



10th Street Corridor Study

From US 192 to Narcoossee Road



June 2022



OSCEOLA
COUNTY be first
to what's next.

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



Table of Contents

1.0 Defining Success (Fall 2021)

1.1 Project Overview

1.2 Corridor Characteristics and Previous Studies

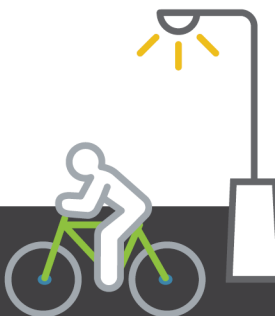
1.3 Summary of Online Survey and Public Feedback

1.4 Goals, Objectives, and Best Practices

1.5 Project Visioning Team #1 Summary

2.0 Alternatives Assessment (Winter 2022)

3.0 Concept Design and Recommendations (Summer 2022)





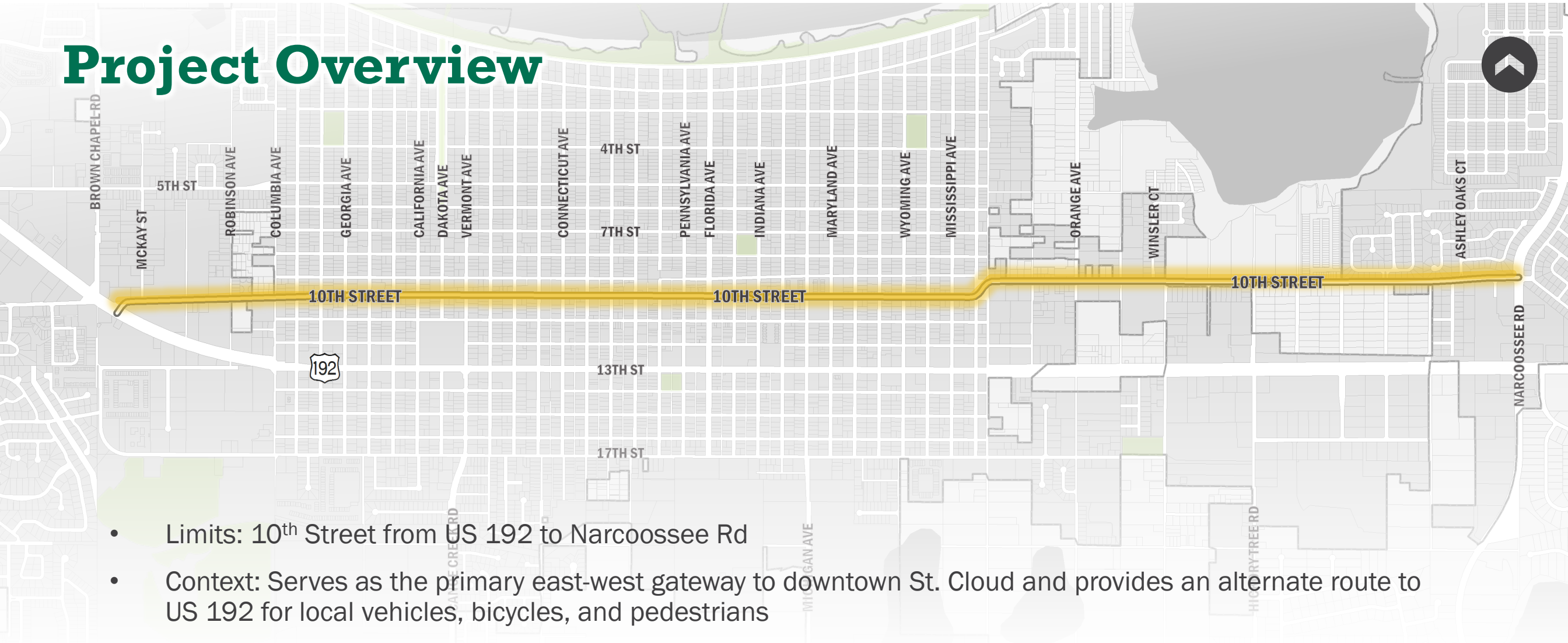
Chapter 1: Defining Success



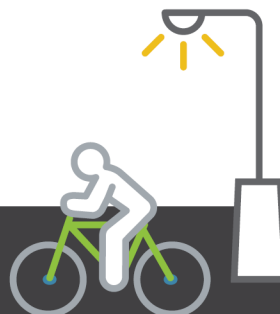
Section 1.1

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

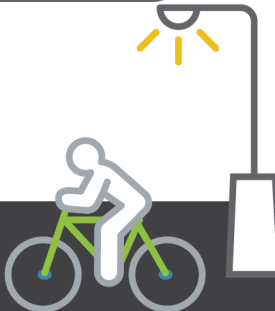
02 Defining Success

July 2021 – December 2021

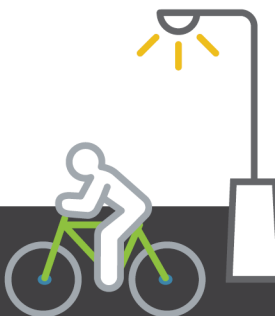
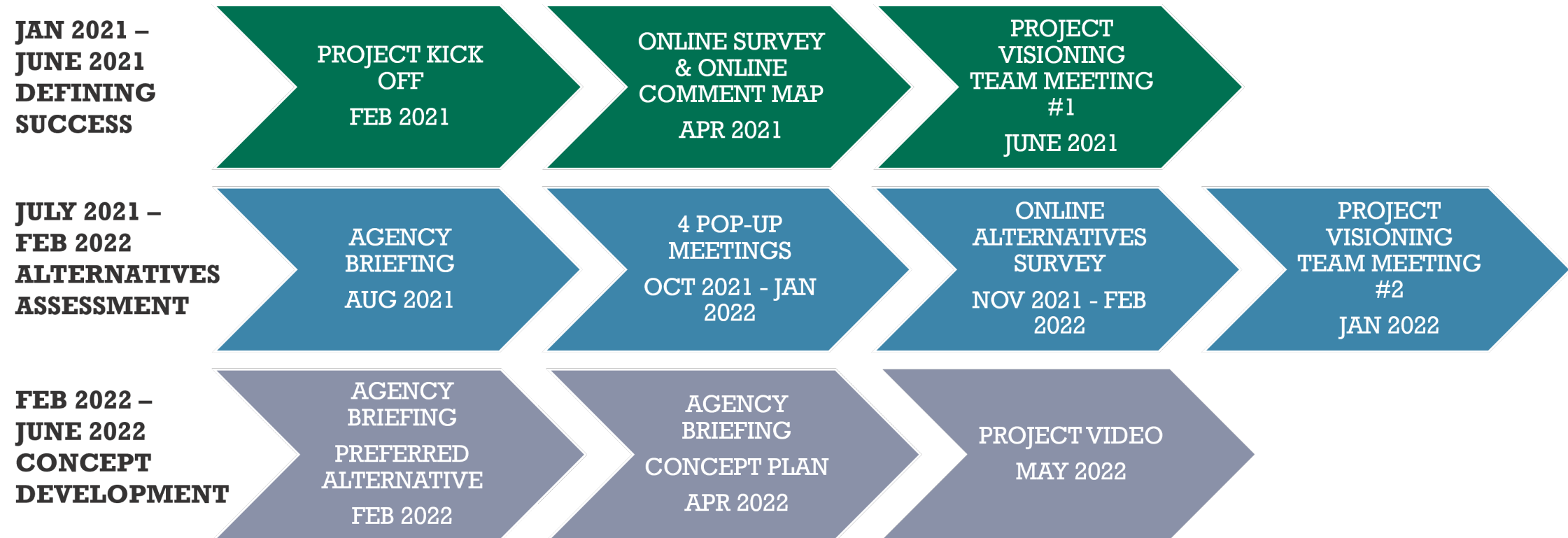
03 Alternatives Assessment

November 2021 – June 2022

04 Concept Development



Outreach Schedule

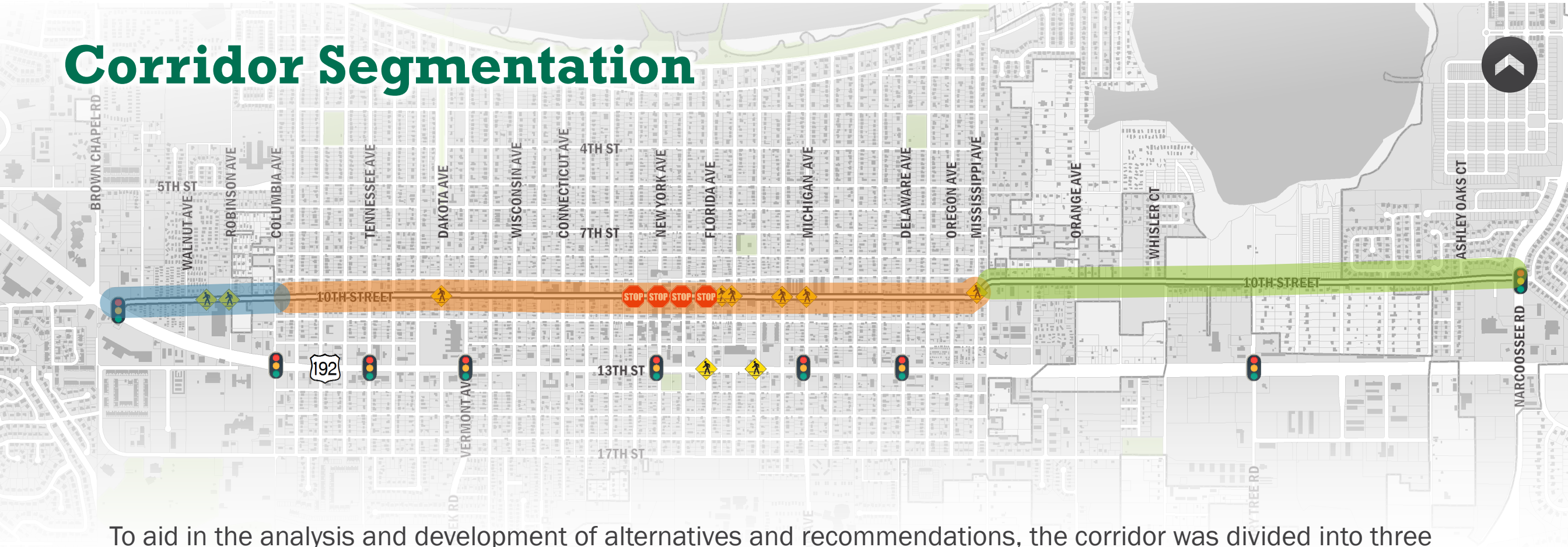




Section 1.2

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:

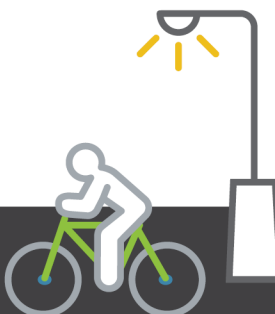
Historic Grid

From Columbia Avenue to
Eastern Avenue

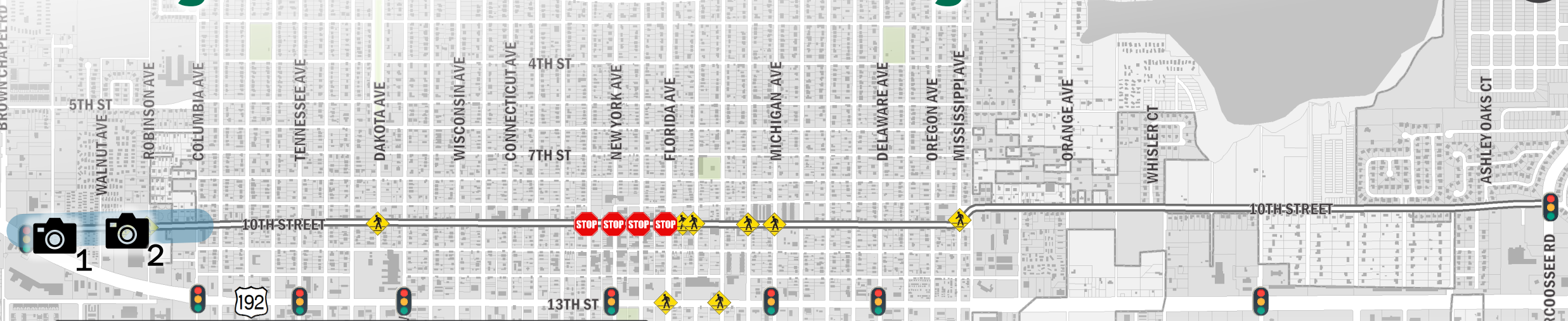
Area 3:

Suburban Transition

From Eastern Avenue to
Narcoossee Road



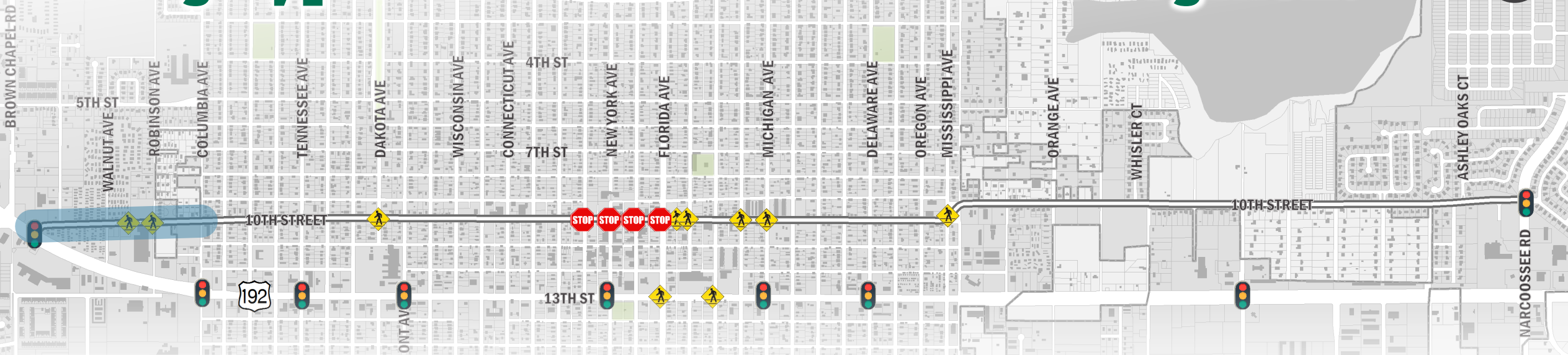
Existing Photos: Medical Arts Segment



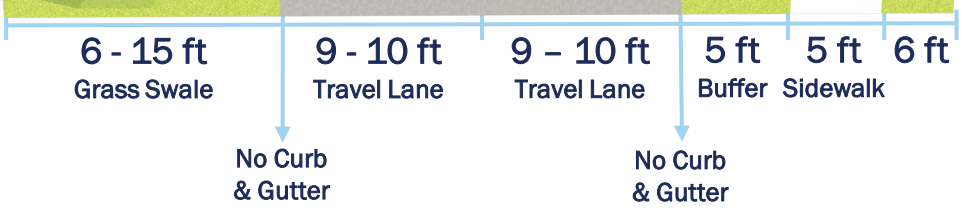
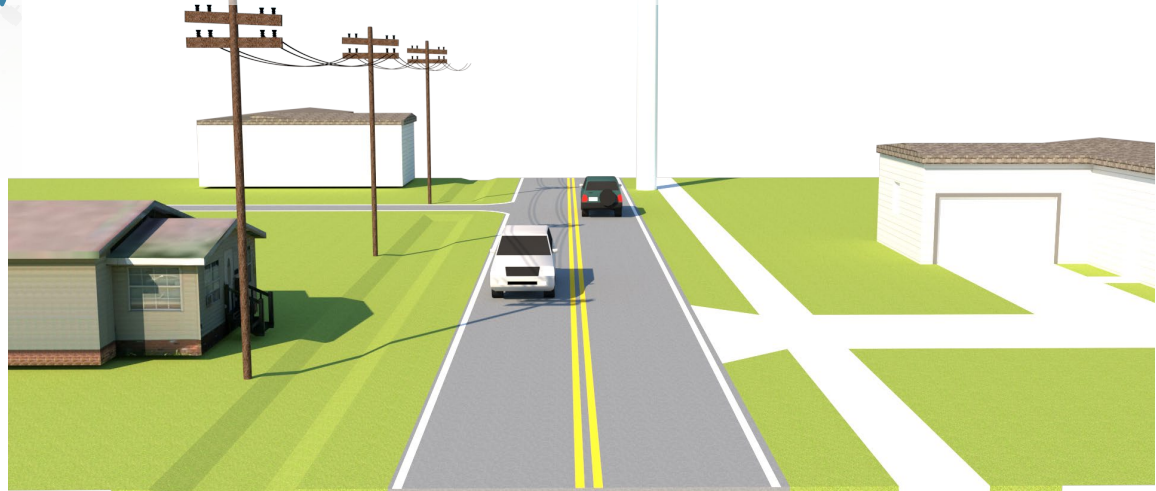
The area is characterized by open drainage, large transmission poles, and sidewalk gaps



Existing Typical Section: Medical Arts Segment

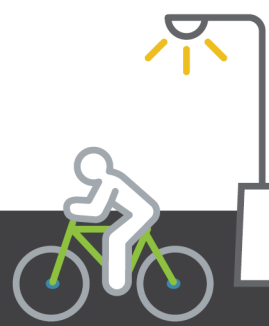


Typical Section from US 192 to Columbia Avenue (Looking West)

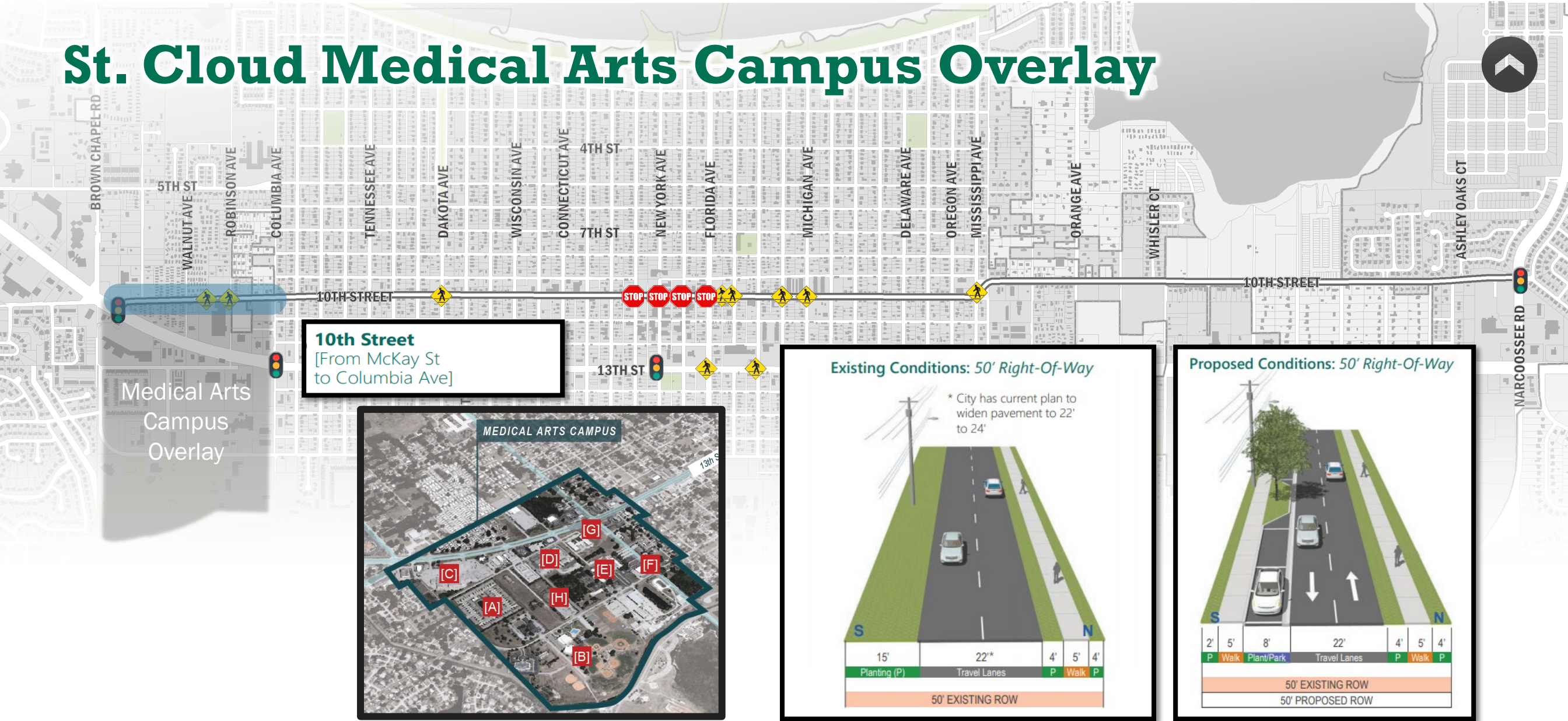


Features:

- 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



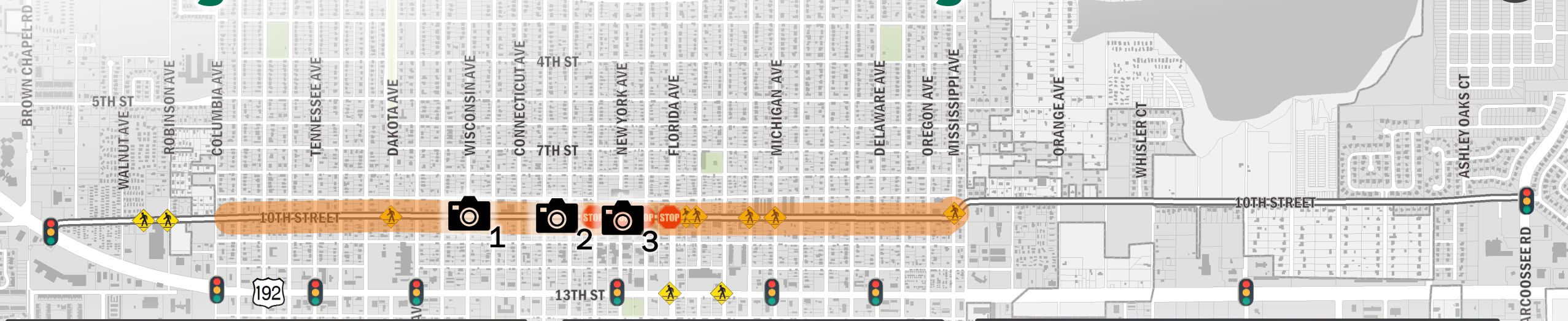
St. Cloud Medical Arts Campus Overlay



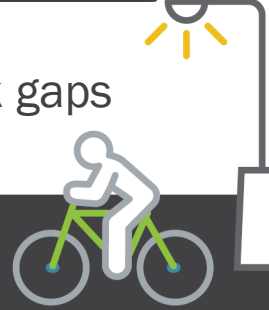
- The St. Cloud Medical Arts Campus is located along the 10th St Corridor from McKay St to Columbia Ave
- Proposed improvements include adding a sidewalk to the western side of the road and creating space for plants and parking

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

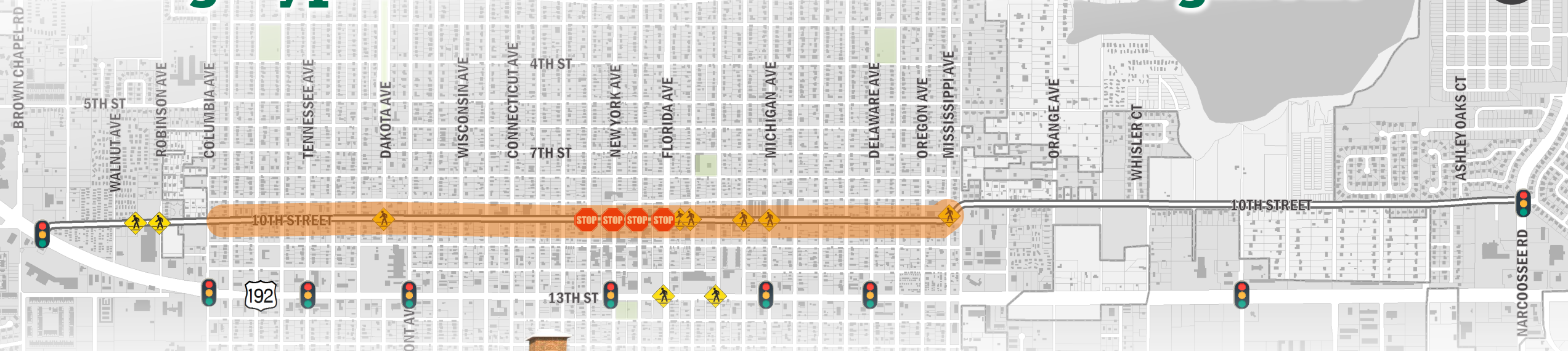
Existing Photos: Historic Grid Segment



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

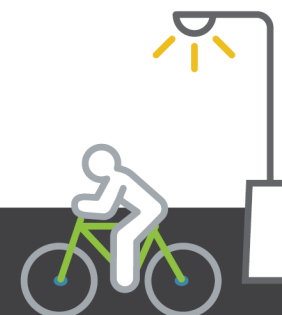


Typical Section from Columbia Avenue to Eastern Avenue (Looking West)

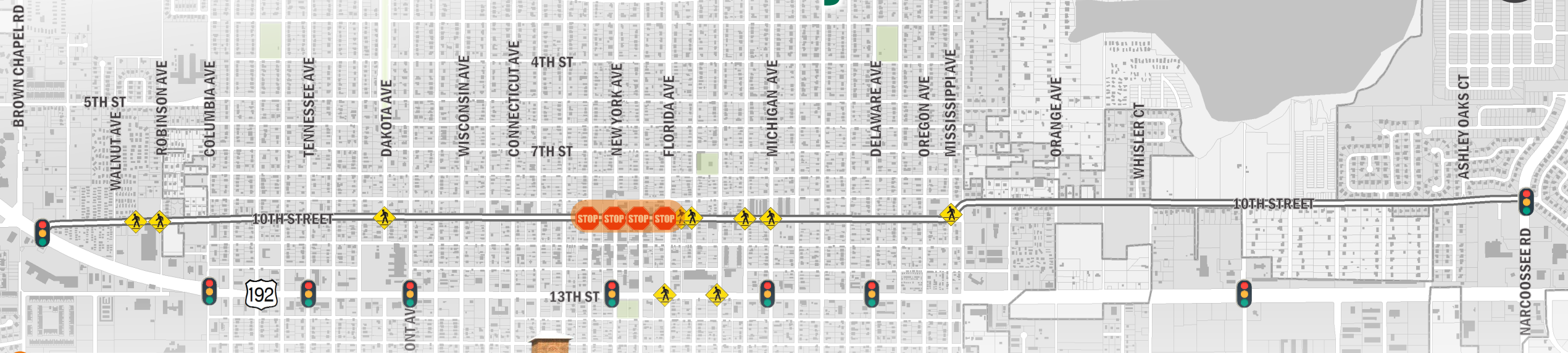


Features:

- 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

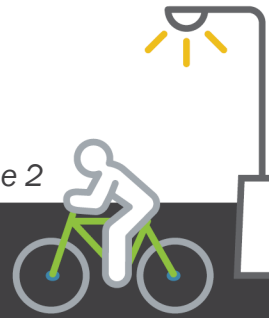


Features:

- 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



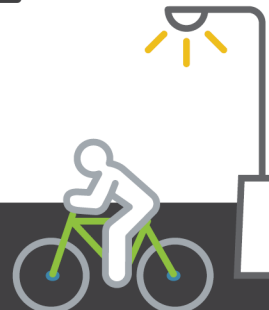
Source: St. Cloud Downtown Revitalization Project Phase 2



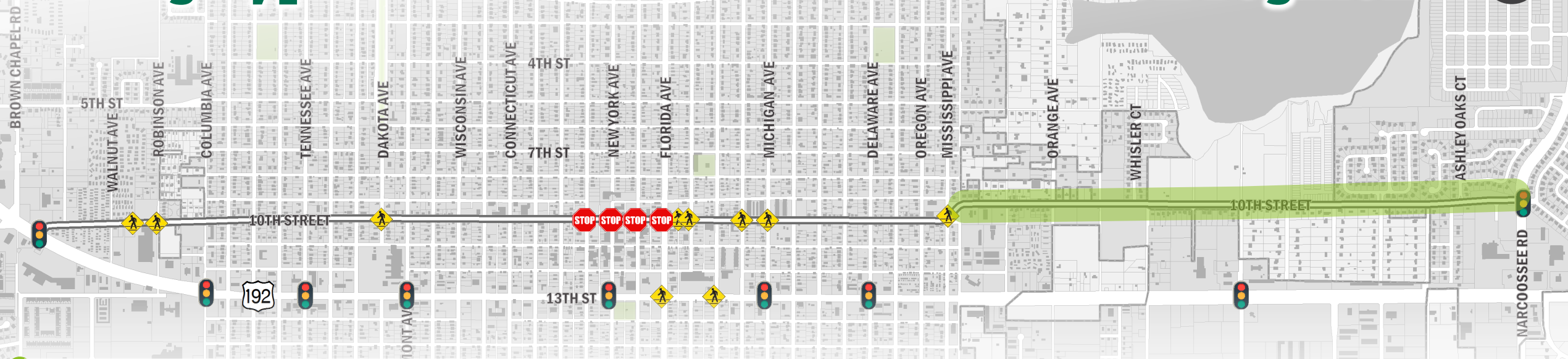
Existing Photos: Suburban Transition Segment



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



Existing Typical Section: Suburban Transition Segment

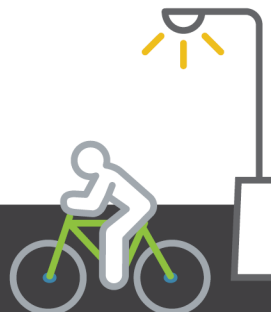


Typical Section from Eastern Avenue to Narcoossee Road (Looking West)



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

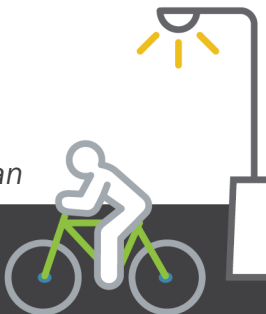


Envision St. Cloud Master Plan

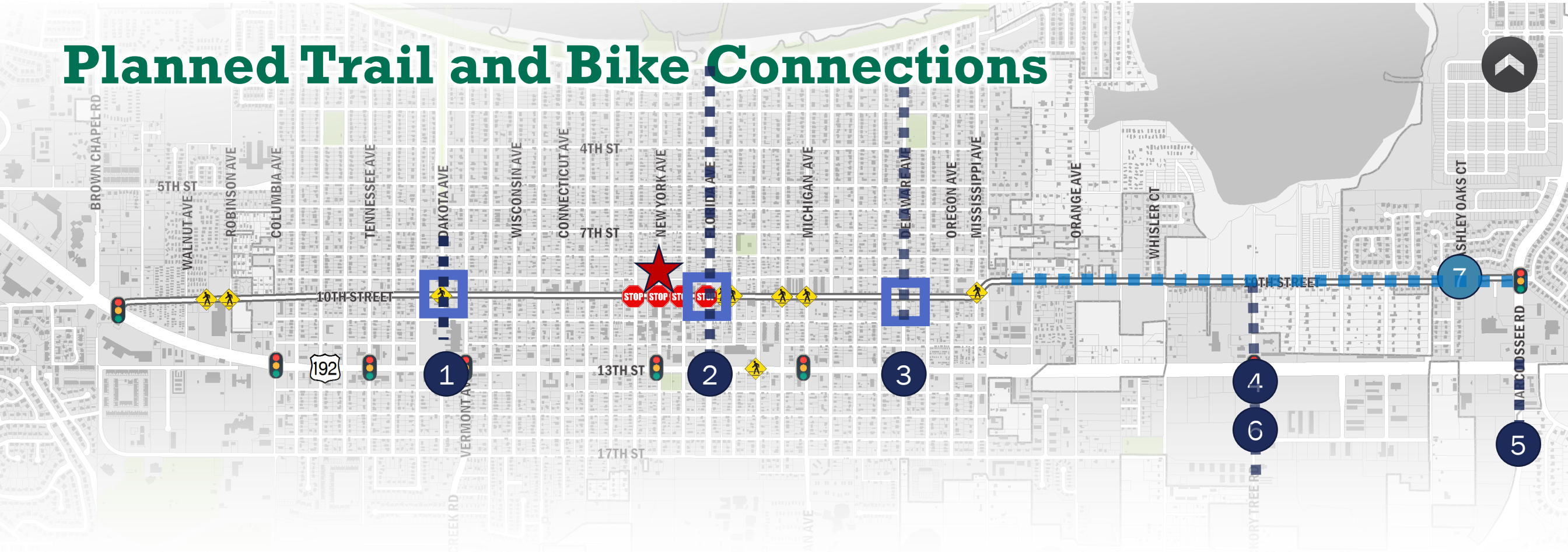
- The Master Plan aspires to create a strong and livable downtown and capitalizes off the lakefront while embracing growth
- Includes changes to St. Cloud's land use, zoning and regulatory policy, and a specific economic-development strategy completed in four phases
- Recommended actions include:
 - 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 Trail

5

Hickory Tree Road Trail

6

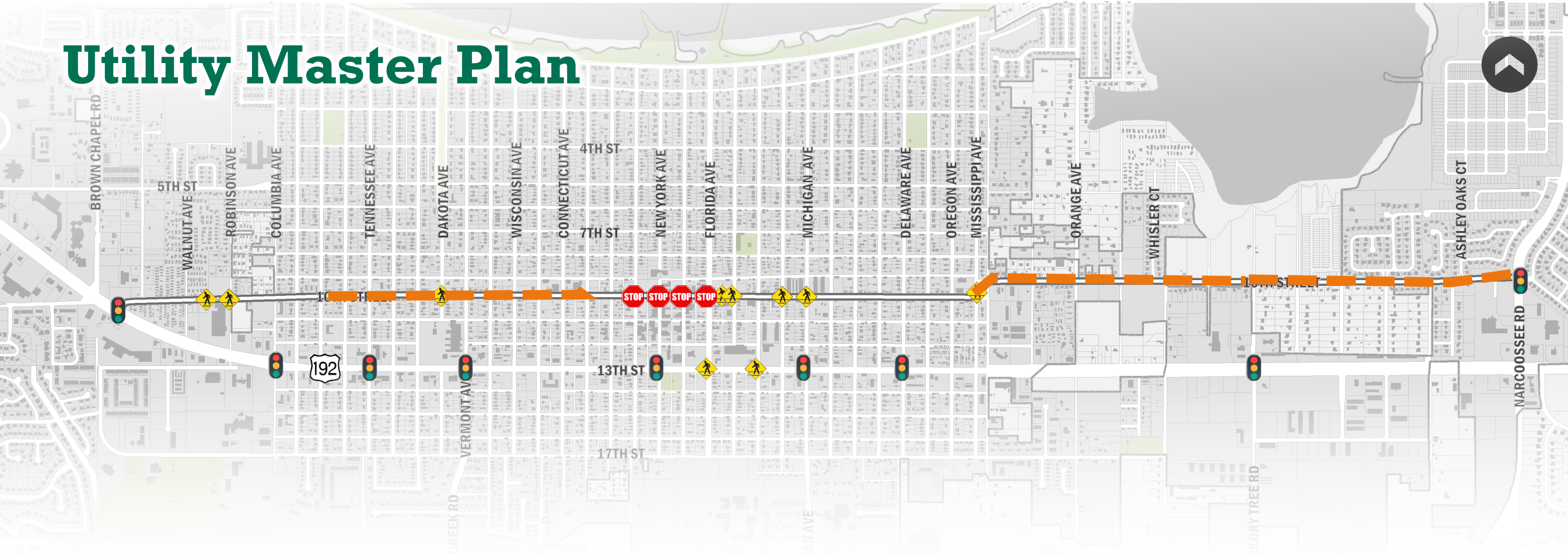
Old Hickory Tree Road Trail

7

Shared Lane Arrow



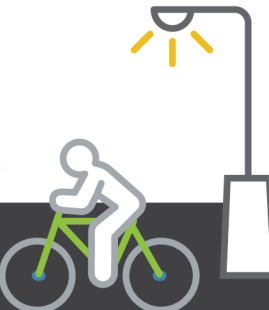
Utility Master Plan



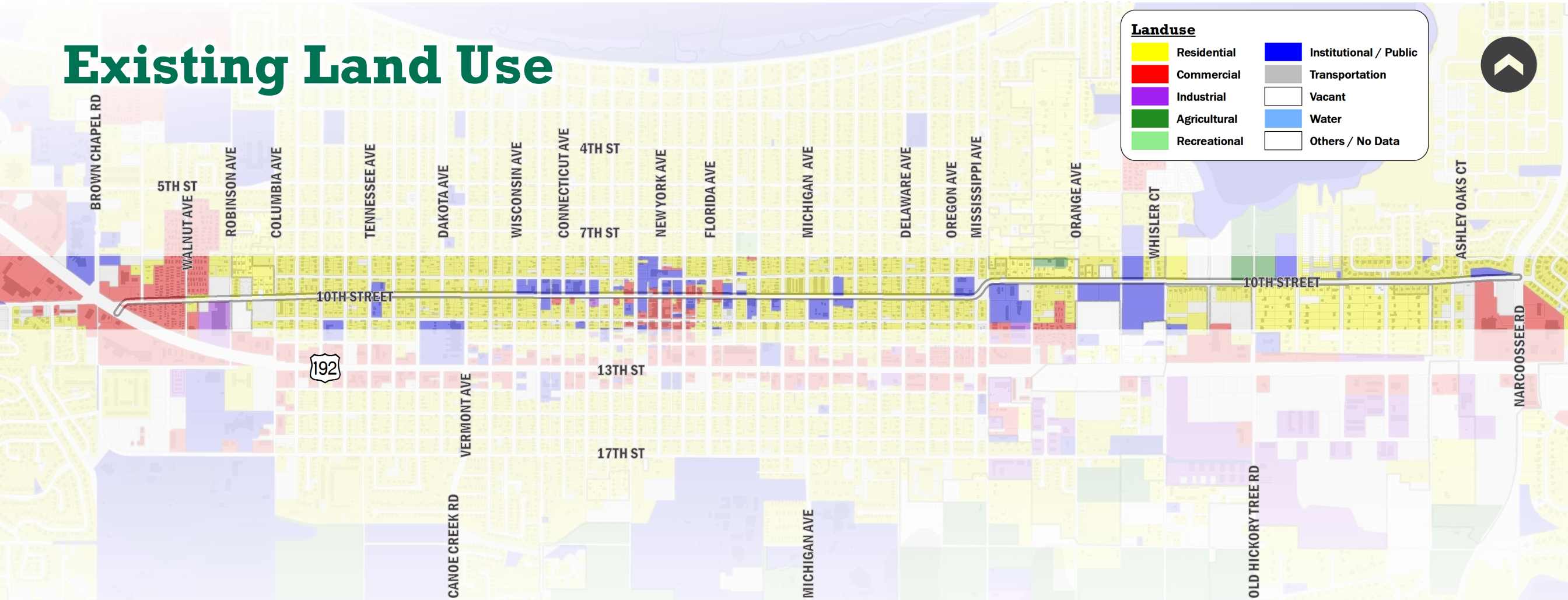
The Utility Master Plan calls for additional reclaimed and potable water capacity. This will help further development of the area. Highlights of the improvements are:

- 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

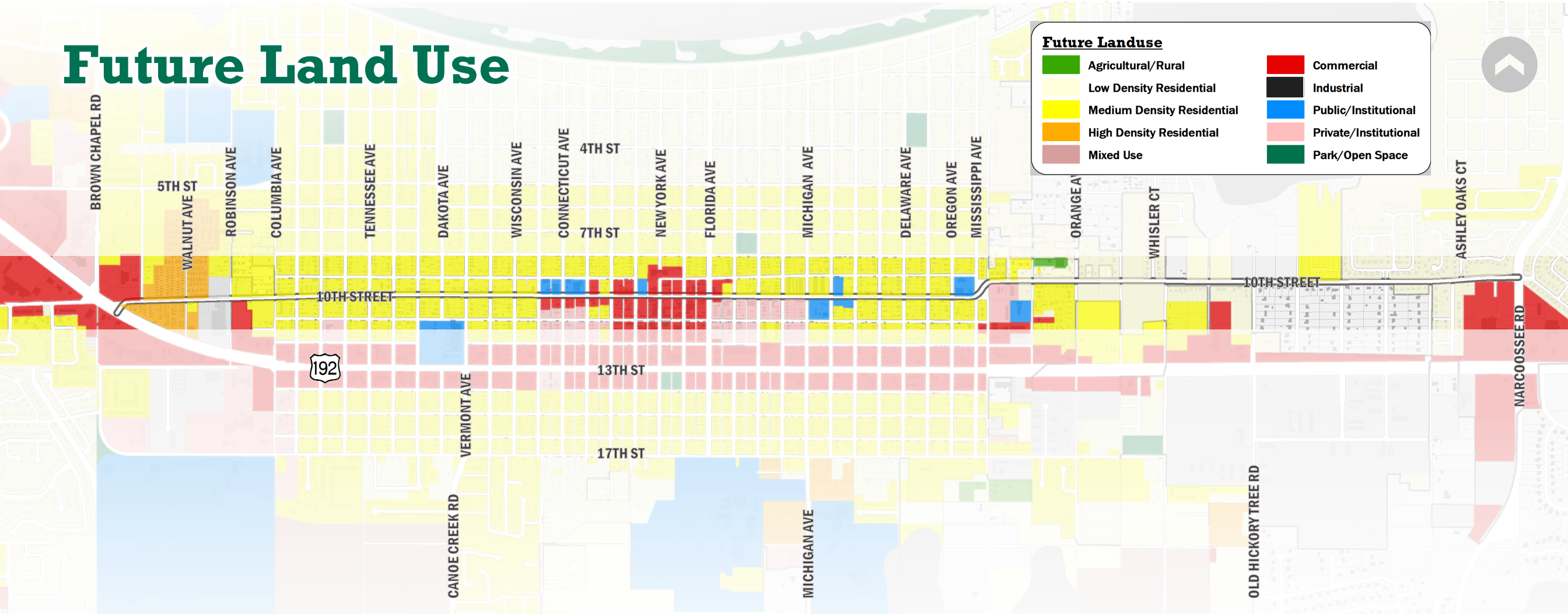


10th Street has a mix of existing land uses. Residential is the primary land use, but there are other uses:

- 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

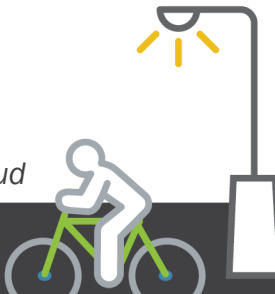
Source: Florida Geographic Library (FDGL 2019)

Future Land Use

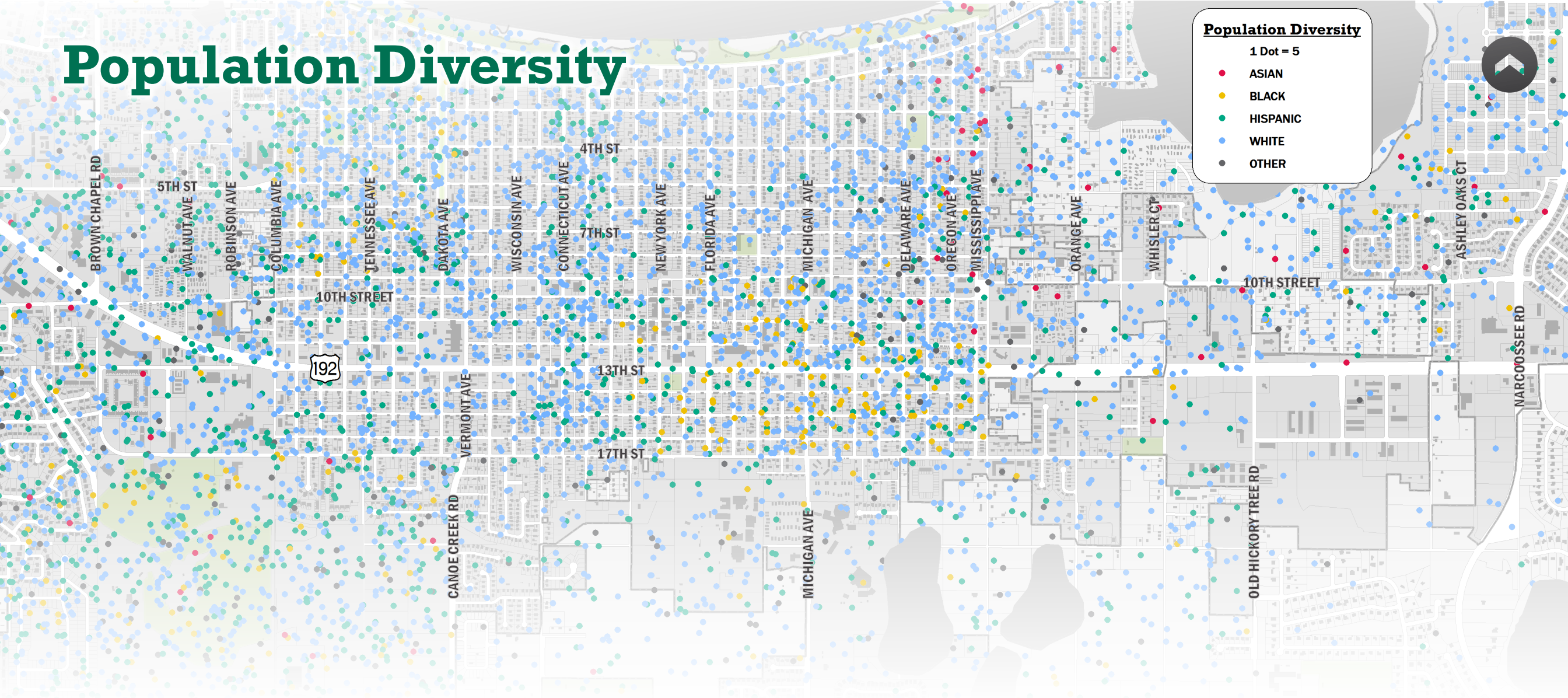


The future land use along 10th Street is relatively consistent with existing land uses. The changes are:

- 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

Employment



White Collar

56%



Blue Collar

24%



Services

20%



Unemployment Rate
8.5%

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%

Social Media Usage



Used Facebook in
Last 30 days
68%



Used Instagram in
Last 30 days
28%



Used LinkedIn in
Last 30 days
8%

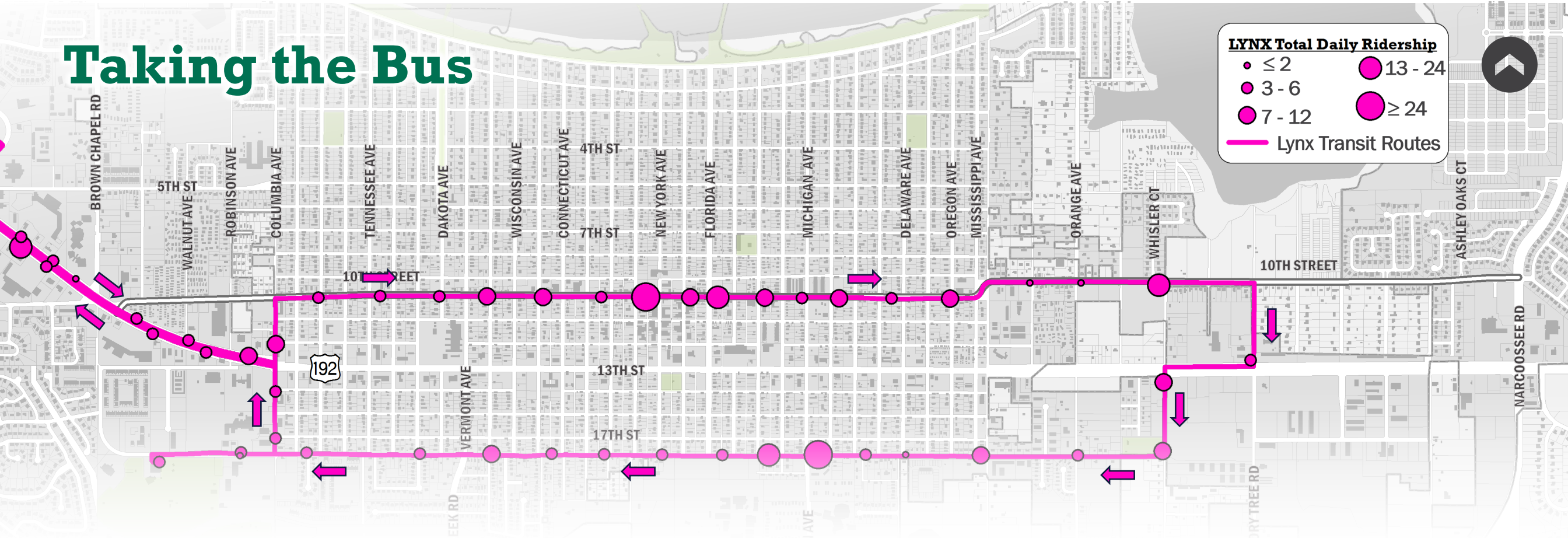


Used Twitter in
Last 30 days
11%

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

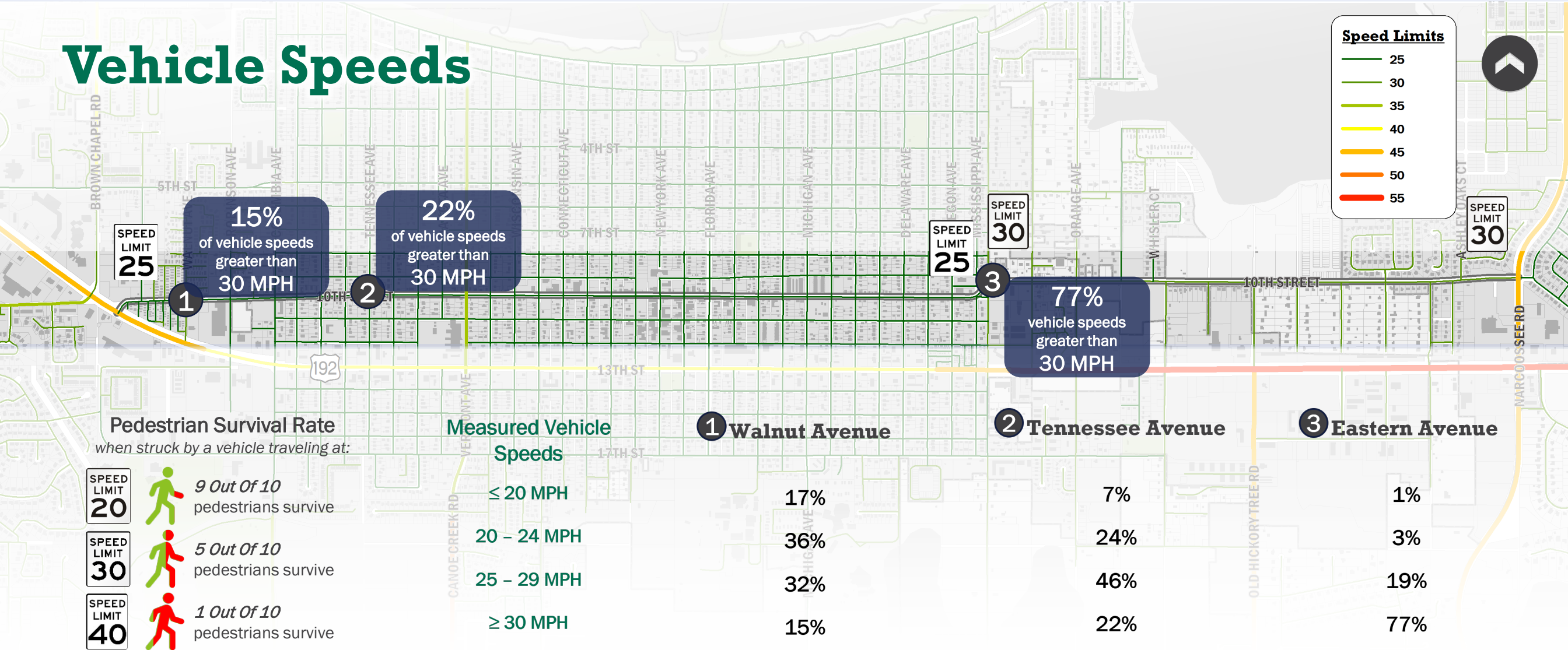
Route 10 Service	Westbound Service Hours	Eastbound Service Hours	Daily Frequency
Weekdays	4:25 - 22:42	4:00 - 22:02	30 min
Saturday	4:30 - 22:43	4:00 - 21:59	1 hour
Sunday and Holidays	5:15 - 22:23	5:00 - 22:00	1 hour

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

Source: LYNX



Vehicle Speeds



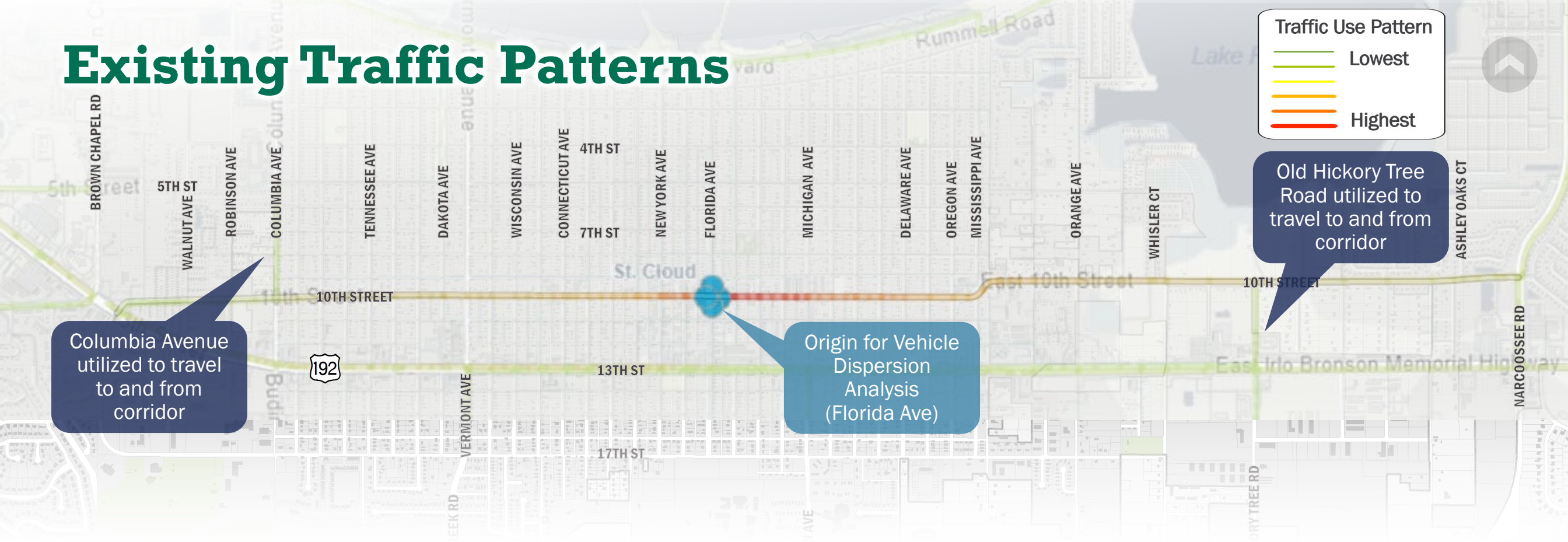
Speed data was collected by the City of St. Cloud in the eastbound and westbound directions at three points along 10th Street – Walnut Avenue, Tennessee Avenue, and east of Eastern Avenue. The data tells us:

- 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)

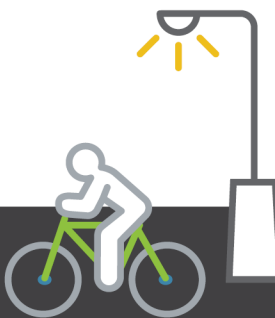


Existing Traffic Patterns



- 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

AADT Legend:

- < 5,000 (Yellow)
- 5,001 - 10,000 (Green)
- 10,001 - 15,000 (Blue)
- > 15,000 (Dark Blue)

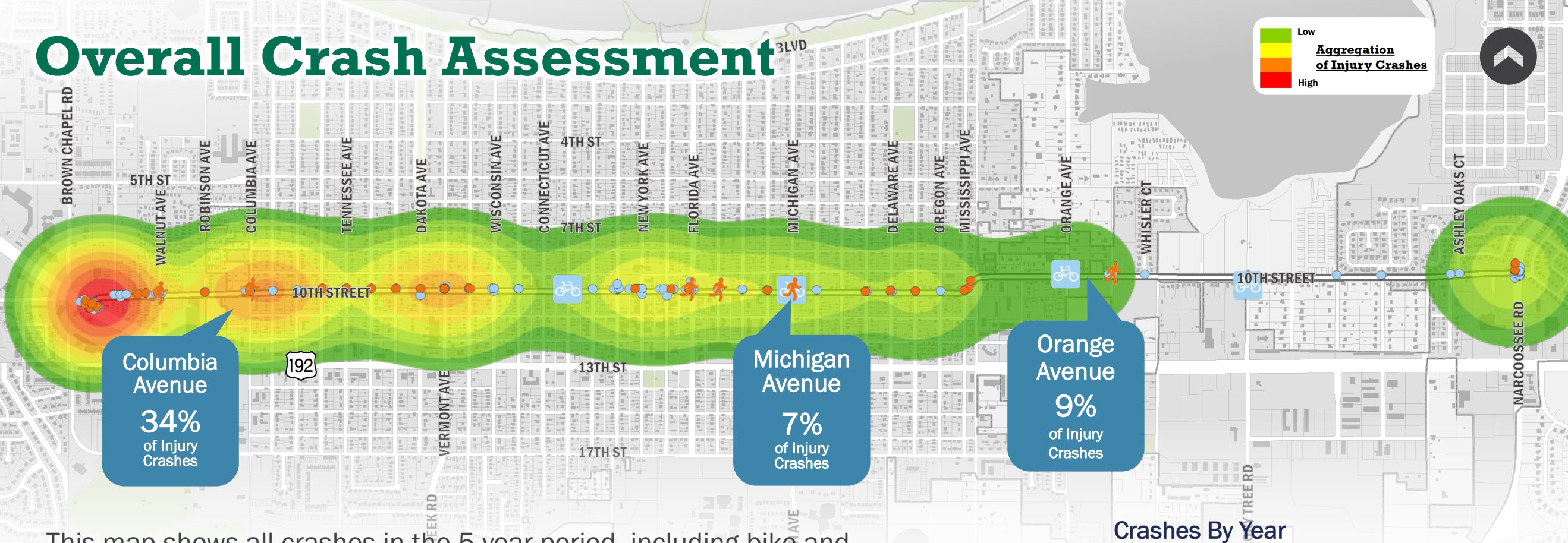
Map Callouts:

- Medical Arts Daily Traffic: 2,195
- Historic Grid Daily Traffic: 4,707 – 6,044
- Suburban Transition Daily Traffic: 5,370 – 6,501

Map Labels: CHAPEL RD, 10TH STREET, 13TH STREET, 17TH STREET, VERMONT AVE, ANOECREEK RD, MICHIGAN AVE, DELAWARE AVE, OREGON AVE, MISSISSIPPI AVE, WHISKEY AVE, ASHLEY OAKS CT, NARCOUSSE RD, OLD HICKORY TREE RD.

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

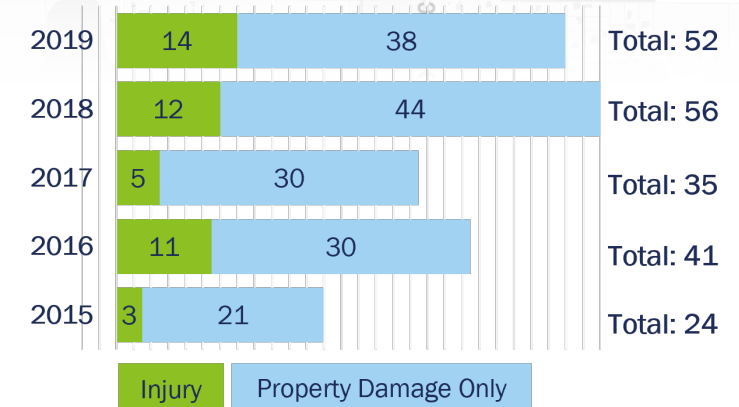
Overall Crash Assessment



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

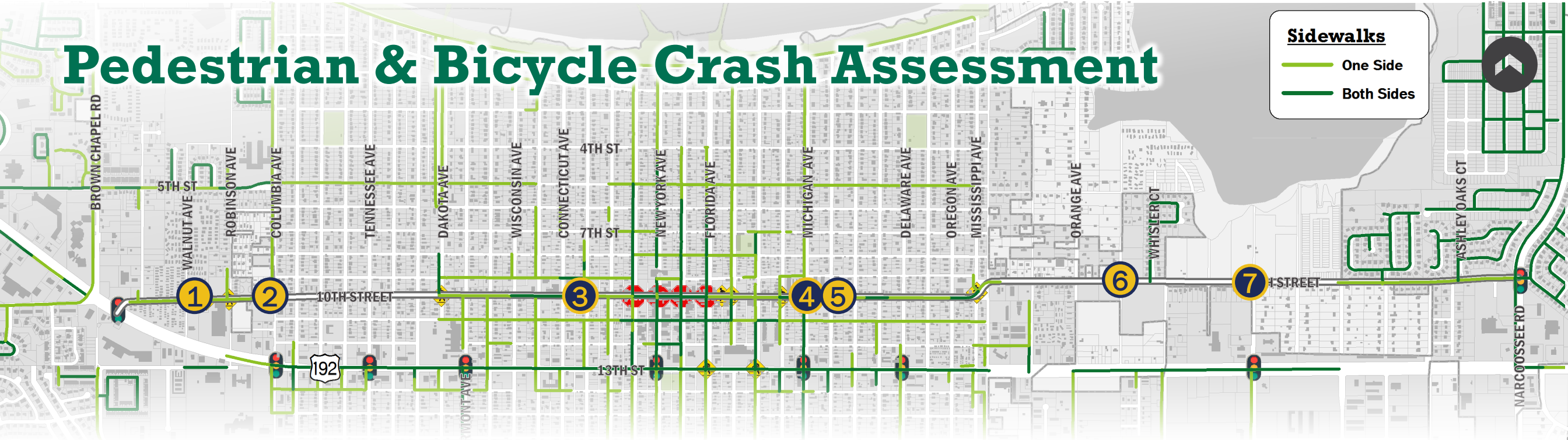
Crashes By Year



Source: Signal 4 (2015-2019)



Pedestrian & Bicycle Crash Assessment



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.

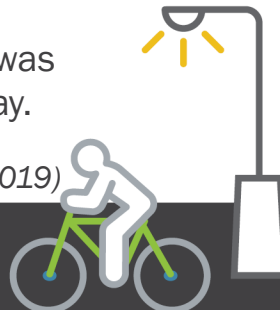
7 Old Hickory Tree Road

Bike Crash

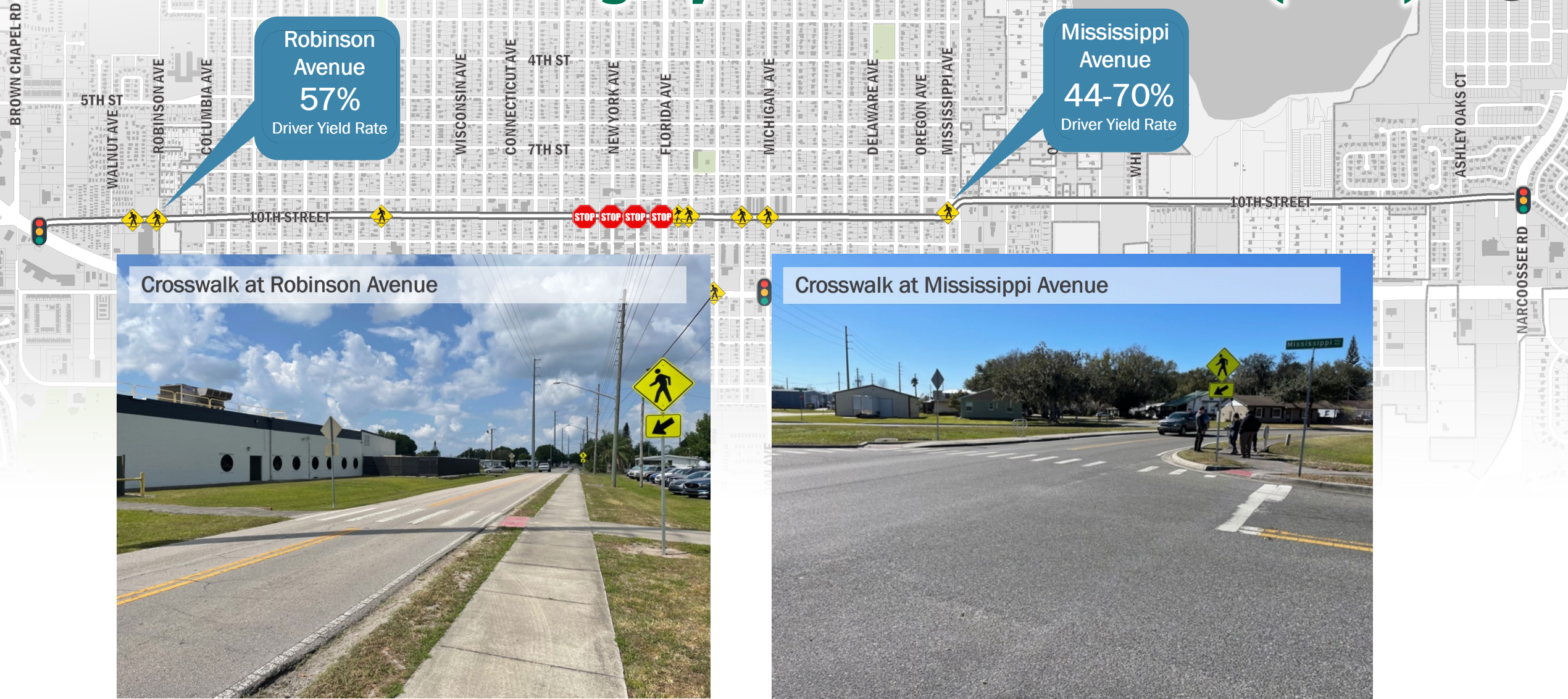
Vehicle and bicyclist collided while bicyclist was attempting a right turn into a private driveway.

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



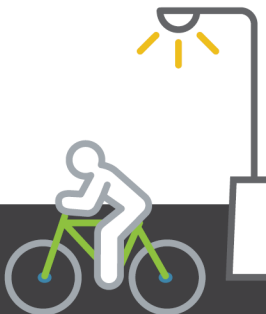
548
Respondents



80%
Travel along
10th Street

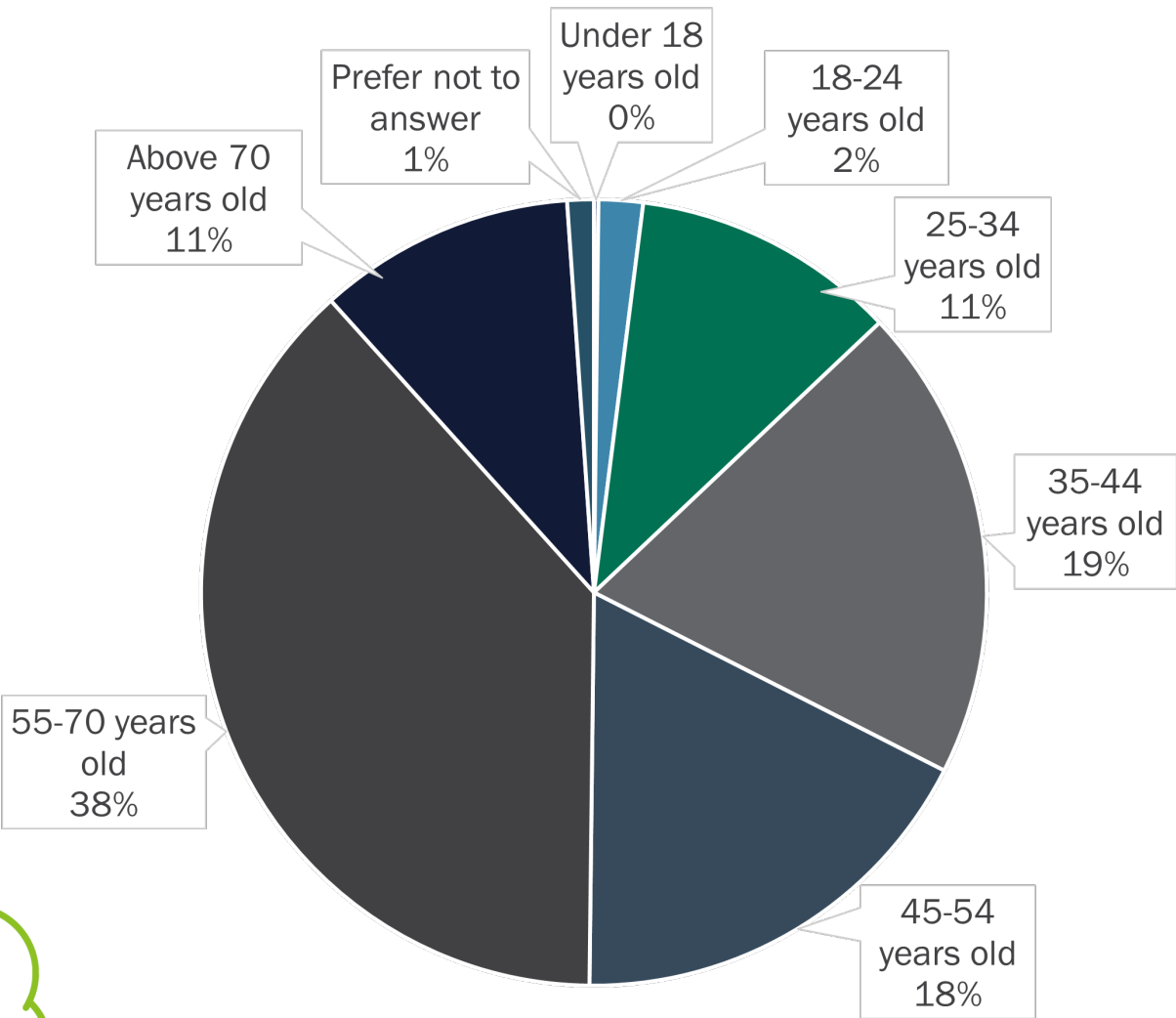


50%+
Live and/or Work
on 10th Street

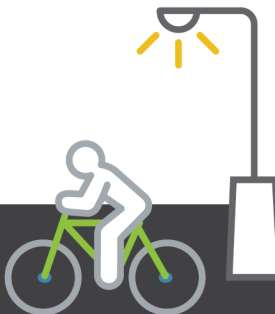
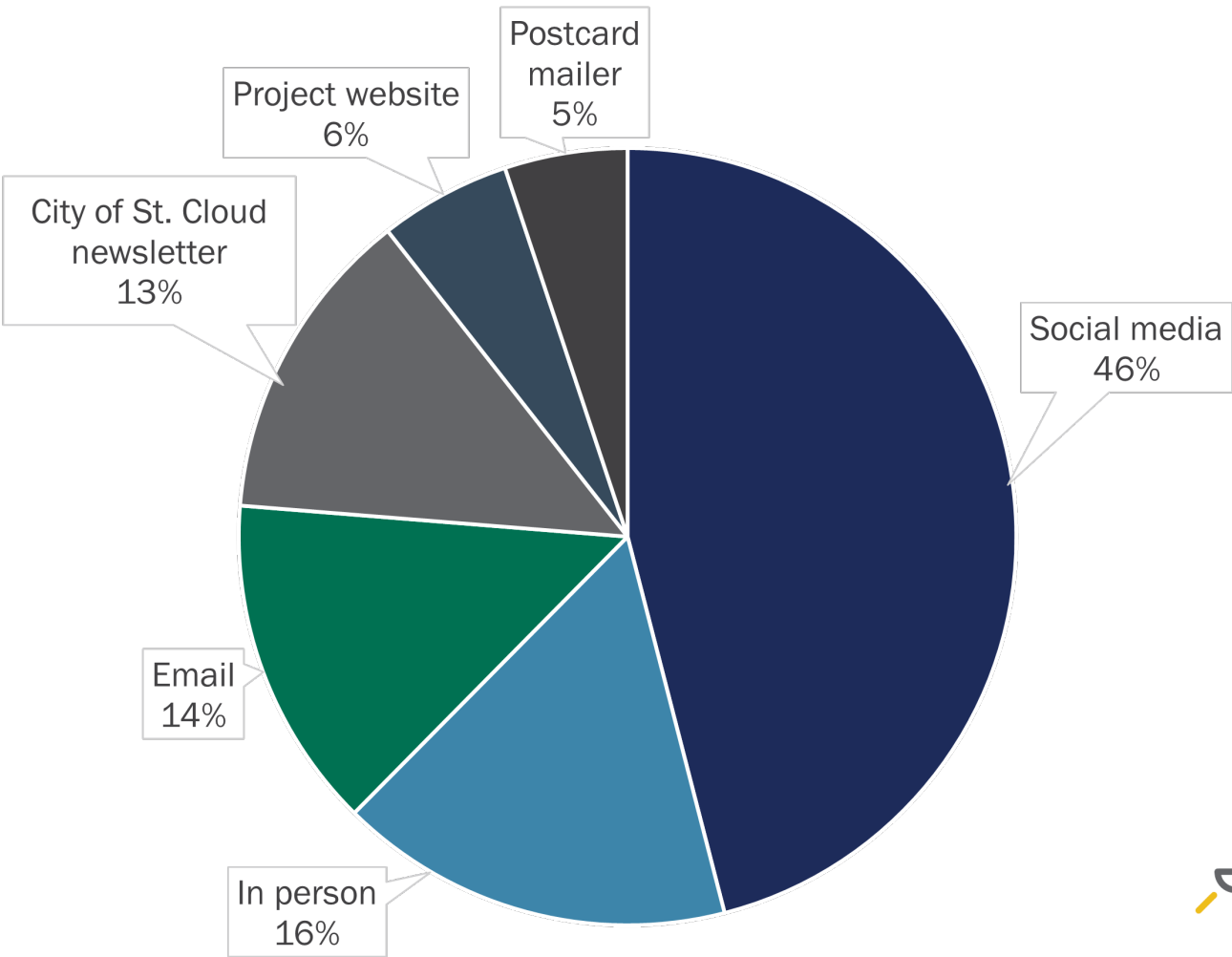


Who Did We Hear From?

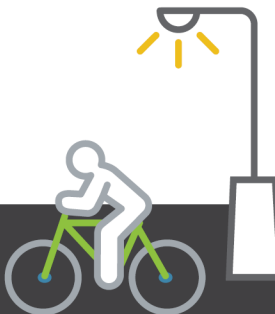
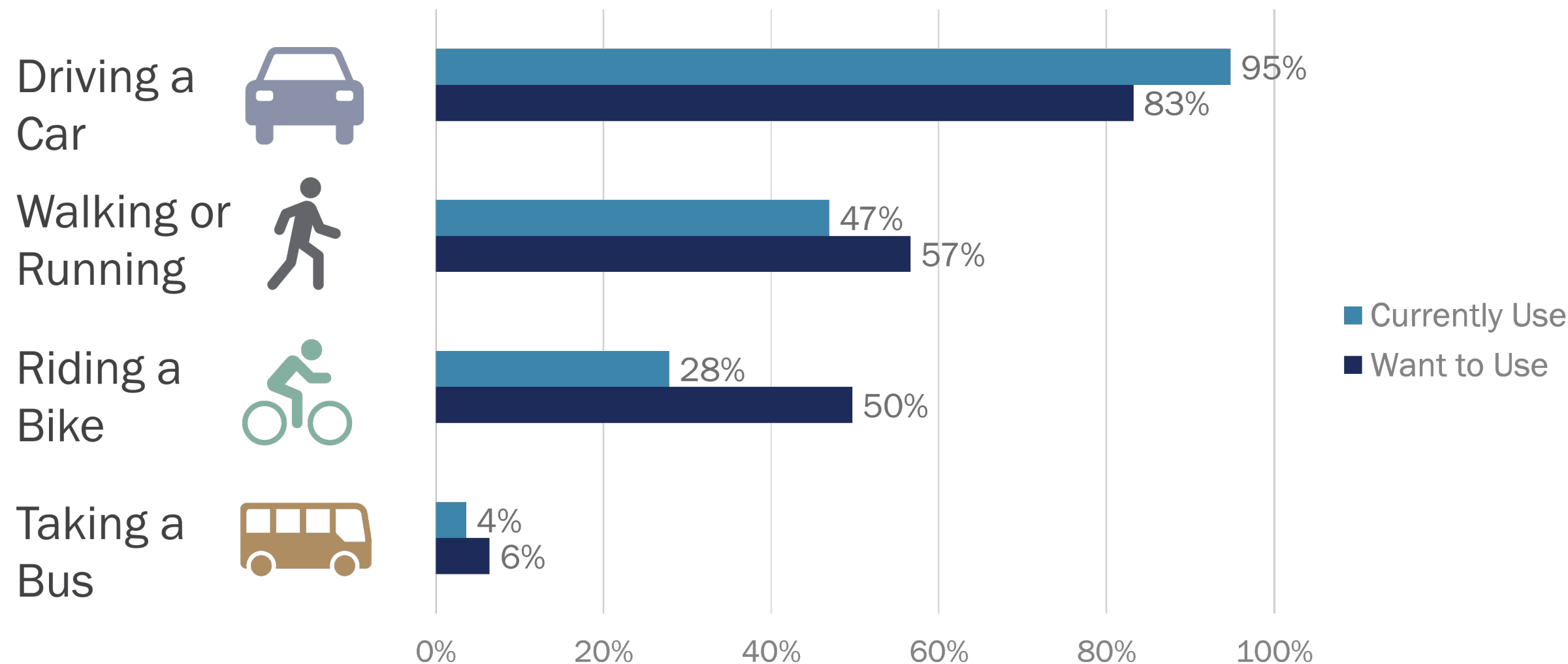
What is your age group?



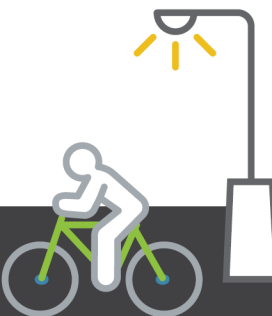
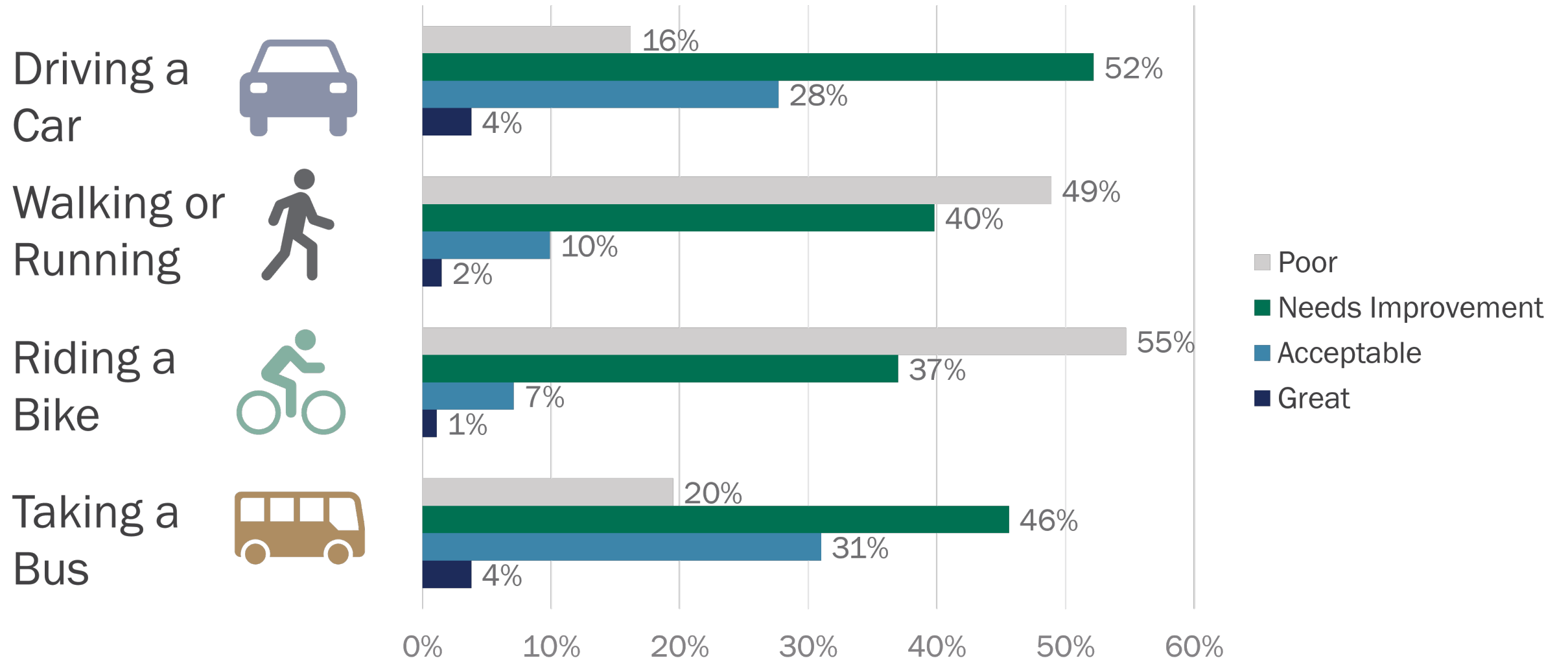
How did you hear about this survey?



How Do They Use 10th Street?

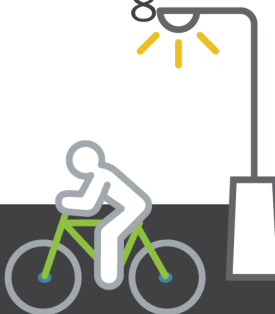
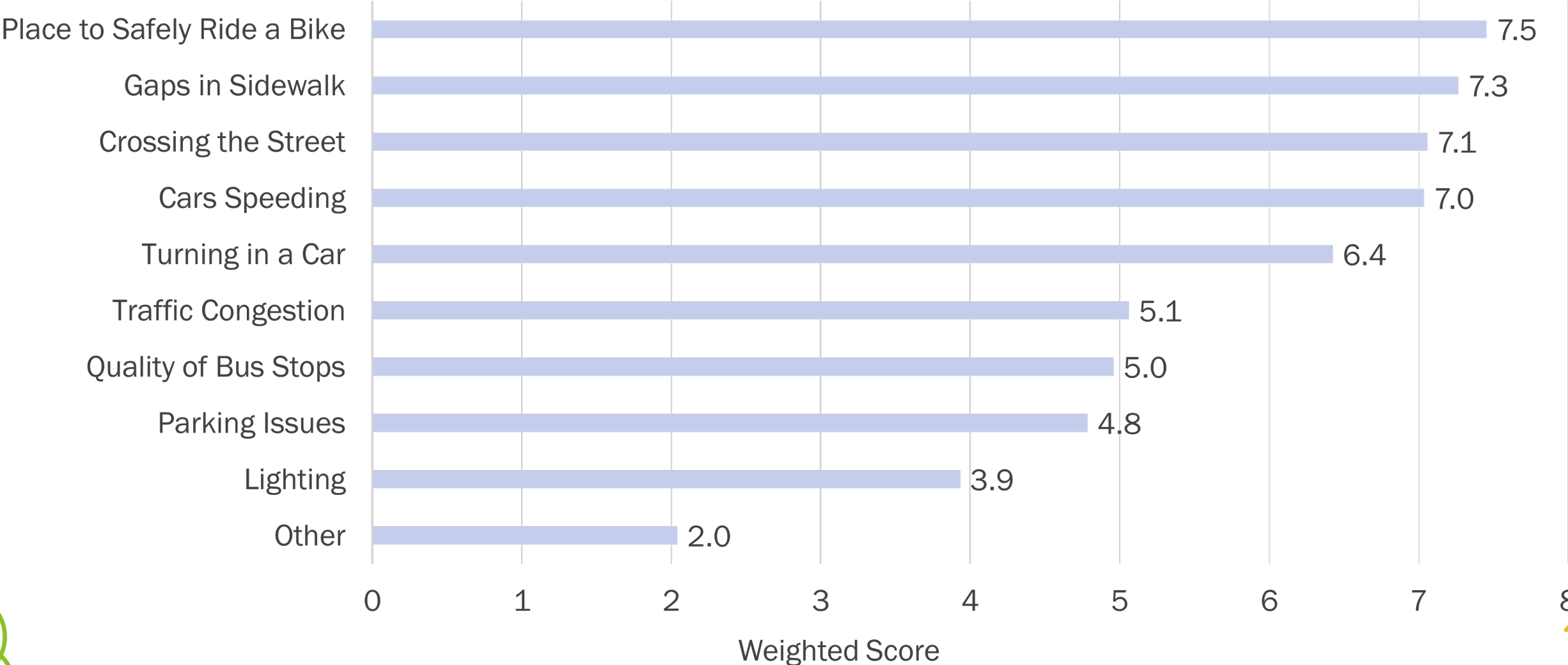


Opinion of Current Conditions



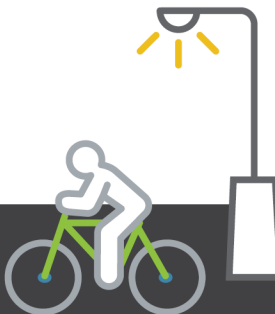
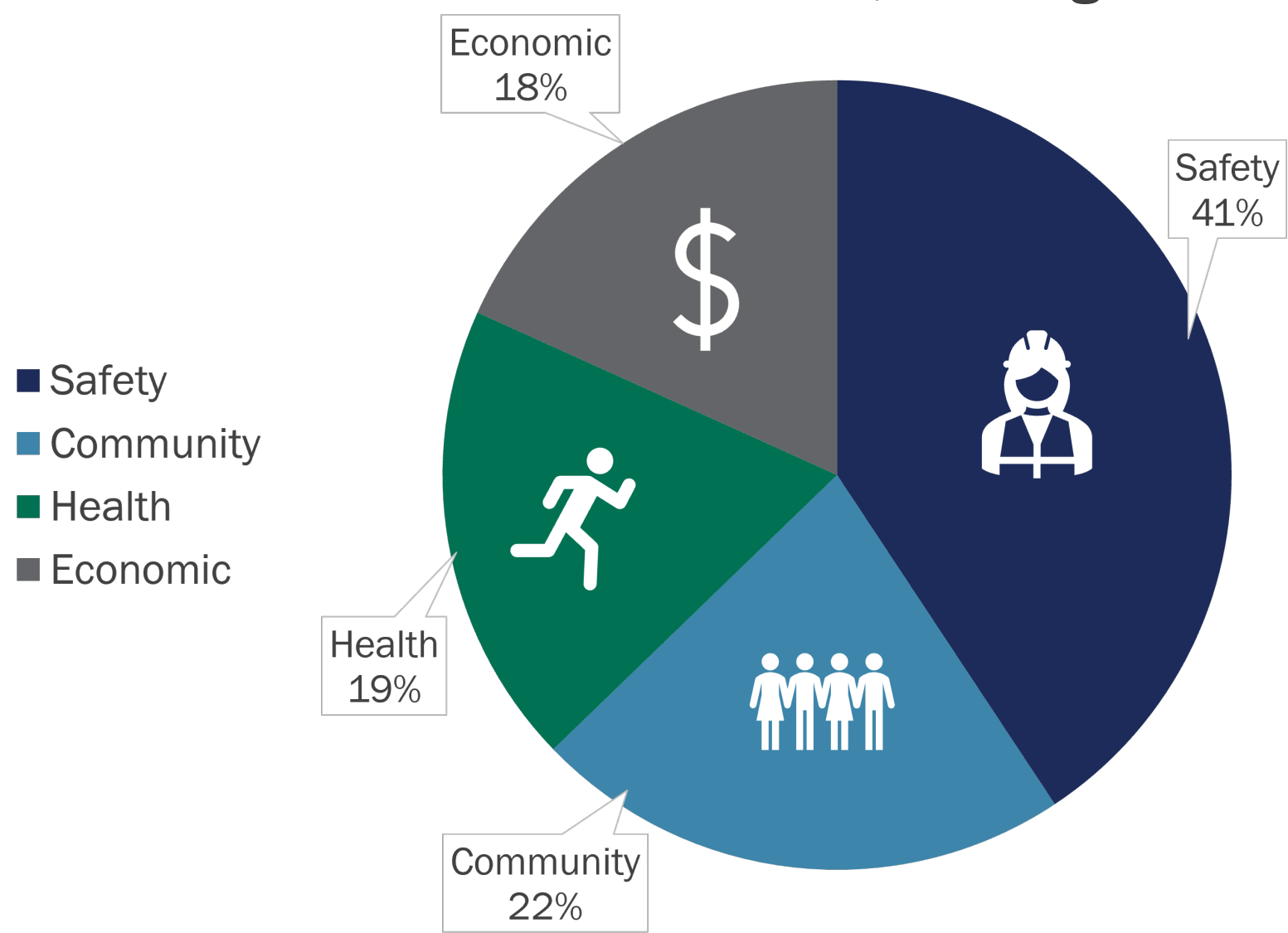
Top Challenges along 10th Street Today

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

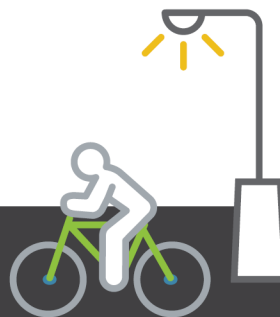
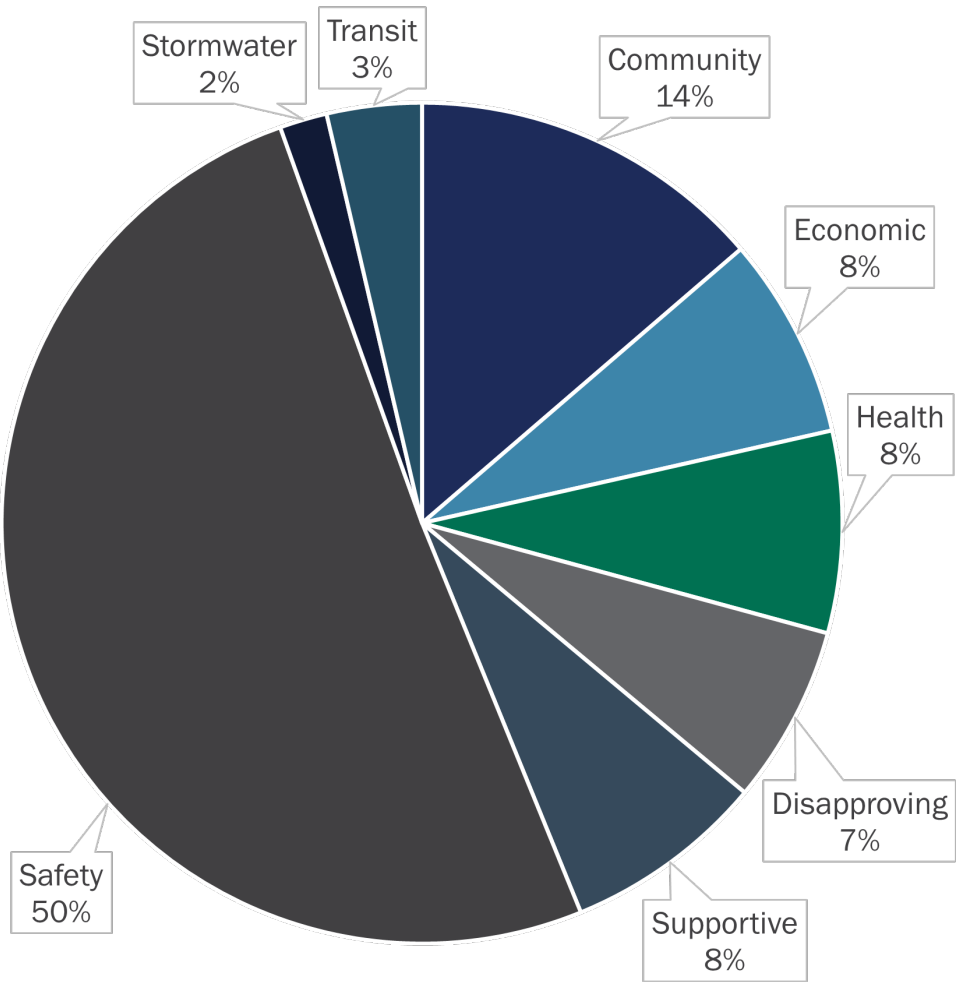
"Buses should have fully lit stops with pull off lanes and all transit info should be at each stop."

Disapproving

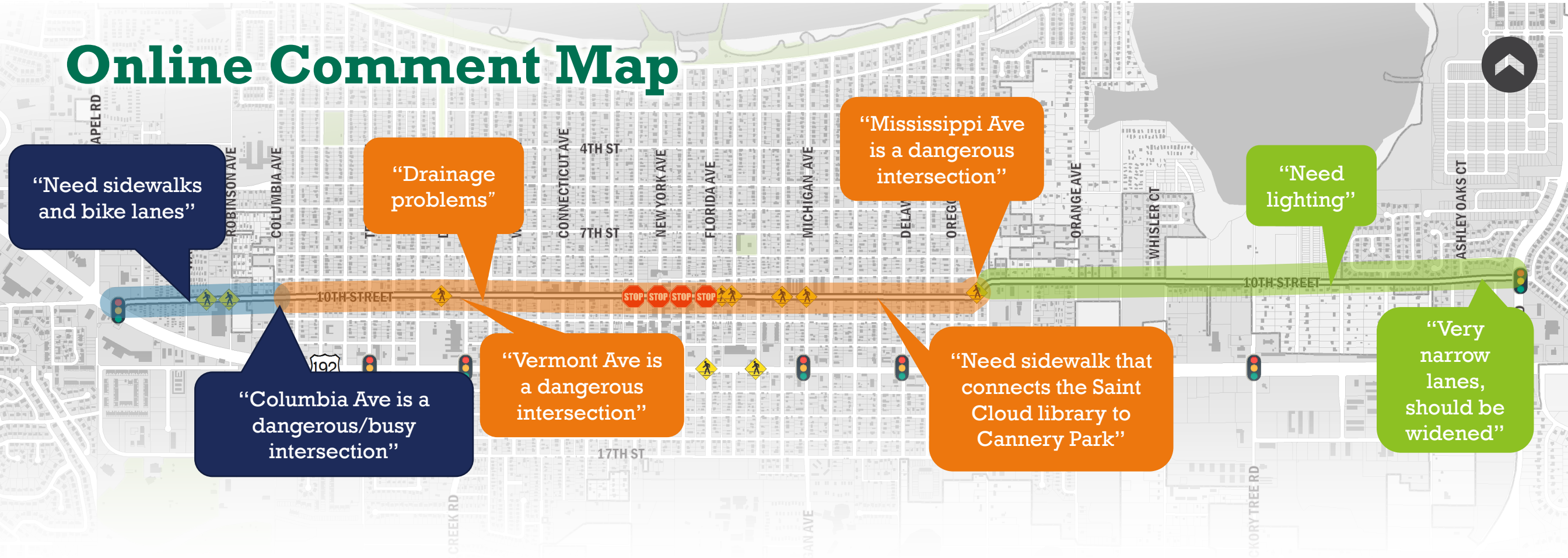
"I do NOT want to see 10th Street increased to more lanes nor do I want to see it made into a one-way street. It is fine as it is. 17th Street would be better revamped as it would access the new businesses that are being built east on 192 and the commercial businesses that are currently located on 17th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

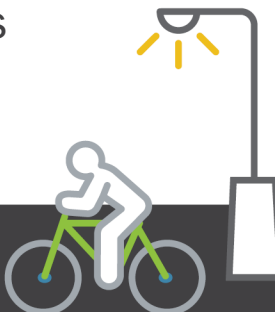


Online Comment Map



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



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



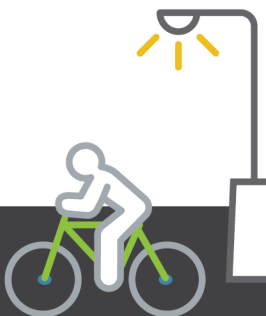
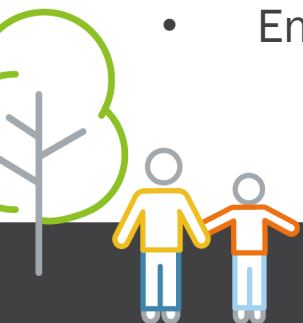
Economy – support local business and investment in downtown St. Cloud

- 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



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



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

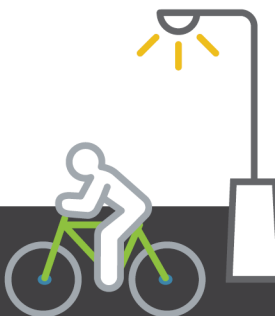
- Accessible & comfortable bus stops
- Bus stop spacing
- Bus schedule reliability & frequency



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

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

ENGAGEMENT

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



Source: NACTO Urban Street Design Guide

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

DEFLECTION

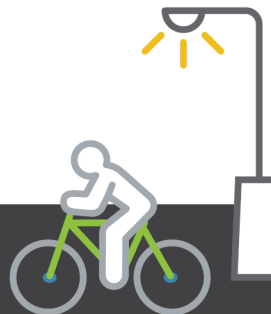
Provides horizontal and vertical movements of drivers from the path of travel



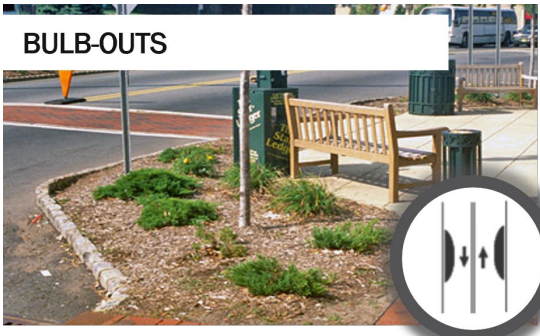
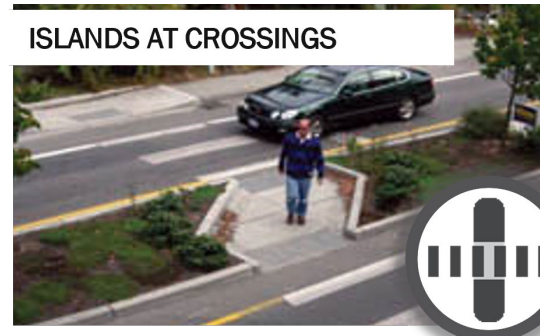
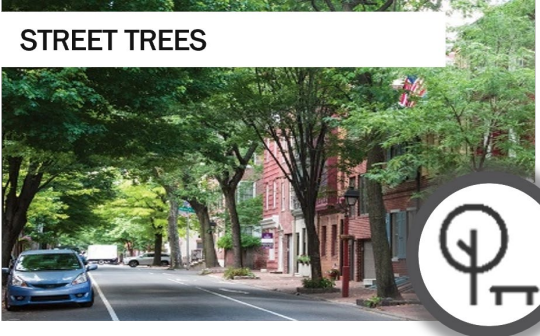
Source: NACTO Urban Street Design Guide

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

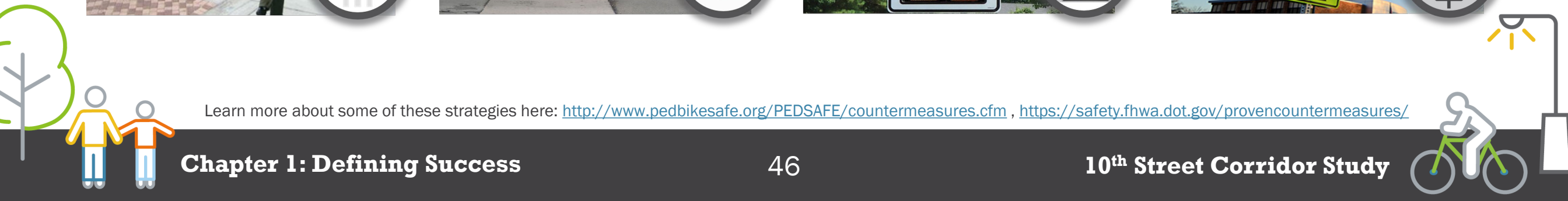
Florida Design Manual: <https://www.fdot.gov/roadway/fdm/default.shtm>



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/>

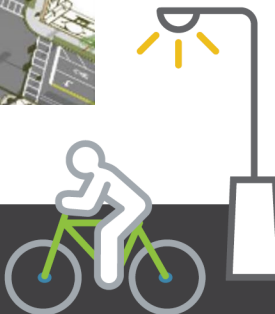
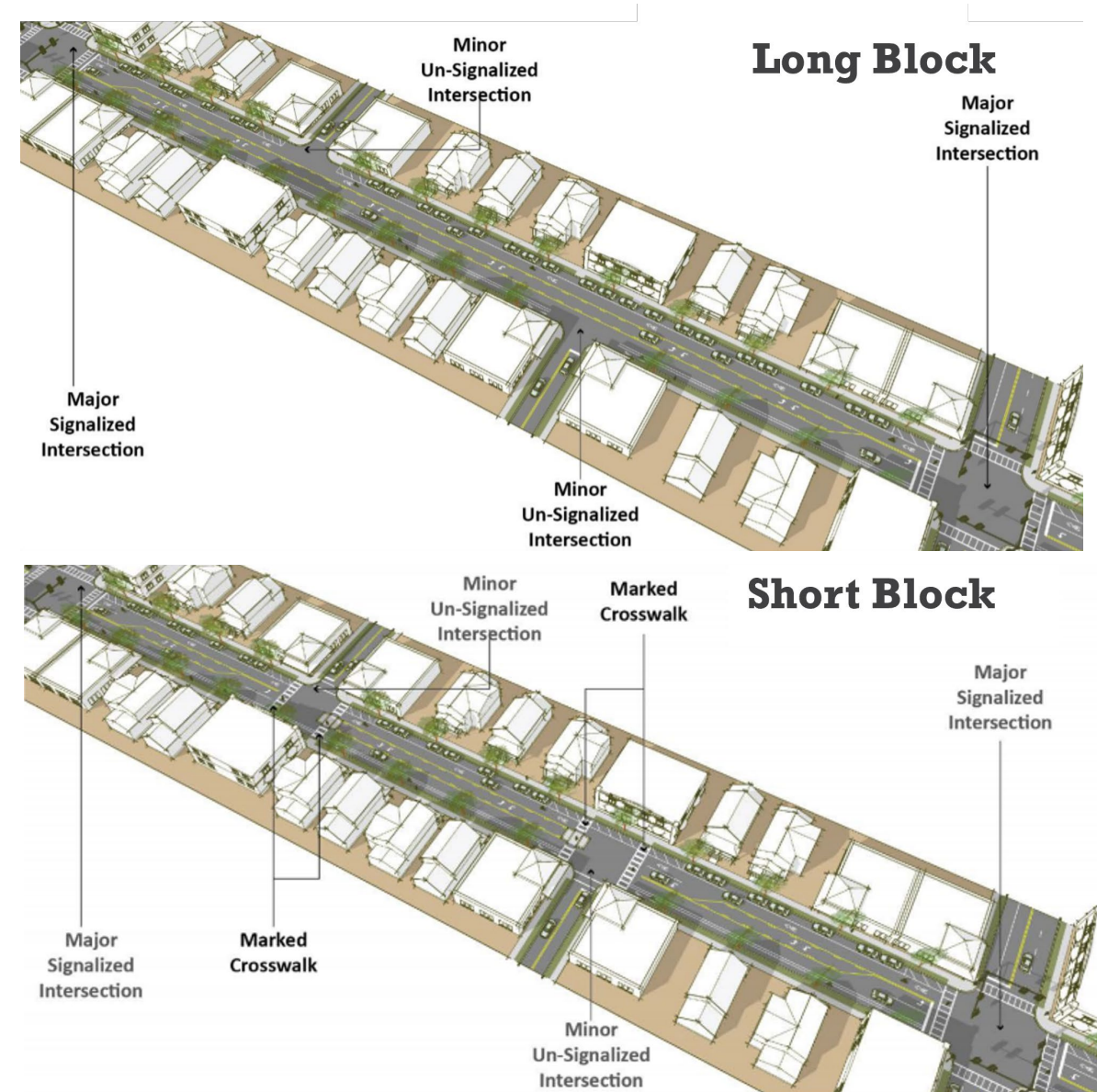


Short Blocks

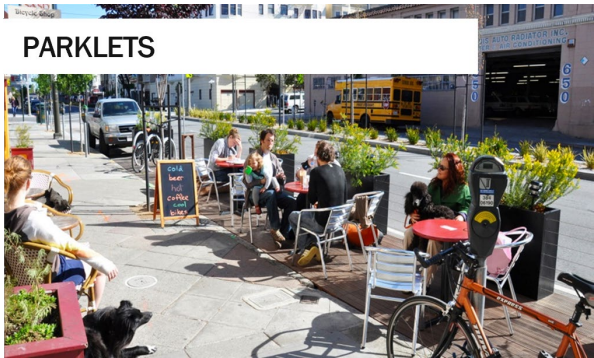
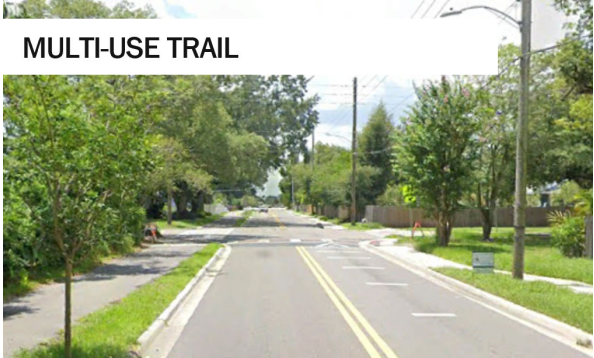
- A pattern of short blocks creates a more walkable environment and helps calm traffic
- Mark crosswalks at major and minor intersections approximately every 600 feet
- These intersections can be emphasized by raising the crosswalk or intersection and/or painting within the intersection
- Provide appropriate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



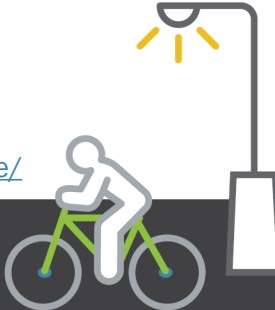
Marked crosswalks at minor street intersections



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

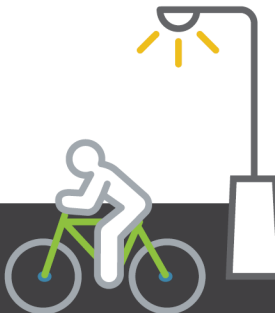
- Transportation and Transit
- Economic Development
- Osceola County Public Schools

Public Utility

- Orlando Utilities Commission (OUC)

Special Interest

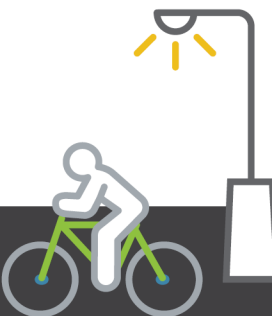
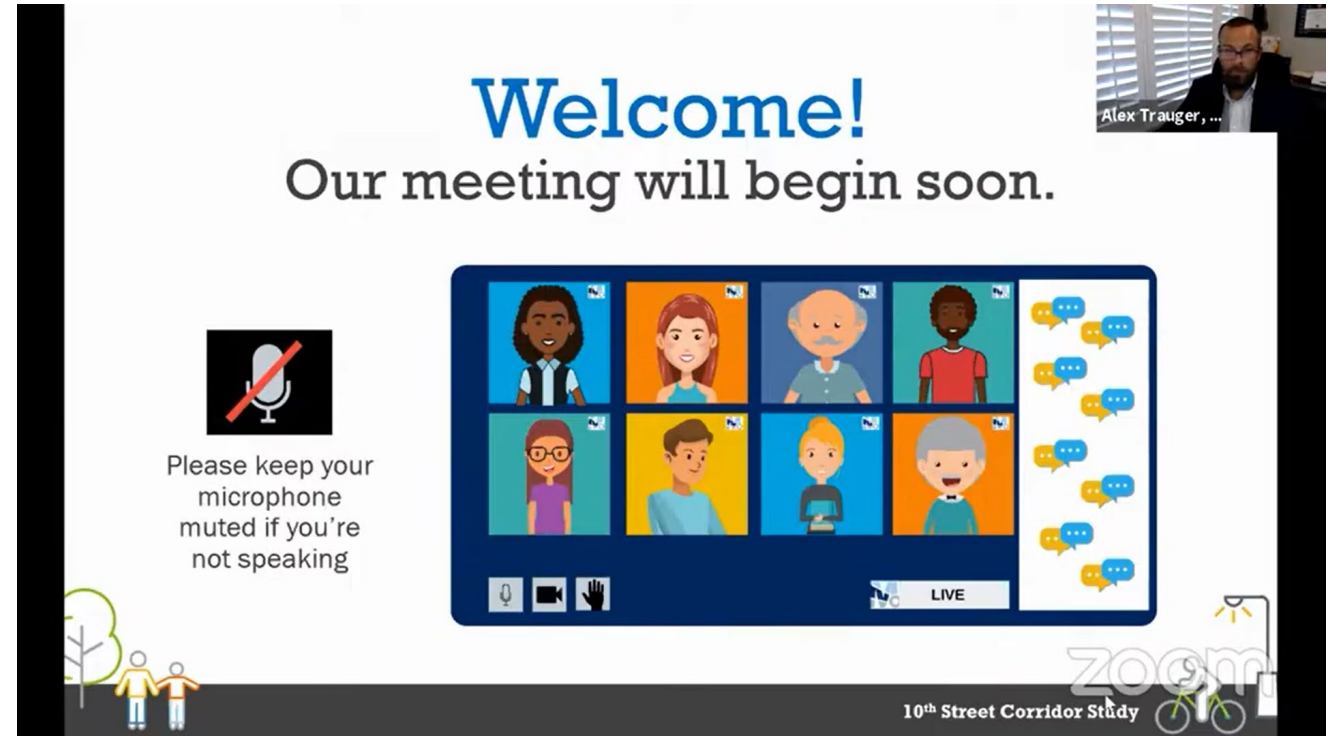
- St. Cloud Main Street District
- St. Cloud Downtown Business Group
- St. Cloud Chamber of Commerce
- Orlando Health St. Cloud
- Bike/Walk Central Florida



Project Visioning Team Meeting #1 Summary

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

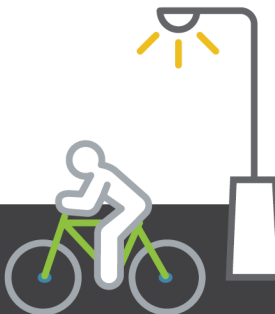
- Meeting held virtually over Zoom
- Over 25 people were in attendance
- The meeting helped to further develop the Goals & Objectives, with changes being reflected in this chapter
- PVT members stressed the importance of improvements that will get people to stop and spend time in the downtown area businesses, 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

February 2022

What is the 10th Street Alternatives Assessment?

This alternatives assessment uses the existing condition data from Chapter 1 (Defining Success) to develop and evaluate potential alternatives for 10th Street. Alternatives are broken out into typical section alternatives and intersection alternatives. Examples of typical section alternatives include bike lanes, wide sidewalks, parking options, and a shared-use path. Examples of intersection alternatives include stop signs, roundabouts, and textured pavement.

The typical section alternatives are qualitatively evaluated using criteria addressing the project goal areas identified in Chapter 1 (Safety, Community, Economy, Health).

It is recommended that readers view the Chapter 1 document prior to reading this Chapter 2 document.

To view Chapter 1 and the most up to date information about the Study, visit:

www.MetroPlanOrlando.org/10thStreetStudy.

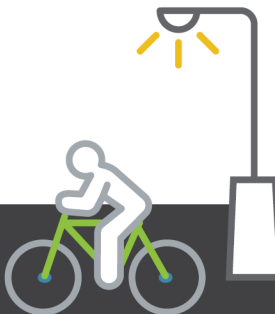


Table of Contents

1.0 Defining Success (Fall 2021)

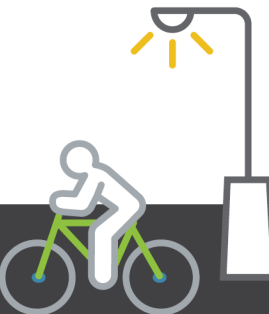
2.0 Alternatives Assessment (Winter 2022)

2.1 Summary of Public Engagement

2.2 Alternatives Assessment

2.3 Project Status & Next Steps

3.0 Concept Design and Recommendations (Summer 2022)





Section 2.1

Summary of Public Engagement

Summary of Public Engagement

Public engagement started in the first *Defining Success* phase of the study (Chapter 1) with an online survey. Participants indicated the following top challenges on 10th Street: places to safely ride a bike, gaps in sidewalks, crossing the street, and speeding.

Throughout the *Alternatives Assessment*, public involvement was used to guide alternative development and gain community feedback on the direction of the study in response to the challenges listed. Public engagement in the *Alternatives Assessment* phase included:

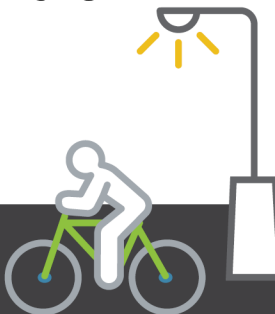


1 Alternatives Survey – available online



3 “Pop-Up” Style Outreach Events – where the study team set up in St. Cloud for face-to-face communication

In addition, the second Project Visioning Team (PVT) meeting was conducted with agency partners.



Online Alternatives Survey

- The survey sought input on potential typical section and intersection improvements
- The survey asked:
 - How respondents felt about possible changes using a 4-point scale (loved, liked, disliked, needed more information)
 - How familiar the respondents were with the intersection solutions
 - Whether the respondents had any open-ended comments
- The top open-ended comment categories were related to:
 - Overall intersection ideas, roundabouts, property lines, roadway widening, sidewalks, and the shared-use path
- The survey was available online from November 4, 2021 to February 28, 2022
- Specific results are on pages 80 through 83 and 86 through 88



621
Respondents



~70%
Positive
Responses about
Alternatives



~98%
Familiar with
Roundabouts



Pop-Up Outreach Events:

St. Cloud Monthly Markets

- Wednesday, November 17, 2021
- Wednesday, January 26, 2022
- Spoke with over 100 people, including people who live near or around the corridor. Feedback was supportive.



St. Cloud Cyclovía

- Sunday, January 9, 2022
- Set up at the marina near the Lakefront
- Spoke with approximately 50 people. Feedback was supportive of the multimodal infrastructure.

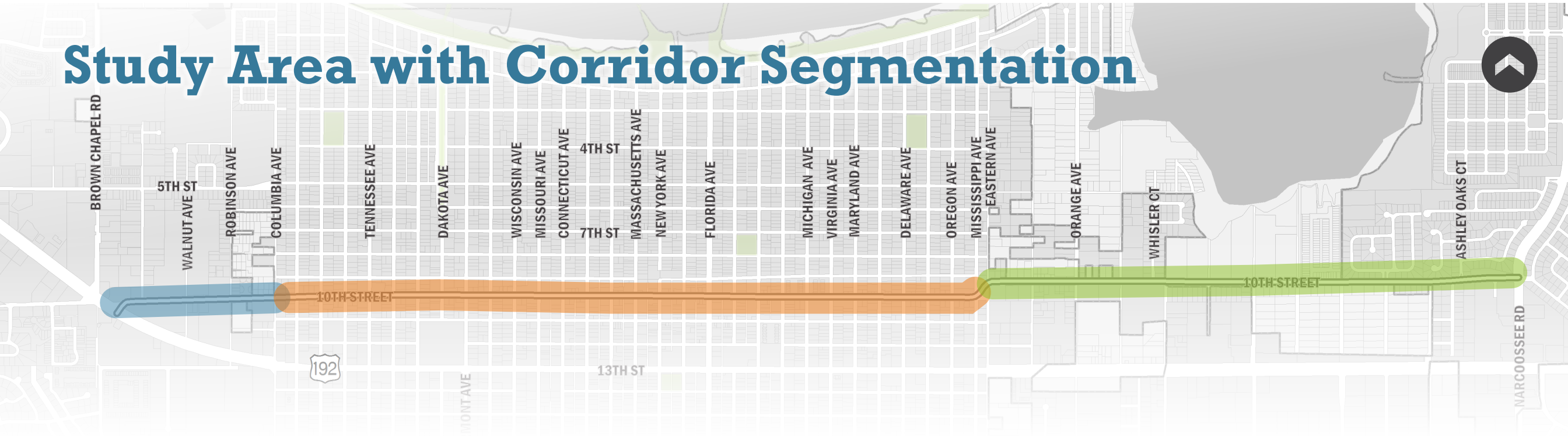




Section 2.2

Alternatives Assessment

Study Area with Corridor Segmentation



To aid in the analysis and development of alternatives and recommendations, the corridor was initially divided into three distinct segments.

Area 1:
Medical Arts

From US 192 to
Columbia Avenue

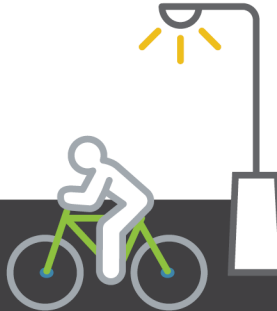
Area 2:
Historic Grid

From Columbia Avenue to
Eastern Avenue

Area 3:
Suburban Transition

From Eastern Avenue to
Narcoossee Road

Many alternatives with pedestrian and bicycle accommodations were considered. The selection process is described next.



Typical Section Overview – Medical Arts & Historic Grid

The following pages will show the proposed typical segment against their existing typical to highlight improvements, as well as the pros and cons of each option. Improvements include:

A typical section is a physical representation of the road and other roadway elements.

Option 1: 2-Lane, No Action

- The no action option would not change the 10th Street Corridor in any way and not involve any cost.

Option 2: 2-Lane, Sidewalk + Shared Use Path + No Parking

- This option provides a shared use path for walkers and bicyclists on one side of the road with a sidewalk on the other. A shared use path is a wider paved facility between the curb and the right-of-way line. There is space for trees on both sides of the road.

Option 3: 2-Lane, Wide Sidewalks + No Parking

- This option provides wide sidewalks on both sides of the road.

Option 4: 2-Lane, Sidewalks + Parking

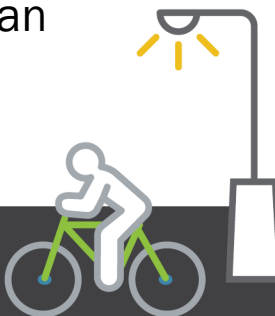
- This option provides on-street parking for vehicles, as well as space for trees on one side of the road. Sidewalks are available for pedestrians.

Option 5: 2-Lane, Sidewalks + Bike Lanes + No Parking

- Option 5 provides sidewalks and bike lanes on both sides of the road with minimal landscaping opportunities.

Option 6: 2-Lane, Sidewalks + Parallel Bike Boulevard

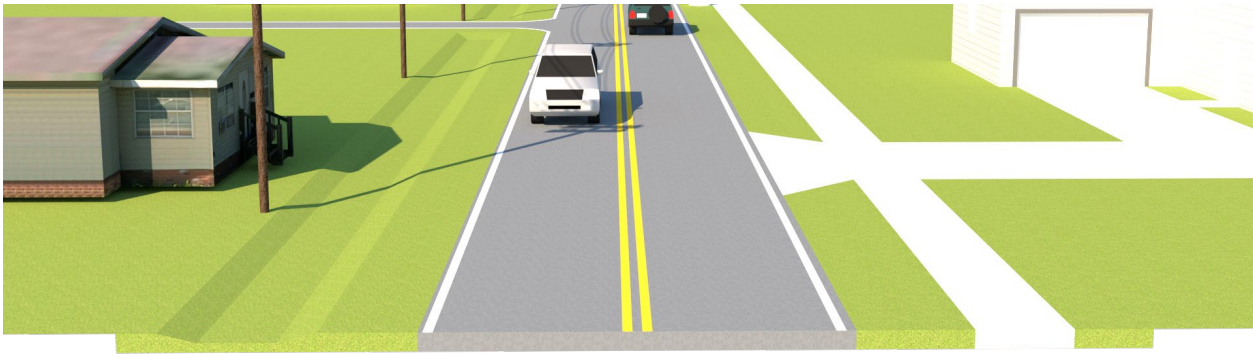
- Option 6 provides a parallel bike boulevard located off of the 10th Street corridor, on lower volume, less stress streets. Having a parallel bike boulevard may encourage new riders and allow for earlier implementation than just the 10th Street improvements. This option could be developed as an additional separate project.



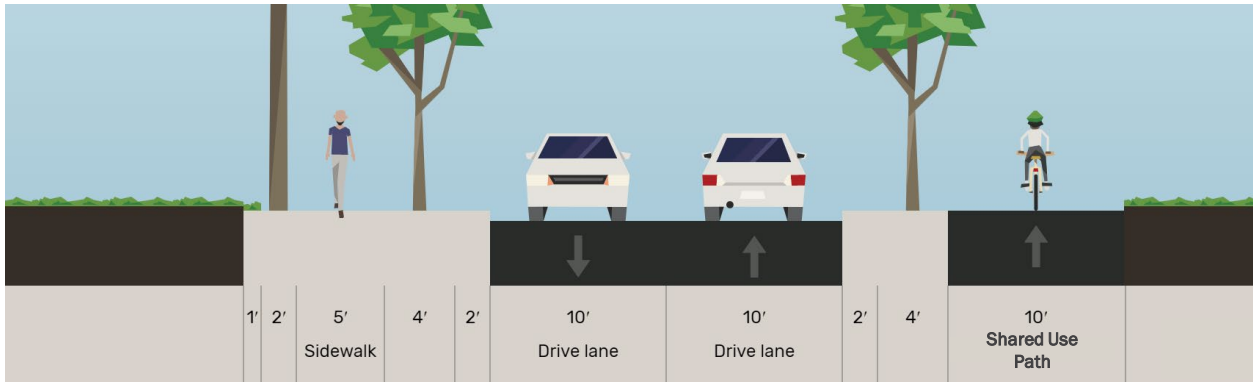
Typical Section Options – Medical Arts & Historic Grid

50-ft
ROW

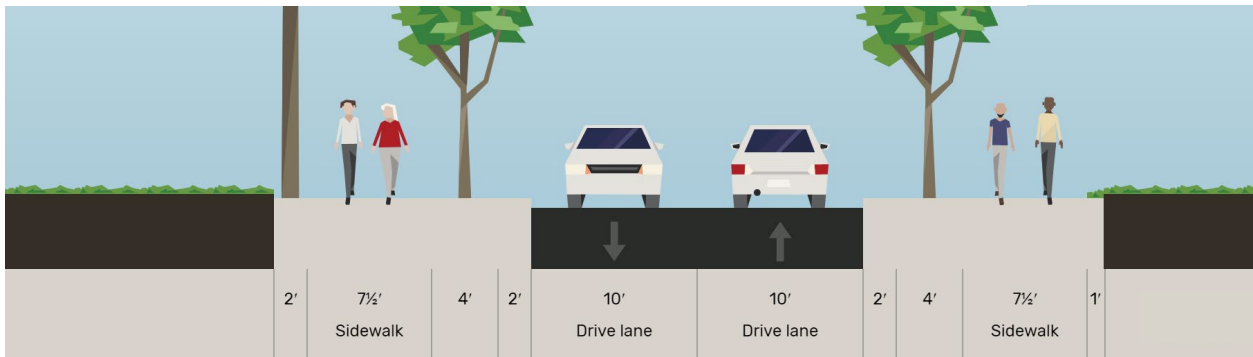
Option 1: 2-Lane, No Action



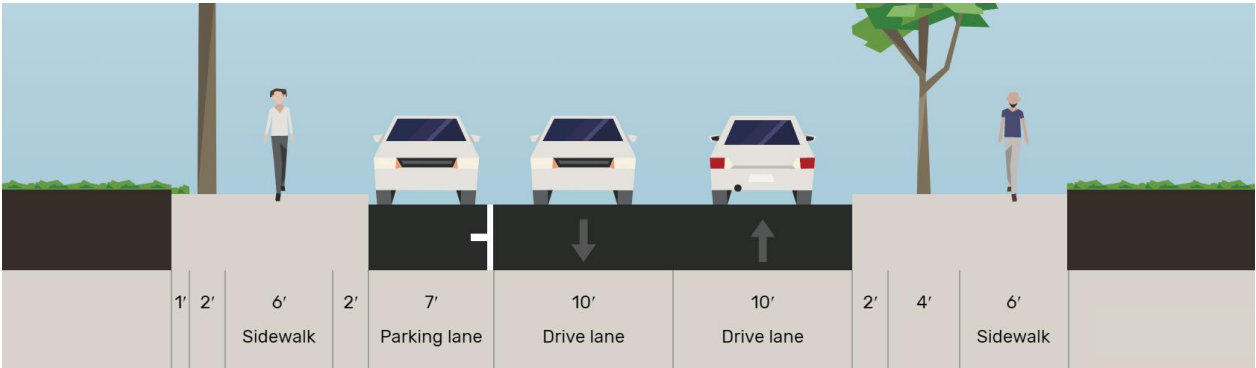
Option 2: 2-Lane, Sidewalk + Shared Use Path + No Parking



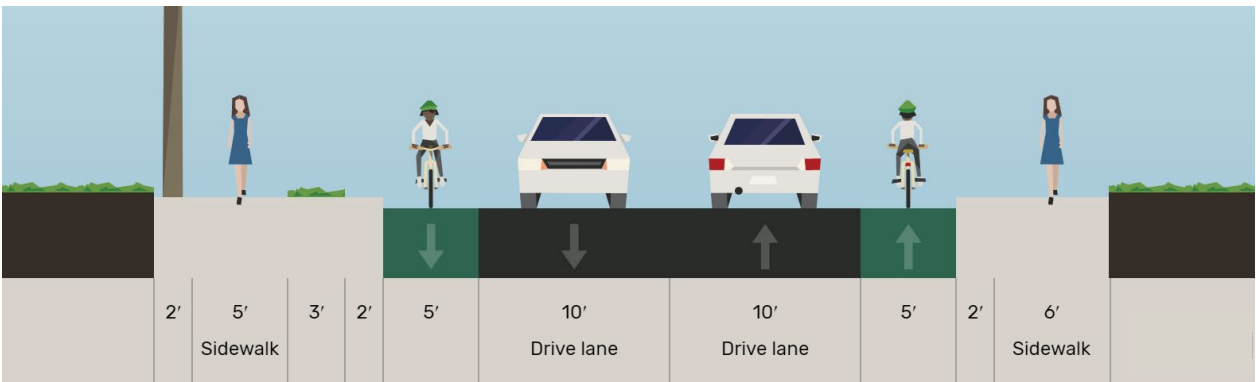
Option 3: 2-Lane, Wide Sidewalks + No Parking



Option 4: 2-Lane, Sidewalks + Parking



Option 5: 2-Lane, Sidewalks + Bike Lanes + No Parking



Option 6: 2-Lane, Sidewalks + Parallel Bike Boulevard



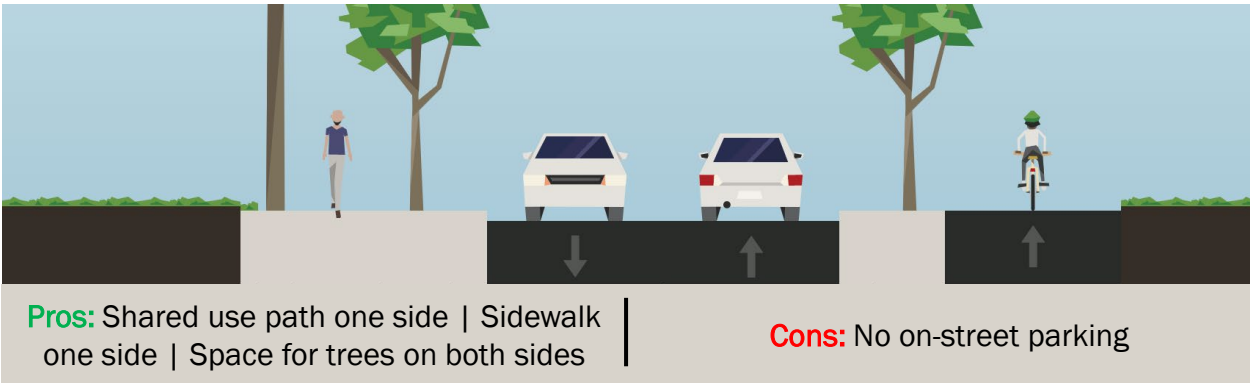
Medical Arts & Historic Grid – Pros and Cons

50-ft
ROW

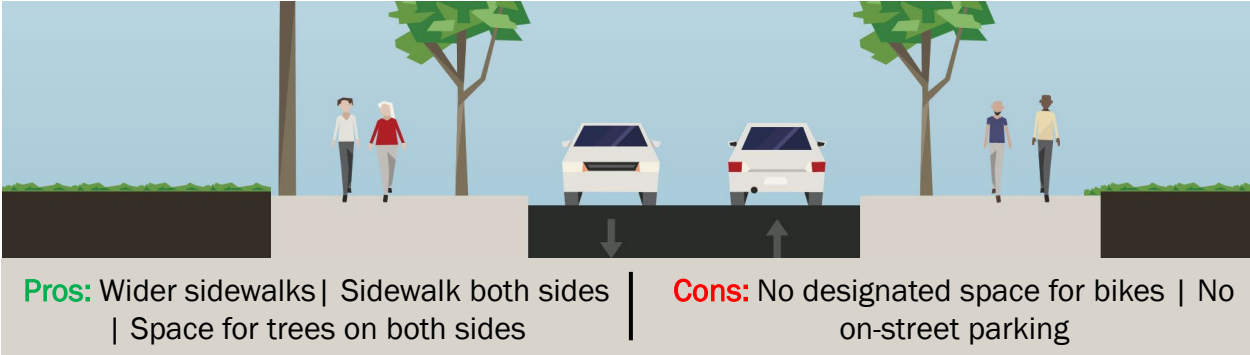
Option 1: 2-Lane, No Action



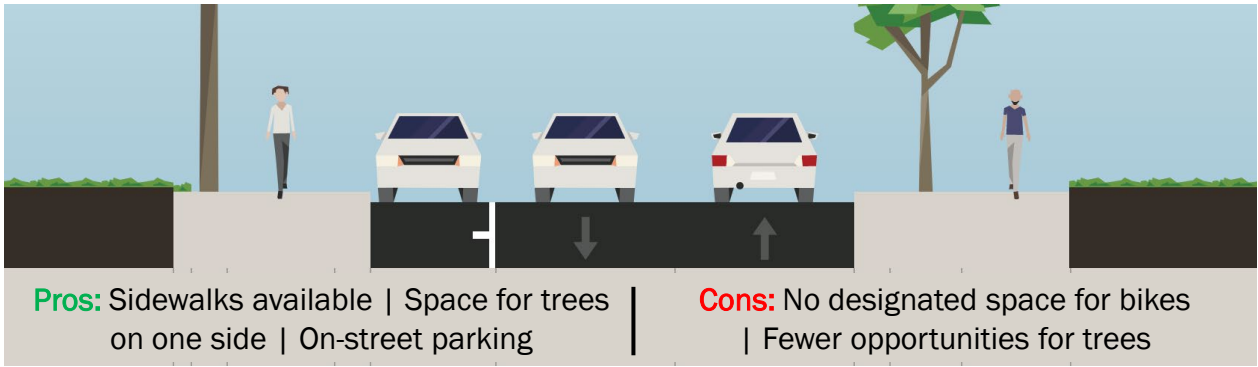
Option 2: 2-Lane, Sidewalk + Shared Use Path + No Parking



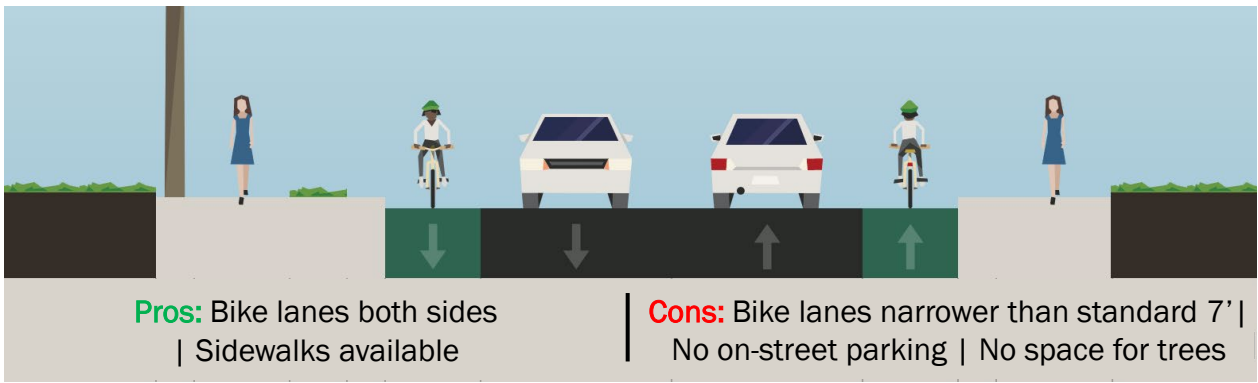
Option 3: 2-Lane, Wide Sidewalks + No Parking



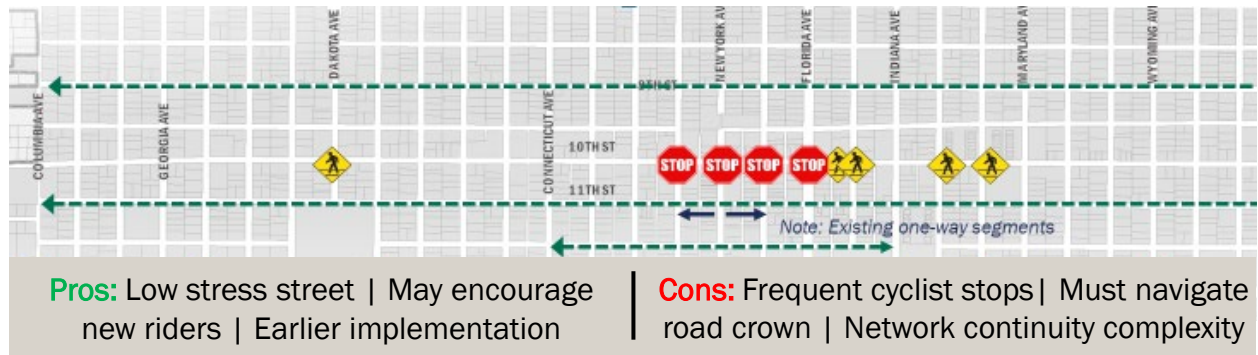
Option 4: 2-Lane, Sidewalks + Parking



Option 5: 2-Lane, Sidewalks + Bike Lanes + No Parking



Option 6: 2-Lane, Sidewalks + Parallel Bike Boulevard



Preliminary Evaluation – Medical Arts and Historic Grid

<i>EVALUATION MATRIX</i>	Option 1 (2-Lane, No-Action)	Option 2 (2-Lane, Sidewalk + Shared Use Path + No Parking)	Option 3 (2-Lane, Wide Sidewalks + No Parking)	Option 4 (2-Lane, Sidewalks + Parking)	Option 5 (2-lane, Sidewalks + Bike Lanes + No Parking)
SAFETY					
Supports reduction in vehicle speeds	Fair	Good	Good	Good	Fair
Supports reduction of all crashes and severity	Fair	Good	Good	Good	Good
Improves street crossing comfort and opportunities	Fair	Excellent	Excellent	Excellent	Good
HEALTH					
Provides safe and comfortable place to walk	Poor	Excellent	Excellent	Good	Fair
Provides safe and comfortable place to bike	Poor	Good	Fair	Fair	Good
ECONOMY					
Maintains consistency with existing plans	Poor	Good	Good	Excellent	Good
Maximizes access and opportunities to parking	Poor	Poor	Poor	Excellent	Poor
COMMUNITY					
Maintains small-town character of St. Cloud	Fair	Good	Good	Good	Fair
Enhances landscaping and shade opportunities	Poor	Excellent	Excellent	Good	Poor

Note: Option 6 was omitted from the matrix given it is off-corridor. Option 6 is considered an additional improvement.

Summary of Evaluation – Medical Arts and Historic Grid

The evaluation matrix rated the proposed typical options on a 4-point scale (**poor**, **fair**, **good**, and **excellent**) based on criteria addressing each of the project goal areas:

Option 1: 2-Lane, No Action

- This option was rated **poor** in terms of both Economy and Health and fair for Safety. This option was the worst rated due to not addressing corridor challenges.

Option 2: 2-Lane, Sidewalk + Shared Use Path + No Parking

- This option was rated **excellent** or **good** in most goal areas. However, this option was rated **poor** in “Maximizes access and opportunities to parking”. This option was considered the best out of all the potential improvements.

Option 3: 2-Lane, Wide Sidewalks + No Parking

- The wide sidewalk option has many **excellent** or **good** ratings in most goal areas. However, “provides safe and comfortable place to bike” was rated **fair**, and “maximizes access and opportunities to parking” was considered **poor**.

Option 4: 2-Lane, Sidewalks + Parking

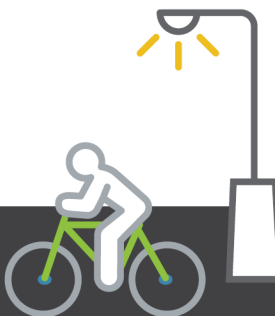
- This option was rated most **excellent** in terms of the Economy, but rated **good** or **fair** in all other areas. This option provides favorable pedestrian options but provides no space for bicyclists.

Option 5: 2-Lane, Sidewalks + Bike Lanes + No Parking

- The fifth option was rated **good**, **fair**, or **poor** in most areas. There are no **excellent** ratings for this option. Option 5 is rated slightly better than Option 1, but worse than Options 2 through 4 due to the less favorable pedestrian and landscape areas.

Option 6: 2-Lane, Sidewalks + Parallel Bike Boulevard

- Option 6 was omitted from the matrix given it is off-corridor. Option 6 is considered an additional improvement.



Typical Section Overview – Suburban Transition

The following pages will show the proposed typical segment against their existing typical to highlight improvements, as well as the pros and cons of each option. Improvements include:

A typical section is a physical representation of the road and other roadway elements.

Option 1: 2-Lane, No Action

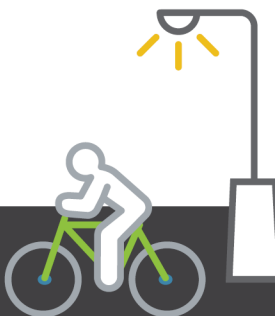
- The no action option would not change the 10th Street Corridor in any way and not involve any cost.

Option 2: 2-Lane, Shared Use Path on Both Sides + Parking

- Option 2 will provide space for trees that may provide shade, as well as implement standard roadway lane widths.
- Shared use paths and parking on both sides may not be needed but space is available.
- Roadway lighting will also be provided. The images on the next page show separate pedestrian scale lighting since the walkways are further from the roadway.

Option 3: 2-Lane, Bike Lanes + Sidewalks + Parking

- The final option will provide bike lanes on both sides of the road and add space for trees that may provide shade to bicyclists and pedestrians. This option will have standard roadway lane widths.
- Roadway lighting will also be provided. The images on the next page show separate pedestrian scale lighting since the walkways are further from the roadway.



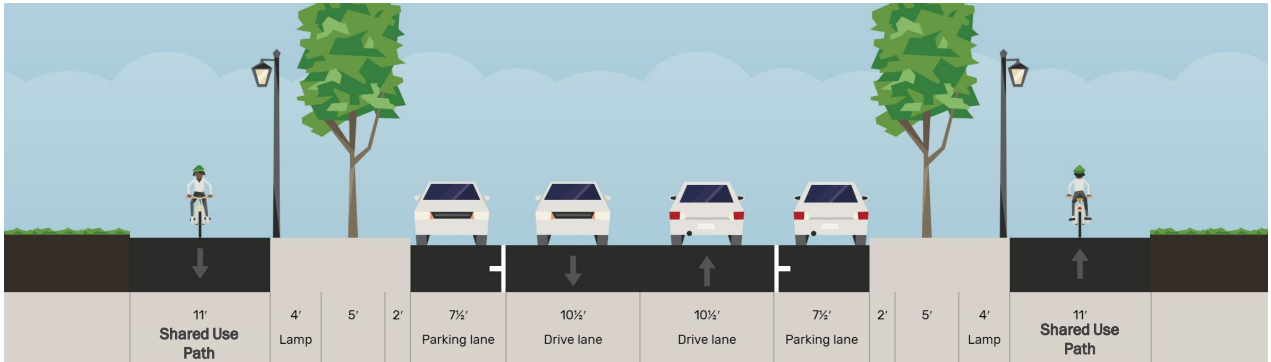
Typical Section Options – Suburban Transition

50- to 80-ft
ROW

Option 1: 2-Lane, No Action

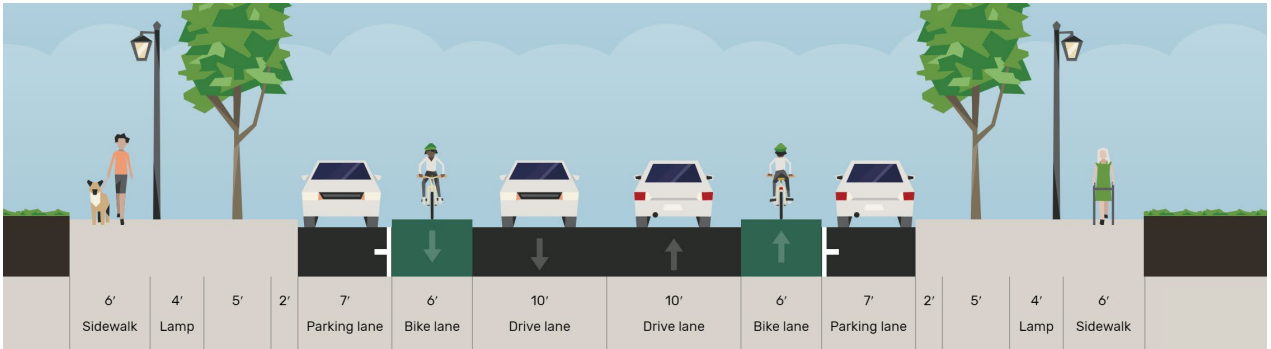


Option 2: 2-Lane, Shared Use Path on Both Sides + Parking

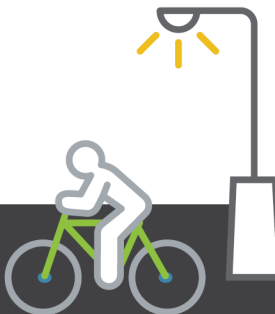


Note: Shared use path and parking on both sides may not be needed but space is available.

Option 3: 2-Lane, Bike Lanes + Sidewalks + Parking



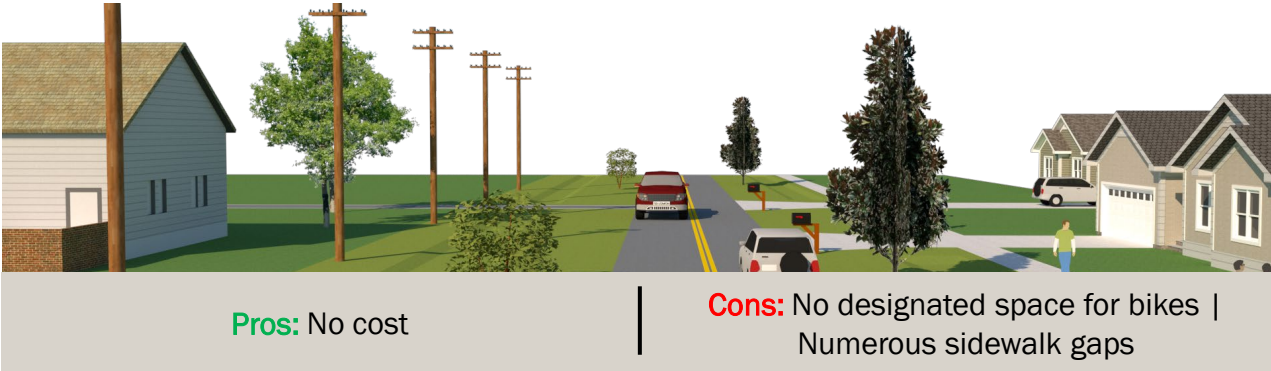
Note: Roadway lighting will also be provided. Graphics show separate pedestrian scale lighting since the walkways are further from the roadway.



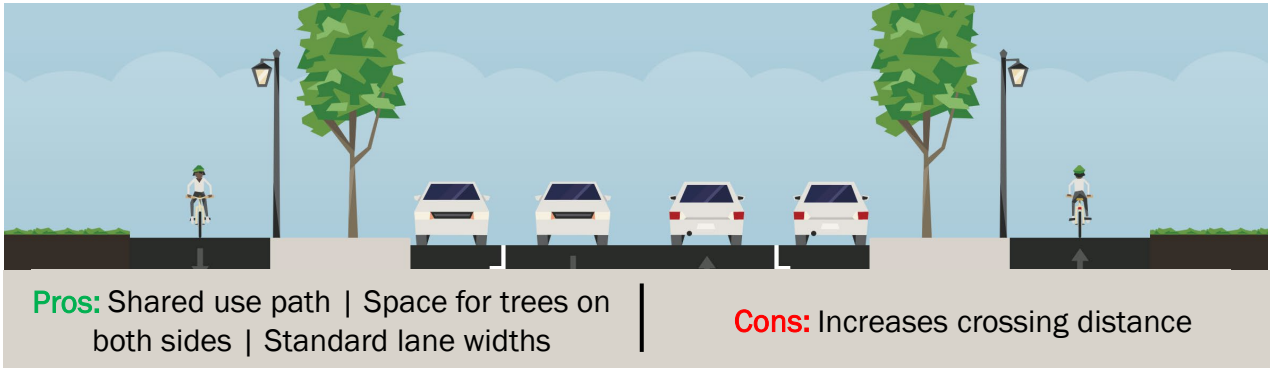
Suburban Transition – Pros and Cons

50- to 80-ft
ROW

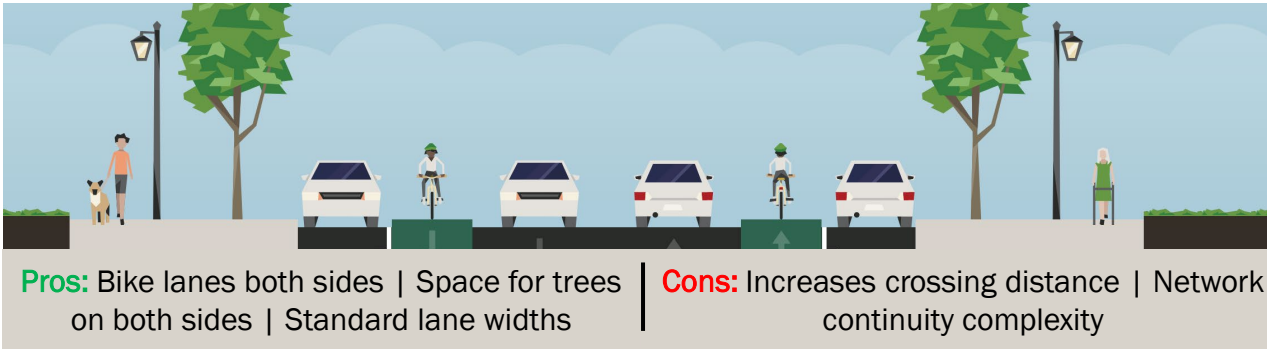
Option 1: 2-Lane, No Action



Option 2: 2-Lane, Shared Use Path on Both Sides + Parking



Option 3: 2-Lane, Bike Lanes + Sidewalks + Parking



Preliminary Evaluation – Suburban Transition

<i>EVALUATION MATRIX</i>	Option 1 (2-Lane, No-Action)	Option 2 (2-Lane, Shared Use Paths + Parking)	Option 3 (2-Lane, Sidewalks + Bike Lanes + Parking)
SAFETY			
Supports reduction in vehicle speeds	Fair	Good	Poor
Supports reduction of all crashes and severity	Fair	Good	Good
Improves street crossing comfort and opportunities	Poor	Excellent	Good
HEALTH			
Provides safe and comfortable place to walk	Poor	Excellent	Good
Provides safe and comfortable place to bike	Poor	Excellent	Good
ECONOMY			
Maintains consistency with existing plans	Poor	Fair	Fair
Maximizes access and opportunities to parking	Poor	Good	Good
COMMUNITY			
Maintains small-town character of St. Cloud	Fair	Good	Fair
Enhances landscaping and shade opportunities	Fair	Excellent	Good

Summary of Evaluation – Suburban Transition

The evaluation matrix rated the proposed typical options on a 4-point scale (**poor**, **fair**, **good**, and **excellent**) based on criteria addressing each of the project goal areas:

Option 1: 2-Lane, No Action

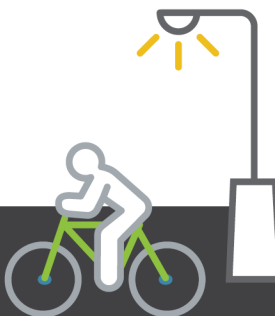
- Option 1 was the worst rated due to not addressing corridor issues. This option was rated **poor** in terms of both Economy and Health and rated **fair** for Safety and Community.

Option 2: 2-Lane, Shared Use Path on Both Sides + Parking

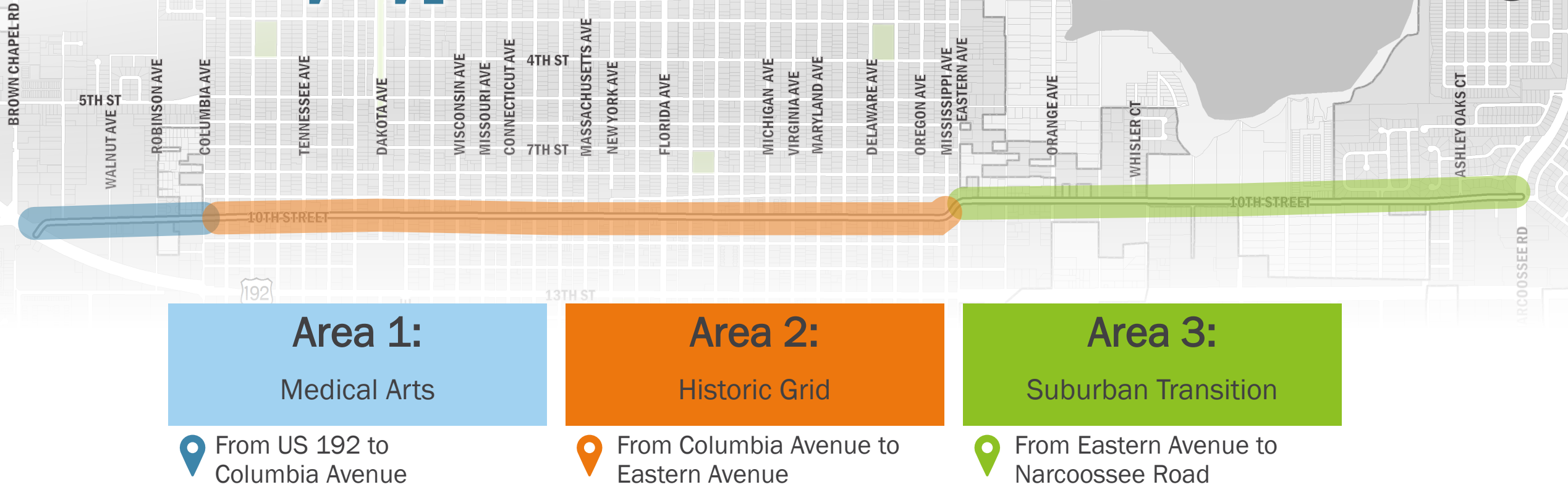
- This option was considered the best option of the three options for the Suburban Transition segment. This option was rated **excellent** or **good** in most goal areas. However, this option is rated **fair** in “Maintains consistency with existing plans”.

Option 3: 2-Lane, Bike Lanes + Sidewalks + Parking

- This option was better than Option 1 because it addresses more corridor challenges. However, this option does not address the corridor issues of speeding vehicles. No evaluation of this option was considered excellent for the goals and objectives. Most were considered **good** or **fair**, with one rated **poor** for “Supports reduction in vehicle speeds”.

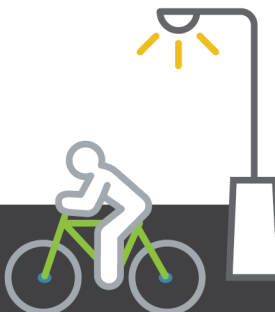


Preliminary Typical Section Selection

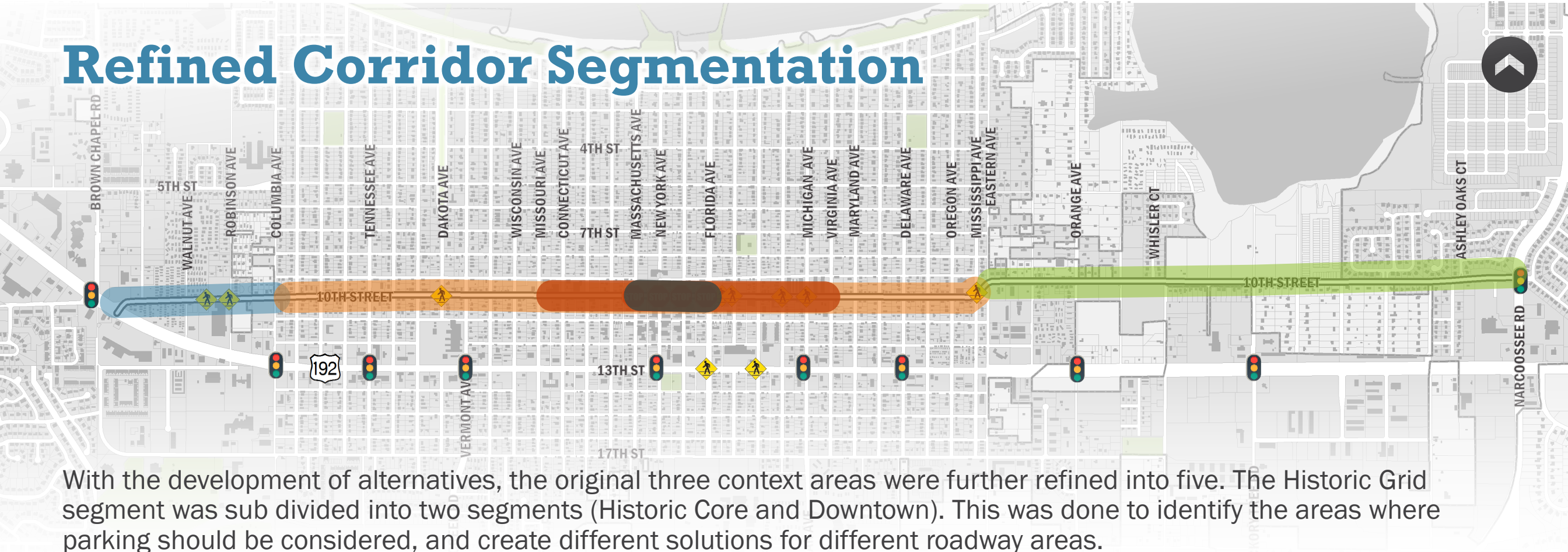


Based on project goals and through discussion with partners, a shared use path is preferred along the entire corridor.






- The bike lanes were eliminated since a buffer from traffic could not be provided
- Wide sidewalks (and no shared use path) were eliminated since bicycles were not well accommodated
- The parallel bike boulevard was identified as a potential solution in addition to the shared use path
- Parking is considered on a block-by-block basis

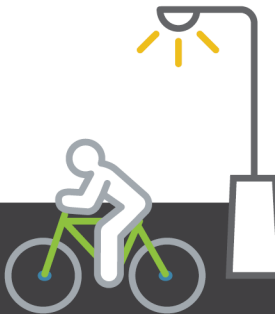


Refined Corridor Segmentation

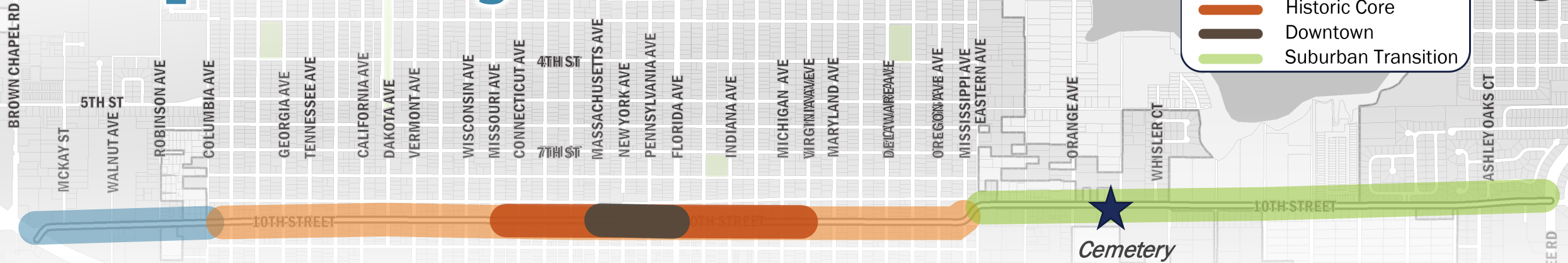


With the development of alternatives, the original three context areas were further refined into five. The Historic Grid segment was sub divided into two segments (Historic Core and Downtown). This was done to identify the areas where parking should be considered, and create different solutions for different roadway areas.

Area 1: Medical Arts	Area 2: Historic Grid	Area 2A: Historic Core	Area 2B: Downtown	Area 3: Suburban Transition
 From US 192 to Columbia Avenue	 From Columbia Avenue to Missouri Avenue, From Virginia Avenue to Eastern Avenue	 From Missouri Avenue to Massachusetts Avenue, From Florida Avenue to Virginia Avenue	 From Massachusetts Avenue to Florida Avenue	 From Eastern Avenue to Narcoossee Road

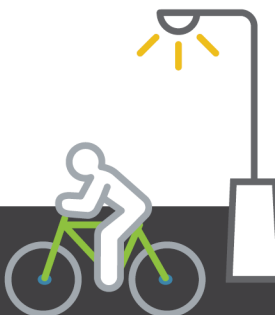


Concept Challenges

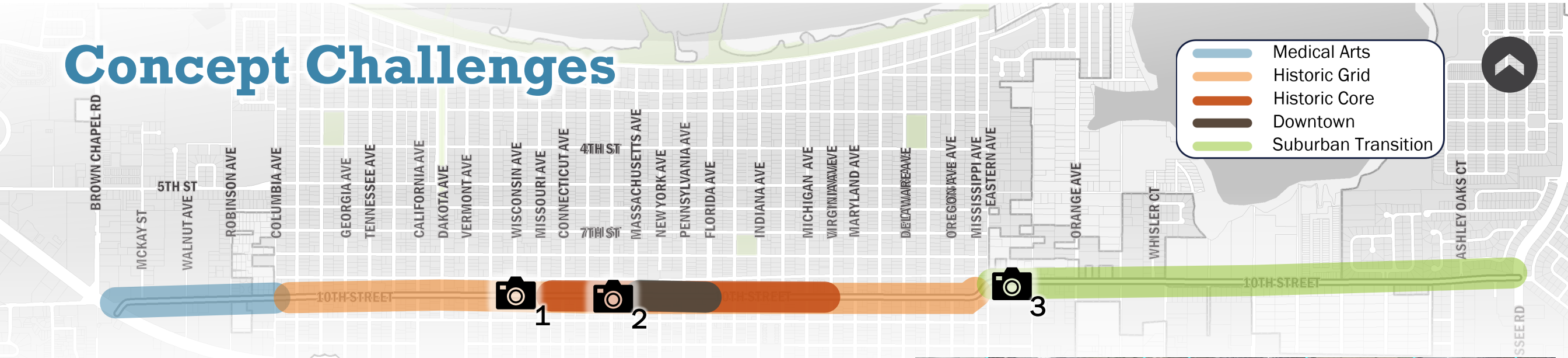


Each typical for the five segments faces some challenges that will be addressed as the concept plan is developed. A description of the challenges is below and pictures of these challenges can be seen on the following pages.

- **All segments**
 - Roadway centerline may need to shift in some locations
 - The shared use path will likely need to switch sides of the road between Eastern Ave and Orange Ave
 - Not all trees will be shade trees
 - Some smaller wooden utility poles likely need to be relocated
- **Medical Arts & Historic Core**
 - Shared use path may need to narrow or transition to sidewalk in areas with large power poles
- **Suburban Transition**
 - Shared use path is preferred on the north side due to fewer driveways
 - Making the shared use path buffer as wide as possible is preferred to separate people from vehicles, but it may need to be reduced due to large transmission power poles
 - The typical section will need modification at the historic cemetery



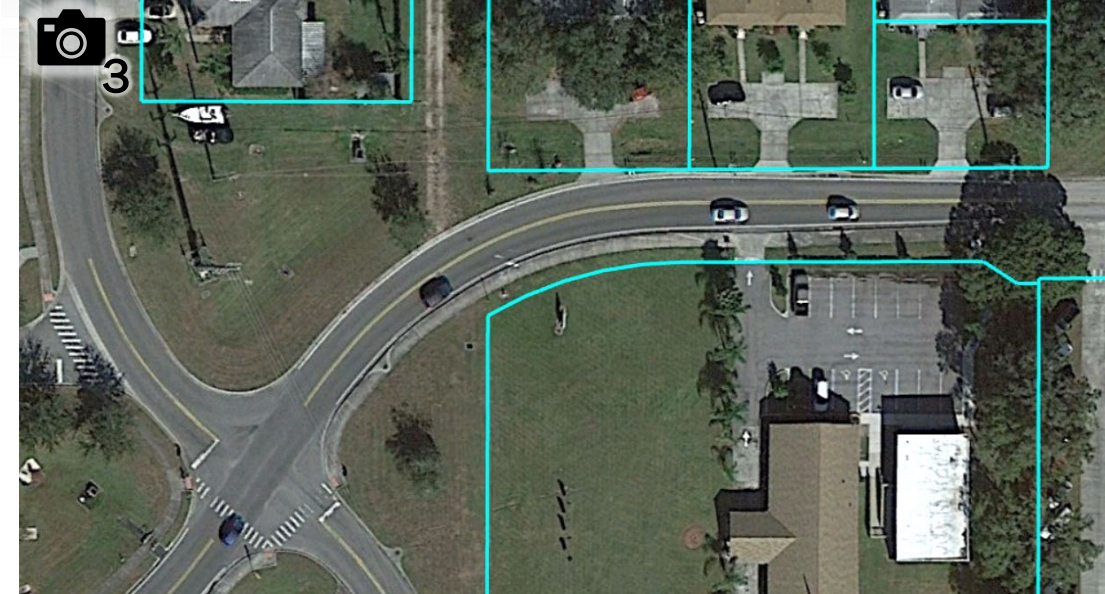
Concept Challenges



Shared use path may need to narrow or transition to sidewalk.

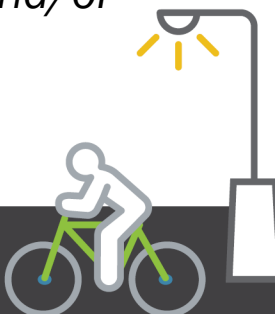


Roadway centerline may need to shift south.

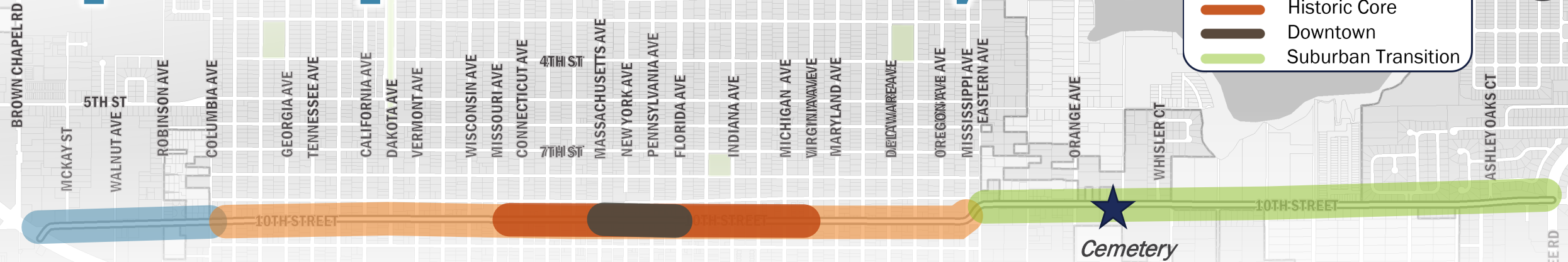


Shared use path will likely need to shift to the south side of the road due to geometric and/or terrain constraints.

The project approach is to stay within the right-of-way.

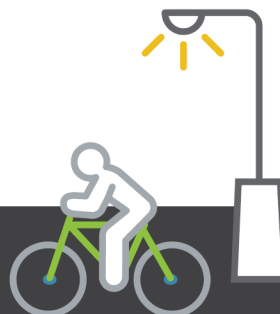


Proposed Improvement Summary

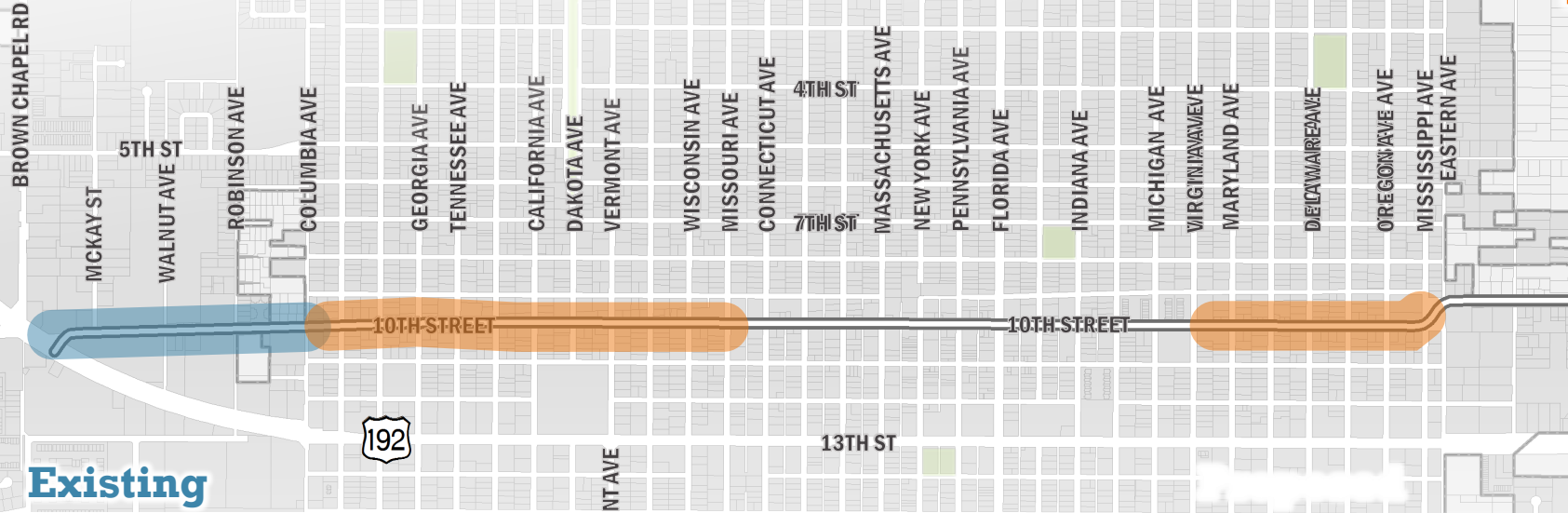


The next few pages will show the proposed typical section compared to the typical existing conditions. Improvements include:

- **Medical Arts & Historic Grid**
 - Shared use path on one side of the road, allowing for space for two bicycles to ride side by side, a sidewalk on the alternate side of the road, ditches will be converted to curb and gutter, and added landscaping.
 - One challenge of this segment is that the shared use path may need to narrow near large transmission power poles.
- **Historic Core**
 - This segment is based on where businesses may expand based on future land use maps. Improvements include a shared use path, curb and gutter, and some on-street parking, which supports the Economy goal.
- **Downtown Core**
 - The Downtown Core segment covers four blocks of downtown, reflecting the improvements already planned as a part of a separate project. The improvements are similar to those of the Historic Core.
- **Suburban Transition**
 - Shared use path is preferred on the north side due to fewer driveways.
 - A wide shared use path buffer is preferred, but it may need to be reduced due to transmission power poles.
 - The typical section will need modification at the historic cemetery.



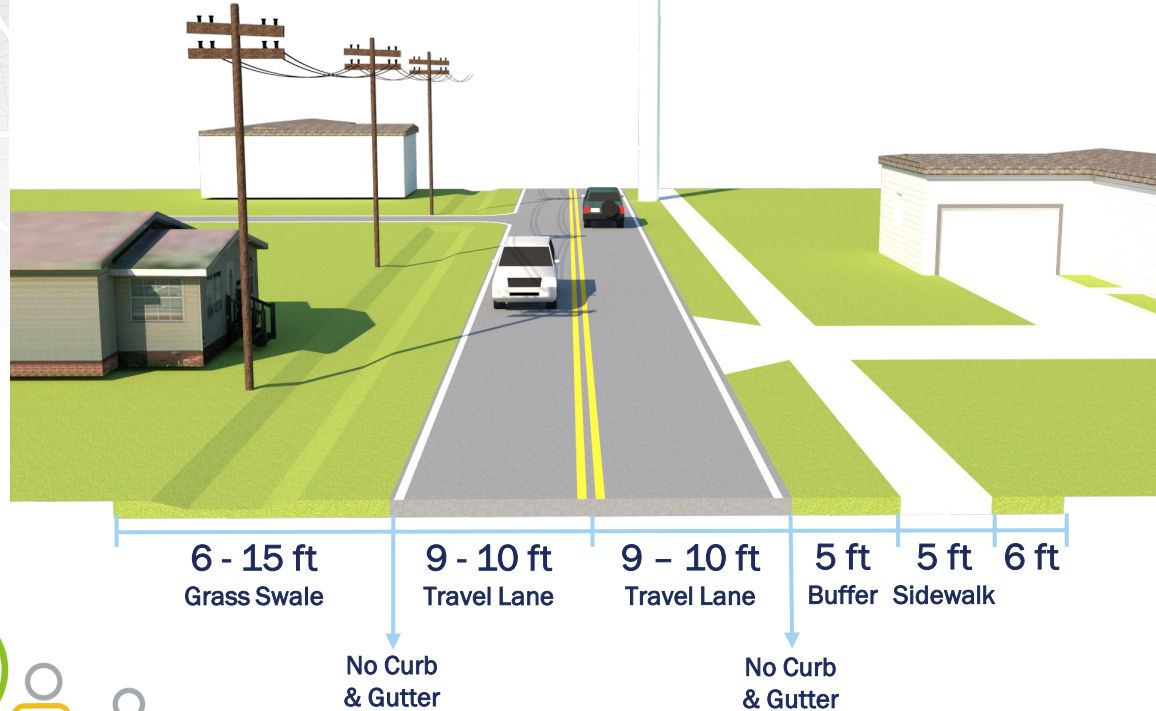
Medical Arts and Historic Grid – Proposed



Proposed Features

- 10-ft vehicle lanes
- 10-ft shared use path (one side)
- 5-ft sidewalk (one side)
- No on-street parking
- Two 4-ft landscape/tree areas
- 7-ft for curb, gutter, utilities

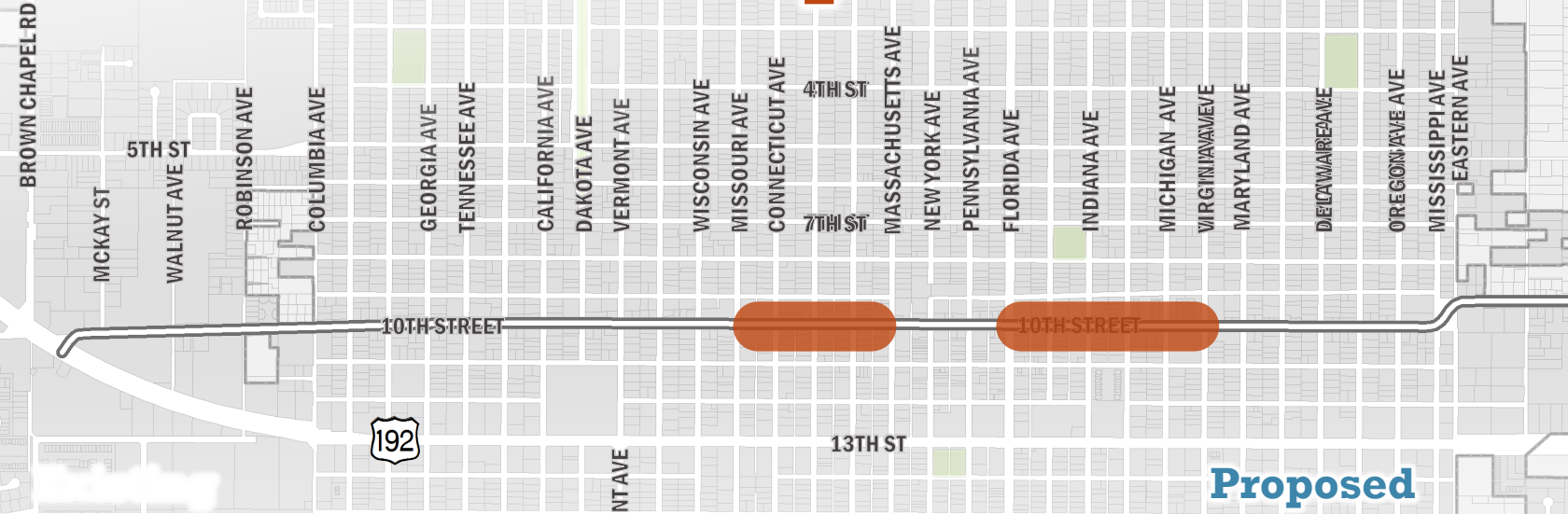
Typical Section of Current ROW (50-ft)



Typical Section of Alternative ROW (50-ft)



Historic Core – Proposed



Proposed Features

- 10-ft vehicle lanes
- 11-ft shared use path (one side)
- 6 ft sidewalk (one side)
- 8-ft for on-street parking (one side)
- Trees between parking spaces
- 5-ft for curb, gutter, utilities

Proposed

Typical Section of Current ROW (50-ft)



6 - 19 ft Grass Swale 9 - 10 ft Travel Lane 9 - 10 ft Travel Lane 3 ft Buffer 5 ft Sidewalk 3 ft

No Curb & Gutter

No Curb & Gutter

Typical Section of Alternative ROW (50-ft)



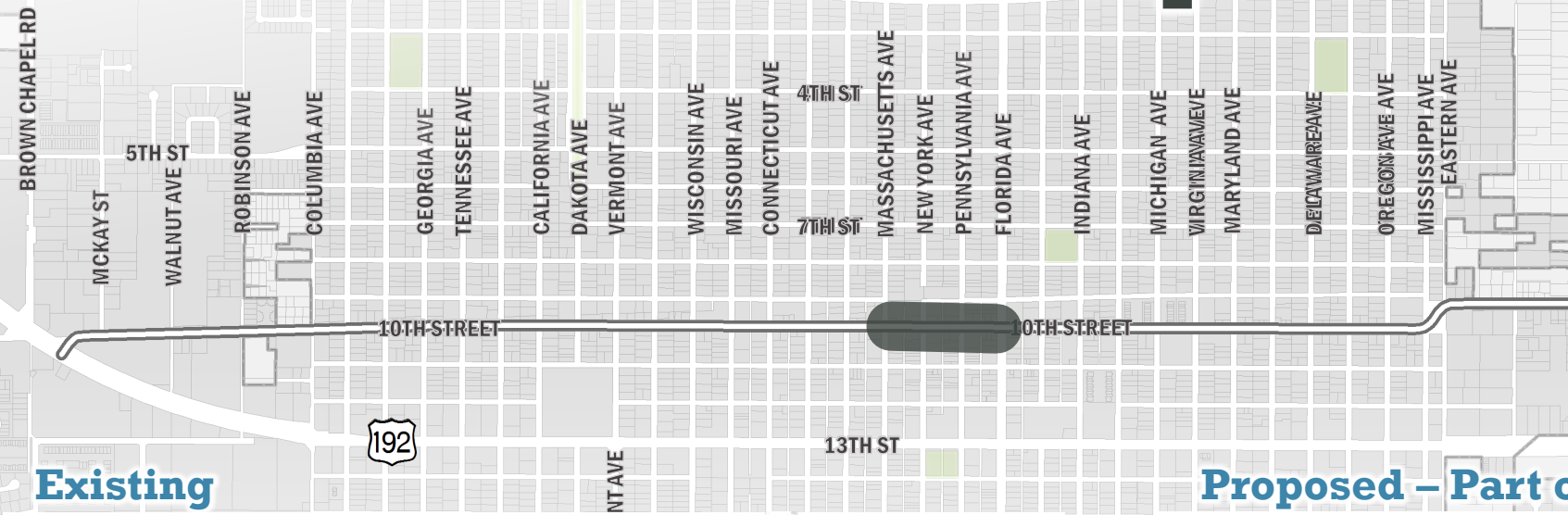
5 ft 6 ft Sidewalk 8 ft Parking 10 ft Travel Lane 10 ft Travel Lane 11 ft Shared Use Path

Includes Curb

Includes Curb



Downtown Core – Part of Separate Design

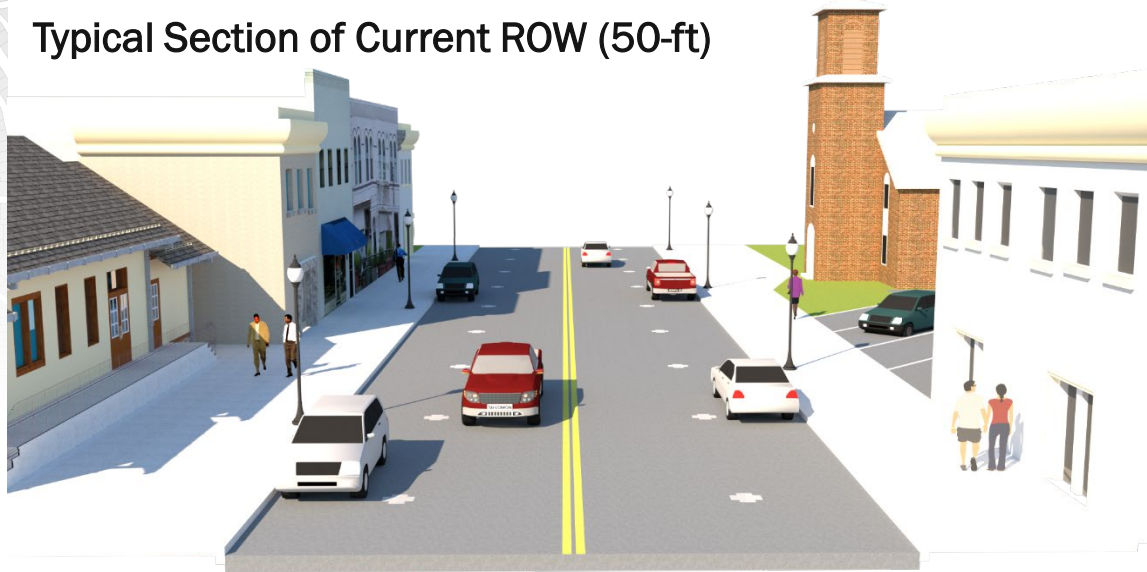


Proposed Features

- 10-ft vehicle lanes
- Sidewalk varies, 10.5-ft max. (both sides)
- 7.5-ft for on-street parking (both sides)
- Trees between parking spaces
- 4-ft for curb, gutter, utilities

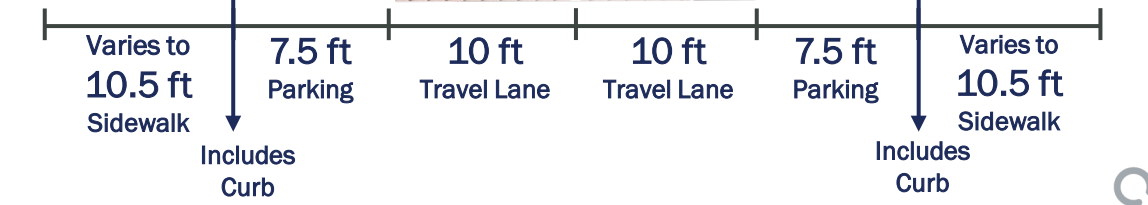
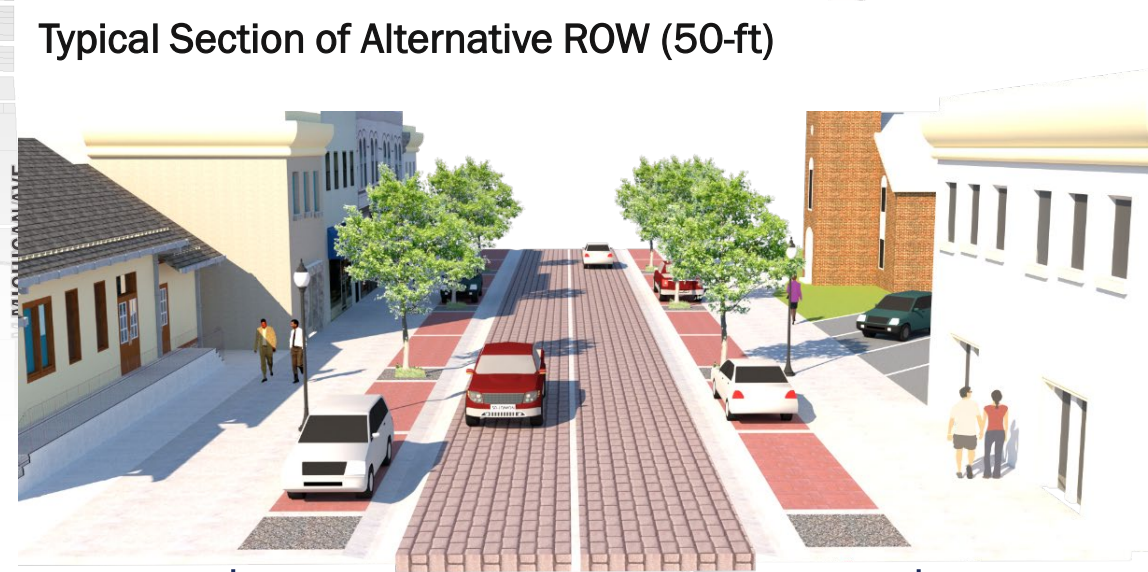
Existing

Typical Section of Current ROW (50-ft)



Proposed – Part of Separate Design Plans

Typical Section of Alternative ROW (50-ft)



Suburban Transition – Proposed

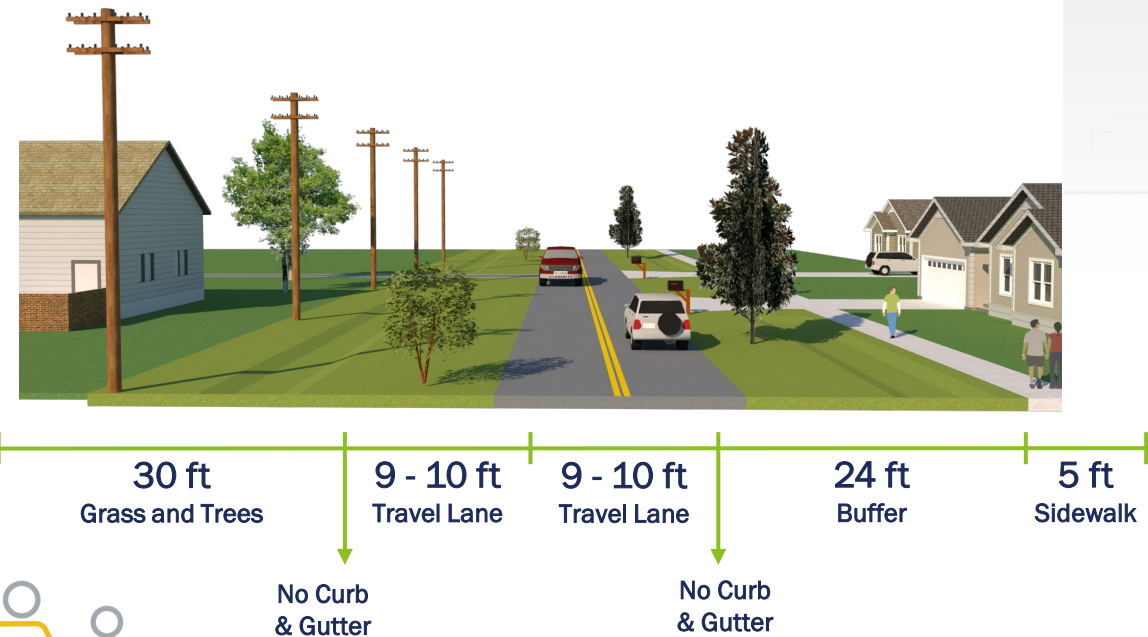


Proposed Features

- 10-ft vehicle lanes
- 10-ft shared use path (one side)
- 5-ft sidewalk (one side)
- No on-street parking
- Two ~5 to 19-ft landscape/tree areas
- 5 to 9-ft for curb, gutter, utilities

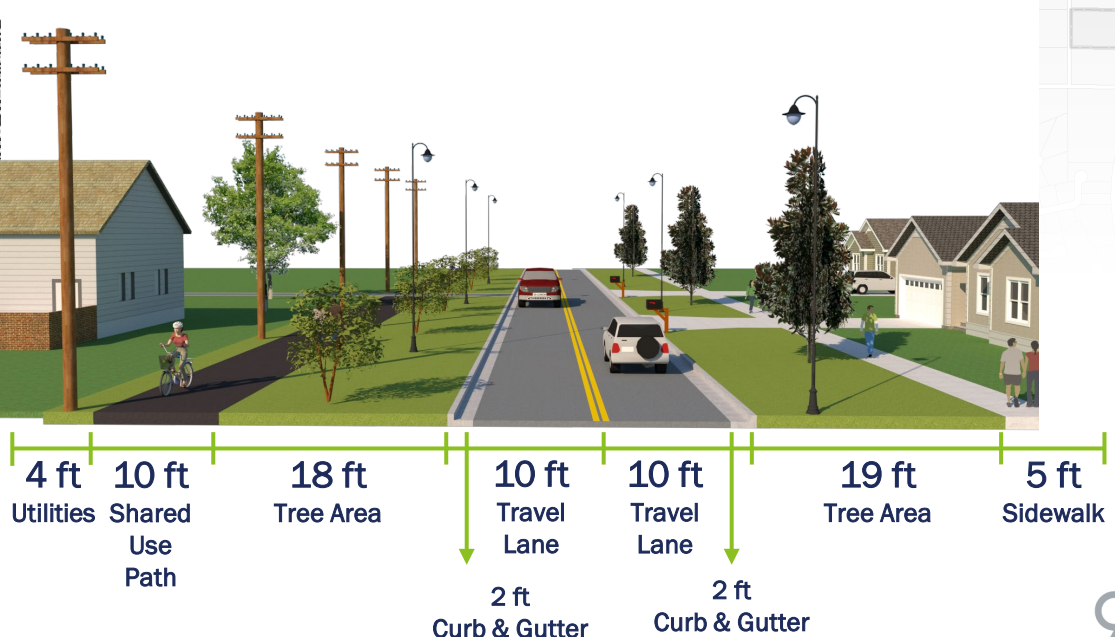
Note: A historic cemetery exists at this location and the ROW gets narrower. Typical section will need modification.

Typical Section of Current ROW (50-80 ft)



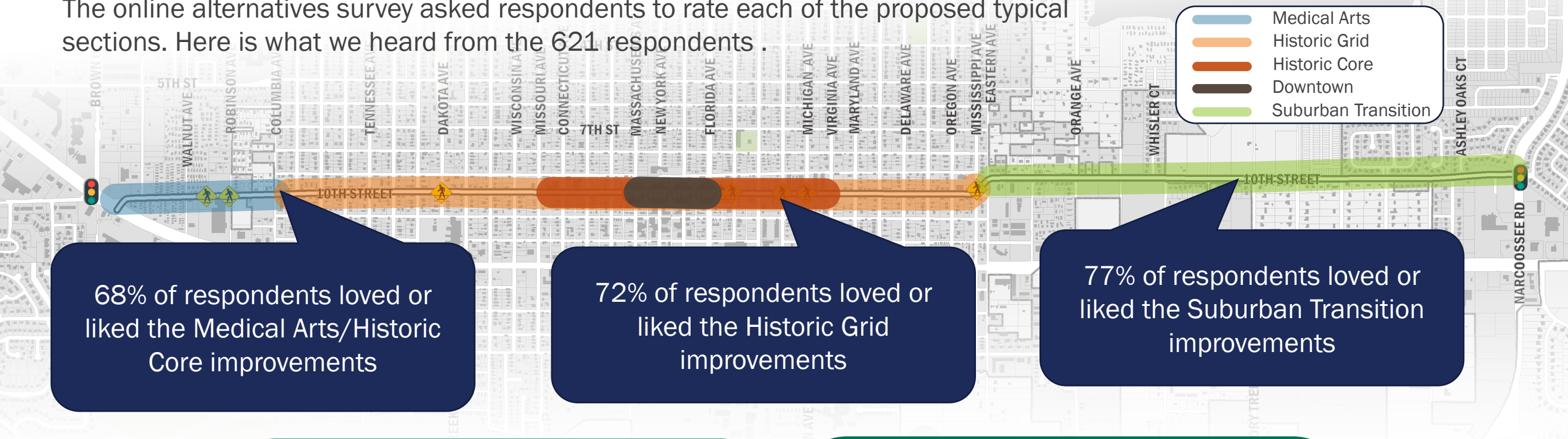
Typical Section of Alternative ROW (50-80 ft)

Note: 80-ft right-of-way shown



Survey Feedback on Proposed Improvements

The online alternatives survey asked respondents to rate each of the proposed typical sections. Here is what we heard from the 621 respondents.



Supportive

- “I really like the creative ideas proposed for the intersections and pedestrian movement areas. We definitely need more lane width on 10th St and pedestrian walk abouts.”
- “I would work to reduce all on street parking and to minimize, as much as possible, the time required for construction. Thanks for the opportunity to provide input. I live in Ashton Place.”

Against

- “I don't see how you are going to widen w/o taking a great number of properties... or running them for resale.”
- “I am still concerned about traffic flow and parking.”
- “I would not like painted intersections.”

Survey Feedback on Proposed Improvements

The online alternatives survey also allowed for open-ended comment responses. The summary is provided below:

General Comments

- “Any improvement which would alleviate heavy traffic and the danger to pedestrians would be very welcome. Trees and wider sidewalks would be great too.”
- “As long as it stays two lanes with sidewalks and drainage for flooding, I think it sounds good.”
- “It looks like a great improvement.”
- “Safety should be the primary factor in the suggested changes.”
- “I am very excited about the possibility of these much-needed changes.”

Sidewalk, Shared-Use Path, Bike Lane Comments

- “Very interested in sidewalks for pedestrian walking and safe places for mobility scooters.”
- “Try to keep the shared use path on the same side of the street.”
- “Sidewalk should be installed on both sides of 10th street the entire corridor, from US 192 to Narcoossee Rd.”
- “Repave, widen, add bike lane.”
- “Sidewalks for pedestrians and bikes all the way through US 192. Make it a walkable city.”

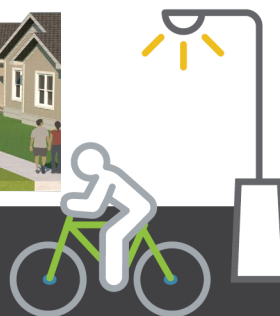
Proposed Medical Arts/Historic Grid



Proposed Historic Core



Proposed Suburban Transition



Survey Feedback on Proposed Improvements

The online alternatives survey also allowed for open-ended comment responses. The summary is provided below:

Vehicular Traffic Comments

- “Improvements are great as long as they do not encourage more traffic. These would be great only if the avenues around 10th street near city hall was shut down to thru traffic making it pedestrian friendly as many cities have done.”
- “Not sure why several of the plans included more bike and pedestrian space than vehicular traffic space.”

Landscaping/Parking Comments

- “I do not like trees between parking spaces. It makes it hard to park sometimes and takes away parking spaces.”
- “Diagonal parking instead of parallel parking in downtown area.”
- “Keep up the great work and public involvement initiative and please consider enhance landscaping too.”
- “I do not like the on-street parking idea.”
- “More parking and sidewalks so it is safer for school age kids getting to and from bus stops and commuters”
- “We need as much shade as we can get!”
- “Do not plant trees in the downtown areas, they make a mess and need lots of long term maintenance.”

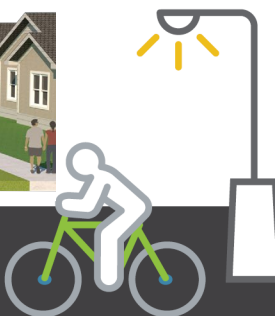
Proposed Medical Arts/Historic Grid



Proposed Historic Core



Proposed Suburban Transition



Survey Feedback on Proposed Improvements

The online alternatives survey also allowed for open-ended comment responses. The summary is provided below:

Lighting/Visibility Comments

- “The huge power poles along 10th have reduced visibility.”
- “Get rid of ALL utility polls -- bury all cables underground.”
- “Urgent public electric lighting!”
- “Need street lighting.”

Property/Business Comments

- “Will the people who live on 10th street lose a lot of their property? Will their driveways have to change?”
- “I think this improvement will benefit the local economy. Many of us want to stay and buy local.”
- “More clarification regarding right of ways.”

St. Cloud Character Comments

- “I like the proposed improvements as long as we do not lose our small-town charm.”
- “I dislike that our quaint, small town St Cloud has got to grow.. however inevitable.”
- “Renovate, maintain its historical uniqueness.”
- “Save the history and old time feel.”

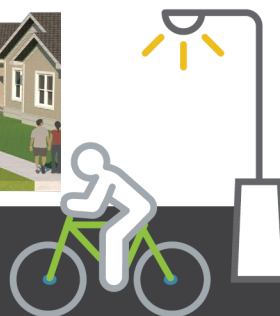
Proposed Medical Arts/Historic Grid



Proposed Historic Core



Proposed Suburban Transition



Possible Intersection Solutions Summary

The next few pages will show the possible intersection solutions suggested along 10th Street. Intersection solutions are proposed based on locations with a relative higher number of crashes, locations that define a transition between context areas (such as Connecticut Ave), public input, or intersections with north-south street traffic signals on US 192. The initial proposed solutions will be defined and expanded in Chapter 3 (Concept Development).



Neighborhood Traffic Circle

- Proposed on Columbia Ave



Rectangular Rapid Flashing Beacon (RRFB)

- Suggested at Dakota Ave and Vermont Ave. The Vermont Ave intersection was added based on public feedback



Pedestrian Median Refuge

- Suggested at Dakota Ave and Vermont Ave in tandem with RRFBs
- This treatment may be added to more intersections during Concept Development



Painted or Raised Intersection

- Connecticut Ave, Michigan Ave, Virginia Ave and Delaware Ave



Mini Roundabouts

- Proposed at Orange Ave, Old Hickory Tree Road, and Pine Lane
- The multiple mini roundabouts in succession are used to moderate travel speeds

Note: More intersections will be considered as additional public involvement is completed.




Possible Intersection Alternatives

Based on crash history, land use, and available space. They aim to address study goals and improve challenges such as speeding and safe street crossings.



Neighborhood Traffic Circle




- Used on low traffic roads.
- Used to reduce turning crashes.
- Columbia Ave has had these types of crashes.

Rectangular Rapid Flashing Beacon (RRFB)




- Crossing is more noticeable.
- Improves driver yielding.
- Studies show pedestrian crashes can be reduced by 47%.

Pedestrian Median Refuge



- Pedestrians can cross one lane at a time.
- Dakota Ave connects to a school and a trail network.

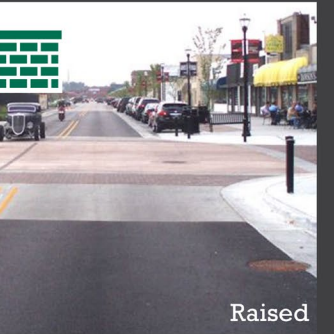
Painted or Raised Intersection



Painted

- Beautifies street.
- Encourages lower speeds.


Painted or Raised Intersection



Raised

- Uses slight incline to raise vehicles up and down.
- Reduces vehicle speeds.

Mini Roundabout

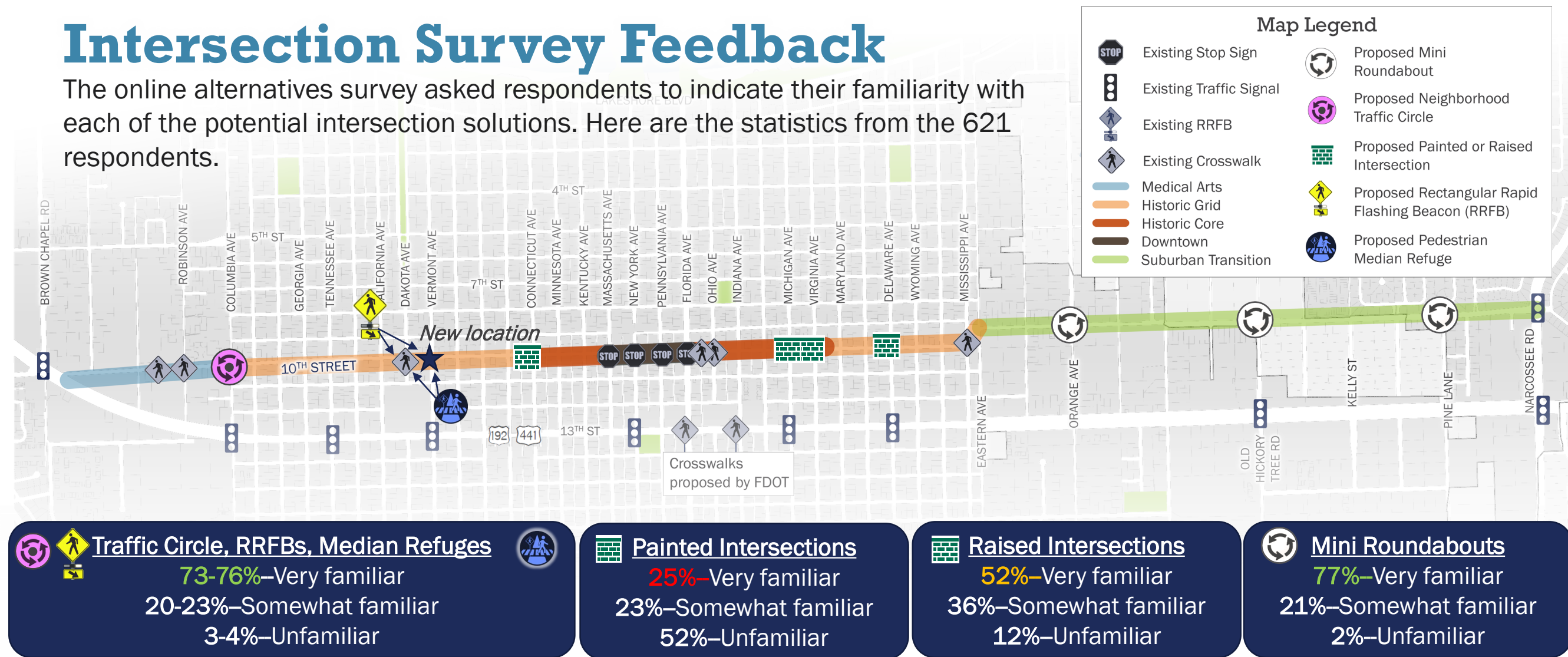


- Reduces vehicle speeds.
- Used to reduce crashes.
- Acts as gateway feature.

Image Sources: NACTO, FHWA, Field Photos

Intersection Survey Feedback

The online alternatives survey asked respondents to indicate their familiarity with each of the potential intersection solutions. Here are the statistics from the 621 respondents.



In addition to the initial intersection locations identified for improvement above, the survey participants also indicated a need for solutions at Vermont Avenue (8 survey mentions) and Eastern Avenue/Mississippi Avenue (3 survey mentions). These intersections will be further evaluated in the Concept Development (Chapter 3) phase.



Intersection Survey Feedback

The online alternatives survey also allowed for open-ended comment responses. The summary is provided below:


General Comments

- “Need to keep traffic slowed down.”
- “Something is definitely needed for traffic at Vermont and 10th.”
- “Check the view behind each white line at each intersection. It’s difficult on many streets to see oncoming vehicles because of mature trees and parking.”
- “I am all for making 10th street more vehicle and pedestrian safe.”

Roundabout Comments

- “I believe the roundabouts will be helpful slowing down drivers.”
- “Please no roundabouts.”
- “Add roundabouts to keep traffic moving.”
- “Definitely think the mini roundabout or traffic circles are the way to go to reduce speeding.”
- “Roundabouts and traffic circles don’t work in the US.”
- “Neighborhood traffic circles get my vote.”
- “Think the roundabouts would work best.”

Neighborhood Traffic Circle




- Used on low traffic roads.
- Used to reduce turning crashes.
- Columbia Ave has had these types of crashes.

Rectangular Rapid Flashing Beacon (RRFB)



- Crossing is more noticeable.
- Improves driver yielding.
- Studies show pedestrian crashes can be reduced by 47%.

Pedestrian Median Refuge



- Pedestrians can cross one lane at a time.
- Dakota Ave connects to a school and a trail network.

Painted or Raised Intersection




Painted

Raised

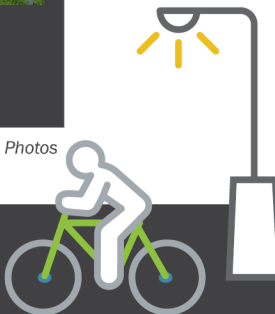
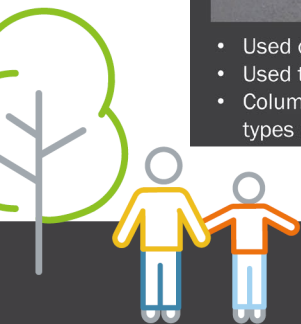
- Beautifies street.
- Encourages lower speeds.
- Uses slight incline to raise vehicles up and down.
- Reduces vehicle speeds.

Mini Roundabout



- Reduces vehicle speeds.
- Used to reduce crashes.
- Acts as gateway feature.

Image Sources: NACTO, FHWA, Field Photos



Intersection Survey Feedback

The online alternatives survey also allowed for open-ended comment responses. The summary is provided below:


Painted/Raised Intersection Comments

- “The painted roadways would not be a good fit for the area and could be visually confusing.”
- “Color intersection is a great idea and beautiful to the eyes.”
- “Raised intersections are a great idea.”
- “Use a theme for painted crosswalks.”
- “No painted intersections.”
- “Raised painted intersection would be a great visual and would make me feel much safer.”

Stop Signs

- “4-way stop signs with flashing lights seem to have stopped all the accidents on 10th and Columbia. There should be more of these along 10th Street.”
- “We need to have stop sign on 10th St. and Vermont Avenue that is a very dangerous intersection.”
- “Flashing stop signs on Vermont and 10th Street.”

Neighborhood Traffic Circle




- Used on low traffic roads.
- Used to reduce turning crashes.
- Columbia Ave has had these types of crashes.

Rectangular Rapid Flashing Beacon (RRFB)




- Crossing is more noticeable.
- Improves driver yielding.
- Studies show pedestrian crashes can be reduced by 47%.

Pedestrian Median Refuge




- Pedestrians can cross one lane at a time.
- Dakota Ave connects to a school and a trail network.

Painted or Raised Intersection



Painted


- Beautifies street.
- Encourages lower speeds.



Raised

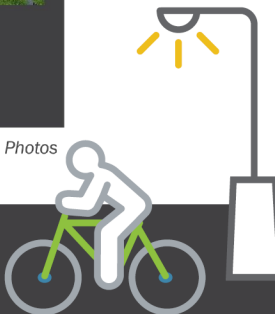
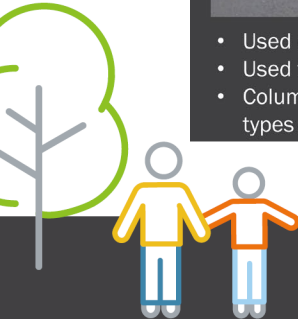
- Uses slight incline to raise vehicles up and down.
- Reduces vehicle speeds.

Mini Roundabout



- Reduces vehicle speeds.
- Used to reduce crashes.
- Acts as gateway feature.

Image Sources: NACTO, FHWA, Field Photos





Section 2.3

Project Status & Next Steps

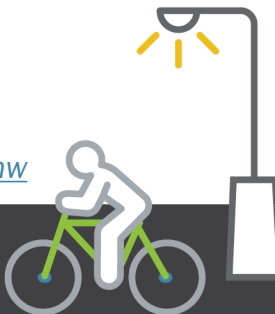
Project Visioning Team Meeting #2 Summary

The second PVT meeting was held virtually over Zoom on Wednesday February 2, 2022 at 1:30pm

- Over 25 people were in attendance
- PVT members provided their feedback on the alternatives, intersection improvements, and asked questions regarding the conceptual design phase
- Key topics discussed at the meeting were:
 - Satisfaction with the shared-use path typical section option
 - The possibility of undergrounding utilities to avoid narrowing or splitting the shared-use path and to provide a more visually appealing 10th Street
 - The citizen approval process for intersection treatments such as painted intersections, and whether painted intersections should be selected
 - Maintaining the study focus on target speeds and pedestrian safety



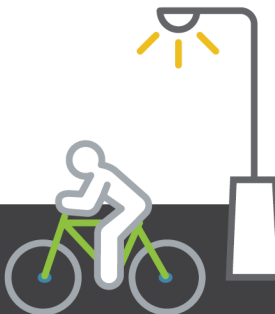
To view the PVT2 presentation, please visit:
<https://www.youtube.com/watch?v=HVE507S7Hhw>



Next Steps

The 10th Street Study is transitioning to the final study phase and will include concept development along with additional public engagement. The final chapter to this report will be added to the study as it is completed. Key activities in the spring of 2022 will include:

- Development of a conceptual design plan
 - Finalizing and drawing typical sections
 - Drawing intersection solutions
- Additional outreach to receive feedback on concept development:
 - In-person engagement at final community event
 - Online video





Chapter 3: Concept Design Plan

Coming Summer 2022



Project Webpage: www.MetroPlanOrlando.org/10thStreetStudy



Chapter 3: Concept Development

Summer 2022

What is the 10th Street Concept Development?

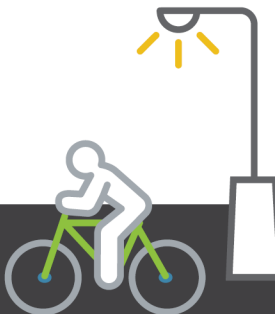
Concept development builds upon the existing condition data from Chapter 1 (Defining Success) and the evaluation of potential alternatives from Chapter 2 (Alternatives Assessment) to develop Concept Designs for 10th Street. The full concept plan for 10th Street from US 92 to Narcoossee Road can be found on the MetroPlan Orlando 10th Street project website. Readers should view the plan with this document.

The proposed design includes two vehicle travel lanes, a shared-use path, sidewalks, lighting, landscaping, and some parking. The proposed intersection solutions include marked crosswalks, mini-roundabouts, and textured pavement. All proposed solutions include community feedback. This report summarizes the key solutions and community feedback on the entire plan.

It is recommended that readers view the Chapter 1 and 2 document prior to reading this Chapter 3 document.

To view Chapters 1 and 2, and the most up to date information about the Study, visit:

www.MetroPlanOrlando.org/10thStreetStudy.



10th Street Project Video

A before and after aerial fly-through video of the corridor can also be found on the MetroPlan Orlando project website: www.MetroPlanOrlando.org/10thStreetStudy.

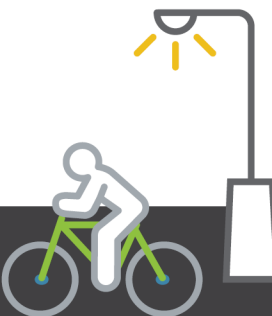
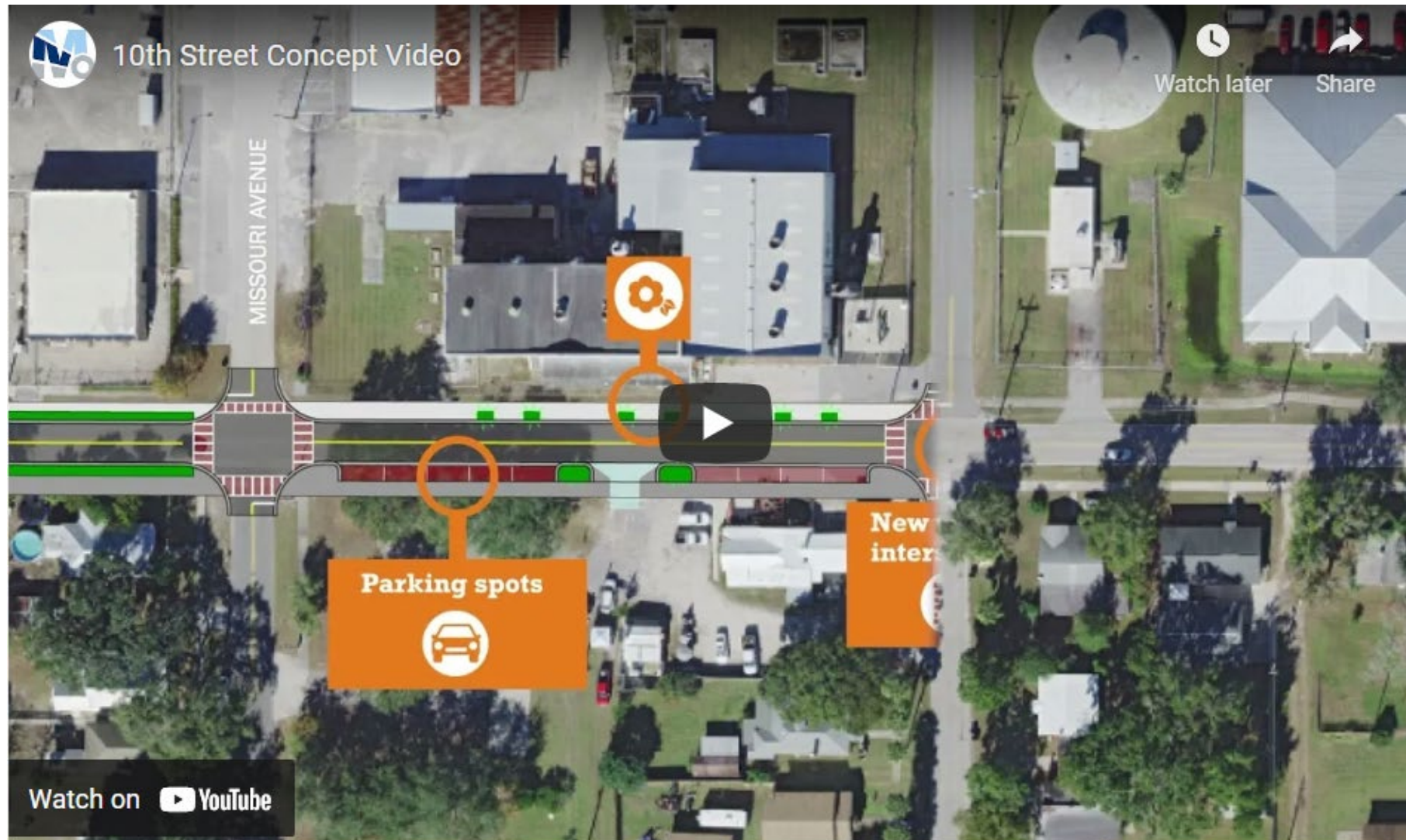


Table of Contents

1.0 Defining Success (Fall 2021)

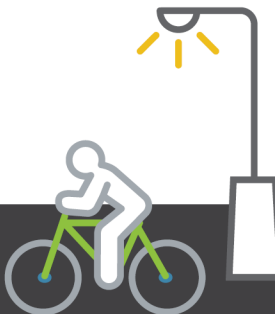
2.0 Alternatives Assessment (Winter 2022)

3.0 Concept Design and Recommendations (Summer 2022)

3.1 Key Improvements

3.2 Community Feedback on Concept Plan

3.3 Project Conclusion





Section 3.1

Key Improvements

Improvement: CROSSWALK

Description:

Multiple crosswalks are proposed along 10th Street. Marked crosswalks indicate optimal or preferred locations for pedestrians to cross the street and help designate right-of-way for motorists to yield to pedestrians.

Benefits:

- Improves pedestrian access
- Warns motorists to expect pedestrian crossings
- Reinforces short blocks to support speed management and limit driver acceleration between intersections

Sources:

- PEDBIKESAFE, [Pedestrian Safety Guide and Countermeasure Selection System](#)
- FDOT Design Manual, [FDM Chapter 202](#)

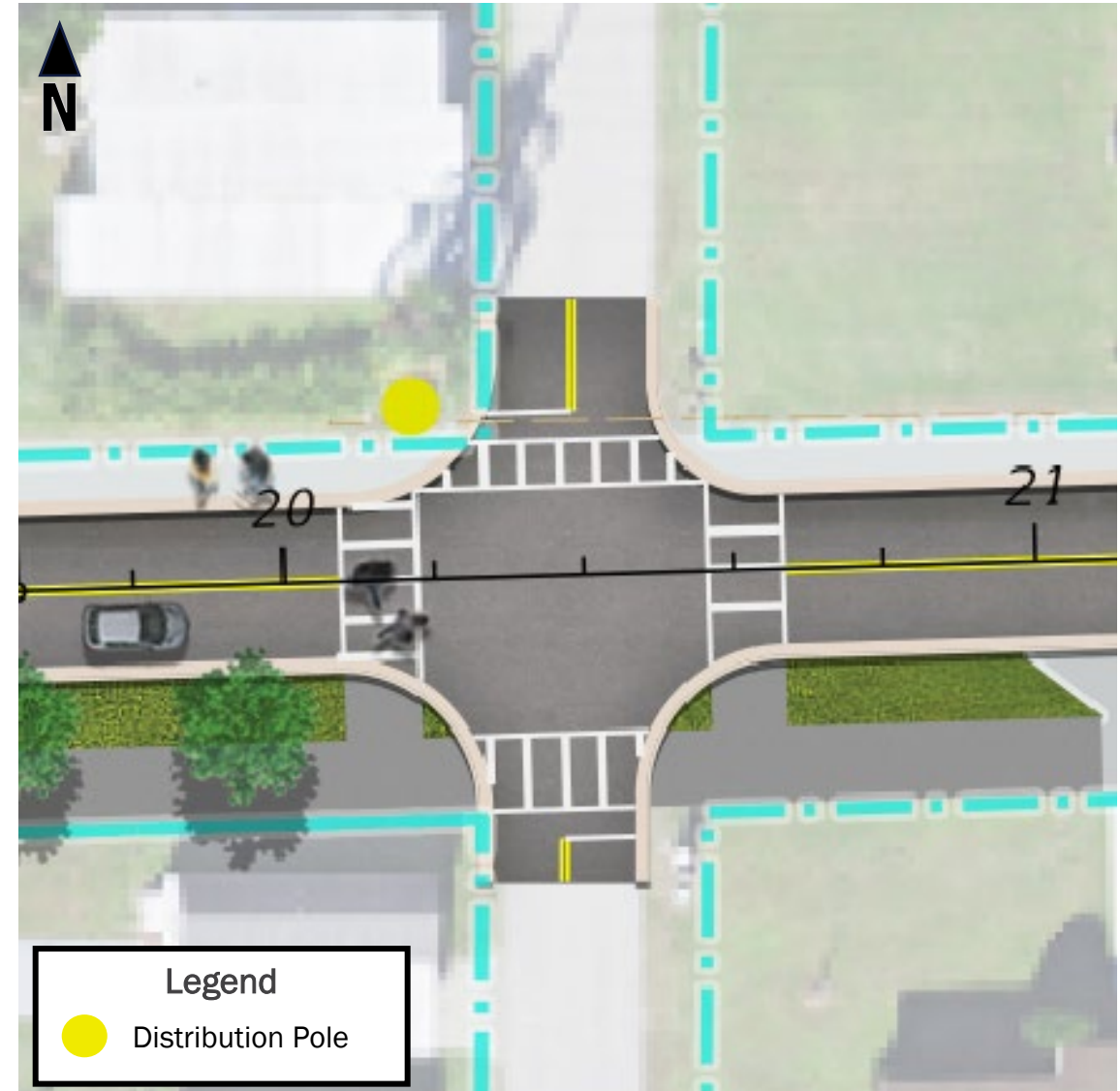
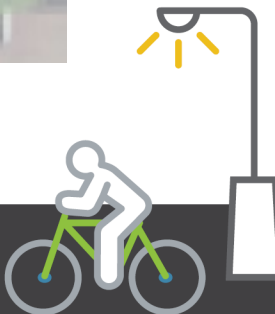


Image Source: 10th Street Concept Design Plan



Improvement: TEXTURED INTERSECTION

Description:

Textured intersections are proposed at:

- Missouri Avenue
- Connecticut Avenue
- Minnesota Avenue
- Kentucky Avenue
- Ohio Avenue
- Indiana Avenue
- Illinois Avenue
- Michigan Avenue
- Virginia Avenue
- Delaware Avenue
- Oregon Avenue
- Mississippi Avenue

These intersections have special paving materials, which make the intersection more prominent in the driver's field of vision. They are concentrated near the Downtown Core, indicating to drivers that they are entering an area with more pedestrian activity.

Benefits:

- Beautifies street
- Enhances crosswalk visibility and encourages lower speeds

Source:

- Federal Highway Administration, [Safe Transportation for Every Pedestrian](#)

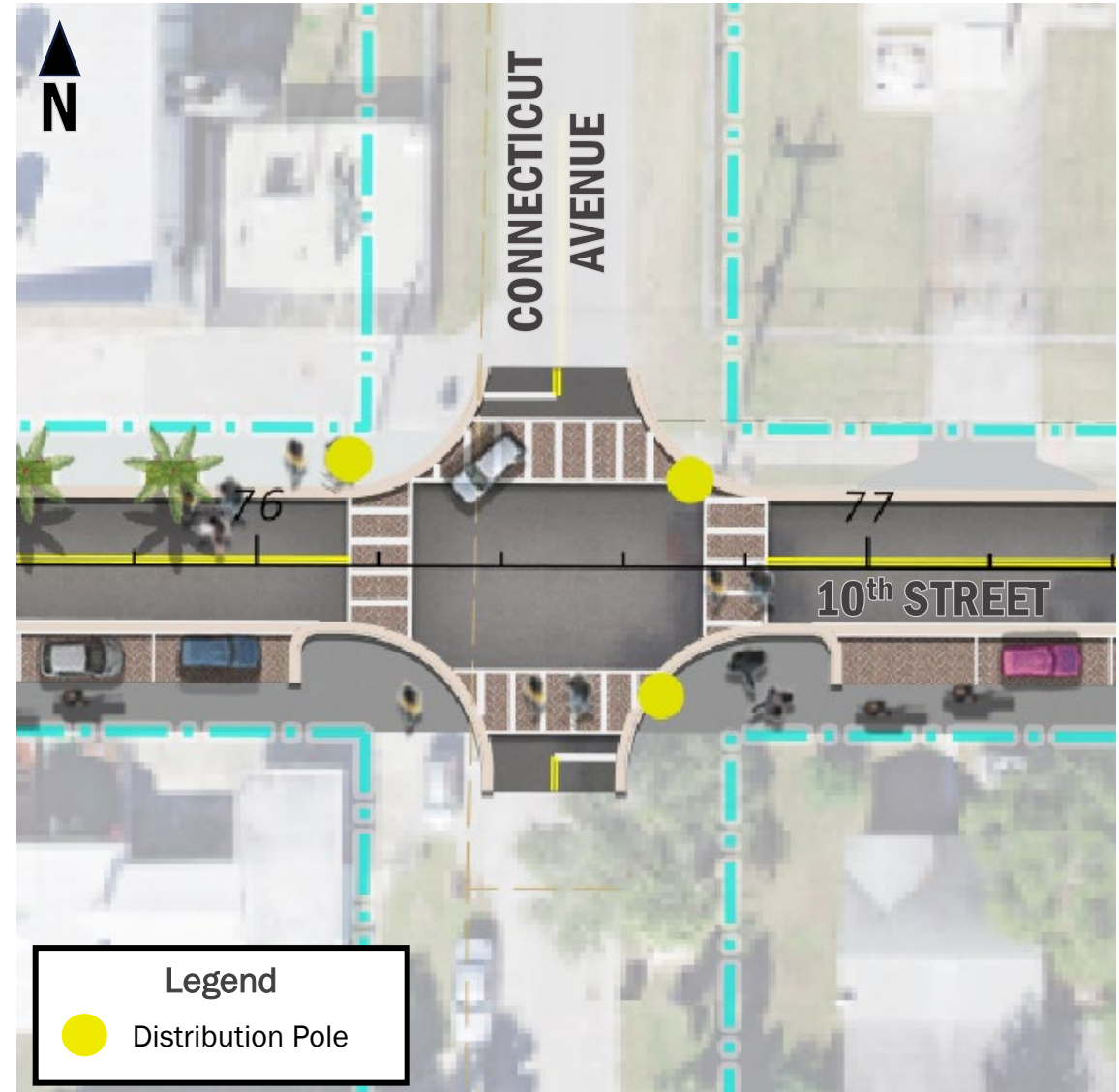
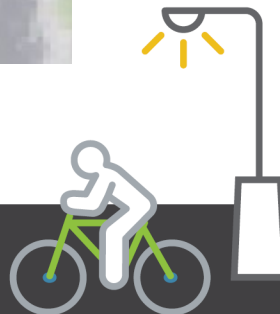


Image Source: 10th Street Concept Design Plan



Improvement: SHARED-USE PATH & SIDEWALKS

Description:

A 10-foot shared use path is proposed along 10th Street. A shared use path is a paved walkway that supports multiple modes including walking, biking, skating, and wheelchairs. A shared use path provides enough space for two bicyclists to pass comfortably side-by-side. In some locations, the path narrows to 8-feet to avoid impacts to large steel transmission power poles.

Benefits:

- Sidewalks provide an approximate 65-89% reduction in crashes involving pedestrians walking along roadways
- Encourages and offers multimodal transportation options

Source:

- Federal Highway Administration, [Proven Safety Countermeasures](#)

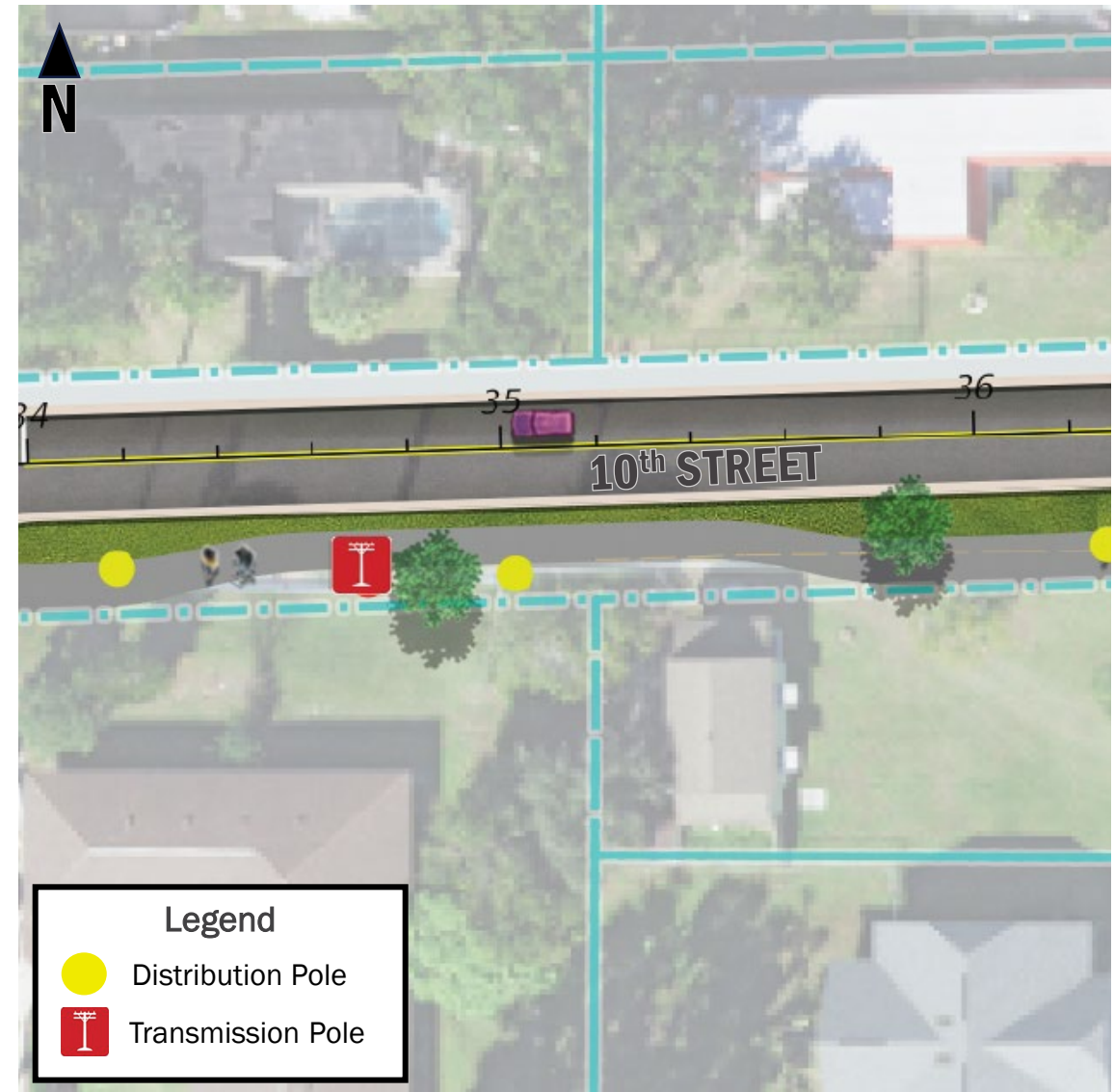
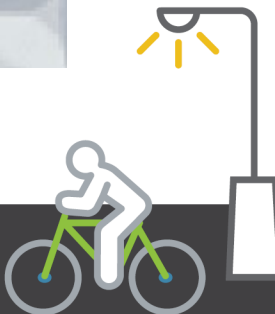


Image Source: 10th Street Concept Design Plan



Improvement: 4-WAY STOP

Description:

A 4-way stop is proposed at Vermont Avenue and 10th Street. However, a traffic study would need to be conducted to confirm it meets engineering warrants. A 4-way stop is a low-cost systemic approach to intersection safety involving enhanced signage and pavement markings.

Benefits:

- Traffic control measure, increasing ability of traffic on Vermont Avenue to make left-turns onto 10th Street.
- Increases driver awareness of intersection
- Reduces fatal and injury crashes by 10%

Source:

- Federal Highway Administration, [Proven Safety Countermeasures](#)

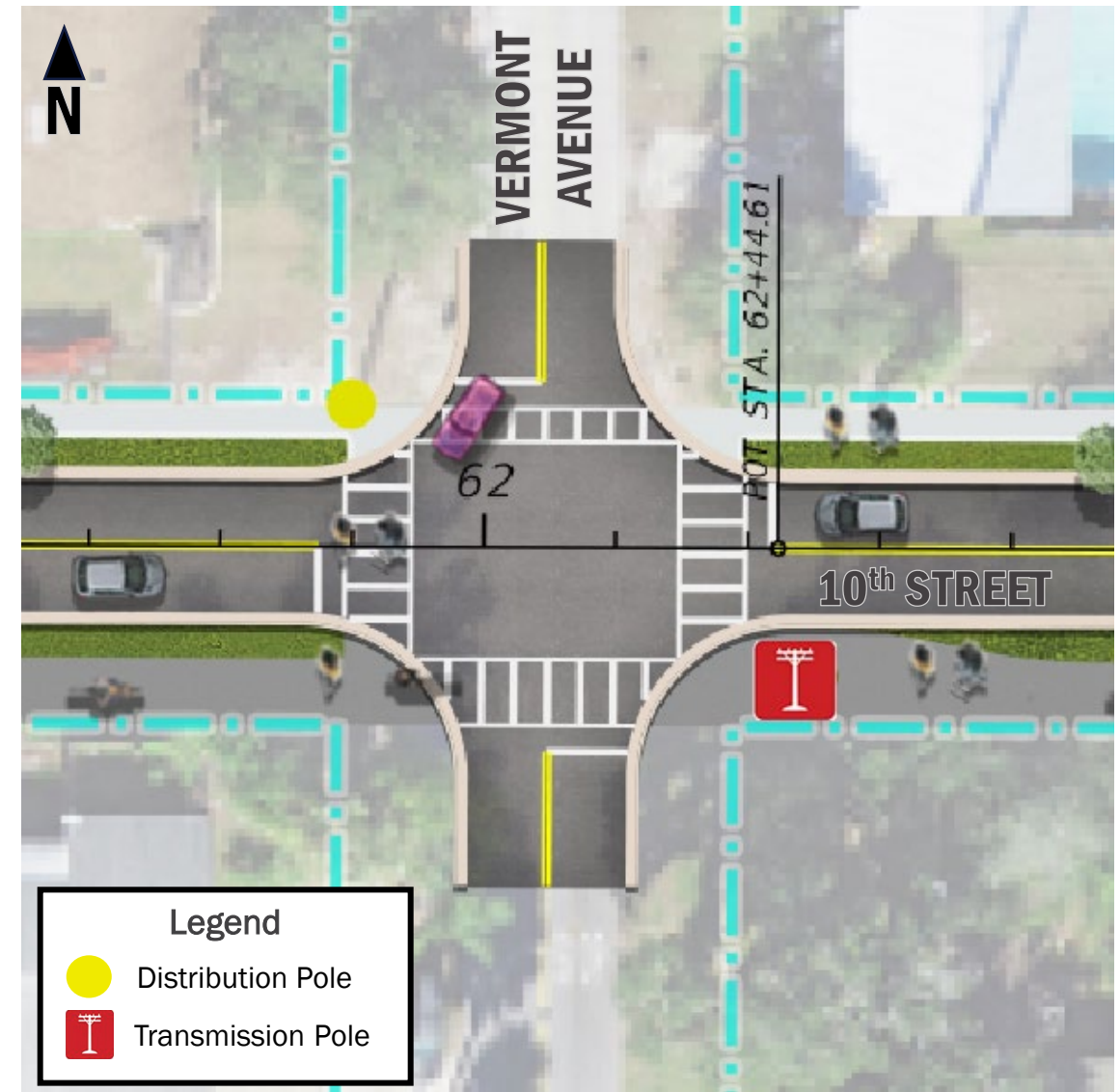
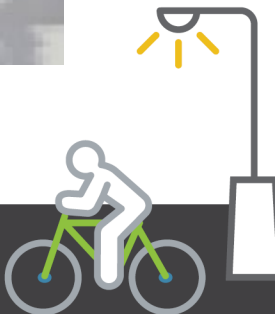


Image Source: 10th Street Concept Design Plan



Improvement: MINI ROUNDABOUT

Description:

Mini roundabouts are proposed at:

- Orange Avenue
- Old Hickory Tree Road
- Pine Lane

A roundabout is a circular configuration that safely and efficiently moves traffic through an intersection. Roundabouts are traffic control devices and a speed management strategy.

Benefits:

- Moderates traffic speeds
- Reduces occurrence of severe crashes by 82%

Source:

- Federal Highway Administration, [Proven Safety Countermeasures](#)

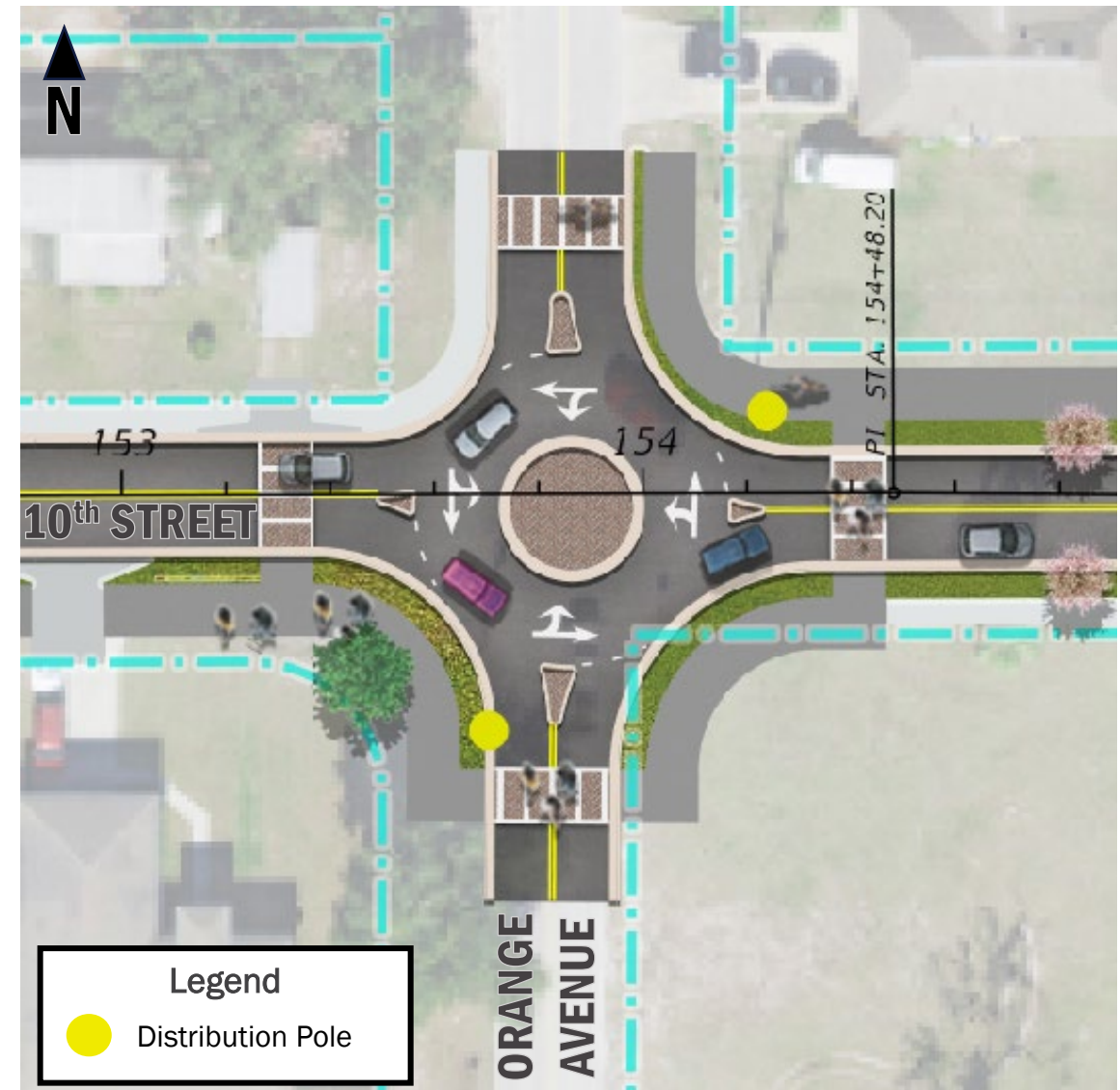
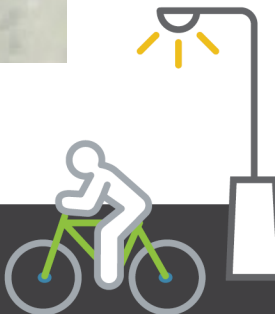


Image Source: 10th Street Concept Design Plan



Rendering of a Mini-Roundabout at Old Hickory Tree Road



Improvement: ON-STREET PARKING

Description:

On-street parking is proposed along the south side of 10th Street from Missouri Avenue to Virginia Avenue. Businesses that use on-street parking are more geared toward pedestrian access. As a result, this fosters a pedestrian friendly commercial environment, and benefits local businesses. In addition, on-street parking increases positive “friction” along a street, which encourages slower speeds. Parking can also provide a buffer between moving motor vehicle traffic and pedestrians along a sidewalk.

Benefits:

- Provides convenient access to businesses
- Encourages slower speeds
- Supports a pedestrian friendly commercial environment

Source:

- PEDBIKESAFE, [Pedestrian Safety Guide and Countermeasure Selection System](#)

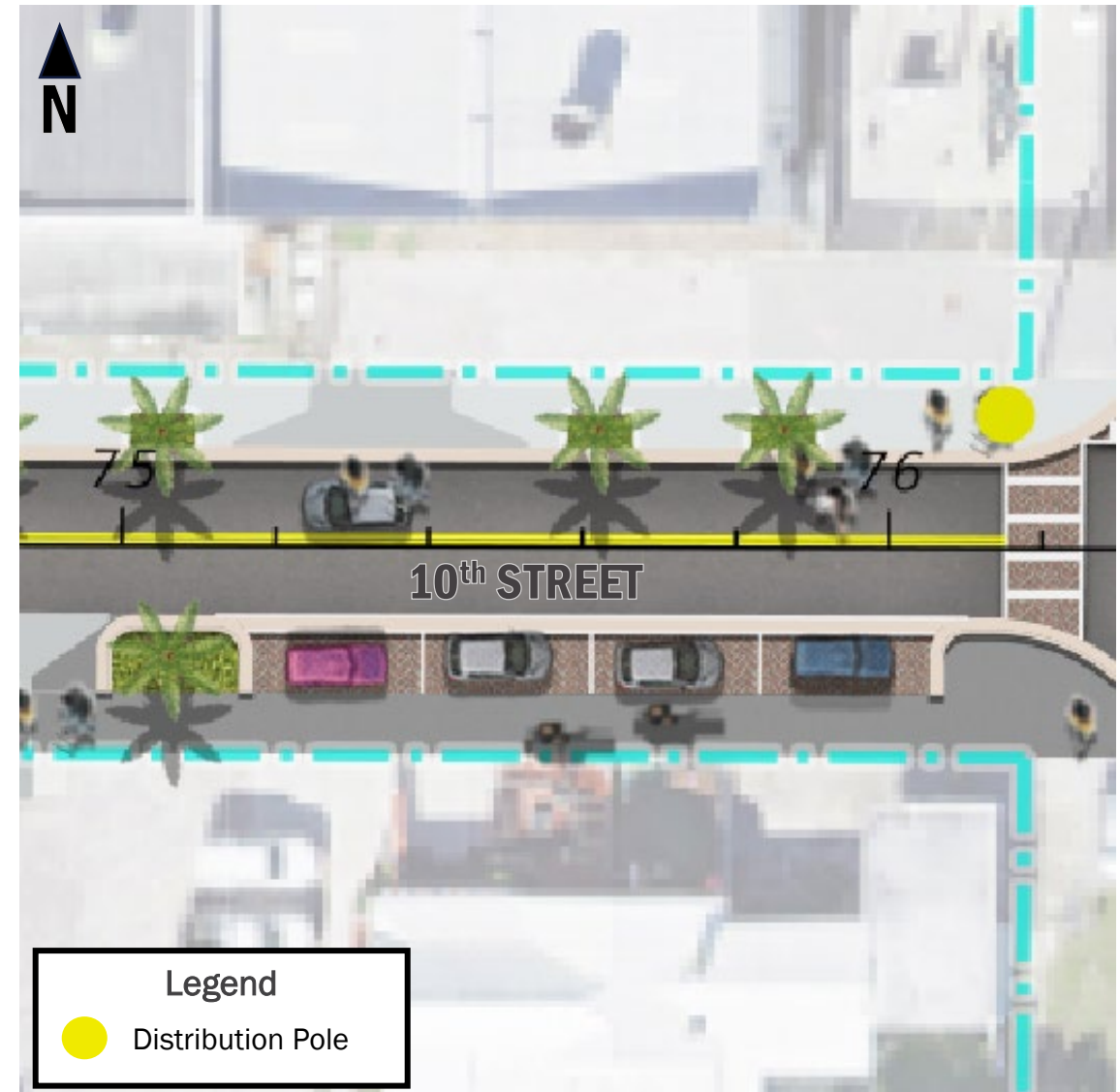
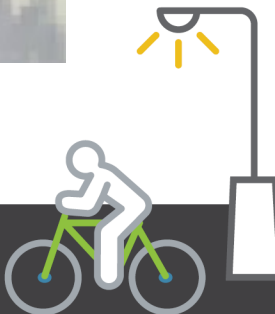


Image Source: 10th Street Concept Design Plan



Improvement: LIGHTING

Description:

Lighting treatments are proposed along the roadway. It will also light the shared-use path. At nighttime, vehicles traveling at higher speeds may not have the ability to stop once a hazard or change in the road ahead becomes visible by the headlights. Therefore, lighting can reduce the chances of a crash, along with increasing the user comfort on the shared-use path.

Benefits:

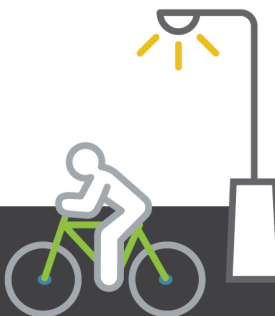
- Reduces night-time pedestrian injury crashes by 42%
- Increased personal security for users

Source:

- Federal Highway Administration, [Proven Safety Countermeasures](#)



Image Source: 10th Street Concept Design Plan



Improvement: LANDSCAPING

Description:

Landscaping is proposed along the 10th Street corridor. The careful use of landscaping along a street can provide separation between motorists and pedestrians, reduce the visual width of the roadway (which can help to reduce vehicle speeds), and provide a more pleasant street environment for all.

Benefits:

- Reduce vehicle speeds by providing a sense of enclosure
- Increases safety for pedestrians
- Community beautification

Sources:

- PEDBIKESAFE, [Pedestrian Safety Guide and Countermeasure Selection System](#)
- FDOT Design Manual, [FDM Chapter 202](#)

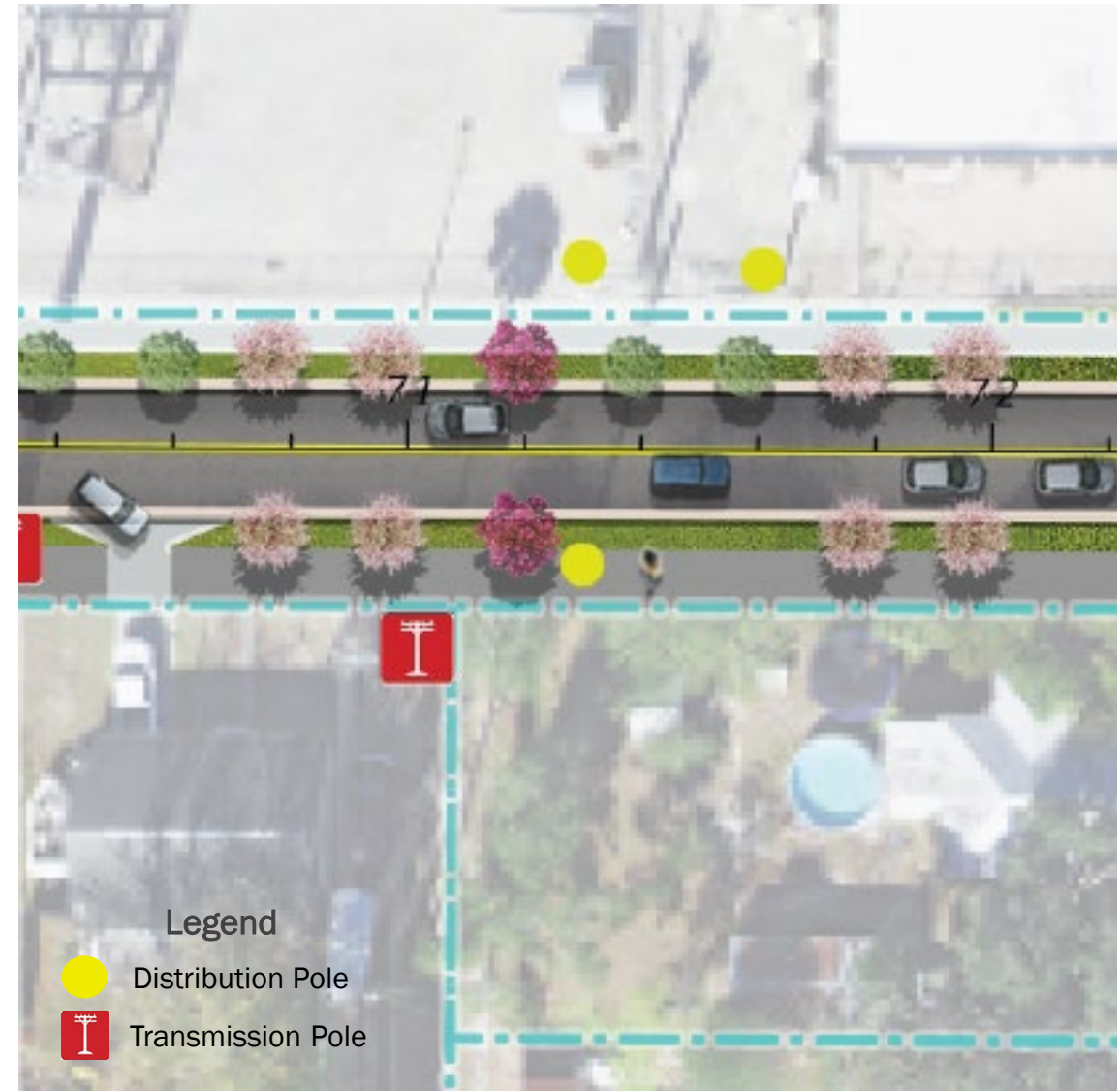
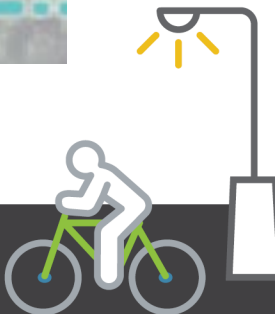


Image Source: 10th Street Concept Design Plan





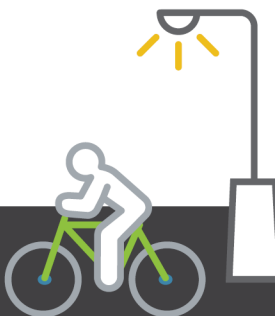
Section 3.2

Community Feedback on Concept Plan

Pop-Up Outreach Events:

St. Cloud Monthly Market

- The final outreach event for the study was conducted on Wednesday, April 27, 2022. Large concept plan boards were brought for display.
- The study team spoke with a total of 185 people. This was the highest number of people reached at an outreach event during the 10th Street Study.
- Feedback was almost all positive, including roundabout feedback. Mississippi Avenue was suggested as a 4th location to evaluate. This can be something that is evaluated further at the start of the final design phase.
- The most common questions asked were about the timeline for implementation and whether there were any property impacts.



Survey Feedback on Proposed Improvements

- The survey sought input on the final concept plan
- The survey asked:
 - Residential jurisdiction, such as “City of St. Cloud”, “City of Kissimmee”, “Another Part of Osceola County”, or “Elsewhere”
 - Why respondents are interested in the study, such as “I live along or near 10th Street”, “I shop along or near 10th Street”, “I own a property or business along 10th Street, and “I travel along 10th Street”
 - Open ended feedback on the plan
- The survey was available online from April 27, 2022 to May 31, 2022
- This survey had less engagement than the previous survey (621 respondents), although this survey was open for a shorter span
- Specific results are on the next pages
 - It was observed that in-person outreach had overwhelmingly positive support for roundabouts, while the online survey showed less positivity



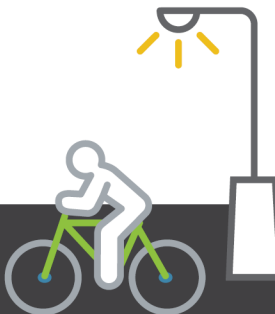
247
Respondents



~81%
Live in the
City of St. Cloud



~39%
Shop Along
or Near 10th
Street



Survey Feedback on Concept Plan

The final concept survey allowed for open-ended comment responses.

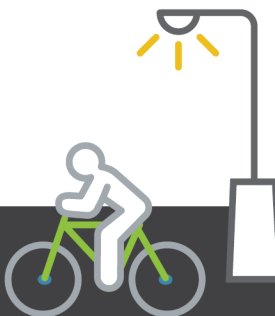
General Comments

Positive or Supportive

- “Excited to see this beautiful project finally coming together.”
- “Looks like a good plan to make the road safer and easier to walk and drive.”
- “Excellent. Looking forward to enjoying the area.”
- “Looks great to me. I drive on 10th street multiple times a day and these improvements would make it safer and quicker.”
- “It will be nice to have continuous walking and biking paths on the main street, as well as a way to slow down speeding vehicles.”
- “I think the end result will benefit all who use it.”
- “I think the plan as presented has a lot of merits to address the multiple issues of pedestrian access, speeding, crossings, and parking. I encourage St. Cloud to identify funding and proceed. Great plan.”
- “I love it! It will add another spot in St. Cloud to go for walks and offer additional options for safely commuting by bicycle. Love the concept!”
- “The plan appears to incorporate the safety of pedestrians and vehicle traffic; it is also visually pleasing.”

Neutral or Has Concerns

- “The improvements are not needed, the amount of travel on this stretch of road is not high enough to warrant use of resources to make improvements such as these. It would make more sense to use these resources for traffic coming along Lakeshore Drive.”



Survey Feedback on Concept Plan

The final concept survey allowed for open-ended comment responses.

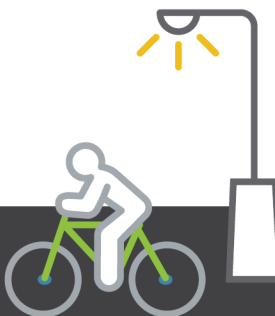
Sidewalk, Shared-Use Path, Bike Lane Comments

Positive or Supportive

- “I’m excited to have a continuous sidewalk, and the texture intersections and roundabouts will help immensely with speeders.”
- “I love the design. I walk and ride my longboard around town everyday and love the mixed-use path.”
- “It will be nice to have continuous walking and biking paths, on the main street, as well as a way to slow down speeding vehicles.”
- “The importance given to pedestrians is evident. Look forward to its completion.”
- “I watched the video and I love this plan. Enhanced sidewalks and crosswalks will be a fantastic addition to 10th Street!”
- “It is unclear if sidewalks will be on both sides of the roadway in the plan. The mixed use is clearly defined. I think the design will increase the safety and pleasure of both pedestrians and moving vehicles.”
- “Love the multi-use path along 10th Street. Overall, I think it’s a good plan. It does not take any property yet still is able to accommodate a multi-use path. It would be great to have some bus pull over areas for Lynx.”
- “I love it! It will add another spot in St. Cloud to go for walks and offer additional options for safely commuting by bicycle. Love the concept!”
- “I think the sidewalks and mixed-use paths are fantastic and much needed.”

Neutral or Has Concerns

- “Your depiction of pedestrians on foot is greatly exaggerated.”



Survey Feedback on Concept Plan

The final concept survey allowed for open-ended comment responses.

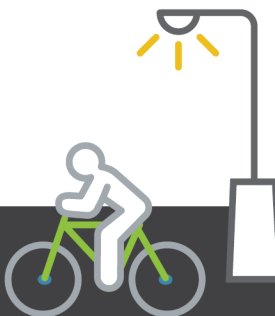
Vehicular Traffic/Roundabout Comments (Page 1/2)

Positive or Supportive

- “It is a great plan. There's heavy traffic flow on 10th street closest to Narcoossee Rd. The plan is great and should be a benefit.”
- “I think that the plans are needed and will help to smooth that area out. One thing I think is beneficial is the roundabouts.”
- “Perhaps a roundabout would be a welcome improvement.”
- “I love these ideas! Having more sidewalks, parking, and roundabouts are great ways to keep traffic and pedestrians moving and safe. I’ve been to the UK and thought their roundabouts were so nice because traffic rarely stops. Keep up the great work!”
- “Roundabout needed at 10th & Mississippi – currently can’t see eastbound traffic on 10th when heading south on Mississippi at this intersection. Also need golf cart paths.”
- “Will there be a roundabout at Mississippi and 10th street? That corner, when either coming from Mississippi south or trying to turn west on 10th to Oregon, is dangerous as you cannot see oncoming cars easily. Safer features for cars are needed there.”

Neutral or Has Concerns

- “Please do not add roundabouts. They seem to interrupt the flow of traffic and many people cannot accurately navigate them, which makes them more dangerous than helpful. They are a pain! 10th Street should not be a place for roundabout.”
- “The roundabouts are a big waste and should be reconsidered. They will not alleviate traffic. There is not a lot of traffic there now.”



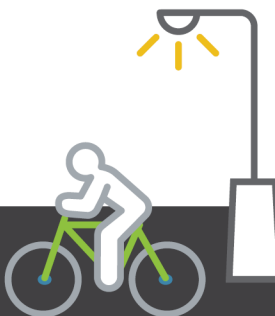
Survey Feedback on Concept Plan

The final concept survey allowed for open-ended comment responses.

Vehicular Traffic/Roundabout Comments (Page 2/3)

Neutral or Has Concerns

- “Most of it looks great but unless those roundabouts are large and multiple vehicles can be in the loop, they just don’t work. Mini roundabouts are a major problem and cause more harm than good. Make it a 4-way stop instead.”
- “Certain areas for roundabouts are useful but I do not think there will be enough space for larger trucks with trailers to use them effectively.”
- “No roundabouts. Drivers have a hard enough time with stop signs, as well as elderly drivers who cannot drive correctly. No need to reinvent the wheel or turn St. Cloud into something it’s not.”
- “No roundabouts. People around here wouldn’t know how to drive around them... Four way stop signs aren’t even safe, much less having roundabouts where people wouldn’t yield when they are supposed to... More accidents waiting to happen! Speed limit needs to be enforced at all state and numbered streets to cut down on speeders not obeying 25 MPH in residential areas!”
- “No roundabouts. I live just outside of the city limits in the Narcoossee community, so I frequent this area to shop in St. Cloud. I also do volunteer work at the Mount Peace cemetery and this road does not need any more confusion”.
- “Mini roundabouts are always too small. All else looks good.”
- “Traffic circles cause more accidents than they are worth. Please don’t.”



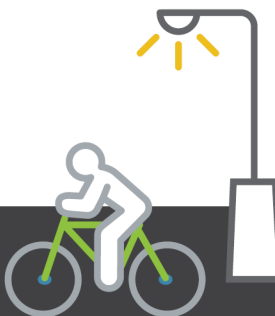
Survey Feedback on Concept Plan

The final concept survey allowed for open-ended comment responses.

Vehicular Traffic/Roundabout Comments (Page 3/3)

Neutral or Has Concerns

- “The planning for Pennsylvania and 10th Street was poorly executed. The businesses in town are going to suffer a lack of foot traffic in the time being as well as local events. The roundabouts will also be confusing for this community. Would not recommend.”
- “No roundabout at Orange Avenue. A lot of boats cross there.”
- “No roundabouts at all. This plan looks wasteful and will jack up property taxes in a time where the economy is uncertain. This is a waste of tax money.”
- “I think that the plan will not slow down the speeders that travel down 10th street. I don’t think we need to spend money designing the street. I think speed bumps would work better. Keep traffic off the street, and the road is in poor condition. Speed bumps are a better option for the speeders. Your idea is not going to change that.”
- “Vermont and 10th Street needs to at least a four way stop. The amount of traffic utilizing this intersection everyday is staggering and it’s only going to increase.”
- “The idea is nice, but the way traffic has been in St. Cloud lately maybe widen the road instead.”



Survey Feedback on Concept Plan

The final concept survey allowed for open-ended comment responses.

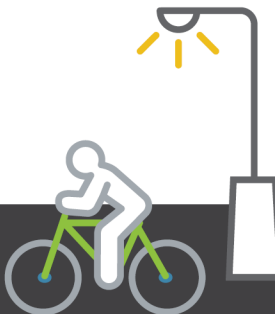
Parking Comments

Positive or Supportive

- “Sidewalks and parking spots in downtown are a must!”
- “Looks like a much-needed improvement for the 10th Street corridor, specifically the additional parking that will be implemented.”

Neutral or Has Concerns

- “Don’t need more street parking on west 10th Street. On-street parking on west 10th will slow traffic too much and encourage roamers into residential areas. Confine downtown.”
- “No need for parallel parking for residences.”
- “Street parking is a concern everywhere in St. Cloud. The city needs to revamp rules and ordinances so that enforcement can be done.”



Survey Feedback on Concept Plan

The final concept survey allowed for open-ended comment responses.

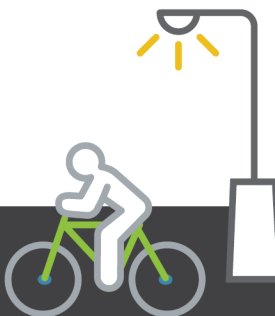
St. Cloud Character/Built Environment Comments

Positive or Supportive

- “I love the wide multi-use paths. I would love to see dynamic landscaping and some opportunities for public art incorporated into this project. I think making St. Cloud more bike and pedestrian friendly is key.”
- “I think this little city needs some modern touches and inspiration for the younger families and single people moving to the area. The downtown area has a lot of potential. I think this is great!”
- “It looks a lot safer for pedestrians and drivers. It also makes the community along 10th Street look richer and prosperous.”
- “Please plant shade trees on both sides of the road with the new works; this looks great.”
- “Shaded and covered areas at bus stops would be nice. I see many people standing in the sun or rain. Safer crossing for cars at Mississippi and 10th Street needed as well.”

Neutral or Has Concerns

- “This is ruining our small-town charm. You messed up New York Avenue with the bricks, now this. Also, stop all the housing developments. You’re ruining everything you touch. I don’t think this will change anything but cause more delays.”



Survey Feedback on Concept Plan

The final concept survey allowed for open-ended comment responses.

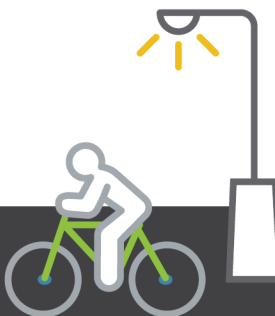
Lighting/Utilities Comments

Positive or Supportive

- “The plans as presented are perfect for what is needed on 10th Street. Be sure to put overhead wires underground.”

Neutral or Has Concerns

- “Lighting should be downward facing only and not pollute surrounding areas. OUC poles are an eyesore.”
- “I’m not sure about these small roundabouts. What is the plan for the site triangles for the transmission and distribution poles? Difficult to see crossing 10th Street. Is there a plan to reduce the power poles?”





Section 3.3

Project Conclusion

Project Conclusion

The concept plan concludes the 10th Street Study. This study was a partnership project between MetroPlan Orlando, the City of St. Cloud, and Osceola County. It was an 18-month effort that began in January 2021 and concluded in June 2022. The purpose of the study was to envision the future of 10th Street and create a plan to make it safer for all users, whether you walk, bike, drive, or take the bus.

The next steps to implement this project include the below. These steps can take several years:

- Funding
- Design
- Construction



Image Source: Concept Plan Rendering of 10th Street at Minnesota Avenue

