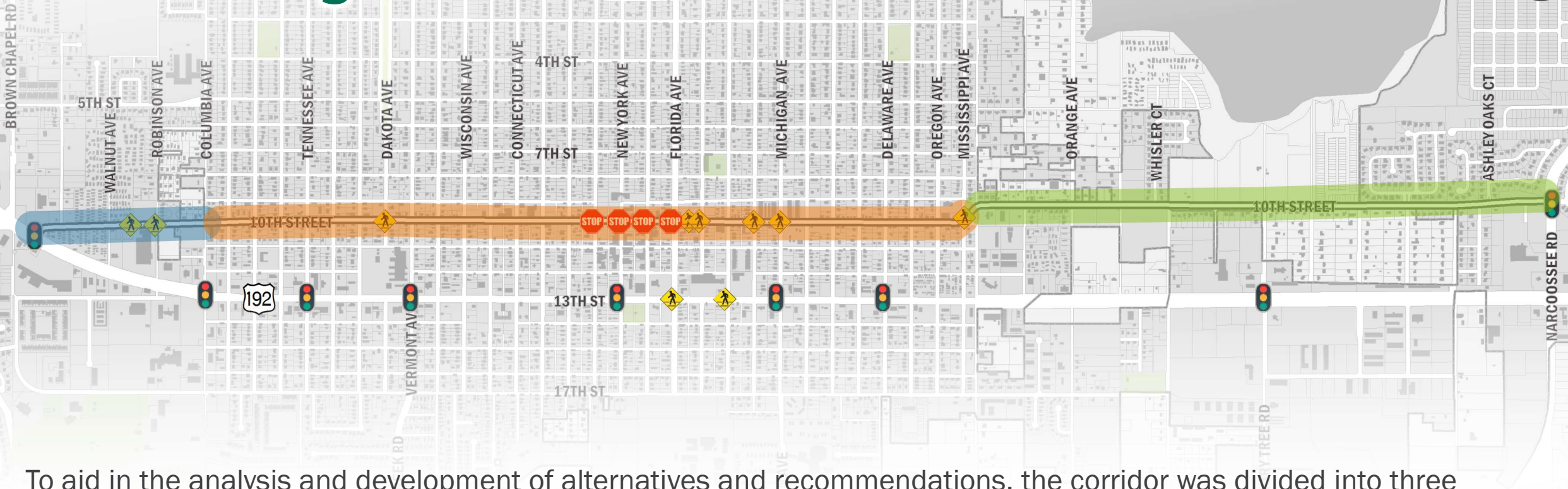




Section 1.2

Corridor Characteristics and Previous Studies

Corridor Segmentation



To aid in the analysis and development of alternatives and recommendations, the corridor was divided into three distinct segments based on changing roadway characteristics and land use context.

Area 1:
Medical Arts

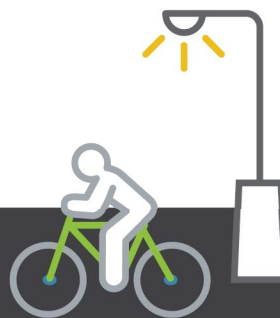
From US 192 to
Columbia Avenue

Area 2:
Historic Grid

From Columbia Avenue to
Eastern Avenue

Area 3:
Suburban Transition

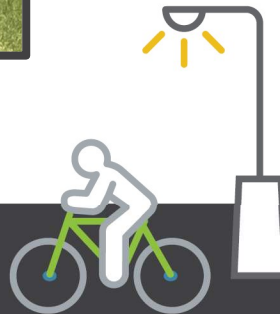
From Eastern Avenue to
Narcoossee Road



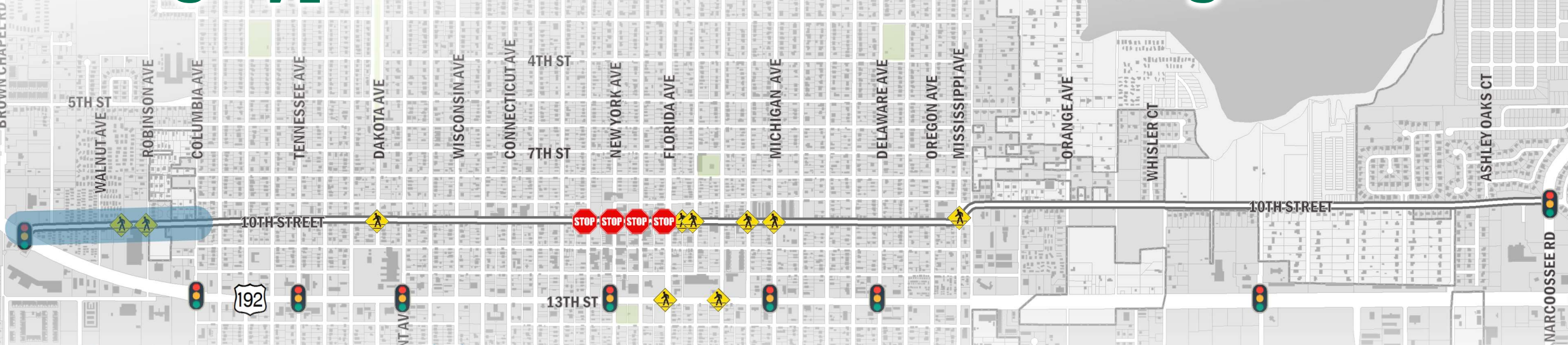
Existing Photos: Medical Arts Segment



The area is characterized by open drainage, large transmission poles, and sidewalk gaps



Existing Typical Section: Medical Arts Segment

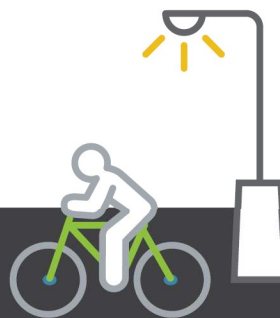


Typical Section from US 192 to Columbia Avenue (Looking West)

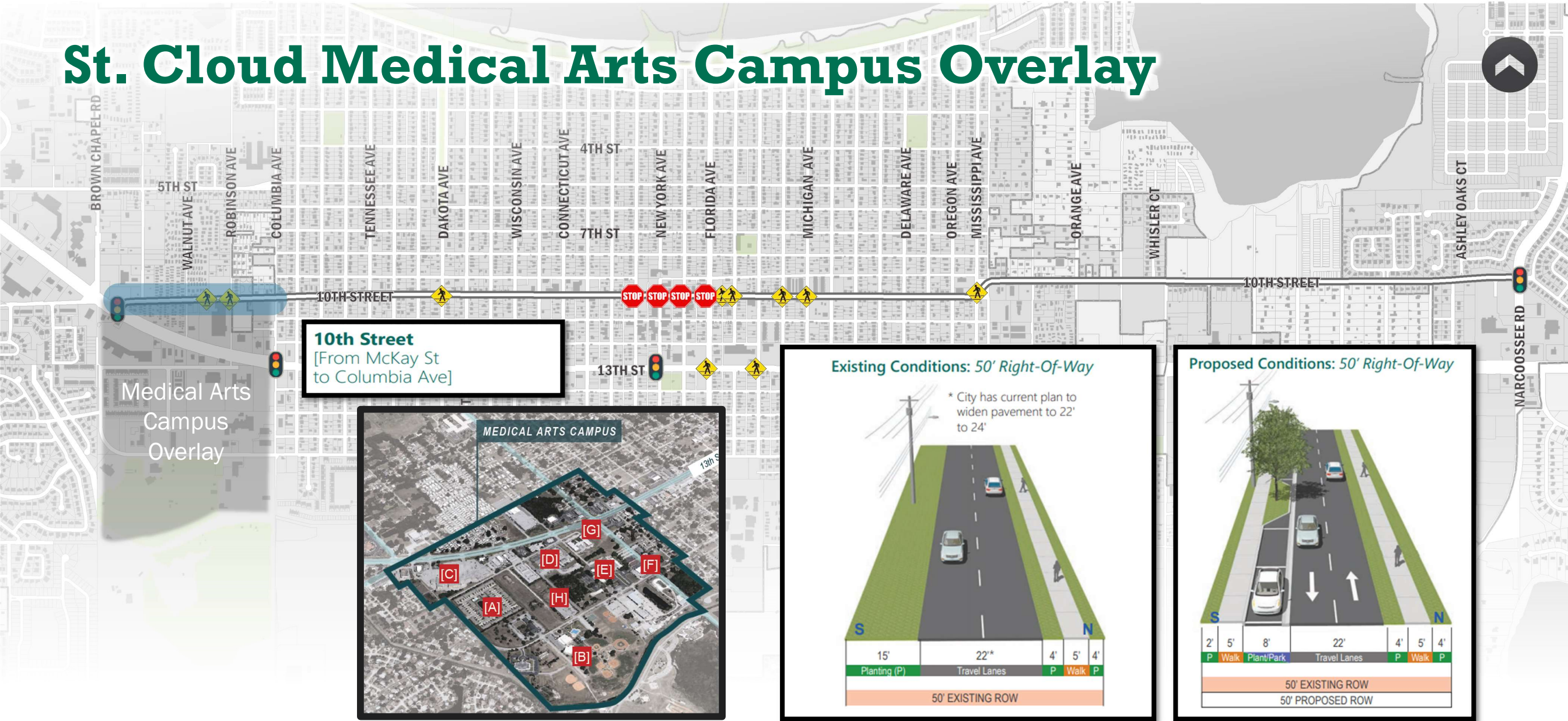


Features:

- 50 ft right-of-way
- North side sidewalk begins at Arizona Ave
- No curb and gutter
- Narrow lanes with no shoulder
- Drainage swale on south side



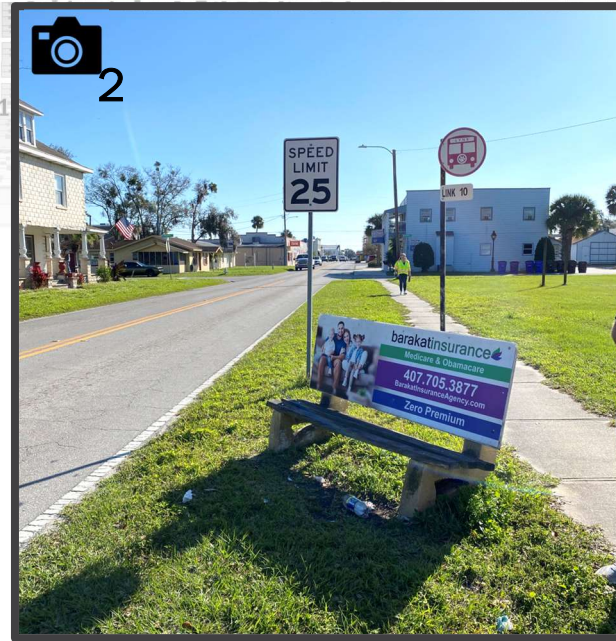
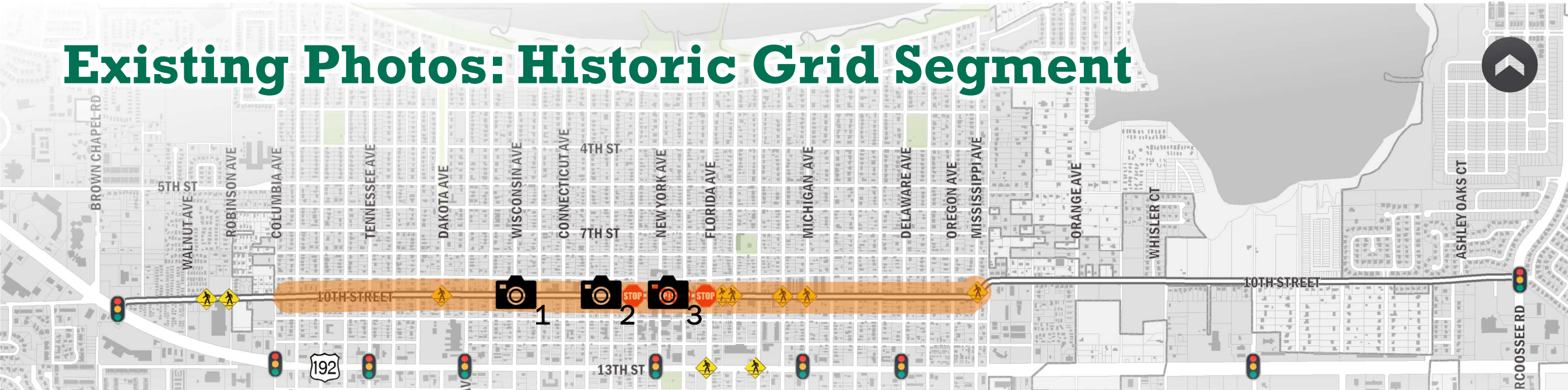
St. Cloud Medical Arts Campus Overlay



- The St. Cloud Medical Arts Campus is located along the 10th St Corridor from McKay St to Columbia Ave
- Proposed improvements include adding a sidewalk to the western side of the road and creating space for plants and parking

Source: St. Cloud Medical Arts Campus Design Standards and Overlay

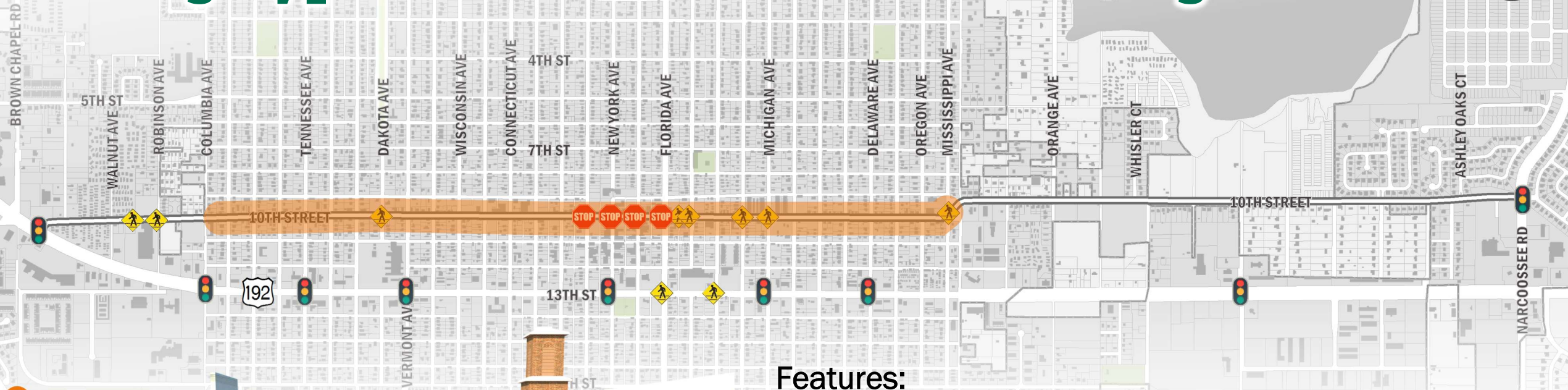
Existing Photos: Historic Grid Segment



The area has a higher level of activity, large transmission poles outside the downtown core, and fewer sidewalk gaps



Existing Typical Section: Historic Grid Segment

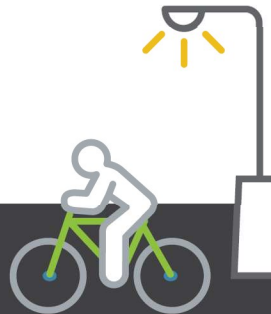


Typical Section from Columbia Avenue to Eastern Avenue (Looking West)

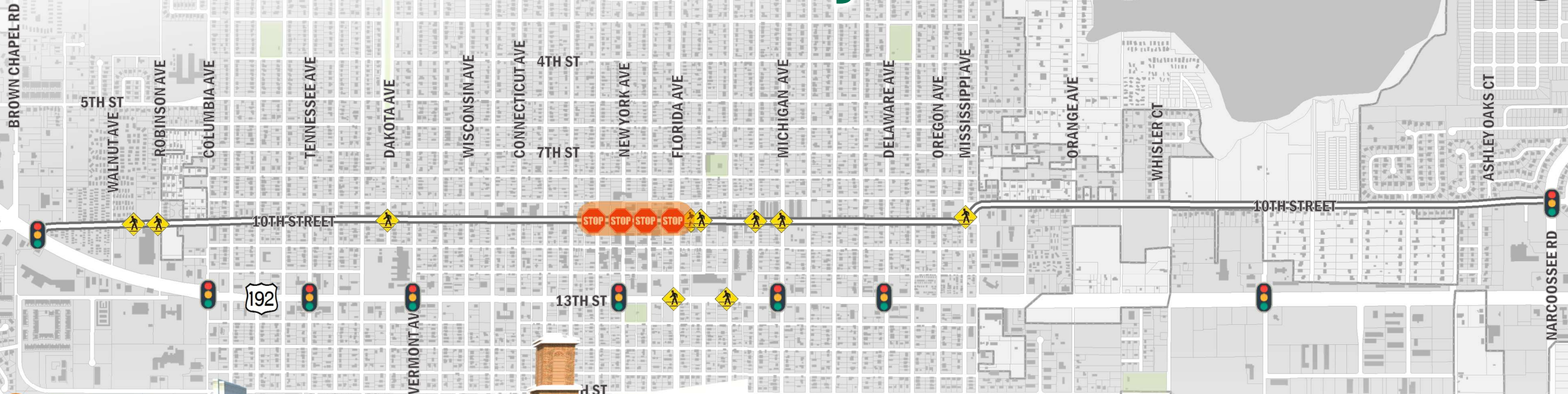


Features:

- 50 ft right-of-way
- Residential and Downtown context
- South side sidewalk begins at Dakota Avenue and continues through segment
- North side sidewalk begins at Connecticut Avenue and is intermittent east of Florida Avenue
- Parking conflicts with sidewalk in Downtown
- Inconsistent curb and gutter



Downtown Revitalization Project Phase 2



Typical Section from Massachusetts Avenue to Florida Avenue (Looking West)



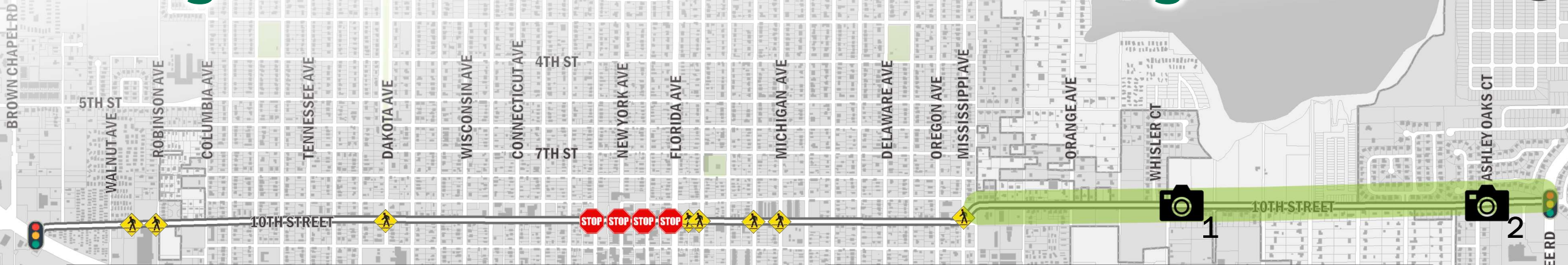
Features:

- Existing 90% design plans for 10th Street between Massachusetts Ave and Florida Ave
- Improvements will tie into the updates along New York Ave and include brick streets, street trees, parallel parking, and 10-foot sidewalks

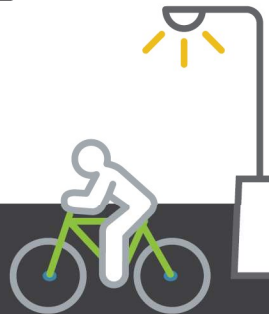
Source: St. Cloud Downtown Revitalization Project Phase 2



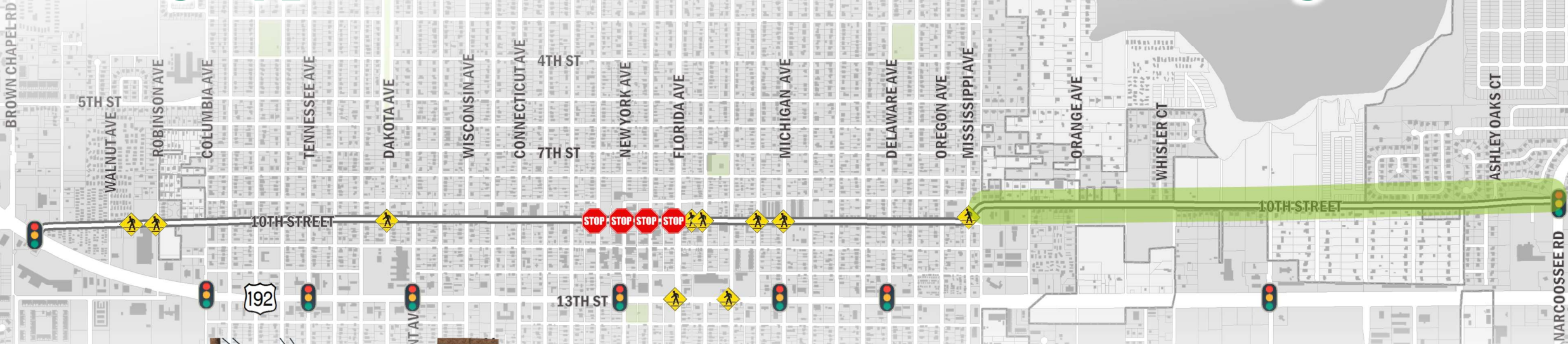
Existing Photos: Suburban Transition Segment



The area has narrow travel lanes, a wider right-of-way, and open swale drainage



Existing Typical Section: Suburban Transition Segment

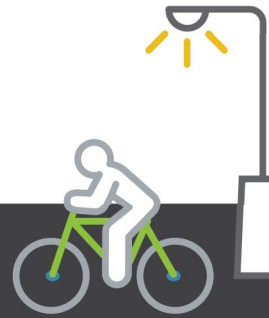


Typical Section from Eastern Avenue to Narcoossee Road (Looking West)



Features:

- 55 - 80 ft right-of-way
- Traditional St. Cloud grid ends
- Small segment of sidewalk on north side near Narcoossee Road
- Location for future rural suburban residential development
- Narrow lanes with no shoulder
- No curb & gutter

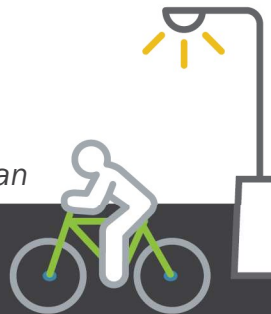


Envision St. Cloud Master Plan

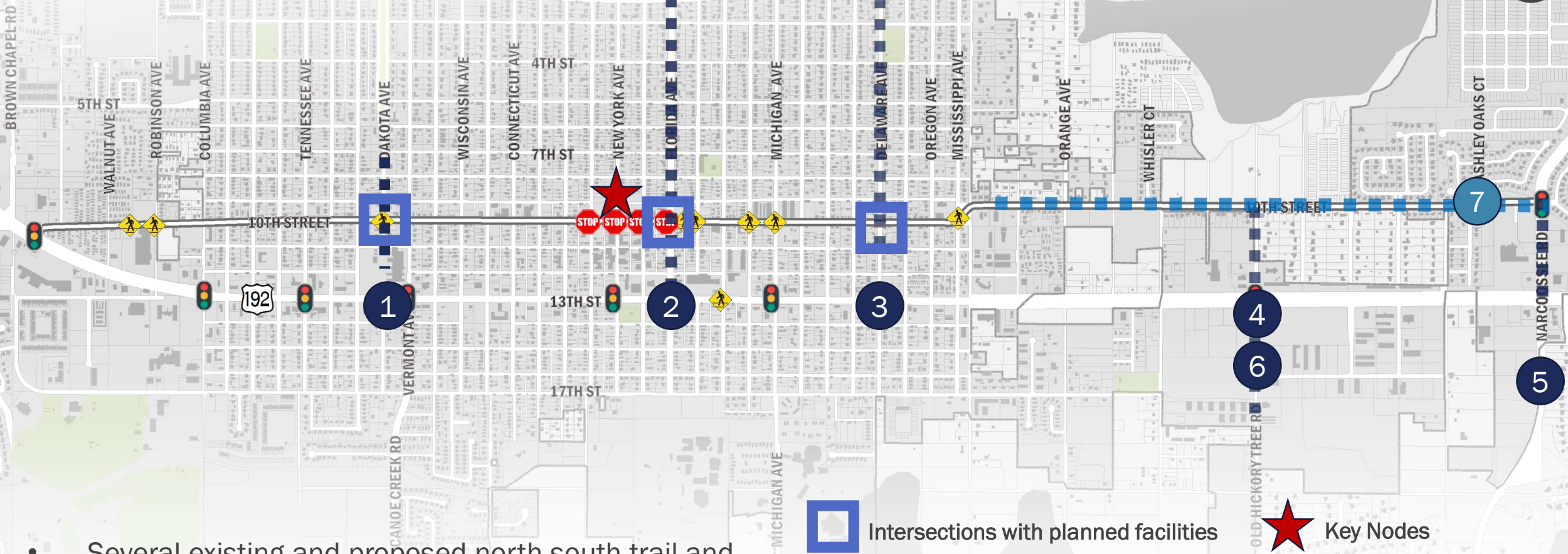
- The Master Plan aspires to create a strong and livable downtown and capitalizes off the lakefront while embracing growth
- Includes changes to St. Cloud's land use, zoning and regulatory policy, and a specific economic-development strategy completed in four phases
- Recommended actions include:
 - Continue on-going downtown revitalization efforts through a focus on public realm (streetscape and park) improvements
 - Focus transportation improvements on bike and pedestrian linkages that improve the comfort of nonvehicular users





New York Ave Rendering



Planned Trail and Bike Connections

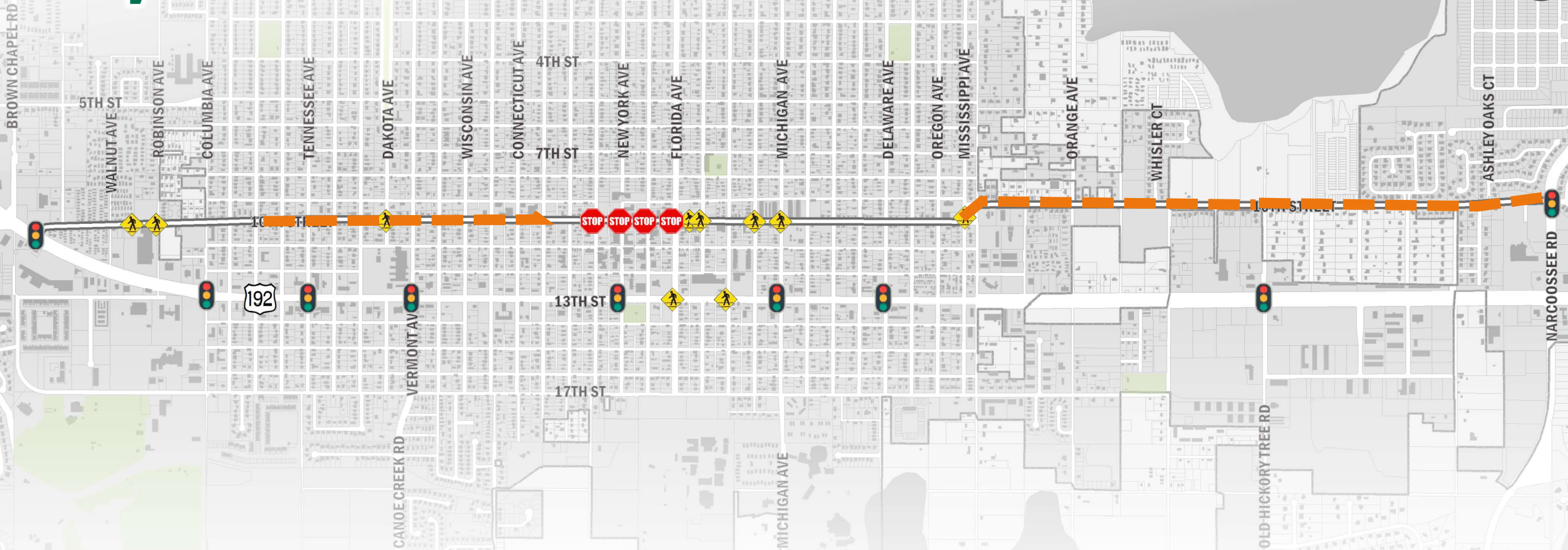


- Several existing and proposed north-south trail and bikeway connections identified in the St. Cloud Citywide Trails Master Plan intersect 10th Street
- Shared lane markings (sharrows) are identified in the Osceola County Bike Plan for 10th Street from Eastern Avenue to Narcoossee Road
- Intersections with planned facilities include Dakota Avenue, Florida Avenue, and Delaware Avenue

-  Intersections with planned facilities
-  Key Nodes
- 1** Dakota Avenue Multi-Use Trail
- 2** Florida Avenue Bikeway (top priority project)
- 3** Delaware Avenue Bikeway
- 4** Crawford Avenue Bikeway
- 5** Hickory Tree Road Trail
- 6** Old Hickory Tree Road Trail
- 7** Shared Lane Arrow



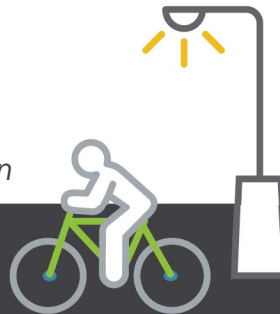
Utility Master Plan



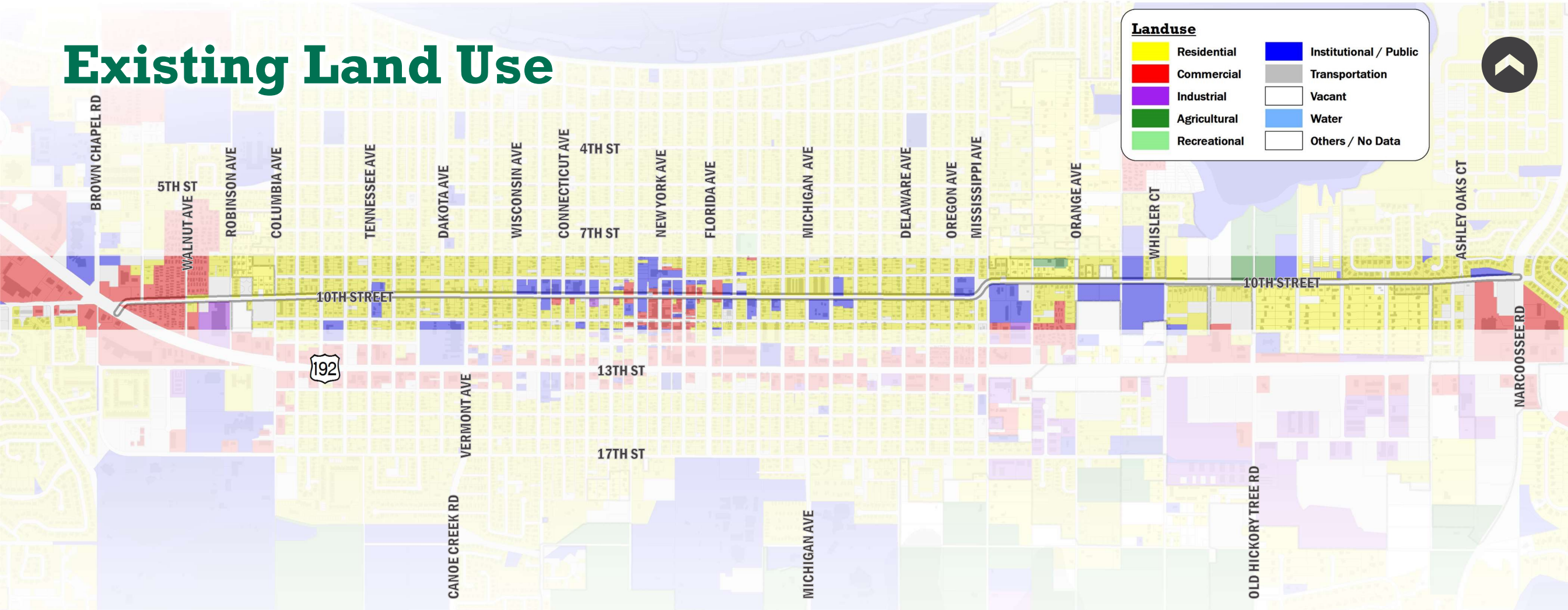
The Utility Master Plan calls for additional reclaimed and potable water capacity. This will help further development of the area. Highlights of the improvements are:

- Installation of a 12" reclaimed water main from Old Hickory Tree Road east to Narcoossee Road
- Upgrading the existing 12"-16" potable water main to 24" from Eastern Avenue east to Old Hickory Tree Road
- Upgrading the existing 10" potable water main to 16" from Louisiana Avenue east to Minnesota Avenue

Source: St. Cloud Utility Master Plan



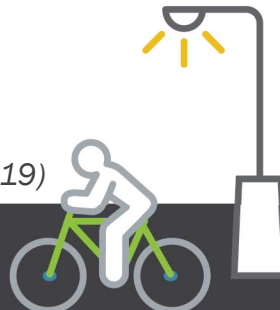
Existing Land Use



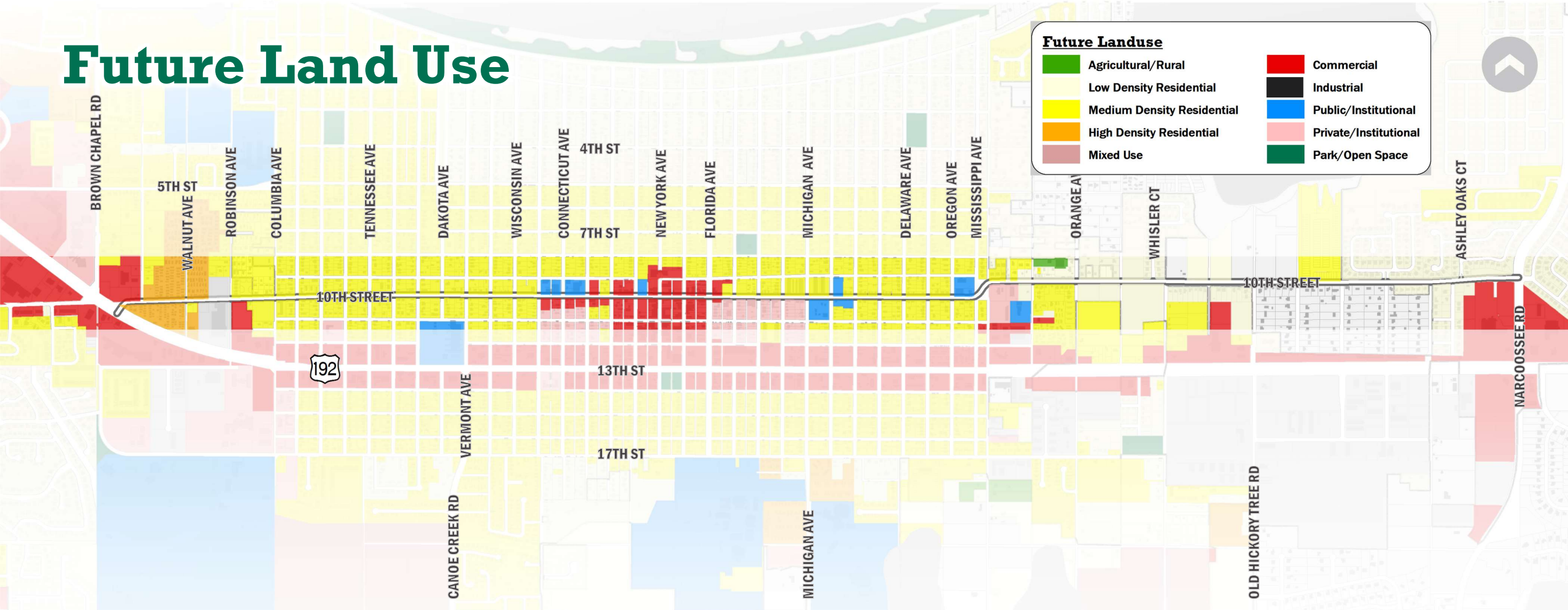
10th Street has a mix of existing land uses. Residential is the primary land use, but there are other uses:

- Mix of commercial and institutional/public land uses within the historic grid segment
- Commercial and industrial land use within the medical arts segment
- Institutional/public land use within the suburban transition segment

Source: Florida Geographic Library (FDGL 2019)

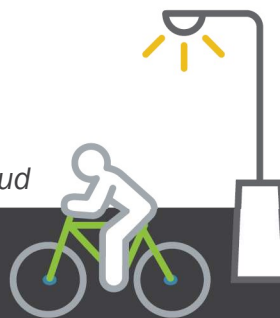


Future Land Use

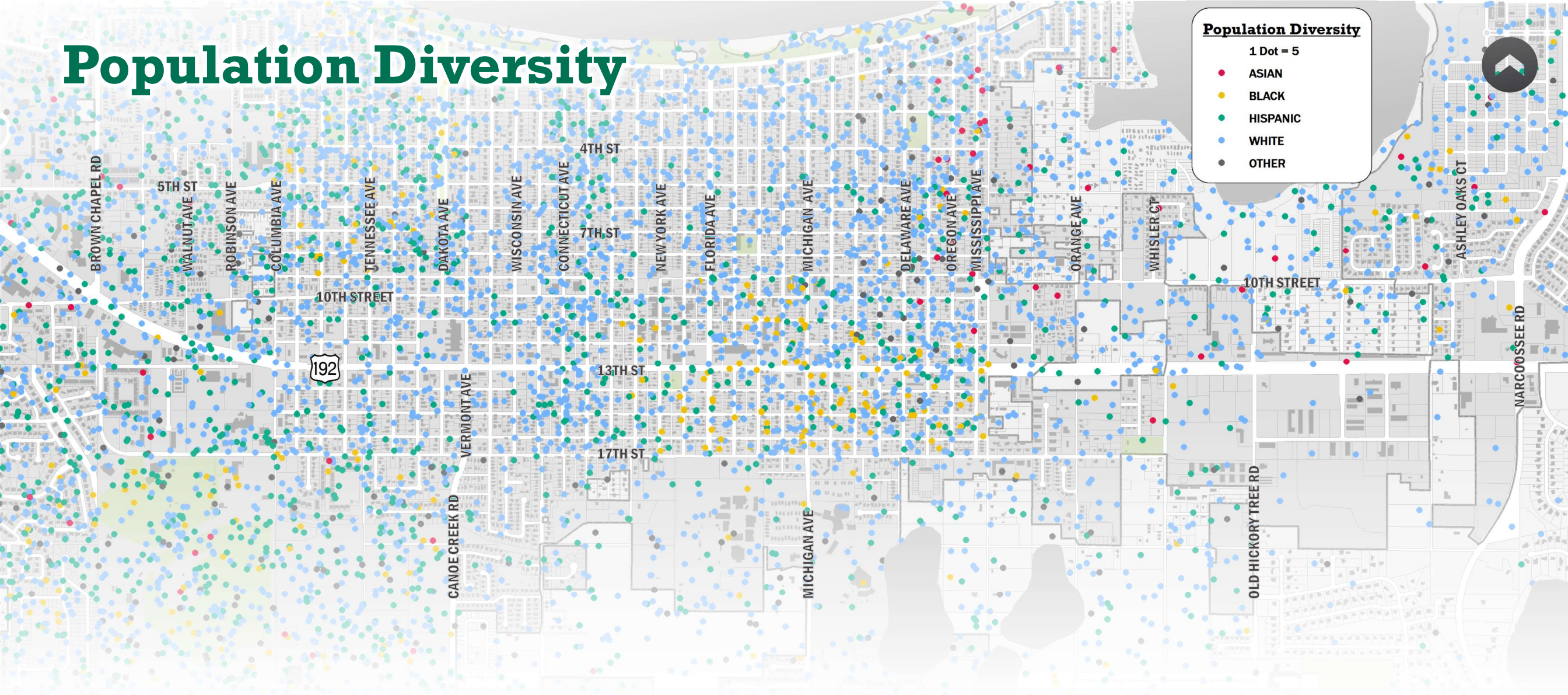


The future land use along 10th Street is relatively consistent with existing land uses. The changes are:

- Incorporates the vision identified in the Downtown Master Plan as well as for the Medical Arts Campus

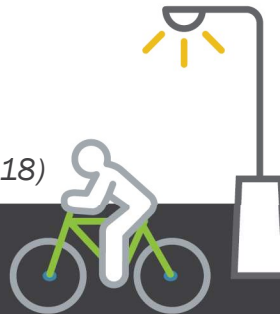


Population Diversity



- Clusters of Hispanic and Black populations within neighborhoods north and south of the corridor west of Mississippi Ave

Source: American Community Survey (ACS) Census (2018)



Demographics & Socioeconomic Characteristics

Key Facts



Population
13,606



Median Household Income
\$47,437



Average Household Size
2.5



Median Age
40.3

Internet Access



Use Computer
59%



Use Cell Phone
77%



Use Tablet
25%

Housing



Median Home Value
\$167,879



Average Spent on
Mortgage and Basics
\$7,356



Median Contract Rent
\$837

Business



Total Businesses
993



Total Employees
7,164

At Risk



Households Below
Poverty Level
17%



Households with 1+
Persons with Disability
33%



Population 65+ Speak
Spanish & No English
1%



Owner Households
with No Vehicles
6%

Employment



White Collar

56%



Blue Collar

24%



Services

20%



Unemployment Rate
8.5%

Social Media Usage



Used Facebook in
Last 30 days
68%



Used Instagram in
Last 30 days
28%



Used LinkedIn in
Last 30 days
8%

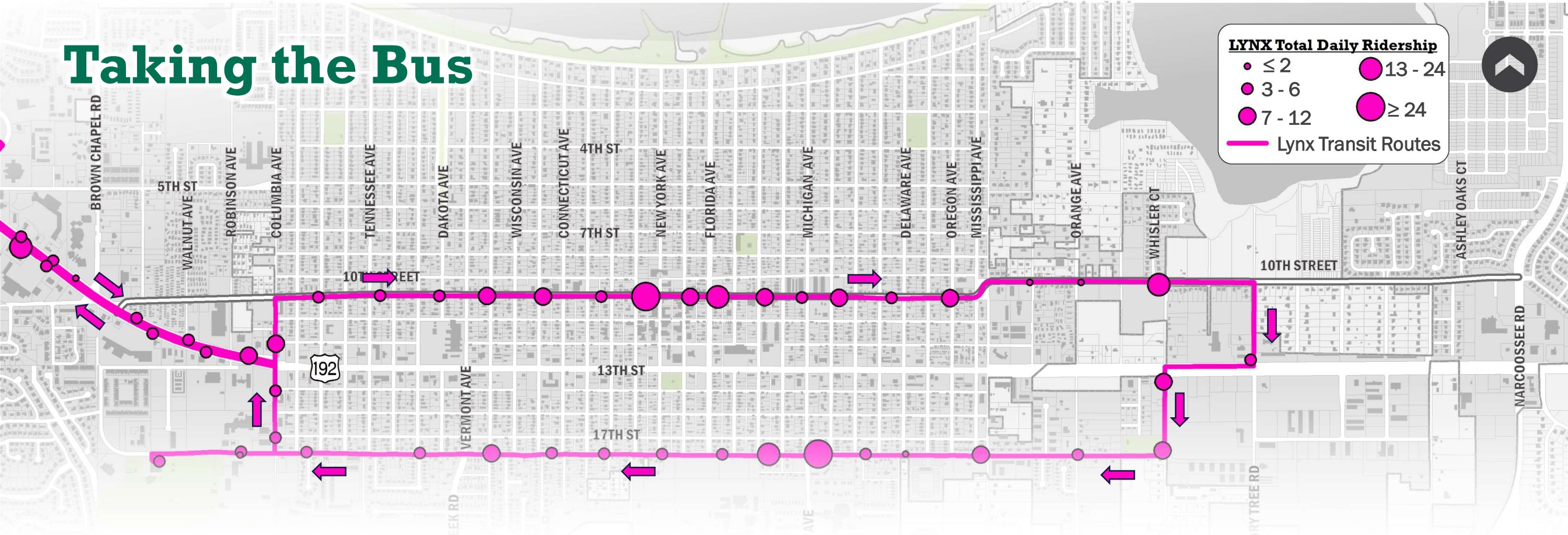


Used Twitter in
Last 30 days
11%

Source: U.S. Census Bureau



Taking the Bus



- The LYNX Route 10 runs eastbound along 10th Street and there are 17 total stops
- The busiest stops are near Downtown
- LYNX has identified the potential to relocate current route to US 192 and/or provide a flex route serving 10th Street and the Lakeshore Neighborhood

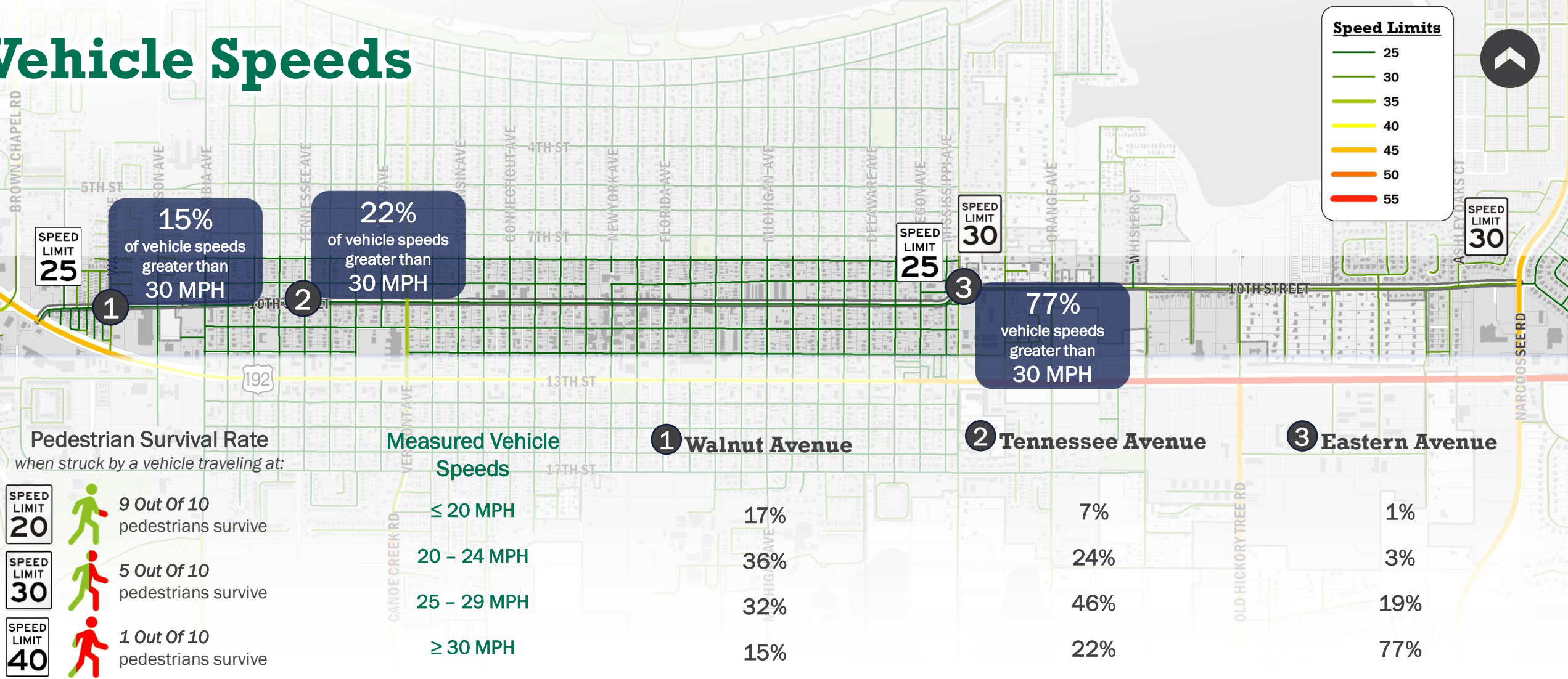
Route 10 Service	Westbound Service Hours	Eastbound Service Hours	Daily Frequency
Weekdays	4:25 - 22:42	4:00 - 22:02	30 min
Saturday	4:30 - 22:43	4:00 - 21:59	1 hour
Sunday and Holidays	5:15 - 22:23	5:00 - 22:00	1 hour

Lynx Routes and Schedules: [Routes & Schedules](#) | [Public Transportation Services for \(golynx.com\)](#)

Source: LYNX



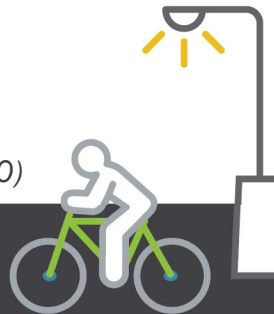
Vehicle Speeds



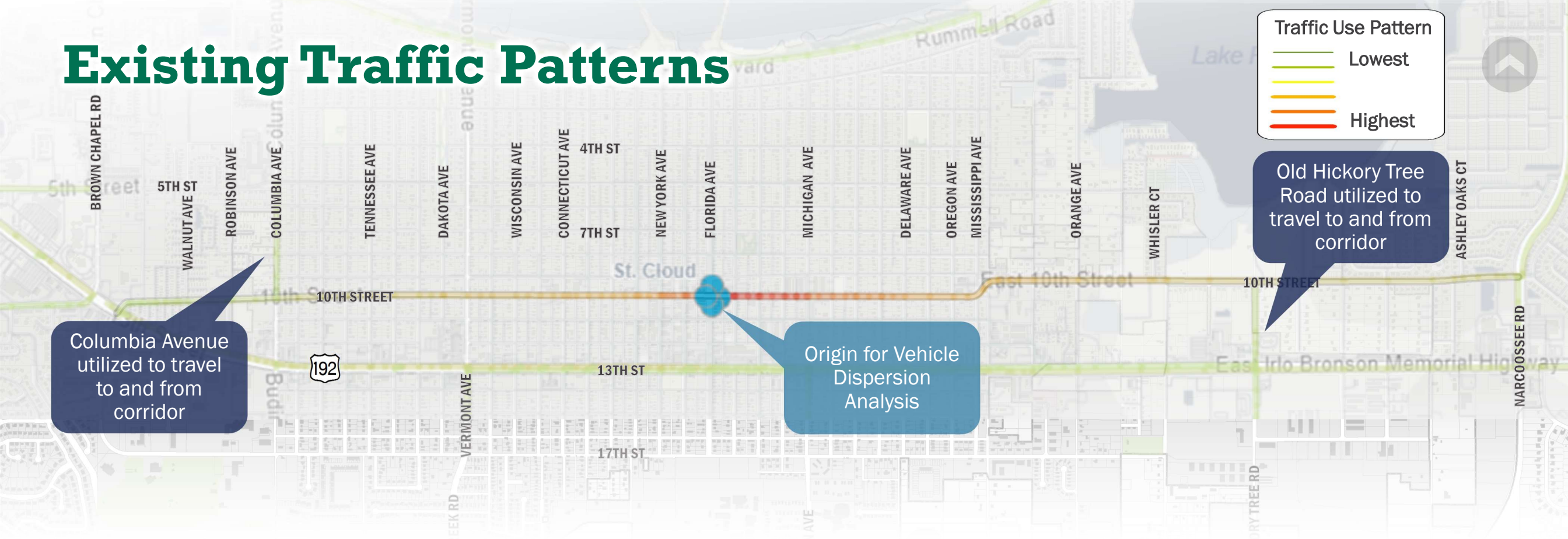
Speed data was collected by the City of St. Cloud in the eastbound and westbound directions at three points along 10th Street – Walnut Avenue, Tennessee Avenue, and east of Eastern Avenue. The data tells us:

- Vehicles tend to exceed the posted speed limit, especially at Eastern Ave (location 3)
- At Eastern Ave, 77% of vehicles exceed the speed limit

Source: City of St. Cloud (2020)

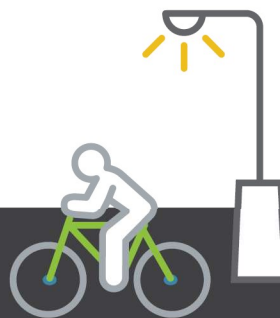


Existing Traffic Patterns

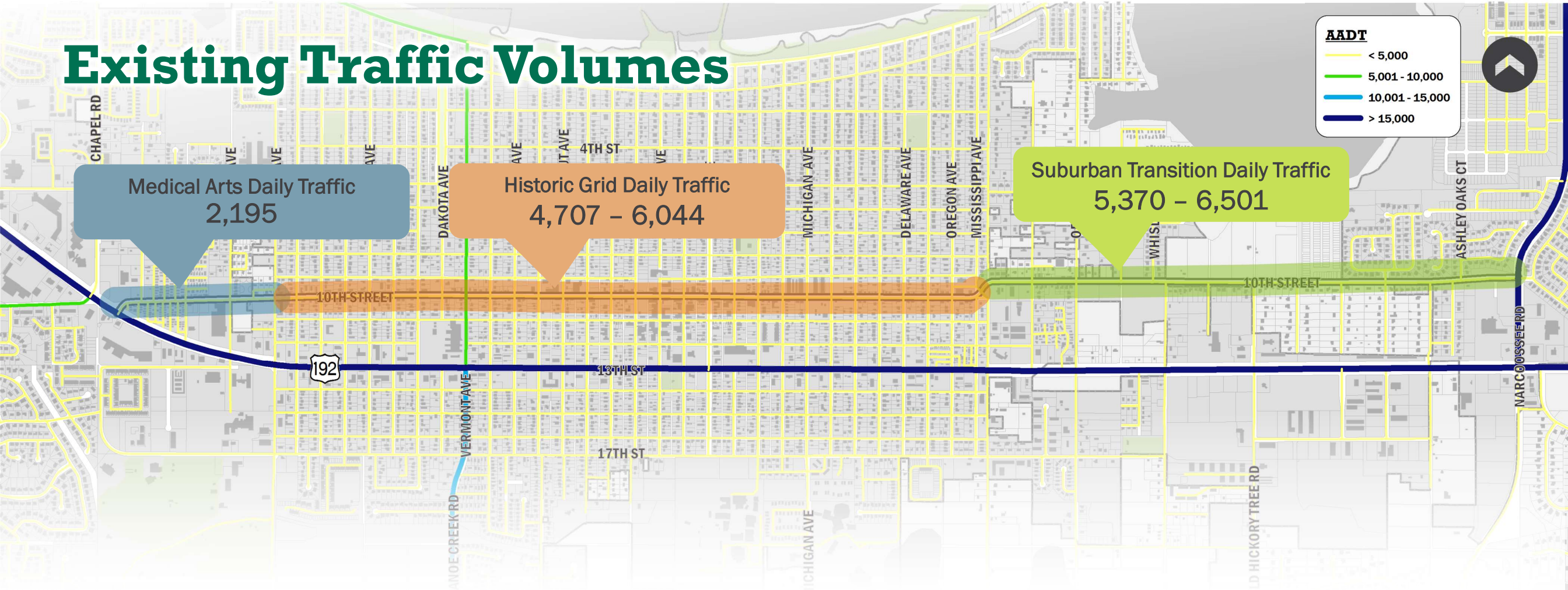


- Analysis shows that 10th Street acts as a local collector road and not a cut-through street
 - Traffic traveling to US 192 is utilizing Columbia Avenue and Old Hickory Tree Road
 - Majority of trips along 10th Street are home/work trips to locations along or within a few blocks of the corridor
- Traffic drops off significantly in the western segment between Columbia Avenue and US 192

Traffic data collected via Streetlight Data - a mobility data tool that uses smartphones as sensors to measure vehicles, bikes, and pedestrians



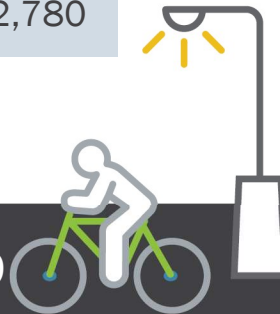
Existing Traffic Volumes



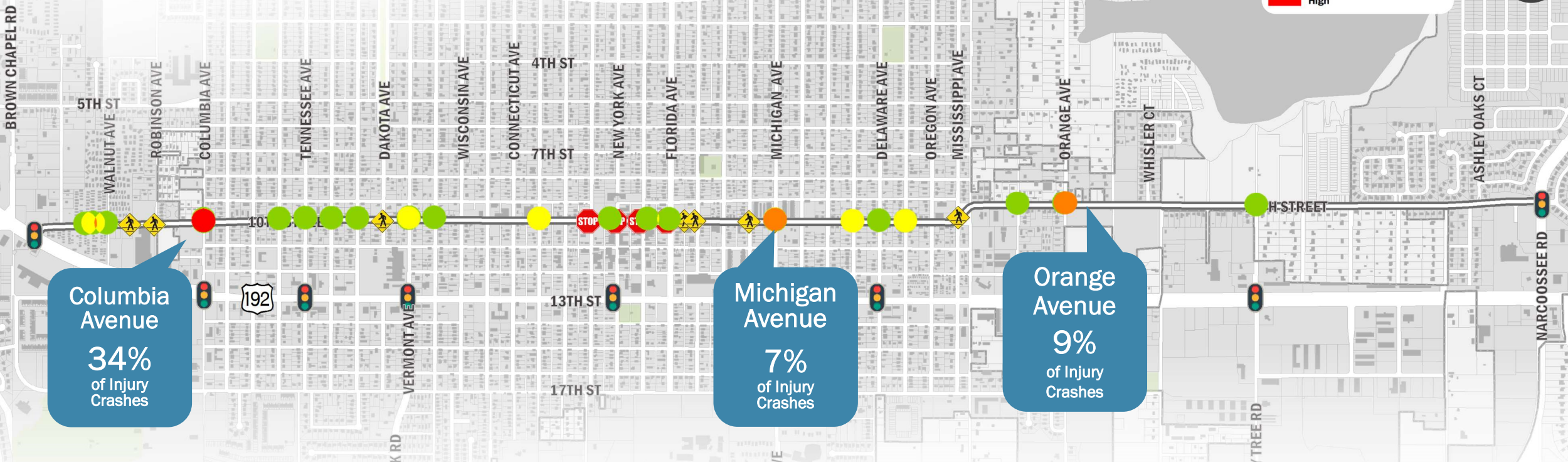
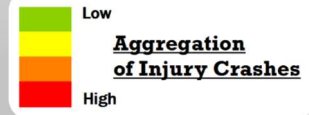
- Capacity improvements are not needed to accommodate future traffic volumes
 - Current roadway can hold double today's traffic volumes before exceeding maximum service volumes
- Study area is built-out and will maintain a low growth pattern
 - Projected growth is concentrated within Segment 3 may result in an approximately 10% increase in daily traffic over the next 20 years

Service Volume Thresholds for Non-State Roads	
LOS C	< 5,850
LOS D	5,850 - 11,970
LOS E	11,970 - 12,780

Note: Traffic Volumes obtained from: Osceola County Count Stations (2020), St. Cloud Count Stations (2021), FDOT Count Stations (2019), and New Counts collected from 1/20/2021- 1/27/2021 (Walnut Ave & Tennessee Ave) and from 1/29/2021 - 2/5/2021 (E 10th St)



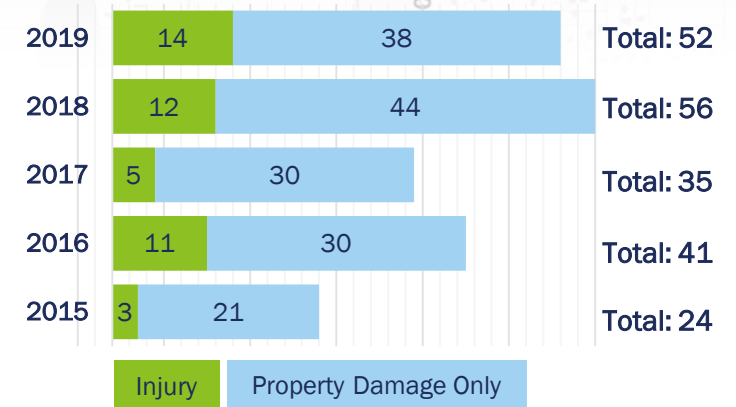
Overall Crash Assessment



This map shows all crashes in the 5-year period, including bike and pedestrian crashes. The data tells us:

- No fatalities occurred during the 5-year analysis period
- More than half of all injury crashes occurred at Columbia Avenue, Michigan Avenue, and Orange Avenue
- There was an increase in crashes in 2018 and 2019

Crashes By Year



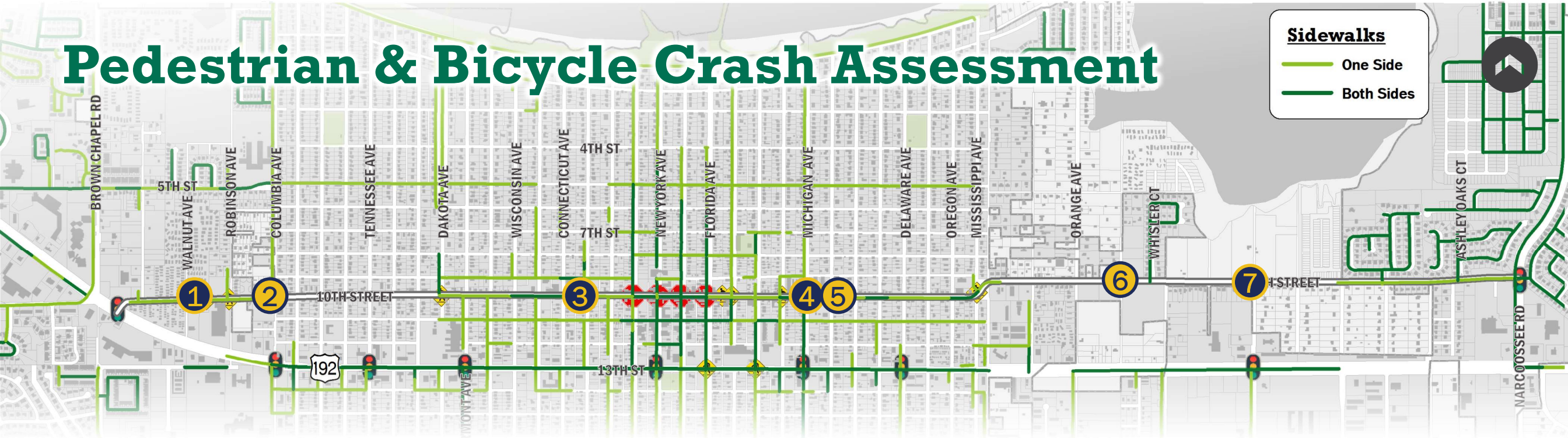
Source: Signal 4 (2015-2019)



Pedestrian & Bicycle Crash Assessment

Sidewalks

- One Side
- Both Sides



This map shows 5-year pedestrian and bicycle crashes, overlaid on existing sidewalk facilities. Most crashes occurred at locations without sidewalk or with sidewalk only on one side of the road.

1 Arizona Avenue

Pedestrian Crash
Vehicle struck person on an electric three-wheel scooter¹ when scooter was turning left.

2 Columbia Avenue

Pedestrian Crash
Vehicle hit-and-run while pedestrian was crossing Columbia Avenue along 10th Street.

3 Minnesota Avenue

Bike Crash
Vehicle struck bicyclist in unmarked crosswalk while crossing Minnesota Avenue along 10th Street.

4 Michigan Avenue

Bike Crash
Vehicle struck bicyclist within intersection.

5 Virginia Avenue

Pedestrian Crash
Vehicle struck pedestrian in crosswalk while crossing Virginia Avenue along 10th Street.

6 Rosedale Avenue

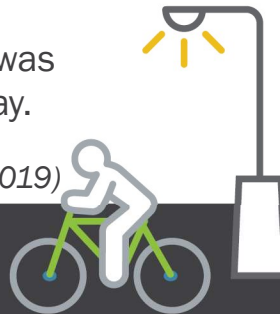
Pedestrian Crash
Vehicle struck pedestrian with side mirror while pedestrian was walking along E 10th Street.

7 Old Hickory Road

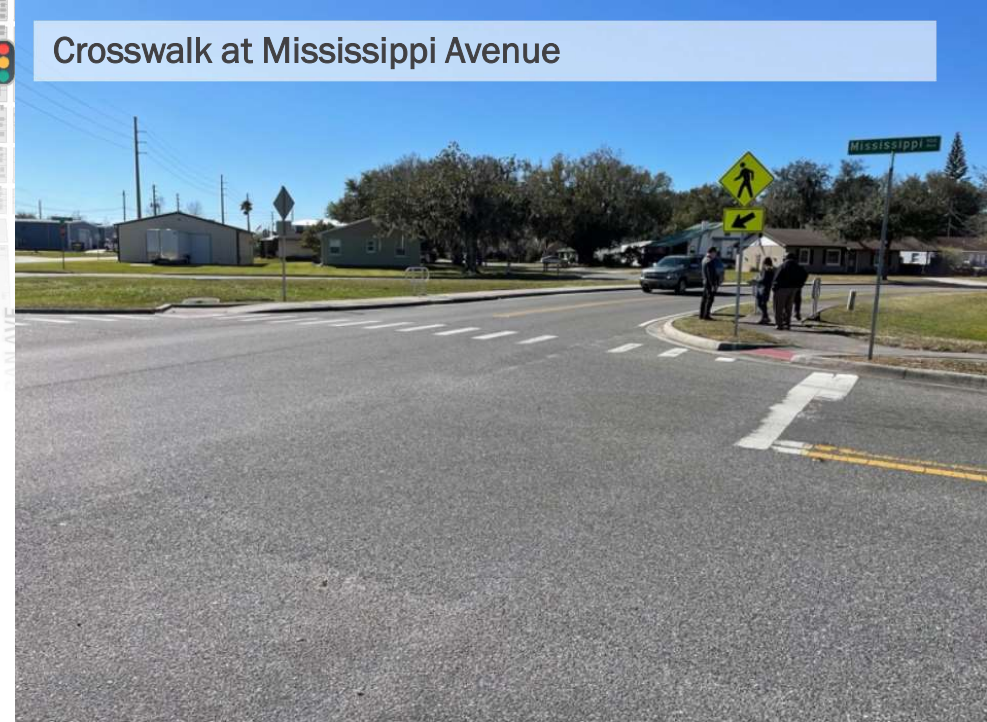
Bike Crash
Vehicle and bicyclist collided while bicyclist was attempting a right turn into a private driveway.

¹Highway Safety and Motor Vehicles (HSMV) crash report does not specify the type of scooter (mobility device versus vespa).

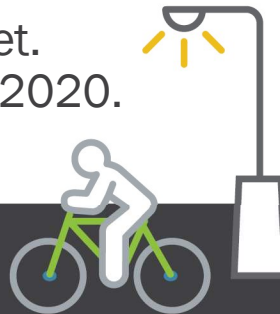
Source: Signal 4 (2015-2019)



Crosswalk Monitoring by Best Foot Forward (BFF)



The organization Best Foot Forward has monitored driver yield rates at two crosswalk locations on SW 10th Street. Robinson Avenue has been monitored since February 2021. Mississippi Avenue has been monitored since July 2020.





Section 1.3

Summary of Online Survey and Public Feedback

Online Survey

- The survey sought input on current conditions and ideas for the future vision of the corridor
- The survey asked:
 - How the respondents use 10th Street
 - How often the respondents walk or run, bike, take the bus, or drive on 10th Street
 - How they rate the current condition of walking or running, biking, taking the bus, and driving on 10th Street
 - Types of improvements respondents would like to see on 10th Street
- The survey also provided insight to help understand specific comments and concerns, respondent demographics, and how participants found out about the online survey
- The survey was available online from April 1, 2021 to May 7, 2021



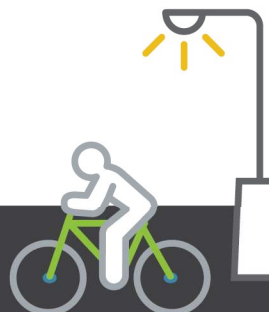
548
Respondents



80%
Travel along
10th Street

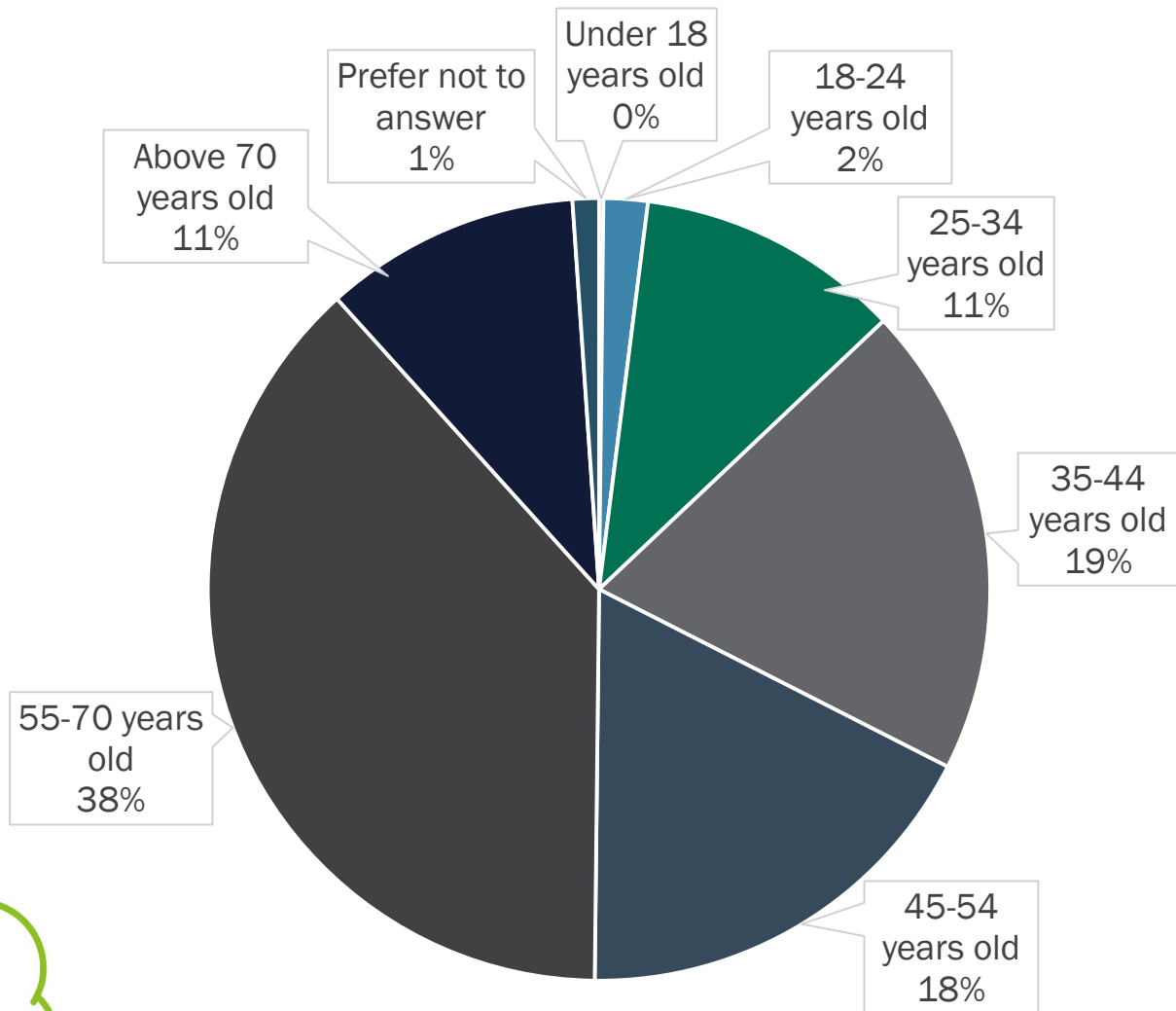


50%+
Live and/or Work
on 10th Street

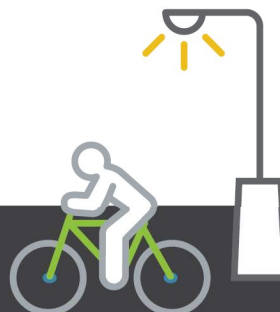
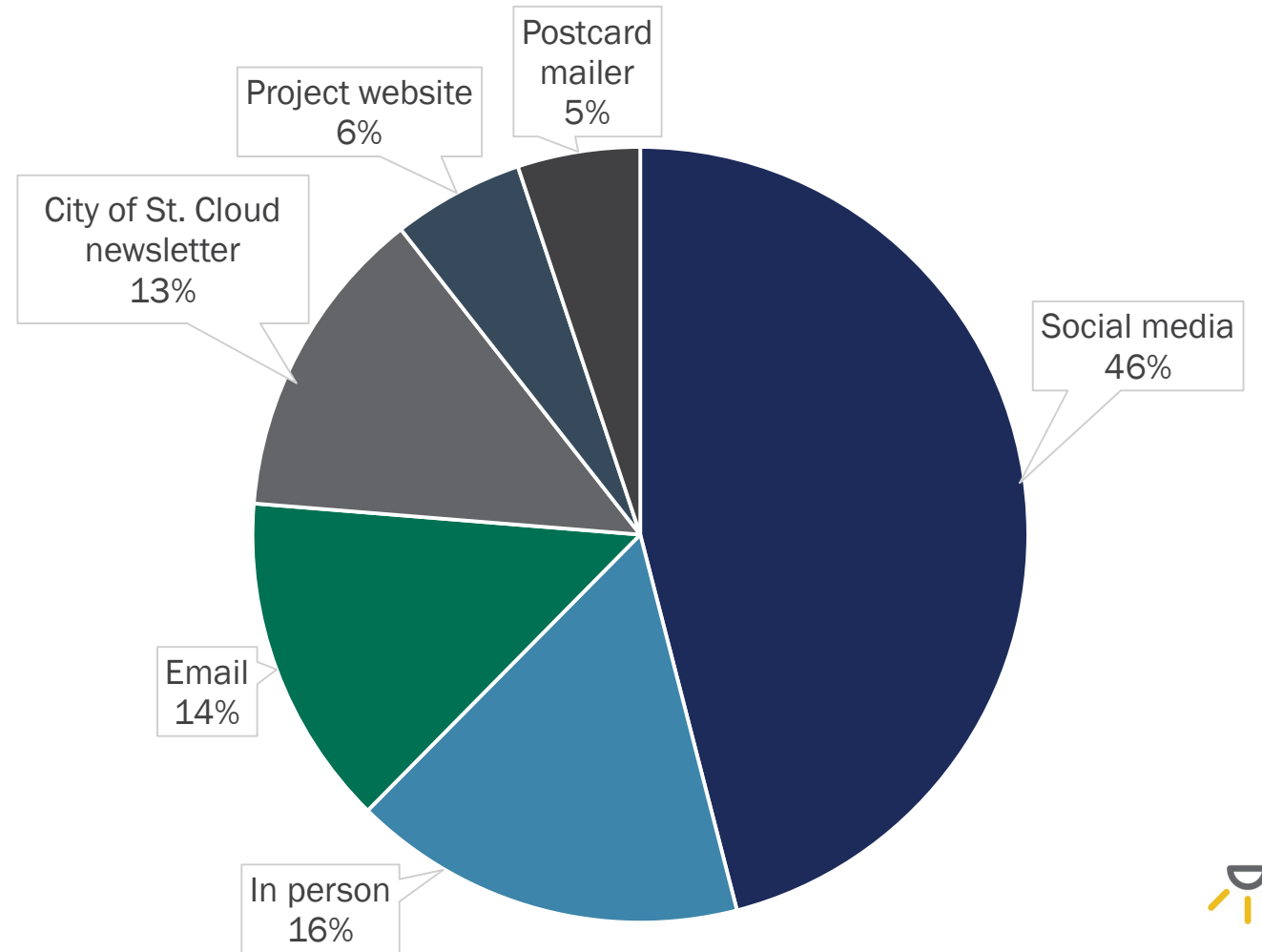


Who Did We Hear From?

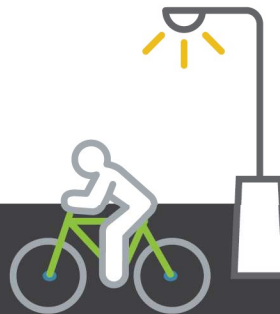
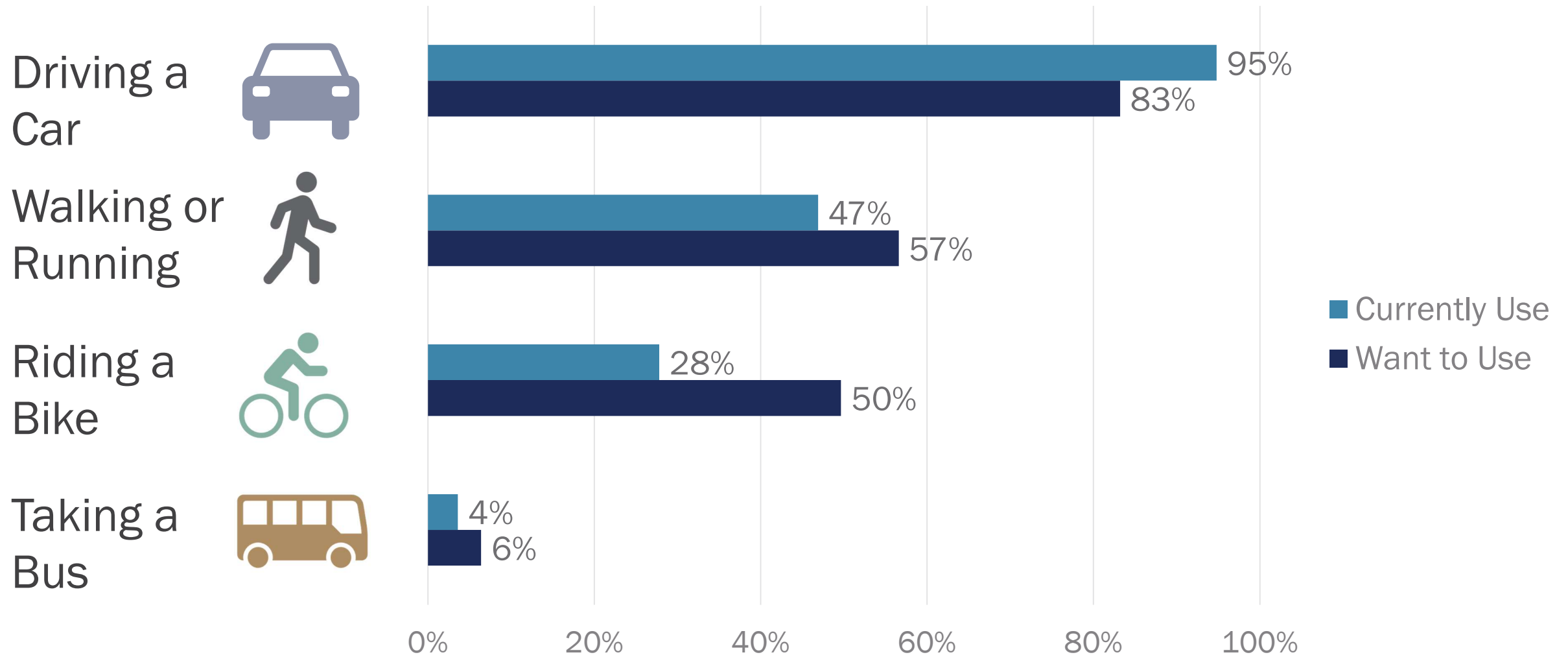
What is your age group?



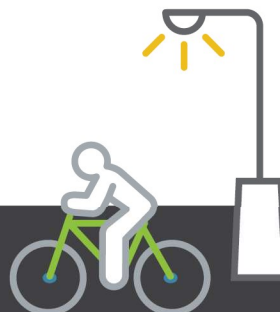
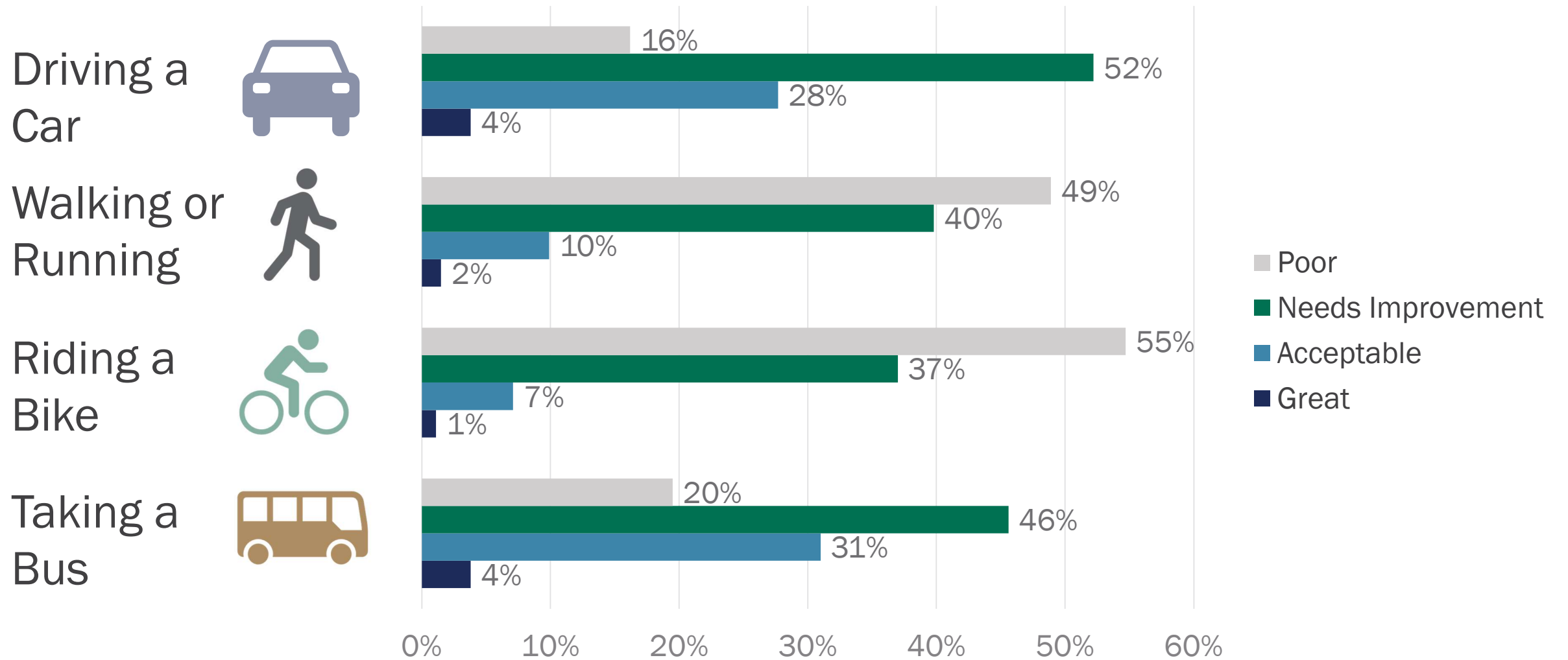
How did you hear about this survey?



How Do They Use 10th Street?

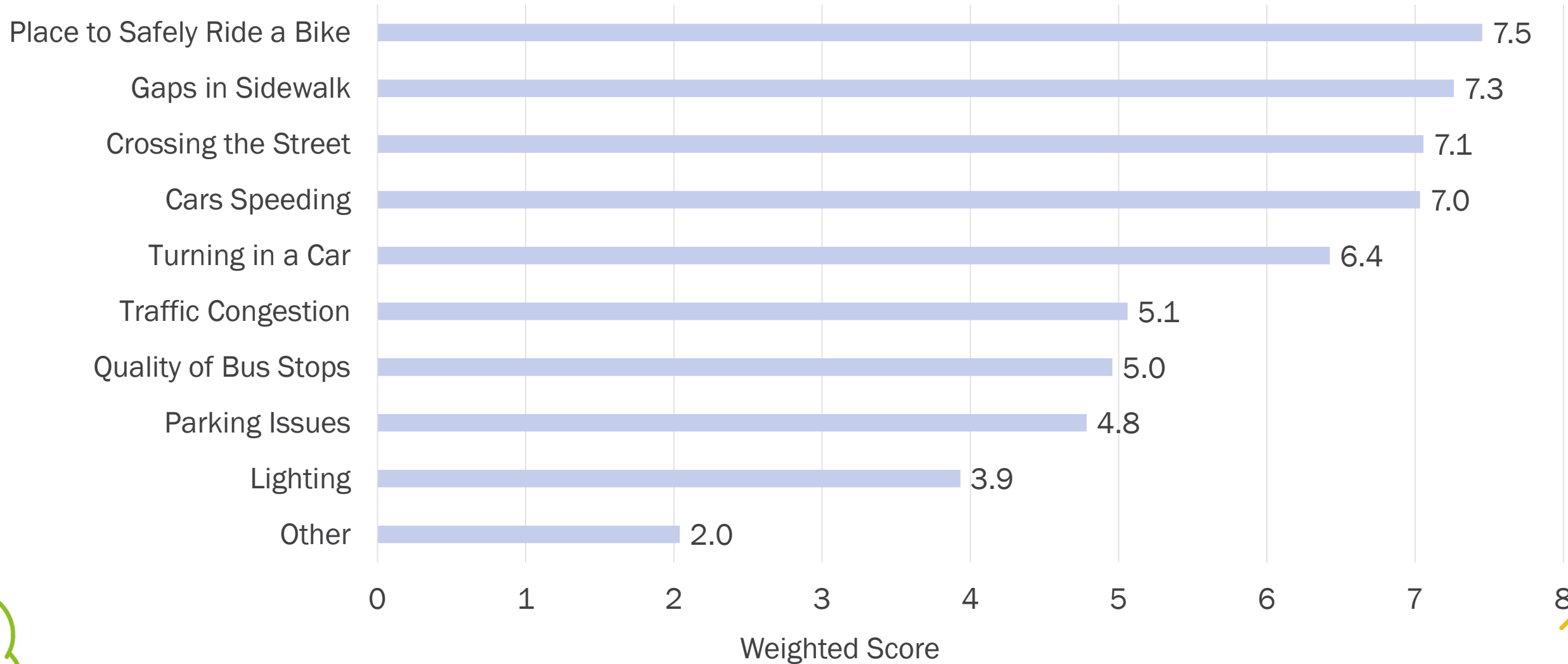


Opinion of Current Conditions



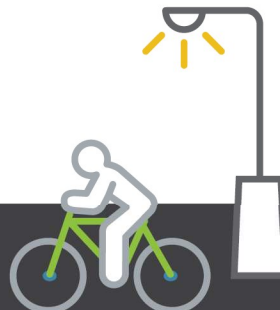
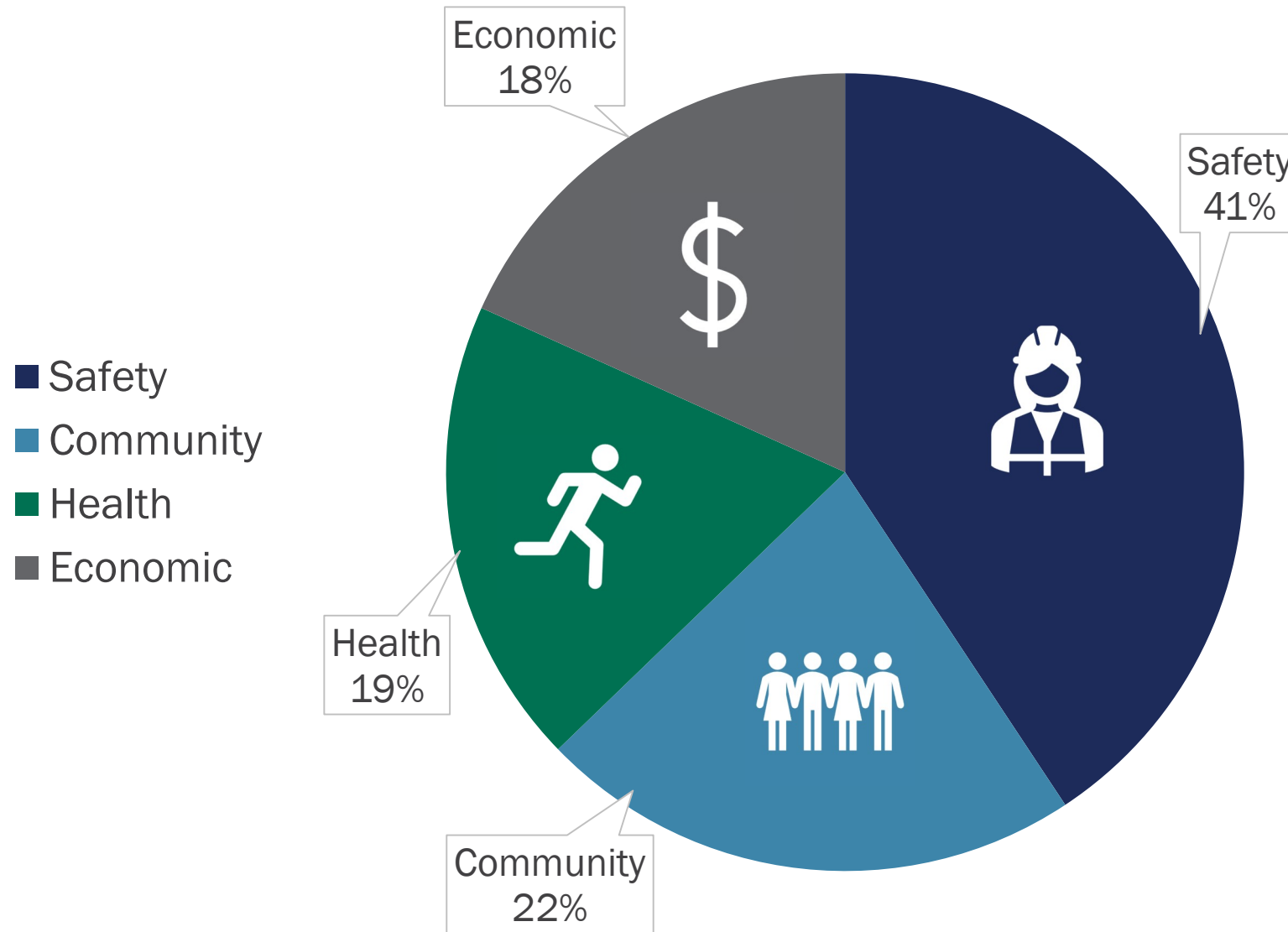
Top Challenges along 10th Street Today

Bicycle and pedestrian conditions came in as the top challenges along 10th St, followed closely by speeding.



Project Goals

When you envision 10th Street in the future, which goal is most important to you?



Comment Examples and Themes

Safety

“I live about 10 blocks from 10th Street and downtown. I like taking my young daughter for walks downtown, but many of the streets on the way to 10th don't have sidewalks. Drivers don't obey the speed limits and we don't feel safe. There are also not many crosswalks, and making cars stop for pedestrians is not enforced.”

Economic

“An exciting and diverse downtown area built with foot traffic and diverse shopping/dining in mind is something I really care about for St. Cloud.”

Community

“Beautification and functionality will stimulate more patronage and foster more hometown pride. I have seen significant improvements in the last couple years and hope it continues.”

Health

“I think that improving sidewalks on 10th street would be wonderful! Also, some sort of bike lane. Those two things would really make a huge difference. Thank you.”

Stormwater

“Please make flooding issues your priority!!”

Transit

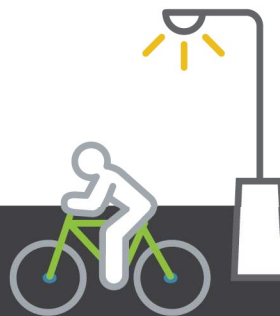
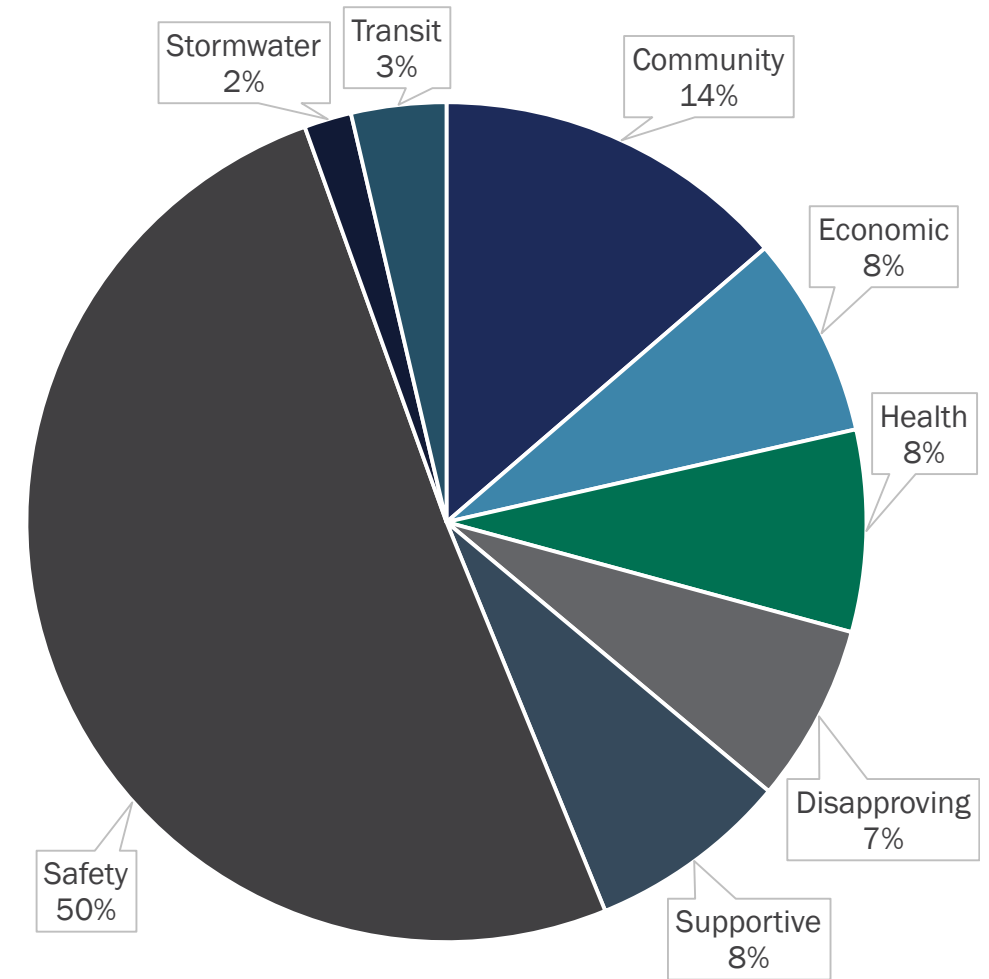
“Buses should have fully lit stops with pull off lanes and all transit info should be at each stop.”

Disapproving

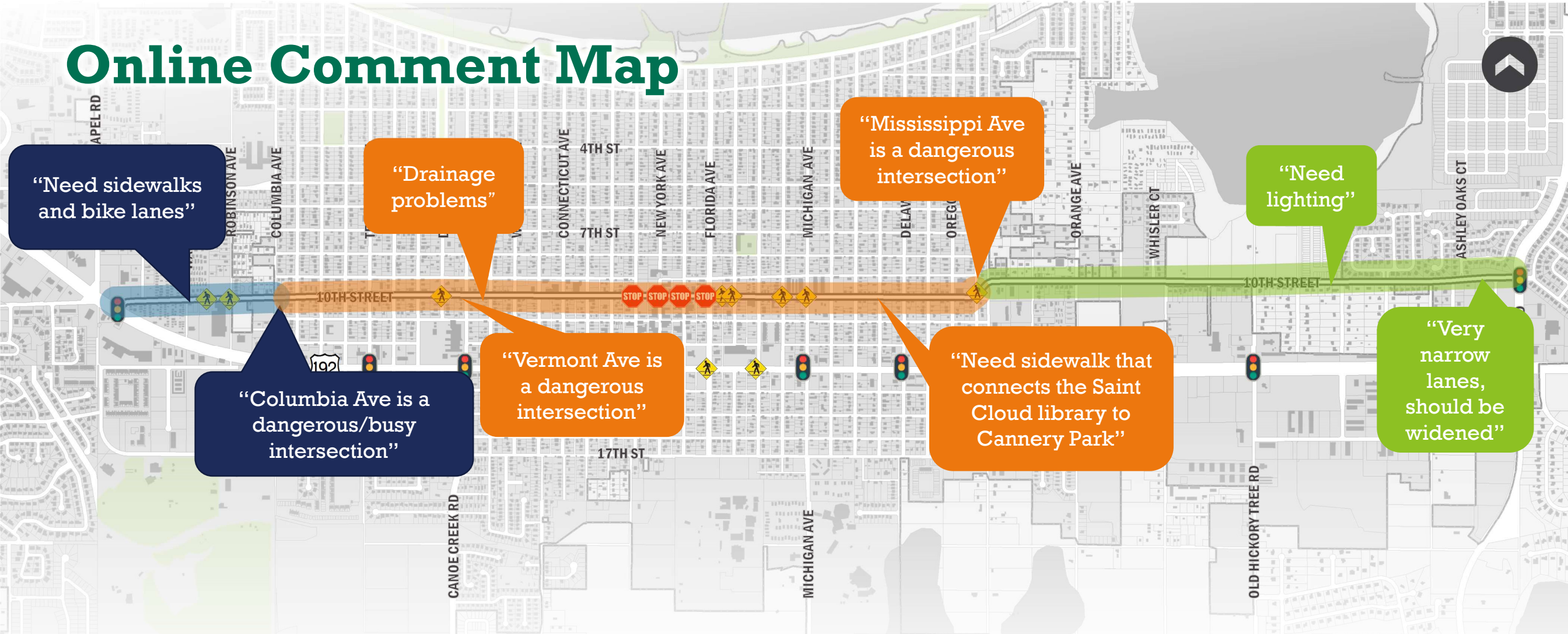
“I do NOT want to see 10th Street increased to more lanes nor do I want to see it made into a one-way street. It is fine as it is. 17th Street would be better revamped as it would access the new businesses that are being built east on 192 and the commercial businesses that are currently located on 17th Street. If changes need to be made, 17th Street is the best choice.”

Supportive

“Lots of opportunity for improvement on many levels. Hope to see positive results. I'm willing to take more surveys and/or help. Feel free to email me.”

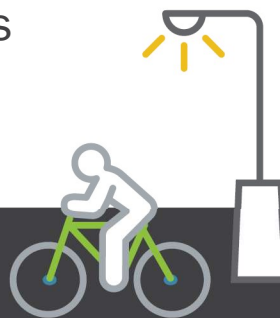


Online Comment Map



Another public feedback tool used was an online comment map. Sample comments are shown above.

- 26 comments were submitted
- Comments included suggestions for bicycle and pedestrian connections, highlighted points of interest along 10th Street, called out the need to complete sidewalk gaps in various locations, and identified intersections that have bad sight lines and frequent crashes





Section 1.4

Goals, Objectives, and Best Practices

Goals & Objectives



Safety – reduce speeding, crashes, and conflicts

- Prioritize vulnerable user safety, especially at Robinson Ave, Dakota Ave, and Florida Ave
- Provide lane widths per design criteria
- Prioritize intersection safety improvements, especially at Columbia Ave, Michigan Ave, and Orange Ave
- Increase safe crossing opportunities by using short blocks and enhanced crosswalks at key north-south bicycle and pedestrian connections



Community – beautify the street to enhance the overall neighborhood character and identity

- Maintain the “small town” character of St. Cloud
- Update street design to better reflect adjacent land uses, including pedestrian scale lighting, and installing curb and gutter
- Improve drainage and consider stormwater runoff
- Provide enhanced gateways and placemaking
- Enhance landscaping and maximize shade



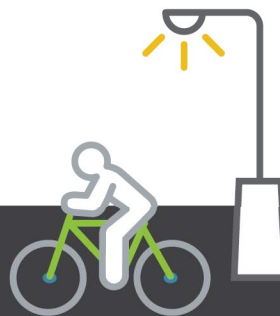
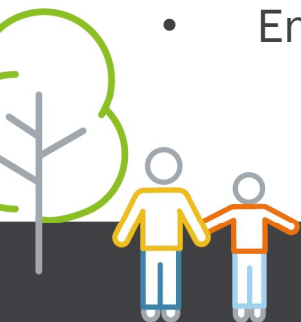
Health – improve access to walking and biking to increase physical activity

- Provide a safe, comfortable place to walk and bike
- Improve the quality and comfort of bicycle and pedestrian connections to parks and schools



Economy – support local business and investment in downtown St. Cloud

- Create transitions east and west of the planned downtown 10th St improvements
- Maintain consistency and expand upon existing master plans and downtown revitalization projects
- Consider bicycle and pedestrian network connectivity to adjacent neighborhoods, future transit stops, Lakeshore Blvd, and US 192
- Maximize opportunities and access to parking in coordination with businesses / property owners, especially near Downtown



Complete Street Best Practices

A complete street shares space with all users – people walking, people biking, people taking the bus, and people driving. A best practice is to prioritize the most vulnerable users, which is why people on foot are at the top of the pyramid.



People Walking

A sustainable and enjoyable way to get around, all trips by bike, bus, or car also begin and end with walking

- Well-maintained sidewalk space
- Safe & enhanced pedestrian crossings
- Lighting, shade, and other amenities



People Biking

In addition to recreation, biking can replace long walking trips and supplement transit trips

- Bike user visibility
- Safe bikeway & intersection design
- Bike parking and accessibility



People Taking The Bus

An efficient and affordable way to move many people, including disabled people, over long distances

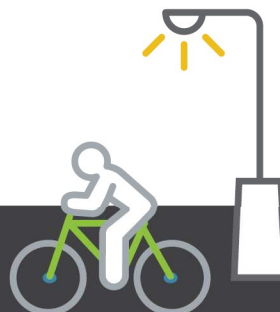
- Accessible & comfortable bus stops
- Bus stop spacing
- Bus schedule reliability & frequency



People Driving

As the most popular but least efficient way to travel, vehicles should be included but not prioritized

- Traffic calming for safety of all users
- Safe driveways & access points
- Speed limit through design



Approach to Speed Management

To achieve the desired speed for a street, various traffic calming elements can be used. The Florida Design Manual emphasizes these three speed management concepts for successful projects.

Specific design strategies that may be used depend on the context classification and speed limit of a roadway section.

ENCLOSURE

Gives the sense that the street is contained rather than a limitless expanse of space



Source: Philadelphia Magazine



Source: NACTO Urban Street Design Guide

ENGAGEMENT

Connects the driver to the surrounding environment through visual and audio input



Source: NACTO Urban Street Design Guide



DEFLECTION

Provides horizontal and vertical movements of drivers from the path of travel



Source: NACTO Urban Street Design Guide

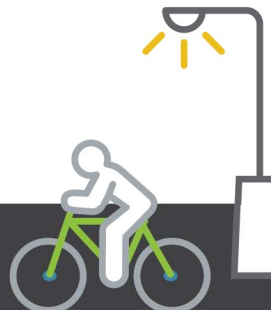
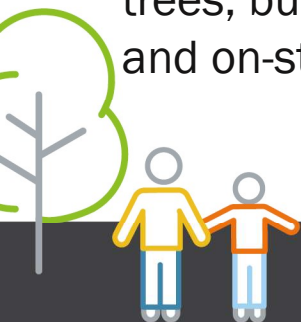


Design strategies may include street trees, building fronts near the street, and on-street parking

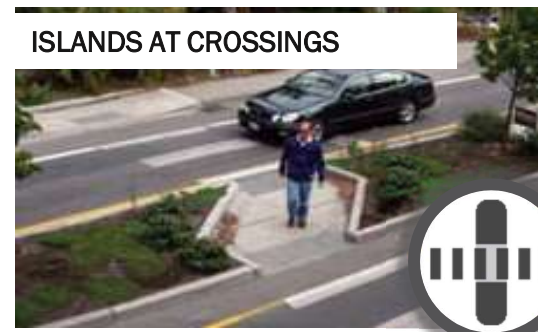
Design strategies may include narrow lanes, on-street parking, patterned and painted pavement, and frequent crossings for people walking and biking

Design strategies may include raised intersections and crosswalks, chicaning, and roundabouts

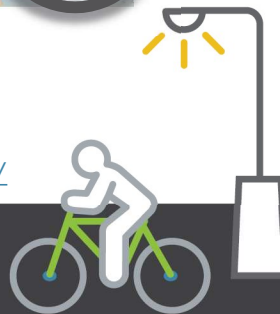
Florida Design Manual: <https://www.fdot.gov/roadway/fdm/default.shtm>



Applicable Speed Management Strategies



Learn more about some of these strategies here: <http://www.pedbikesafe.org/PEDSAFE/countermeasures.cfm> , <https://safety.fhwa.dot.gov/provencountermeasures/>

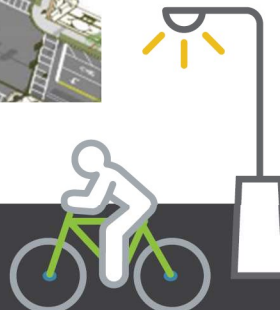
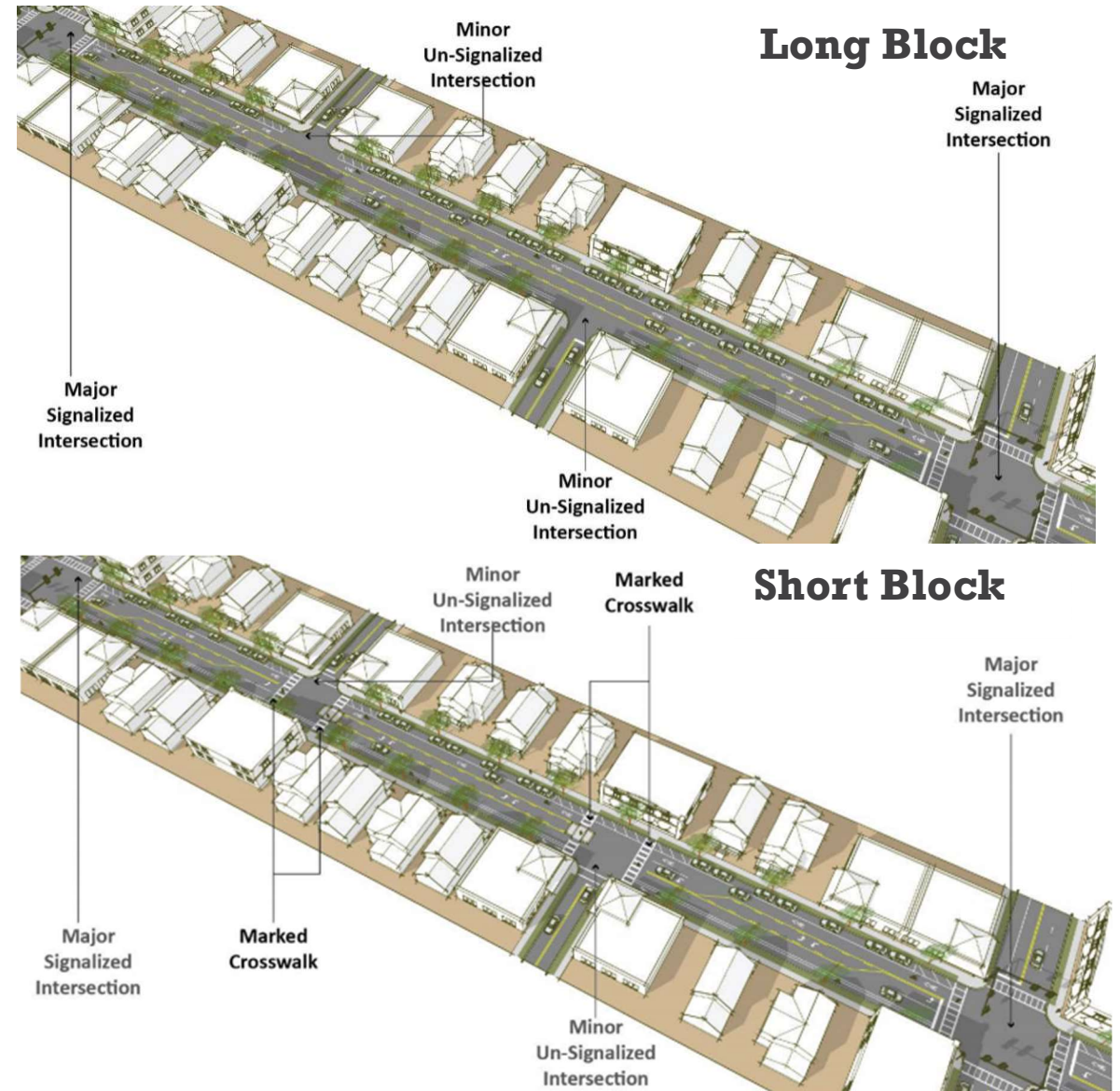


Short Blocks

- A pattern of short blocks creates a more walkable environment and helps calm traffic
- Mark crosswalks at major and minor intersections approximately every 600 feet
- These intersections can be emphasized by raising the crosswalk or intersection and/or painting within the intersection
- Provide appropriate intersection controls to facilitate crossings, including 4-way stops, roundabouts, and traffic signals



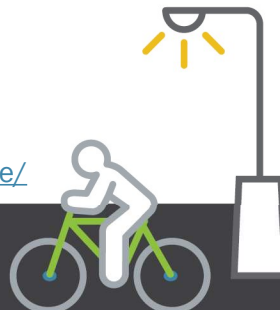
Marked crosswalks at minor street intersections



Multimodal Design Strategies



Learn more about some of these strategies here: <http://www.pedbikesafe.org/PEDSAFE/countermeasures.cfm> , <https://nacto.org/publication/urban-bikeway-design-guide/>





Section 1.5

Project Visioning Team #1 Summary

Project Visioning Team (PVT) Members

The PVT is comprised of regional and local stakeholders that are able to help steer the study's process, recommended alternatives, and conceptual design.

State & Regional

FDOT

LYNX

MetroPlan Orlando

City of St. Cloud

Public Works

Parks and Recreation

Environmental Utilities Department

Community Development/CRA

Planning and Zoning

City Administration

St. Cloud Fire Department

St. Cloud Police Department

Osceola County

Transportation and Transit

Economic Development

Osceola County Public Schools

Public Utility

Orlando Utilities Commission (OUC)

Special Interest

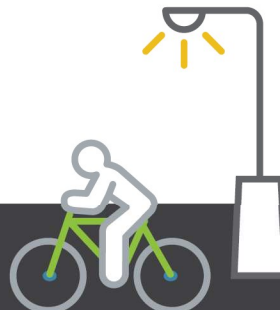
St. Cloud Main Street District

St. Cloud Downtown Business Group

St. Cloud Chamber of Commerce

Orlando Health St. Cloud

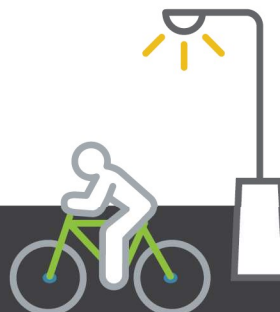
Bike/Walk Central Florida



Project Visioning Team Meeting #1 Summary

The first PVT meeting was held on Monday, June 7, 2021 at 1:30pm

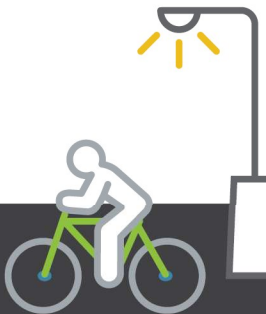
- Meeting held virtually over Zoom
- Over 25 people were in attendance
- The meeting helped to further develop the Goals & Objectives, with changes being reflected in this chapter
- PVT members stressed the importance of improvements that will get people to stop and spend time in the downtown area businesses, including slowing down drivers, linking bicycle traffic, and providing trees for shade for people walking



Next Steps

The 10th Street Study is transitioning to an exciting phase that will include more engagement as the potential options for the corridor become clearer. Future chapters will be added to the study as they are completed. Key activities in the Fall of 2021 will include:

- Development and evaluation of alternatives
 - Typical section options
 - Typical intersection treatments
 - Options for specific key intersections and nodes
- Additional outreach to receive feedback on potential solutions:
 - Online surveys
 - In-person engagement at community events





Chapter 2: Alternatives Assessment

Coming Spring 2022



Project Webpage: www.MetroPlanOrlando.org/10thStreetStudy