AGENDA
ENVIRONMENTAL STEWARDSHIP COMMITTEE MEETING
February 22, 2024
10:00 a.m.

Meeting location: Central Florida Expressway Authority
4974 ORL Tower Road
Orlando, FL 32807
Pelican Conference Room

A. CALL TO ORDER

B. PUBLIC COMMENT

Pursuant to Section 286.0114, Florida Statutes and CFX Rule 1-1.011, the Environmental Stewardship Committee provides for an opportunity for public comment at the beginning of each regular meeting. The Public may address the Committee on any matter of public interest under the Committee's authority and jurisdiction, regardless of whether the matter is on the Committee's agenda but excluding pending procurement issues. Public Comment speakers that are present and have submitted their completed Public Comment form to the Recording Secretary at least 5 minutes prior to the scheduled start of the meeting will be called to speak. Each speaker shall be limited to 3 minutes. Any member of the public may also submit written comments which, if received during regular business hours at least 48 hours in advance of the meeting, will be included as part of the record and distributed to the Committee members in advance of the meeting.

C. APPROVAL OF FEBRUARY 23, 2023 ENVIRONMENTAL STEWARDSHIP COMMITTEE MEETING MINUTES (action item)

D. AGENDA ITEMS

1. **PD&E PROJECT UPDATE** – *Will Hawthorne, Director of Transportation Planning and Policy* (info item)

2. **ACCEPTANCE OF SYSTEMWIDE LANDSCAPING ASSESSMENT REPORT** – *Christina Hite, Founding Partner, Dix-Hite* (action item)

E. OTHER BUSINESS

(CONTINUED ON PAGE 2)

F. ADJOURNMENT

This meeting is open to the public.

Section 286.0105, Florida Statutes states that if a person decides to appeal any decision made by a board, agency, or commission with respect to any matter considered at a meeting or hearing, they will need a record of the proceedings, and that, for such purpose, they may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based.

Persons who require translation services, which are provided at no cost, should contact CFX at (407) 690-5000 x5316 or by email at Malaya.Bryan@CFXWay.com at least three (3) business days prior to the event.

In accordance with the Americans with Disabilities Act (ADA), if any person with a disability as defined by the ADA needs special accommodations to participate in this proceeding, then they should contact the Central Florida Expressway Authority at (407) 690-5000 no later than two (2) business days prior to the proceeding.

C.

APPROVAL OF FEB. 23, 2023 ENVIRONMENTAL STEWARDSHIP COMMITTEE MEETING MINUTES

MINUTES
ENVIRONMENTAL STEWARDSHIP COMMITTEE MEETING
February 23, 2023

Location: Central Florida Expressway Authority
4974 ORL Tower Road, Orlando, FL 32807
Pelican Conference Room

Committee Members Present:
Charles Lee, Citizen Representative, Committee Chairman
Richard Durr, Seminole County Representative
Maurice "Mo" Pearson, Citizen Representative
Timothee Sallin, Lake County Representative
Brittany Sellers, City of Orlando Representative

Committee Member Participating by Phone:
Beth Jackson, Orange County Representative

Committee Member Not Present:
Robert Mindick, Osceola County Representative
Jim Barfield, Brevard County Representative

Staff Present:
Laura Kelley, Executive Director
Michelle Maikisch, Executive Director Elect
Glenn Pressimone, Chief of Infrastructure
Diego "Woody" Rodriguez, General Counsel
Dana Chester, Director of Engineering
Rita Moore, Recording Secretary/Executive Administrative Coordinator

A. CALL TO ORDER

The meeting was called to order at approximately 10:05 am by Chairman Lee.

B. PUBLIC COMMENT

Ms. Rita Moore, Recording Secretary announced there was no public comment.

There were no written public comments received by the deadline.

C. APPROVAL OF THE JUNE 23, 2022 MEETING MINUTES

A motion was made by Mr. Pearson and seconded by Mr. Durr to approve the June 23, 2022 minutes as presented. The motion carried unanimously with five (5) committee members in attendance voting AYE by voice vote. One (1) committee member, Ms. Jackson voting AYE by phone. Mr. Mindick and Mr. Barfield were not present.

D. AGENDA ITEMS

1. RESOLUTION OF THE CENTRAL FLORIDA EXPRESSWAY AUTHORITY IN SUPPORT OF GREENWAYS, TRAILS AND WILDLIFE CORRIDORS

Ms. Laura Kelley, Executive Director discussed the resolution that was approved by the board in February 2023. She explained that Mr. Dale Allen and CFX worked on this resolution together. Per the resolution, Ms. Kelley stated that CFX will connect trails and wildlife corridors as much as possible. She asked that the Environmental Stewardship Committee help CFX fulfill this commitment.

(This item was presented for information only. No committee action was taken.)

2. SR 417 ORLANDO/SANFORD INTERNATIONAL AIRPORT CONNECTOR CONCEPT, FEASIBILITY AND MOBILITY (CF&M) STUDY UPDATE

Ms. Sunserea Gates, Vanasse Hangen Brustlin, Inc. presented the SR 417 Orlando/Sanford International Airport Connector Concept, Feasibility and Mobility (CF&M) Study Update. Ms. Gates explained the feasibility phase and where it falls in the project development phase. She discussed the project background and the location map. Ms. Gates discussed the purpose and need of the project. She explained the CF&M evaluation criteria and constraints including sociocultural, floodplain and natural. She presented proposed alignments and discussed the differences between them.

Committee Members asked questions which were answered by Ms. Gates.

(This item was presented for information only. No committee action was taken.)

3. SR 516 MITIGATION STRATEGIES

Ms. Nicole Gough, Dewberry Engineers, Inc. presented the SR 516 Mitigation Strategies. Ms. Gough detailed the project permitting phases and jurisdictions. She presented the wildlife and species impacts. She detailed the mitigation bank for the project for each segment of the project. She detailed the functional loss, parcel maps, and mitigative value.

Committee Members asked questions which were answered by Ms. Gough and Mr. Pressimone.

(This item was presented for information only. No committee action was taken.)

E. OTHER BUSINESS

Ms. Laura Kelley thanked the committee for their service.

Chairman Lee suggested a discussion on the Southport Connector and Cypress Parkway at a future Environmental Stewardship Committee meeting.

Chairman Lee announced the new Chairman will be Beth Jackson.

Chairman Lee announced that the next Environmental Stewardship Committee is scheduled for May 25th, 2023.

F. ADJOURNMENT

Chairman Lee adjourned the meeting at 11:37 a.m.

Minutes approved on _____, 2024.

Pursuant to the Florida Public Records Law and CFX Records Management Policy, audio tapes of all Board and applicable Committee meetings are maintained and available upon request to the Records Management Liaison Officer at publicrecords@CFXway.com or 4974 ORL Tower Road, Orlando, FL 32807.

D.1

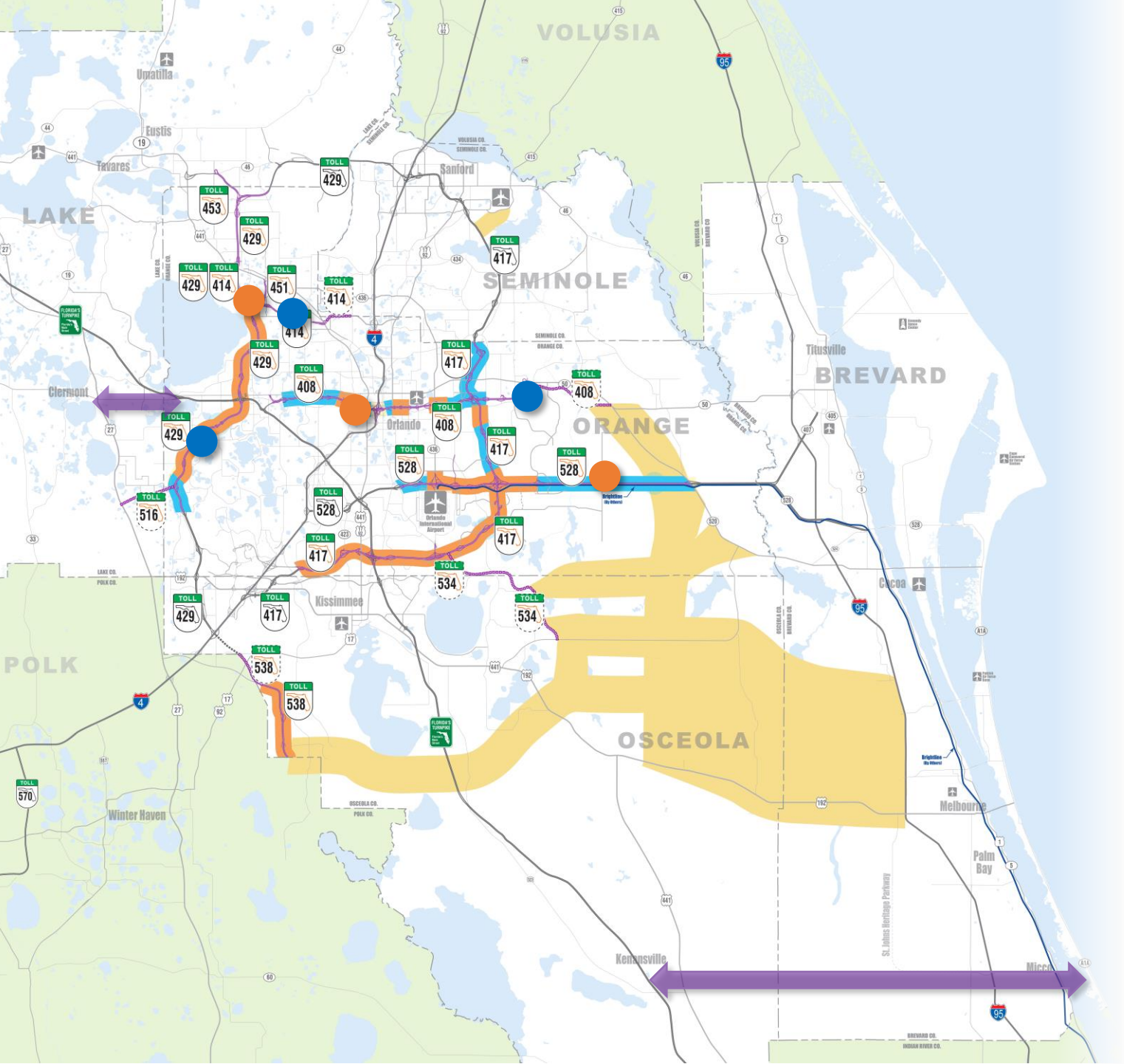
PD&E PROJECT UPDATE

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Planning Projects Update

Environmental Stewardship Committee

— February 22, 2024 —



2045 Master Plan

Widenings

Interchanges

Expansion Projects

Planning Studies

Long Range Expansion Projects

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Project Development & Environment (PD&E)

Minor

Within Current Right-of-Way
Operational Improvements
Milling & Resurfacing
Public Meeting - Typically
Public Hearing - No

Completed by Continuing Services Consultant

Major

Right of Way Required
New Corridors
Large Capacity Improvements
Public Meeting – Yes
Public Hearing - Typically

Completed by a Dedicated Consultant

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Existing System

- SR 528 Farm Access Road Bridge Removal

- SR 417 Capacity Improvements SR 528 to SR 408

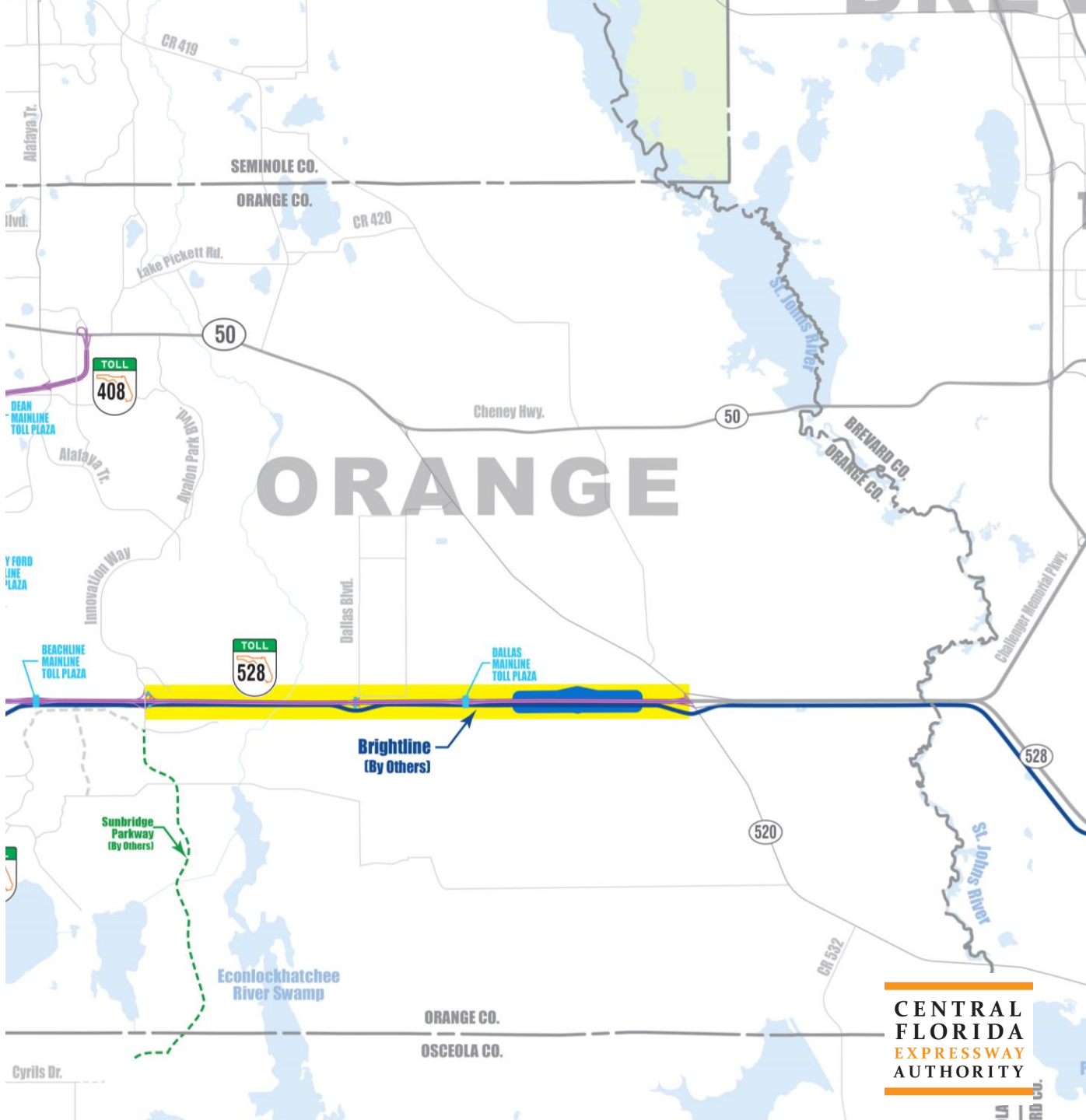
- SR 429 Capacity Improvements Seidel Road to Tilden Road

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

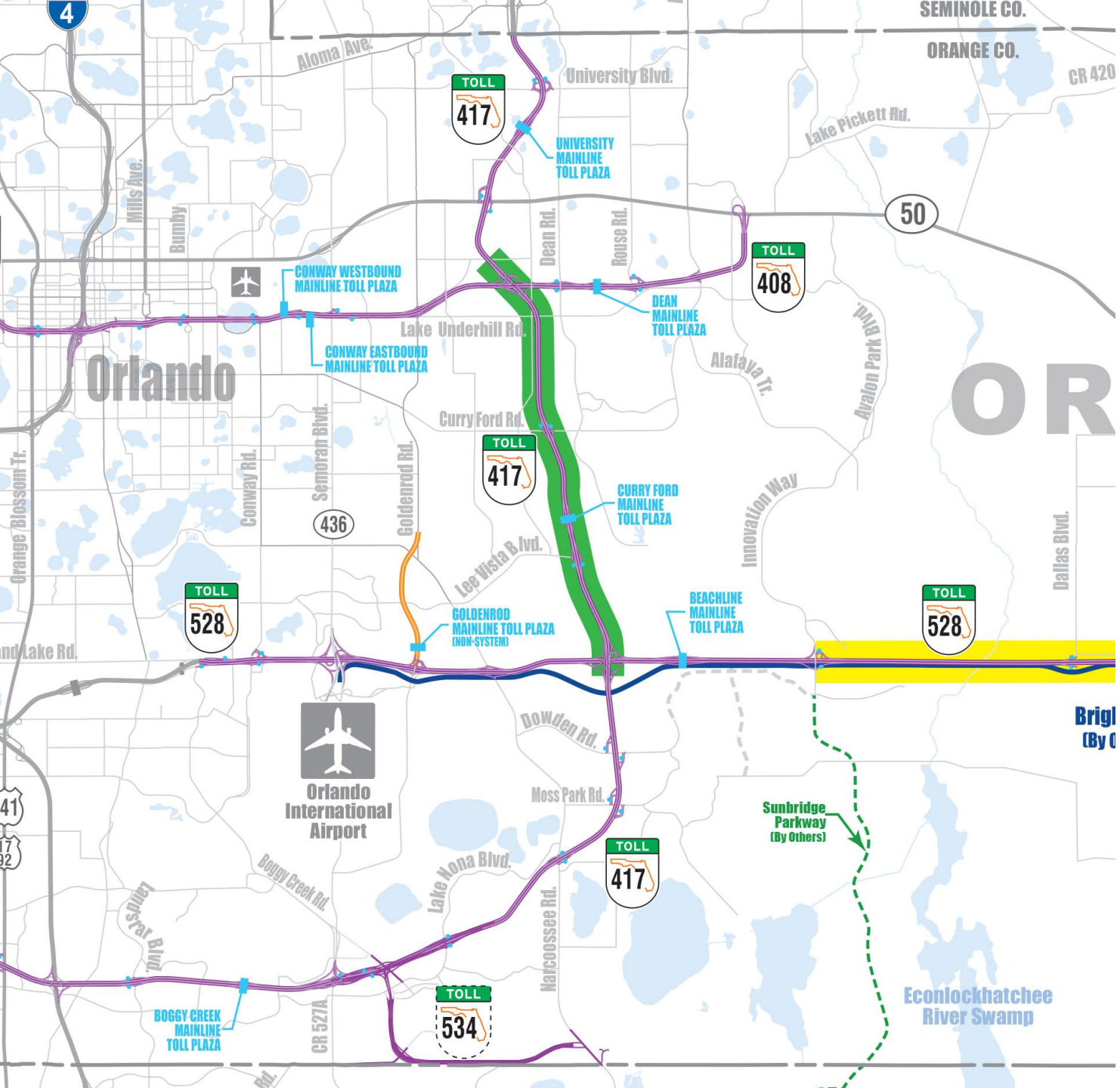
SR 528 Farm Access Bridge Removal

- Began November 2023
- ROW Impacts – None
- Environmental & Species – Low
- Public Meeting – N/A
- Anticipated Completion May 2024

Next Steps: Design



CENTRAL FLORIDA EXPRESSWAY AUTHORITY



SR 417 Capacity Improvements

- Beginning May 2024
- ROW Impacts – Likely (Stormwater Ponds)
- Environmental & Species – Low
- Public Meeting – Included
- Anticipated Completion May 2025

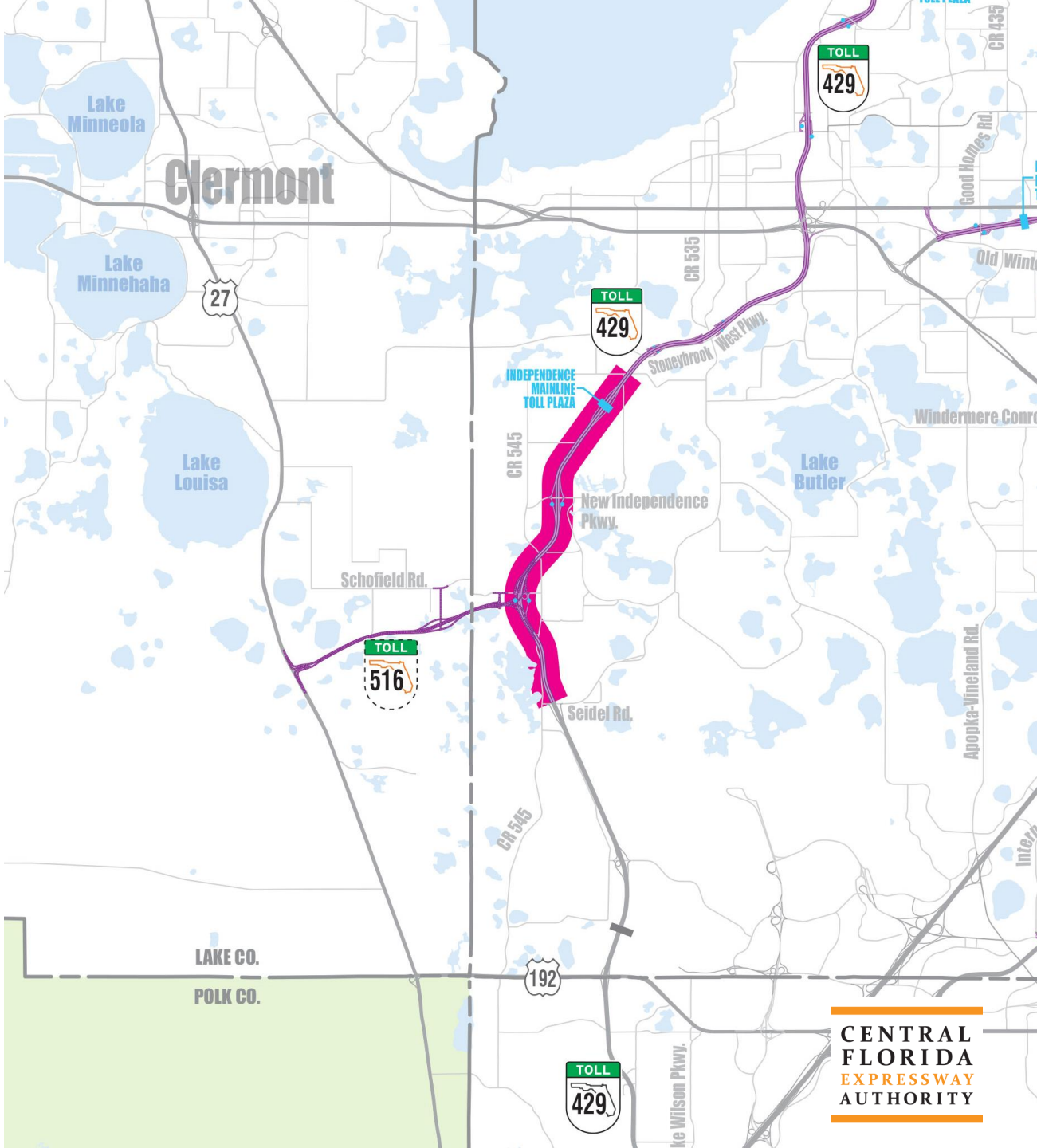
Next Steps: Execute Contract

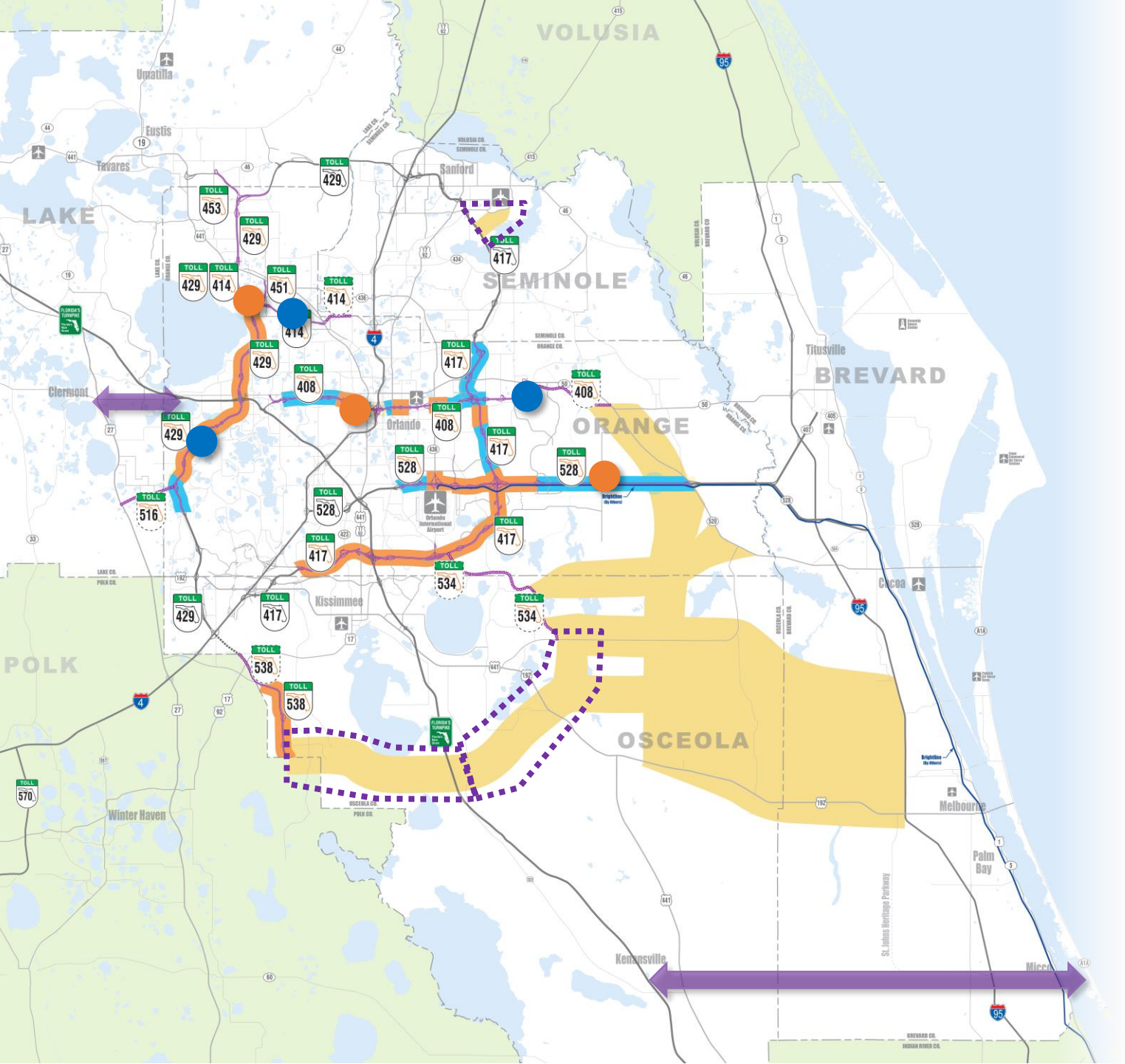
CENTRAL FLORIDA EXPRESSWAY AUTHORITY

SR 429 Capacity Improvements

- Beginning May 2024
- ROW Impacts – TBD
- Environmental & Species – Low
- Public Meeting – Included
- Anticipated Completion May 2025

Next Steps: Develop Scope





2045 Master Plan

Widenings

Interchanges

Planning Studies

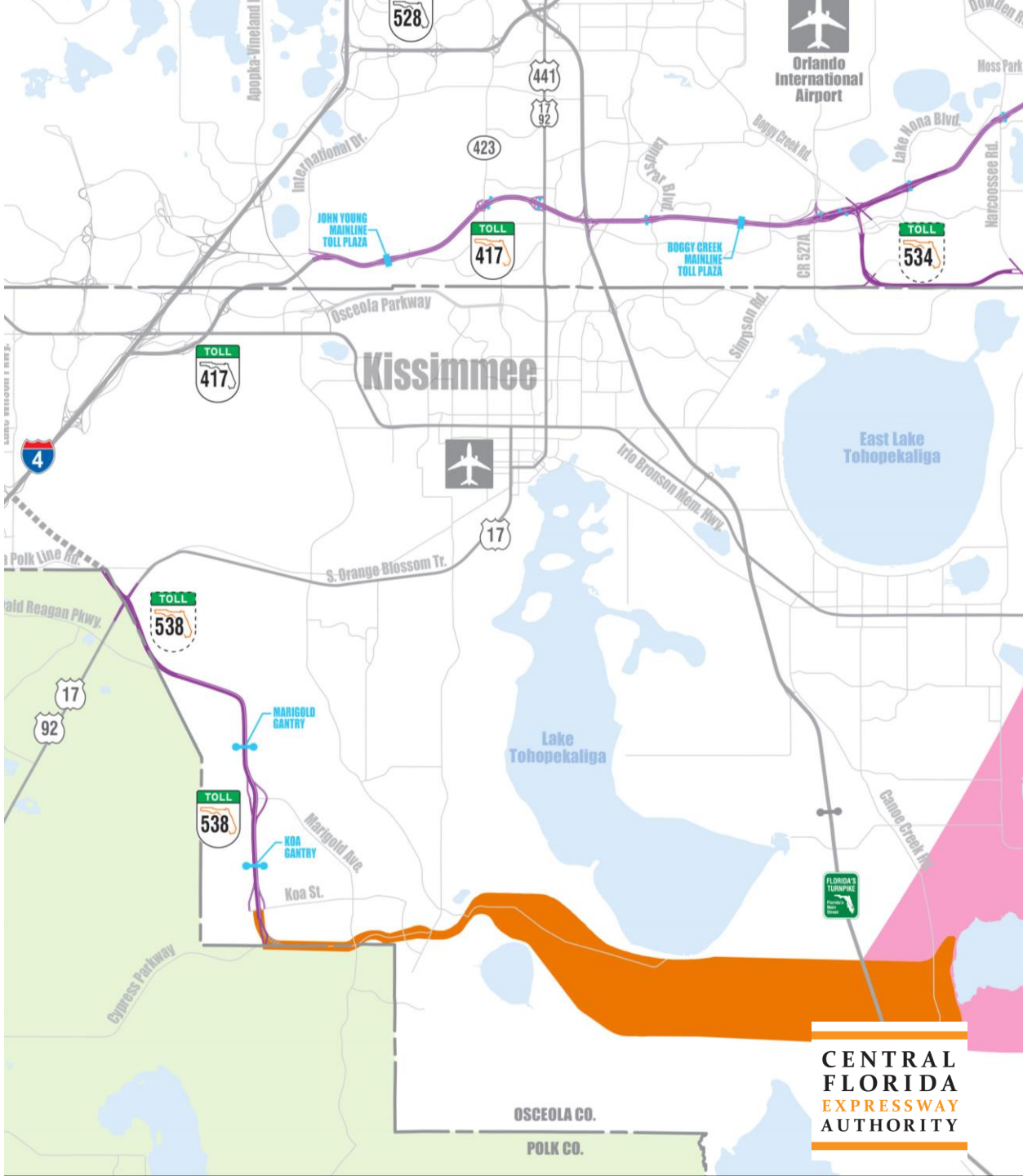
Long Range Expansion Projects

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

SR 538 Southport Expressway

- New Corridor
- Began September 9, 2020
- Volkert
- ROW - Required
- Environmental & Species – Medium
- Anticipated Completion – TBD

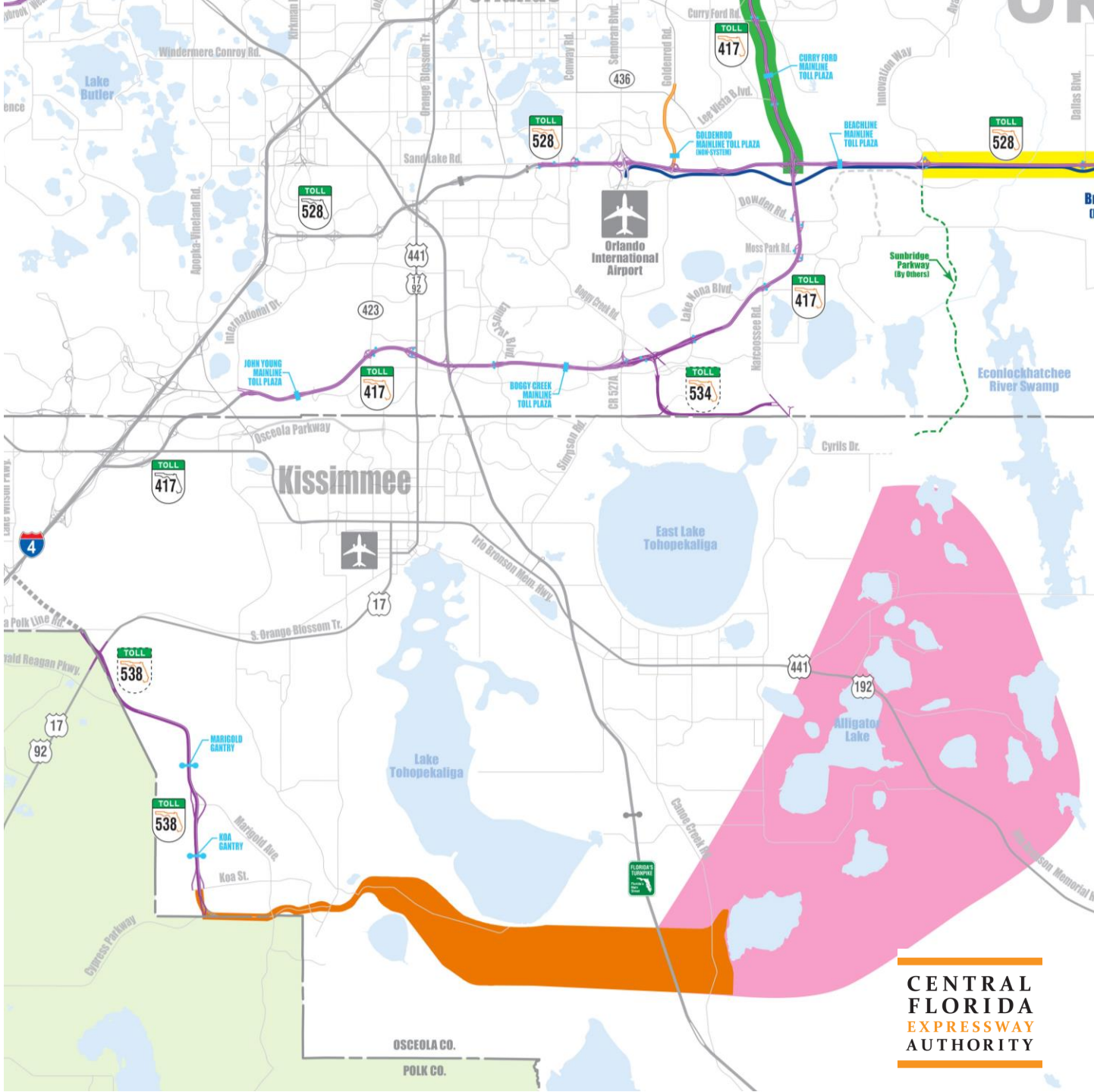
Next Steps: FHWA Decision
Alternatives Public Meeting



SR 515 Northeast Expressway Phase 2

- New Corridor
- Beginning March 2024
- VHB
- ROW - Required
- Environmental & Species – Med/High
- 30 Month Schedule (Completion September 2026)

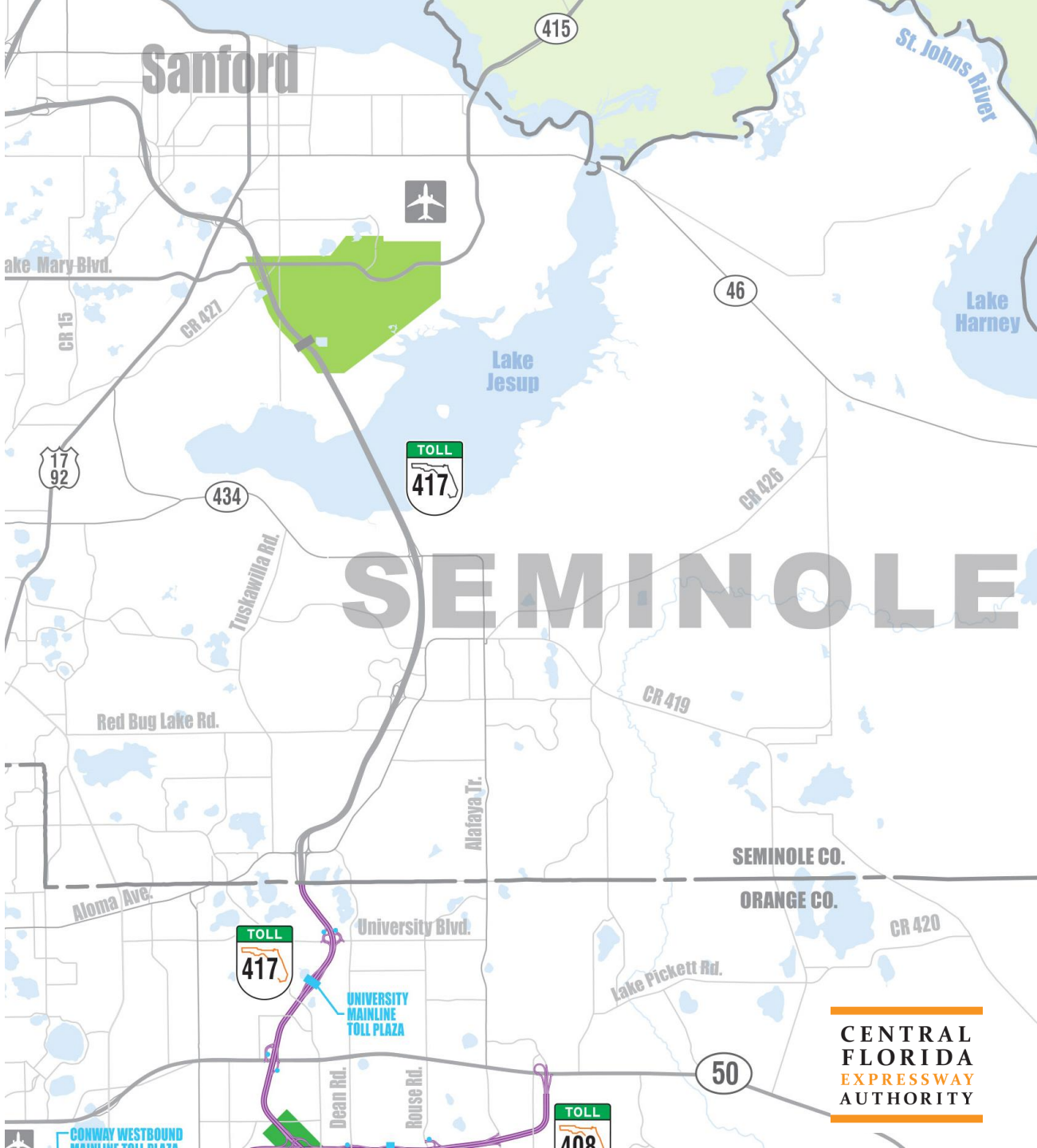
Next Steps: Issue Notice to Proceed (NTP)



SR 417 Sanford Connector

- New Corridor
- Beginning May 2024
- Consultant - Pending
- ROW – Required
- Environmental & Species – Med/High
- Anticipated Completion – May 2025

Next Steps: Board Contract Award & Issue Notice to Proceed




CENTRAL
FLORIDA
EXPRESSWAY
AUTHORITY
PAY TOLL
1 MILE
CASH
LANES
KEEP RIGHT
OR PAY BY PLATE
KEEP LEFT
THANK YOU

D.2
ACCEPTANCE OF SYSTEMWIDE LANDSCAPING ASSESSMENT REPORT

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

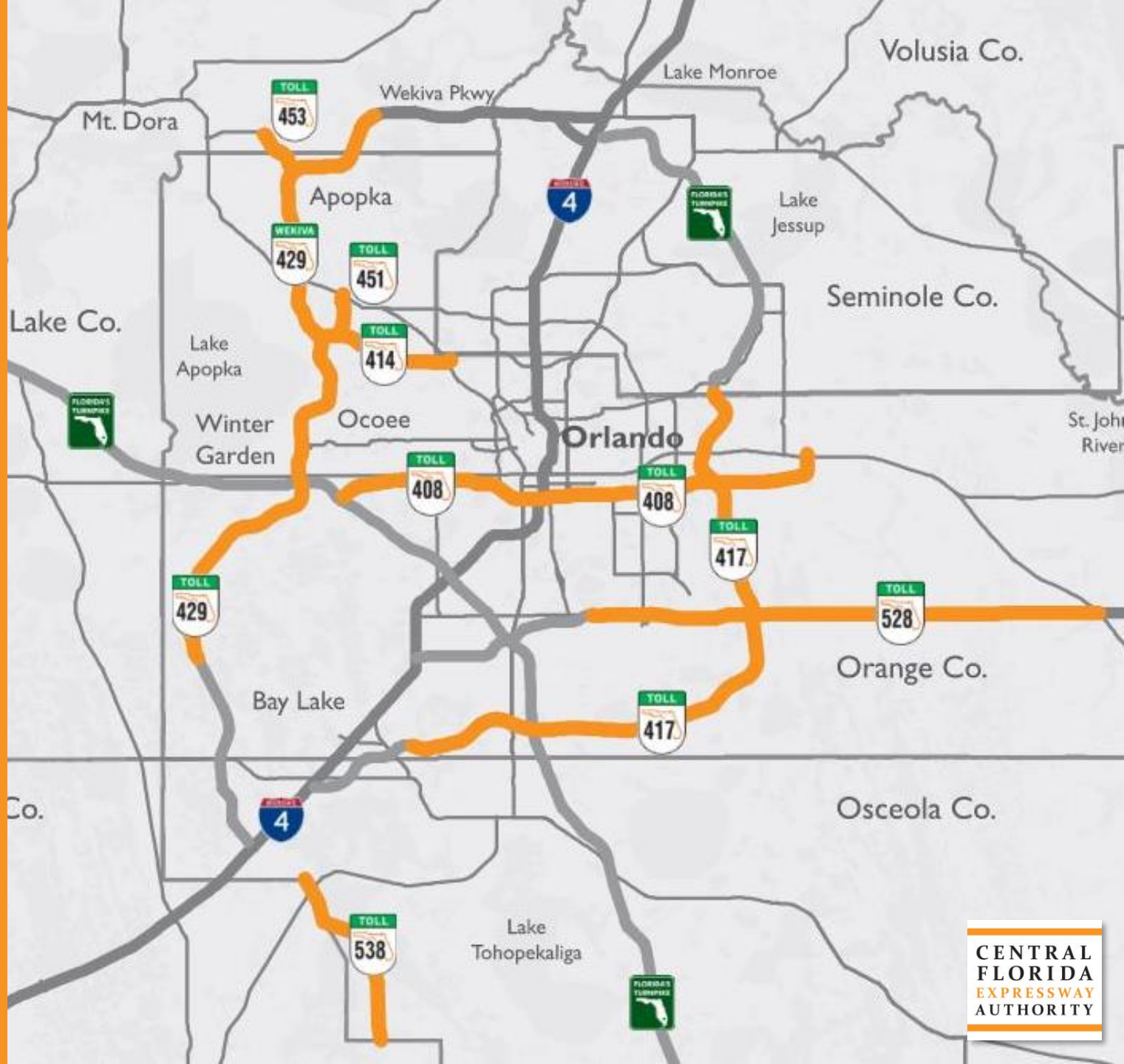
LANDSCAPE ASSESSMENT PRESENTATION

Environmental Stewardship Committee

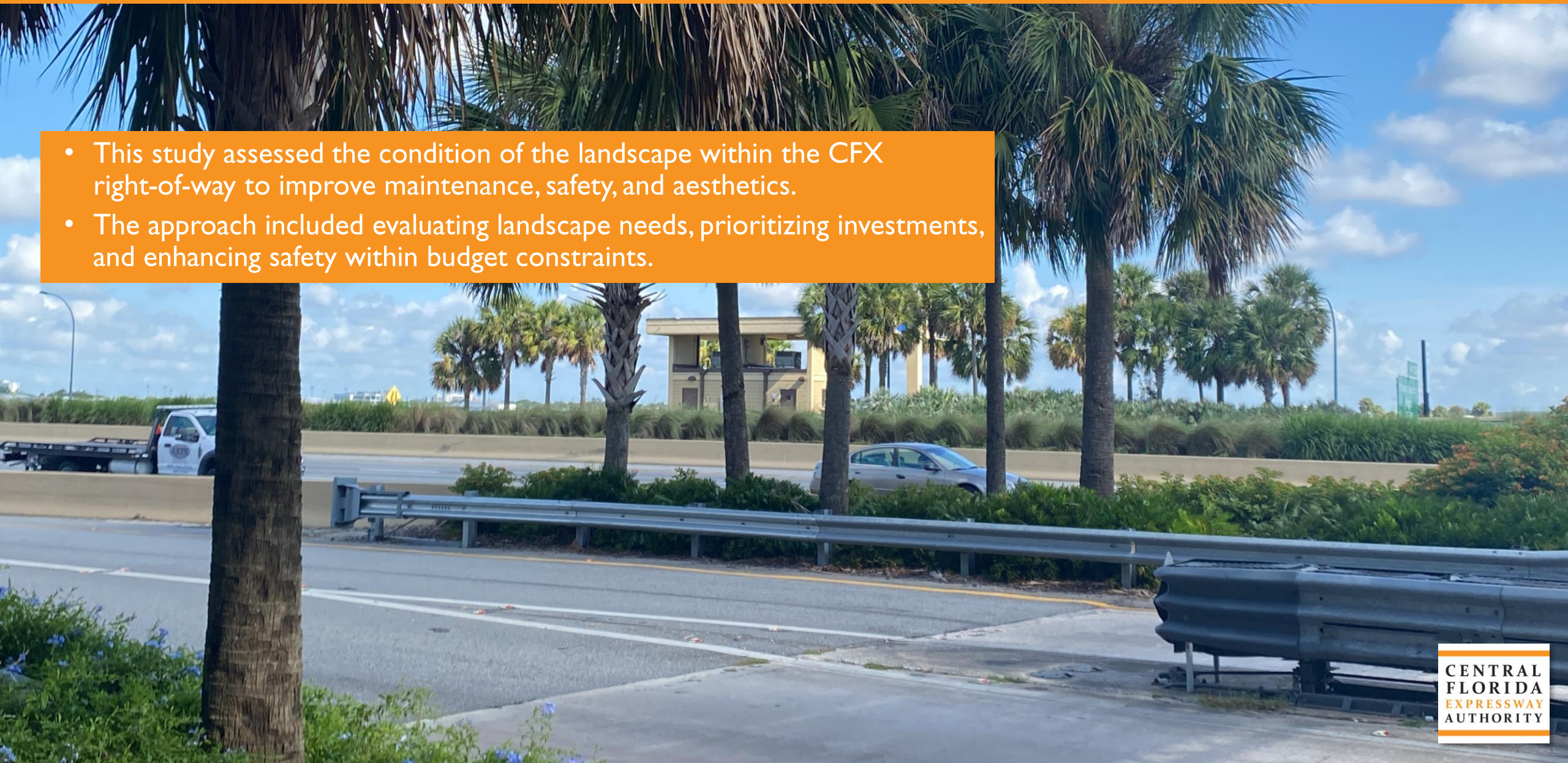
— February 22, 2024 —

AGENDA

1. Purpose
2. Methodology
   - Typologies
   - Landscape Intensity
   - Opportunities & Constraints
3. Example Summary
4. Recommendations
   - Key Recommendations
   - Strategies
5. Conclusion
6. Questions



PURPOSE



- This study assessed the condition of the landscape within the CFX right-of-way to improve maintenance, safety, and aesthetics.
- The approach included evaluating landscape needs, prioritizing investments, and enhancing safety within budget constraints.

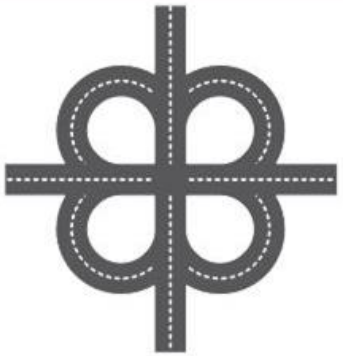
CENTRAL FLORIDA EXPRESSWAY AUTHORITY

METHODOLOGY

- Field Reviews
- ArcGIS Survey123

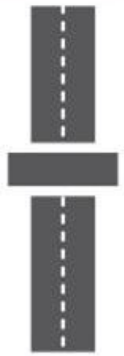
CENTRAL FLORIDA EXPRESSWAY AUTHORITY

TYPOLOGIES



INTERCHANGE

BRIDGE



MAINLINE GANTRY

RAMP TOLL PLAZA

CORRIDOR

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

LANDSCAPE INTENSITY

High Intensity

SR 528 / SR 436

Medium Intensity

SR 528 / Goldenrod Rd

Low Intensity

SR 528 / Innovation Way

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

OPPORTUNITIES & CONSTRAINTS

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

EXAMPLE CORRIDOR SUMMARY

SR 528 OVERALL TAKEAWAYS

- The views along Boggy Creek Rd and Conway Dr are predominantly characterized by adjacent commercial and industrial uses, occasionally punctuated by mature buffers comprising sabal palm and pine groves.
- The 528/436 interchange features newly planted sweeps of grasses and groves of palms and pines that elegantly frame the ramps and overpasses.
- Goldenrod Rd is well planted, while Narcoossee Rd appears stark due to construction, presenting an opportunity for additional plantings.
- The ramps and overpasses of the 417 navigate around mixed wetland hardwood and cypress, and the introduced landscape mirrors this context, seamlessly blending into the natural surroundings.
- The 520 off ramps are unimproved, an opportunity for the integration of contextually sensitive rural landscapes.

TYPICAL PLANT PALETTE

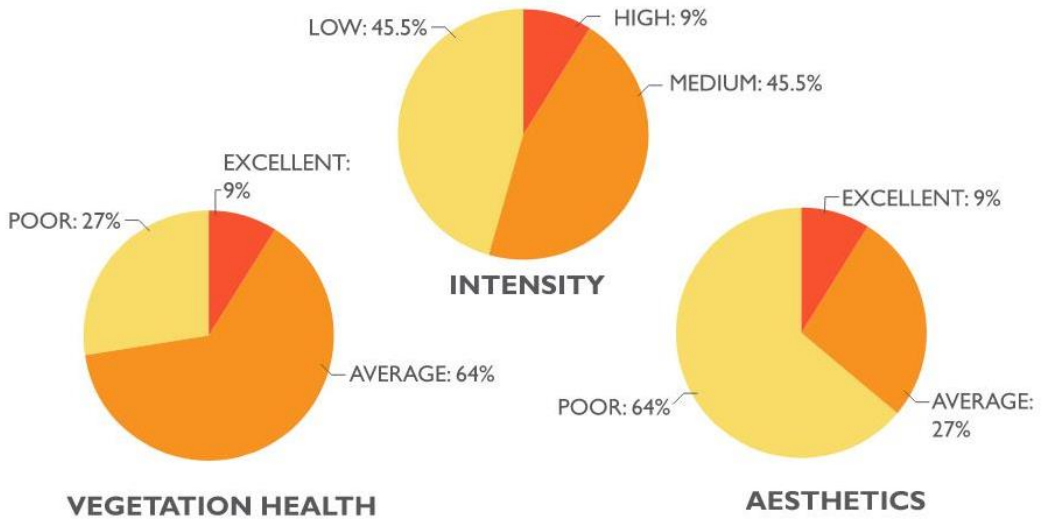
High Intensity Mix: Bald Cypress, Fakahatchee, Sweet Gum, Live Oak, Willow, Cordgrass, Red Cedar, Loquat, Magnolia, Coontie, Firecracker Plant, Bougainvillea, Crape Myrtle, Date Palms, Sweet Bay Magnolia, Red Maple, Pine, Sabal, Oleander, Tabebuia, Washington, Pindo Palm

Medium Intensity Mix: Sabal, Live Oak, Palmetto, Coontie, Jasmine, Plumbago, Slash Pine, Coontie, Jasmine, Plumbago, Oleander, Walters Viburnum, Duck Potato, Cord Grass, Wax Myrtle, Nandina, Indian Hawthorne, Laurel Oak, Ligustrum, Bald Cypress, Red Maple

Low Intensity Mix: Bahia, Red Cedar, Slash Pine, Sabal Palm

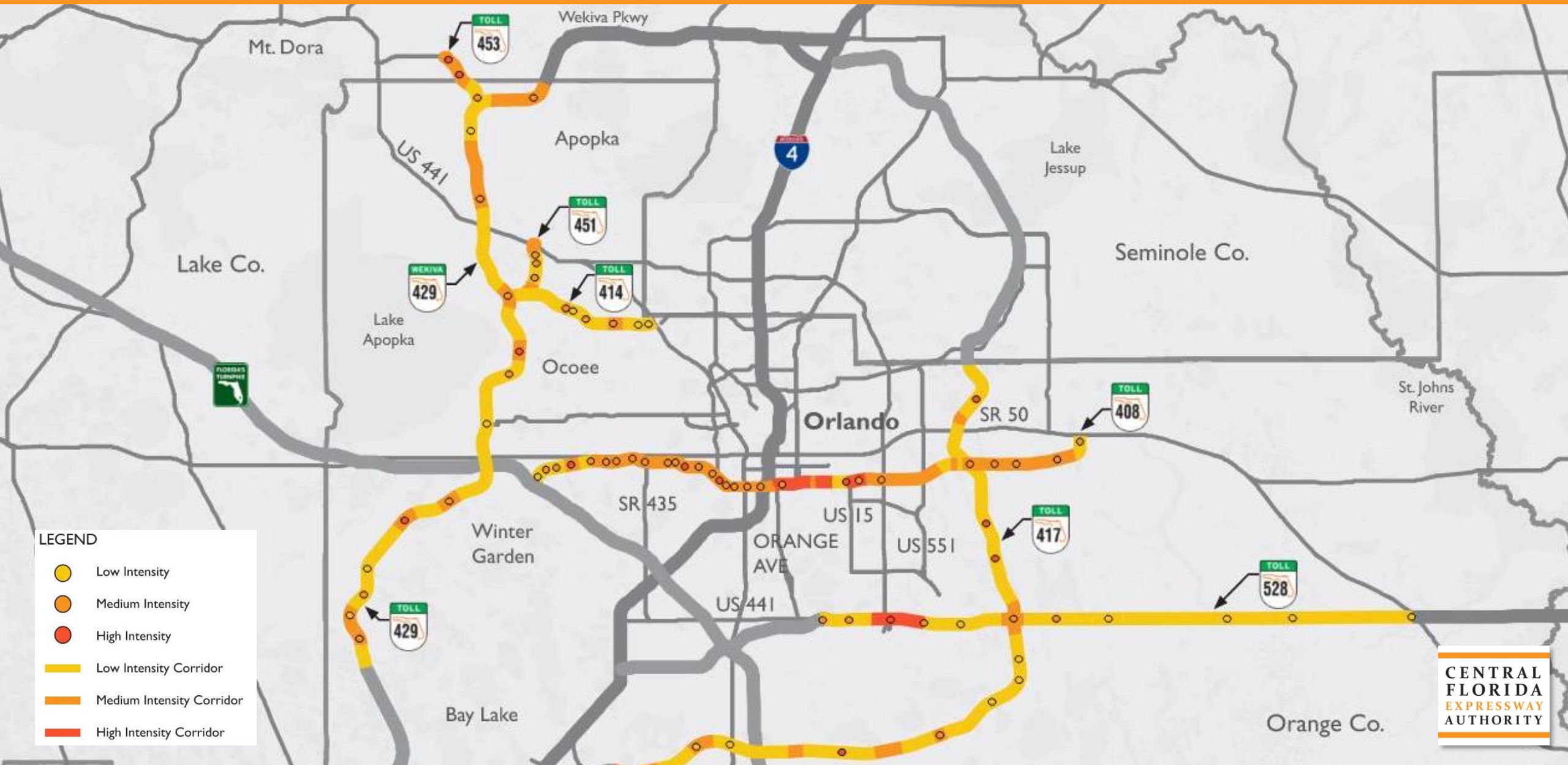
PLANT PALETTE COMMENTS

- Canopy trees and palms are in general good health and established providing a great framework.
- Grasses are hit and miss - cordgrass and muhly need replacement with fakahatchee showing hardiness in the corridor conditions.
- Coontie, firebush, and saw palmetto are very strong groundcovers whereas oleander and plumbago look good or bad depending on location.



CENTRAL FLORIDA EXPRESSWAY AUTHORITY

SYSTEM LANDSCAPE INTENSITY



CENTRAL FLORIDA EXPRESSWAY AUTHORITY

KEY RECOMMENDATIONS

1. Develop Landscape Design Standards
2. Low Investment & High Impact
3. Urban Ecology Showcase

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

1. LANDSCAPE DESIGN STANDARDS

- Develop comprehensive landscape design standards based on the principles of landscape intensity.
- Create a strategic master plan.
- Strategically invest.

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

2. LOW INVESTMENT / HIGH IMPACT

- Increase Tree Canopy
- Maintenance
- Landscape Establishment
- Project Management and Design
- Budget

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

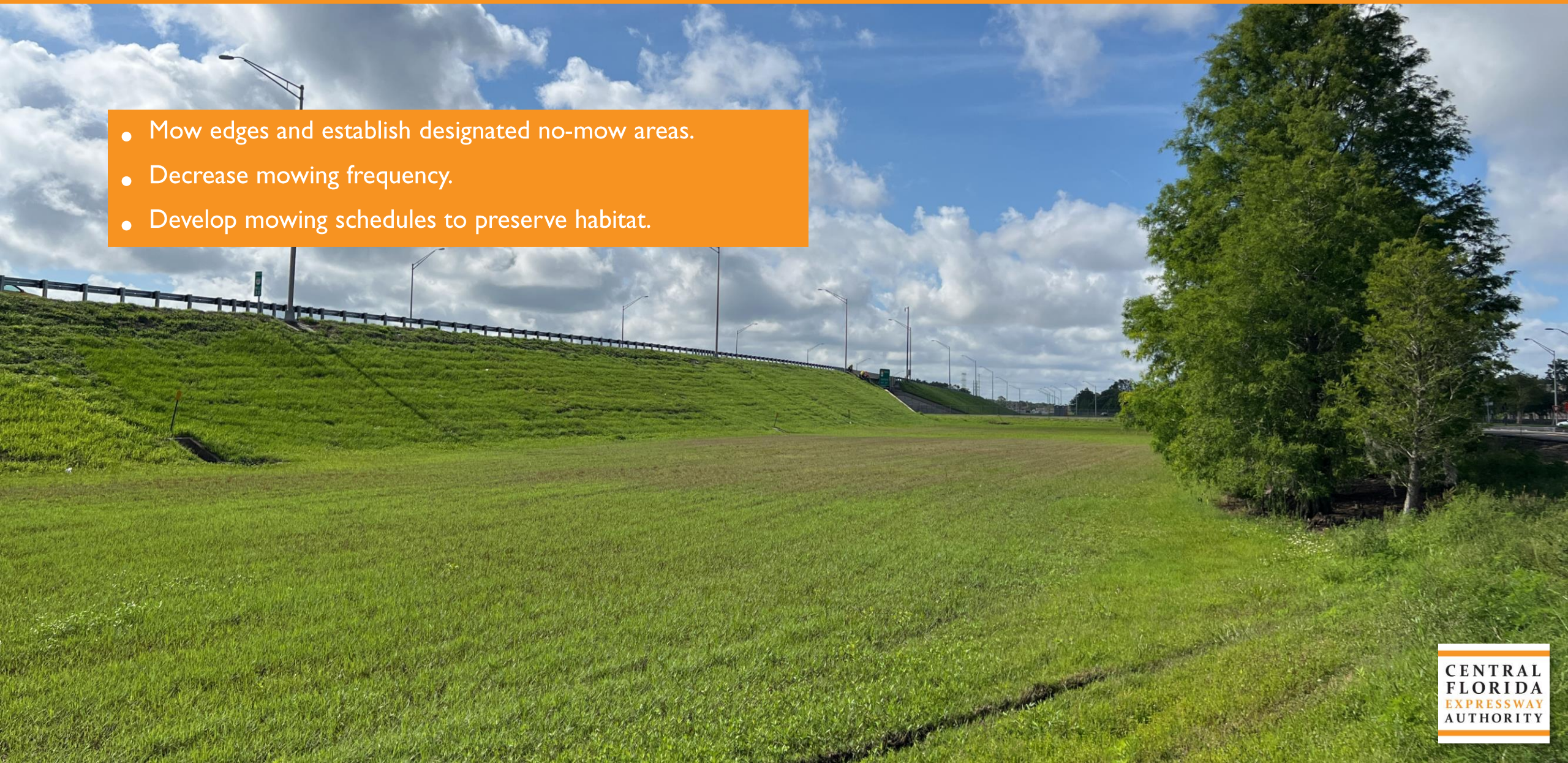
3. URBAN ECOLOGY SHOWCASE

STRATEGIES

1. Targeted Mowing Strategies
2. Landscape Maintenance Zones
3. Typology Maintenance Zones
4. Life-Cycle Tool Kit
5. Workflow and Collaboration
6. Test Plots as Living Labs
7. Soil Amendments & Compost
8. Carbon Sequestration
9. Florida Wildlife Corridor

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

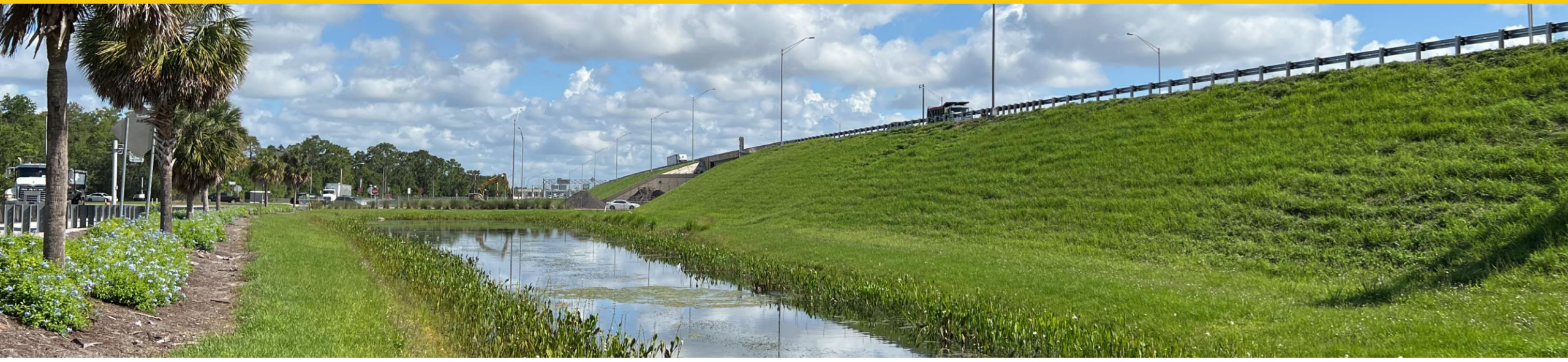
1. TARGETED MOWING STRATEGIES



- Mow edges and establish designated no-mow areas.
- Decrease mowing frequency.
- Develop mowing schedules to preserve habitat.

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

2. LANDSCAPE MAINTENANCE ZONES



Zone 1: Strip mowing.

Image Source: FDOT

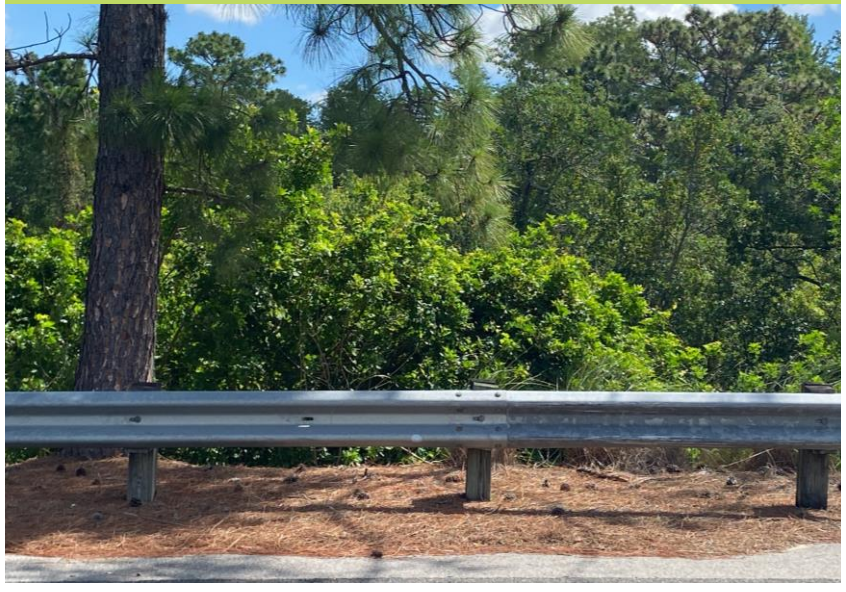
Zone 2: Enhance beauty and ecological advantages.

Image Source: FDOT

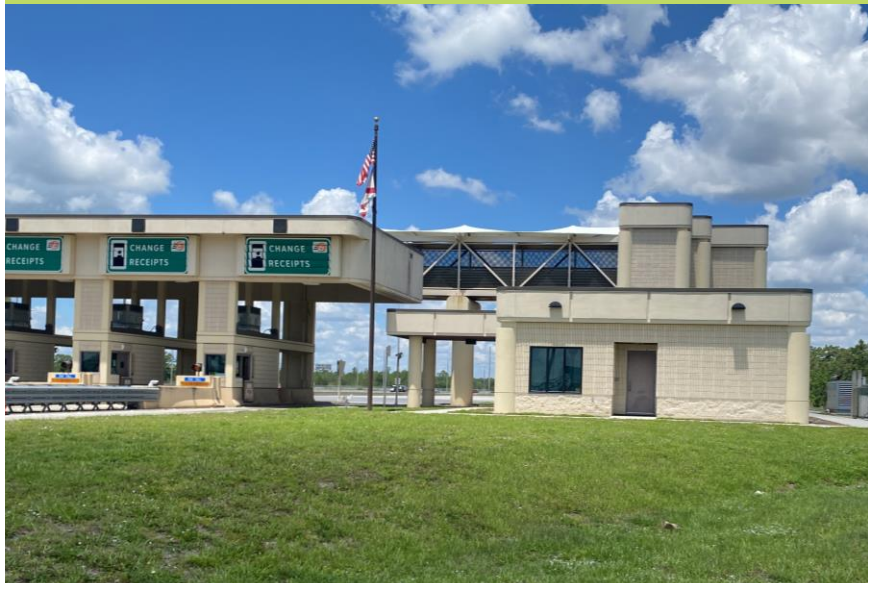
Zone 3: Reforestation and research.

3. TYPOLOGY MAINTENANCE ZONES

Behind the Guardrail



Toll Ramp Plazas and Mainline Toll Gantries



Bridges and Interchanges

4. LIFE CYCLE TOOL KIT

- Adopt an integrated maintenance approach.
- GIS life-cycle monitoring.
- Annual data evaluation.

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

5. WORKFLOW & COLLABORATION

- Revise the structure of the CFX, General Engineering Consultant (GEC), and Continuing Services Consultants (CSC) workflow for landscape projects to align with the management approach used for engineering projects.
- Incorporate Design Standards.
- Exchange ideas and inspiration.

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

6. TEST PLOTS AS LIVING LABS

- Partner with research institutions.

Image Source: FDOT

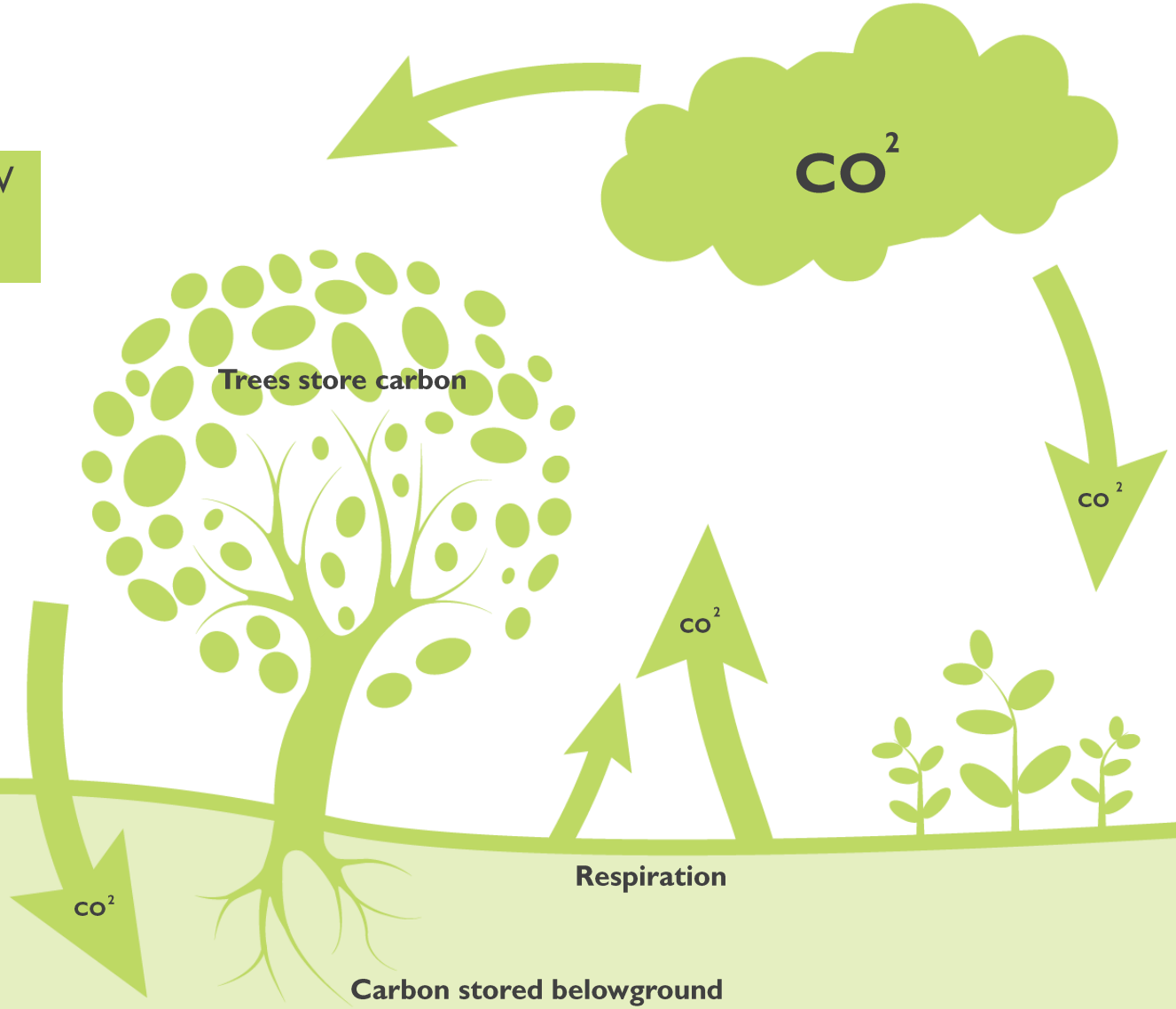
CENTRAL FLORIDA EXPRESSWAY AUTHORITY

7. SOIL AMENDMENTS & COMPOST

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

8. CARBON SEQUESTRATION

- Carbon sequestration within R/W
- External partnerships



CENTRAL FLORIDA EXPRESSWAY AUTHORITY

9. FLORIDA WILDLIFE CORRIDOR

- Promote the protection of habitats, facilitate wildlife movement, and sustain ecosystem services.

Image Source: DRMP

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

CONCLUSION

- The system demonstrates commendable efficacy; however, the integration of the outlined recommendations and strategies possesses the potential to transform the system into a model of global excellence.

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

QUESTIONS?

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

D.2

REPORT

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

SYSTEMWIDE LANDSCAPE ASSESSMENT

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

December 2023

CONTENTS

LIST OF TABLES

LIST OF TABLES

LIST OF FIGURES

LIST OF FIGURES

LIST OF FIGURES

LIST OF IMAGES

LIST OF IMAGES

LIST OF IMAGES

LIST OF IMAGES

CHAPTER 1: PURPOSE

This study aims to evaluate and map the condition of landscapes along the Central Florida Expressway (CFX) to improve maintenance, safety, and overall aesthetics. The study will provide a systemwide landscape assessment and suggest innovative strategies for sustainable landscape improvements. The goal is to align with CFX's vision of being a top-tier mobility network.

Investing in the landscape parallels traditional road infrastructure investment. It involves identifying maintenance needs, determining investment priorities, and improving safety. By understanding the condition and lifespan of existing assets, CFX can strategically plan updates within budget constraints, and recognize the roadside as a crucial interface in the larger ecosystem is integral to this approach.

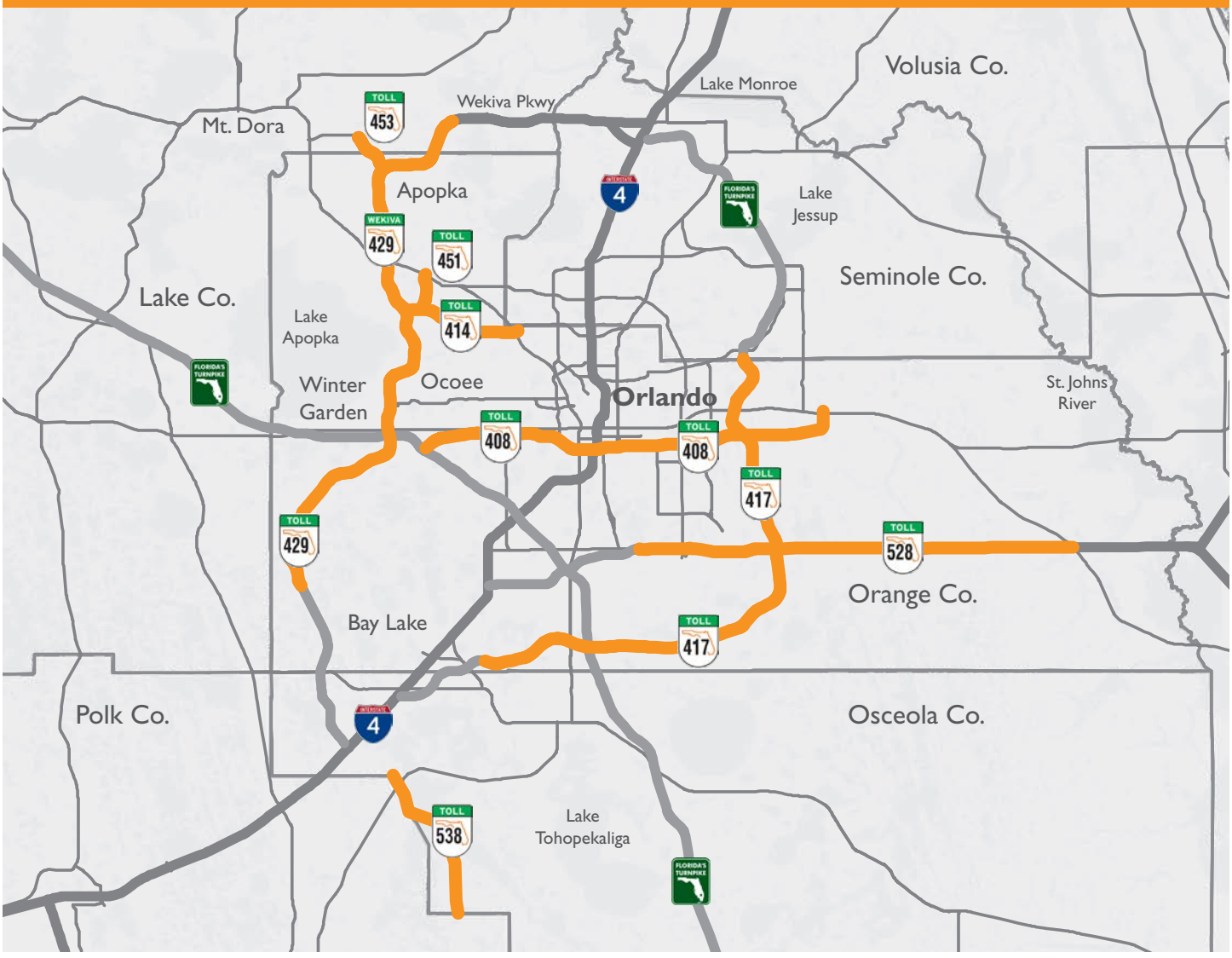


Figure 1.1 Overall System Map

WHO?

CFX is committed to developing and maintaining a world-class mobility network while balancing and supporting sustainable landscaping through environmentally sensitive planning, design, and maintenance practices.

Source: cfxway.com

WHAT?

CFX is 30 years into the program and as Central Florida continues to grow CFX supports the responsible use and protection of the natural environment through conservation and responsible management practices.

Source: cfxway.com

WHY?

CFX is a customer driven organization that connects people to places and makes regional travel easier while providing an enhanced, safe travel experience.

Goals of the CFX landscape sustainability initiative include:

- **Reduce water consumption.**
- **Minimize chemical applications.**
- **Reduce erosion.**
- **Reduce maintenance.**
- **Be aesthetically pleasing.**

Source: cfxway.com

Achieving sustainable roadside landscapes begins by assessing the current state and evaluating its performance and maintenance. Roadside landscapes should not only be visually appealing to enhance the driving experience but also function as living ecosystems. They should support local flora and fauna, use resources efficiently, and celebrate the unique characteristics of the region.

HOW TO USE THIS GUIDE

The report outlines current conditions and strategies for integrating sustainable roadside landscapes into the project decision-making process. Organized by expressways, the guide's Chapters 2 through 9 delve into specific corridors, providing segment inventory, typology intensity studies, and opportunities and constraints studies in each chapter.

The last chapter summarizes key findings and recommendations, emphasizing trade-offs involved in designing and maintaining sustainable roadsides—issues that should be addressed early in project planning. The appendix contains a summary of interviews conducted by Dix.Hite with CFX staff and GEC consultants.

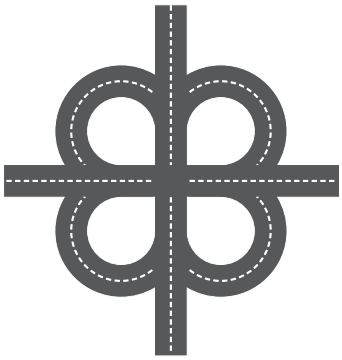
METHODOLOGY

The study covers 125 centerline miles, including 73 interchanges, 14 toll plazas, 5 gantries, 71 ramp plazas, 5 ramp gantries, and 346 bridges across eight expressways in Lake and Orange Counties. Notably, landscaping along SR 538 in Osceola County within CFX R/W was not assessed in this report as the final landscaping was not yet in place.

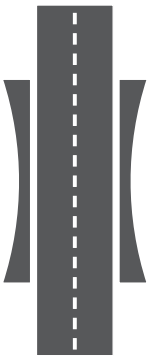
Dix.Hite conducted field reviews to evaluate existing landscape conditions, identify opportunities and constraints, and verify issues across the system. Geospatial mapping software and an ArcGIS Survey123 matrix were used to study each corridor before the field reviews. The systemwide landscape assessment was categorized by roadway typologies and evaluated in the field, with landscape intensity classified accordingly. (See Figures 1.2 and 1.3 for reference.)

TYPOLOGIES

The concept of roadway typology defines the role of roadway elements in their context and function. These typologies were used as the basis for creating a classification system to evaluate the adjacent landscape within CFX R/W.

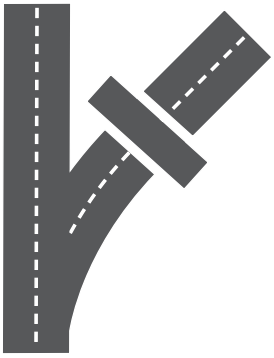


INTERCHANGE



BRIDGE

MAINLINE GANTRY



RAMP TOLL PLAZA

CORRIDOR

Figure 1.2 Roadway Typology Legend

LANDSCAPE INTENSITY

Each typology was evaluated in the field and classified by landscape intensity.

HIGH INTENSITY: Lush landscapes with extensive planting demand significant maintenance efforts. These premium areas exude elegance and make a substantial impact, featuring a blend of vibrant colors and varied textures. An example is the 528/436 interchange.

MEDIUM INTENSITY: Combining elegance and informality, this approach offers accent treatment and buffering with a balanced need for lower maintenance. It usually involves canopy and straightforward understory plantings. An example is the 408/417 interchange.

LOW INTENSITY: Cost-effective and straightforward, typically mown bahia grass with occasional clusters of canopy or palm trees.

Figure 1.3 Landscape Intensities Defined

OPPORTUNITIES/CONSTRAINTS

Both common and distinctive landscape conditions within the right-of-way were observed and documented, in the field, as opportunities and constraints.

OPPORTUNITIES: Favorable aspects that provide a chance for progress or success. They also include situations that are currently working well—existing conditions that can be built upon, leveraging the foundation of already established infrastructure or positive elements. Identifying and utilizing these opportunities is crucial for achieving sustainability goals.

CONSTRAINTS: Limitations or restrictions that create obstacles and restrict what can be done in a given situation. They indicate what is not working or pose limitations to making something work, highlighting areas where improvement or a solution is needed.

Figure 1.4 Opportunities and Constraints Defined

CHAPTER 2:
SR 408 CORRIDOR

The 408 stands out as the landscape focal point within the CFX system. Stretching from east to west, it provides a refreshing break from the congested arterials and the grid-like local network, gracefully traversing over local surface streets. Holistically and experientially, the 408 is the most richly landscaped, showcasing distinct hardscape features that mirror the urban context.

In the corridor core, spanning from the I-4 interchange to SR 436, the landscape experience is marked by striking and sculptural median plantings, with the canopy crowning above the screen walls. The surface street edge and bridges shine in this area, with the landscape rising from stepped terraces, offering a softer touch to adjacent communities adorned with mature canopy. While traffic hums above, the elevated roadway minimizes disturbances to the neighborhoods. These characteristics extend westward, with a shift in dynamics past the I-4 interchange, almost reaching Kirkman Road. Approaching the Turnpike from Kirkman Road, the landscape becomes more mature, featuring groves of pines. Buffer zones are created with a mix of pines, oaks, and varied understory. The canopy flourishes in this mature section of the corridor.

Moving eastward from SR 436 toward the 417, the drive relaxes as the expressway narrows and occasionally rises over cross streets. Younger plantings sweep past, and wetland thresholds create gateway moments, contributing to a sense of newness. As the 408 curves toward SR 50, the external landscape changes closer to the St. Johns River Floodplain. Cutting through a cypress dome, the stark rise of cypress trunks contrasts with the surrounding open views. This turn in the landscape evokes a sense of adventure—a journey to Playalinda, an exciting airboat ride, or the beginning of a new semester at UCF.

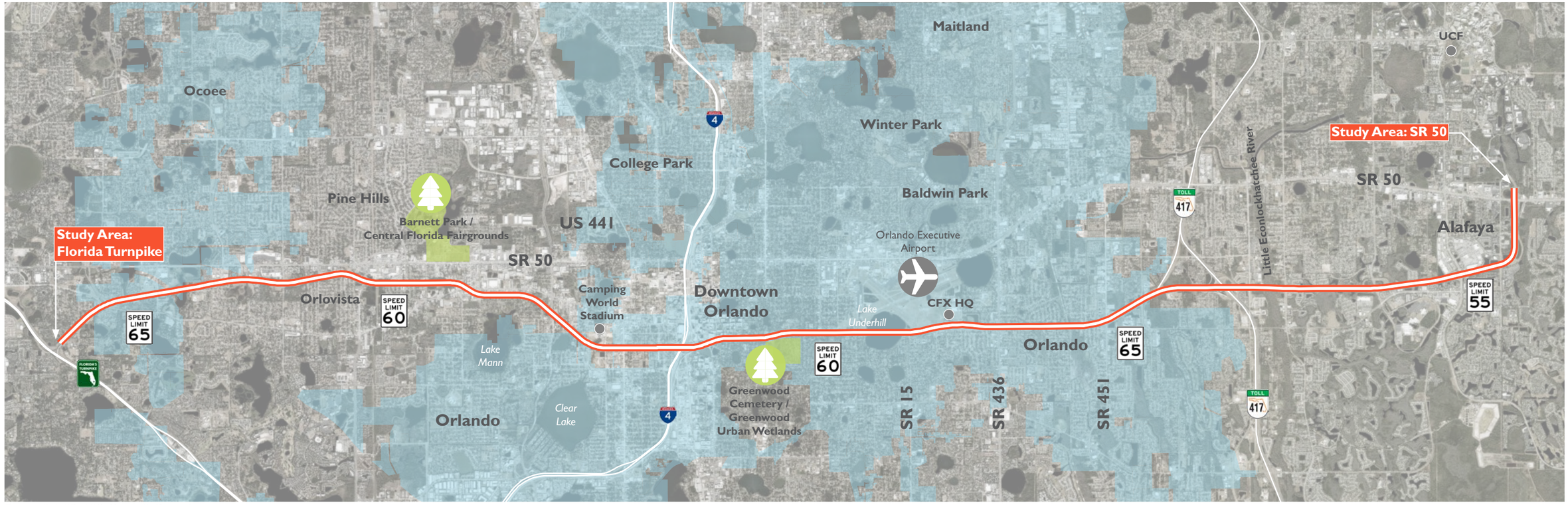


Figure 2.1 SR 408 Overall Corridor

SR 408

AT A GLANCE

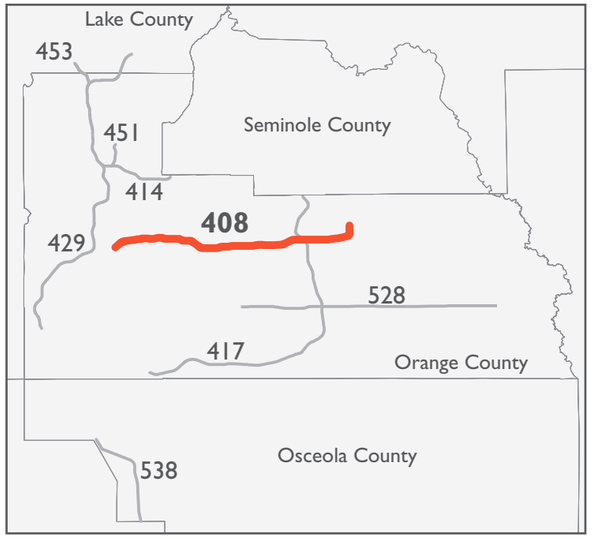
- The study area is 22 miles.
- Nickname: Spessard L. Holland Expressway
- The 408 expressway serves as the backbone of the CFX network, linking the west side of Orange County to the east side and ultimately terminating at SR 50.

Traffic Count:

- AADT: 97,500 (west of I-4)
- AADT: 170,000 (east of I-4 to SR 417)
- AADT: 82,750 (east of 417 to Rouse Rd)
- AADT: 55,250 (east of Rouse Rd)

Adjacent Character:

- Urban and suburban



Context Map

LEGEND

- SR 408 Study Corridor
- Major Roads
- Open Space
- Municipal Boundaries

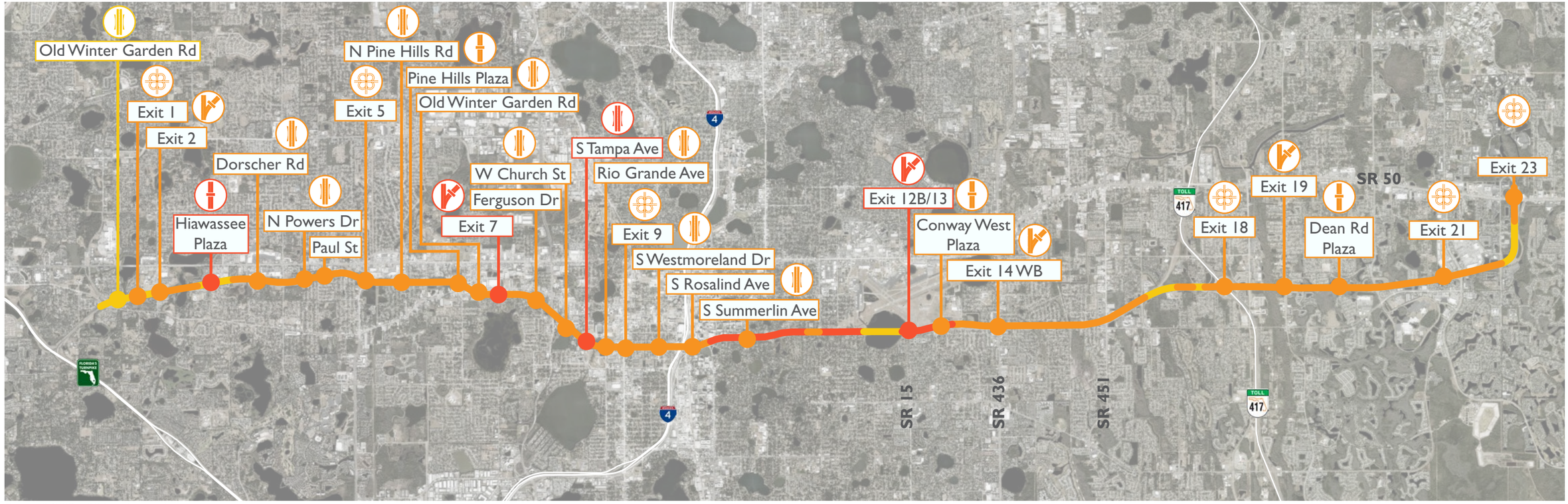


Figure 2.2 SR 408 Landscape Intensity

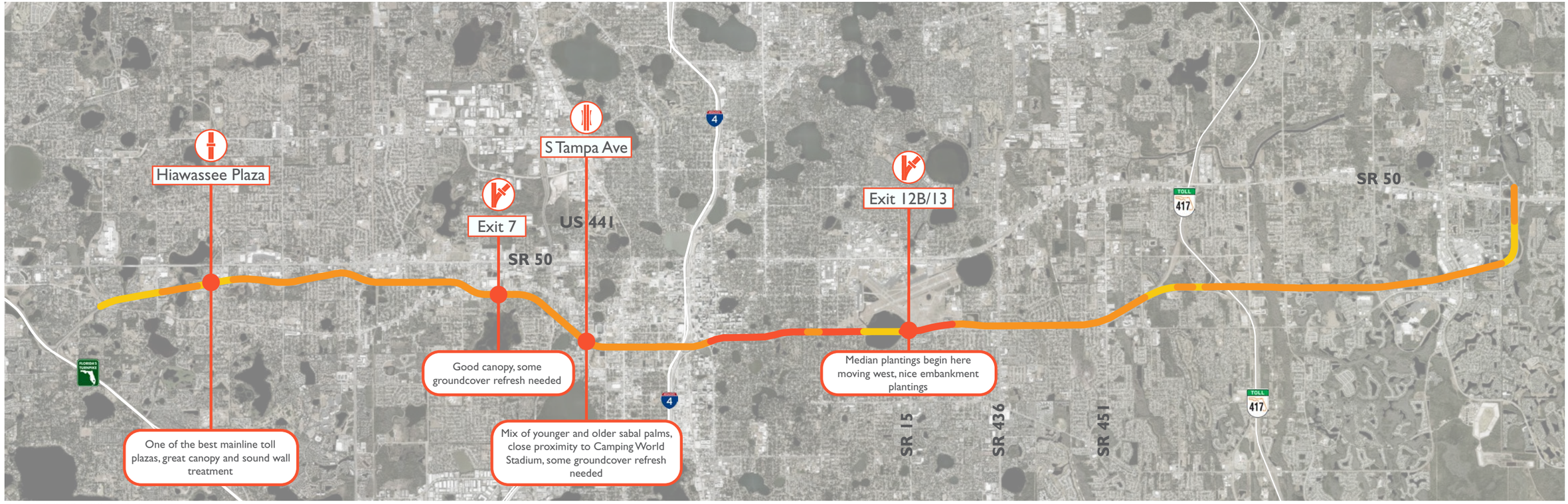
LANDSCAPE INTENSITY

Starting from the Turnpike, the 408 corridor features a mix of low-intensity landscaping in much of the suburban areas, with an increase in intensity at buffer zones adjacent to residential development. Interchanges and tolling facilities maintain a medium intensity, with some bridges incorporating canopy treatments, although this is not consistently applied. Moving from Good Homes Rd, the median along the corridor transitions to medium-intensity landscaping, continuing to Kirkman Rd. Medium intensity is reintroduced just east of the I-4 interchange to the Conway Rd interchange. Kirkman Rd serves as the gateway to the more urban profile of the roadway, with the Kirkman interchange designed with a typical treatment through Orlando to S Bumby Ave.

The landscape treatment resumes at Mercado Ave to S Goldenrod Rd, featuring terraced overpass features with medium-intensity landscaping at surface level streets. East of I-4, the Anderson and South St edges exhibit low-intensity canopy, with medium-intensity end caps at terminating streets like Osceola Ave and Hampton Ave. The 408/417 interchange is newly planted with medium-intensity landscaping that complements the existing canopy areas. As the corridor extends east into suburban Orlando, the landscape once again transitions to low intensity, with medium intensity at key interchanges, including the eastern terminus at SR 50.

TYPOLOGY AND INTENSITY LEGEND

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY



HIGH INTENSITY

Figure 2.3 SR 408 High Intensity

NOTES

High-intensity landscapes along SR 408 are found at mainline and ramp plazas, as well as in overpass treatments. The aesthetic quality and health of vegetation vary from poor to excellent.

Table 2.1 SR 408 High Intensity Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• Good existing canopy is working, build on it • High intensity corridor with good buffer and surface street plantings • Hiawassee mainline plaza is one of the best landscape treatments - great canopy and sound wall treatment • Good median plantings in urban core	• Groundcover refresh needed in most areas • Erosion is a continuing issue • Muhly and cordgrass are not performing

TYPOLOGY AND INTENSITY LEGEND

INTERCHANGE | BRIDGE | MAINLINE TOLL GANTRY | TOLL RAMP | CORRIDOR

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

Image 2.1
SR 408 at Hiawassee Mainline Plaza

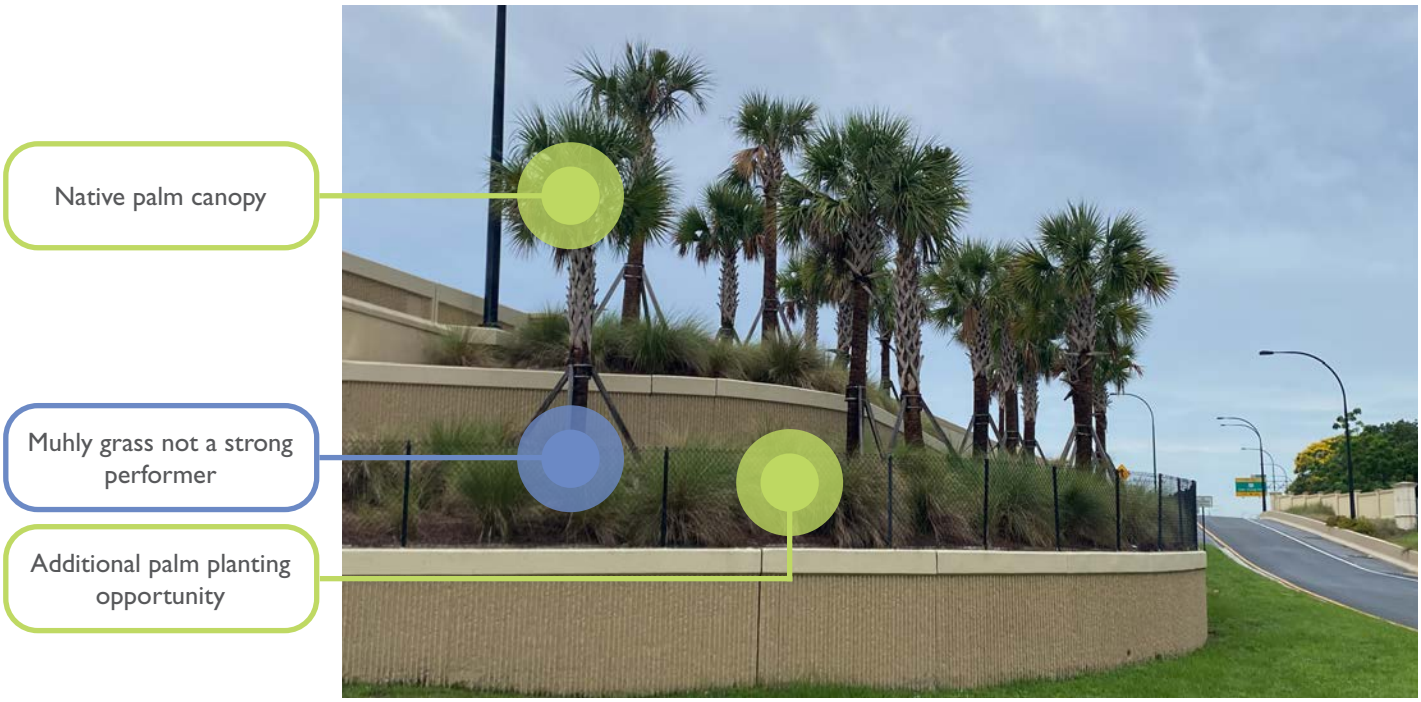


Image 2.2
SR 408 at S Tampa Ave

Image 2.3
SR 408 at N Ortman Dr

Image 2.4
SR 408 at N Ortman Dr

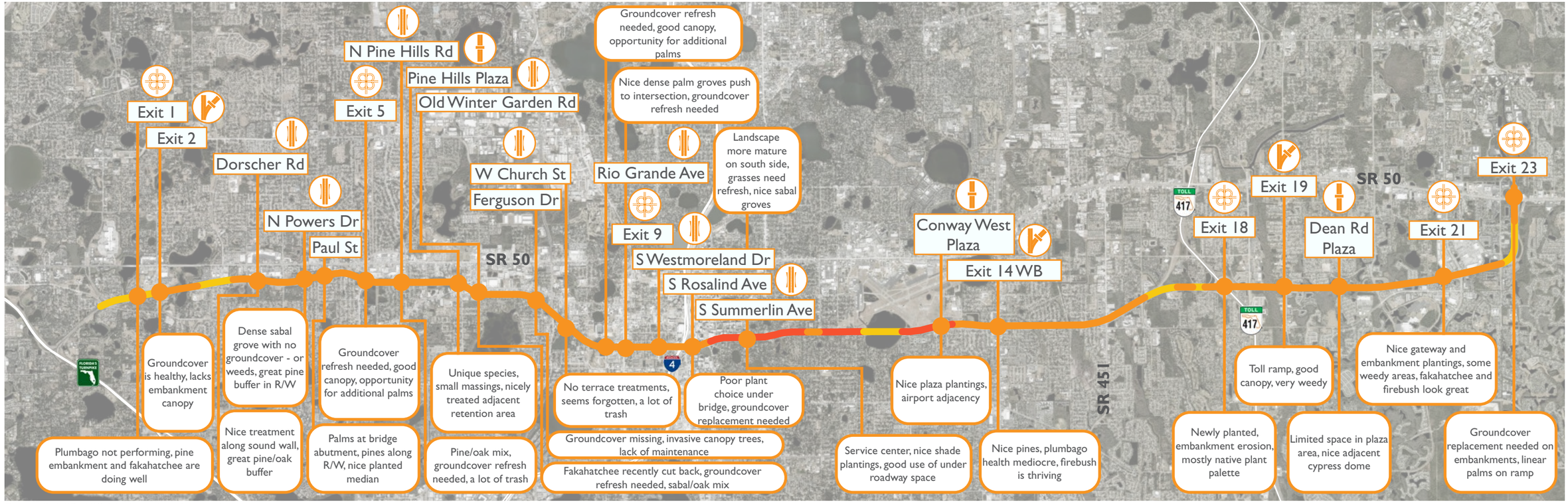


Figure 2.4 SR 408 Medium Landscape Intensity

NOTES

Medium-intensity landscapes along SR 408 are present at the majority of facilities. The aesthetic quality and vegetative health span from poor to excellent.

Table 2.2 SR 408 Medium Intensity Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• Good existing canopy and palms • The majority of facilities and surface street intersections have landscape treatment • Some standouts - firebush, saw palmetto, fakahatchee grasses • Nice adjacent landscapes at some locations - cypress dome and retention areas	• Groundcover refresh is needed at most locations • Poor maintenance at some locations • Embankment erosion

TYPOLOGY AND INTENSITY LEGEND

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

Image 2.5
SR 408/SR 50 Interchange

Image 2.6
SR 408/SR 417 Interchange

Image 2.7
SR 408/SR 435 Interchange

Image 2.8
SR 408/US 441 Interchange

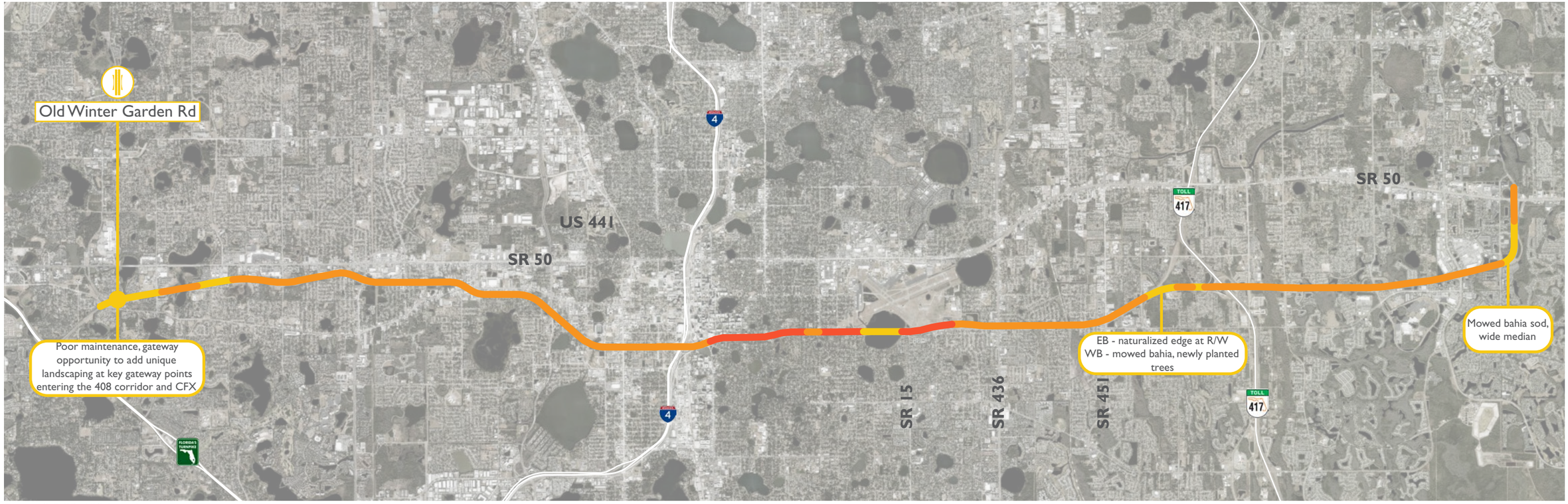


Figure 2.5 SR 408 Low Landscape Intensity

NOTES

Low-intensity landscapes along SR 408 are situated at the Turnpike end of the corridor, characterized by poor aesthetic quality and vegetative health.

Table 2.3 SR 408 Low Intensity Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• Simple plant palette • Sod performing well • Opportunity for gateway to CFX • Vegetate corridor • Naturalize landscape where possible	• Poor maintenance

TYPOLOGY AND INTENSITY LEGEND

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

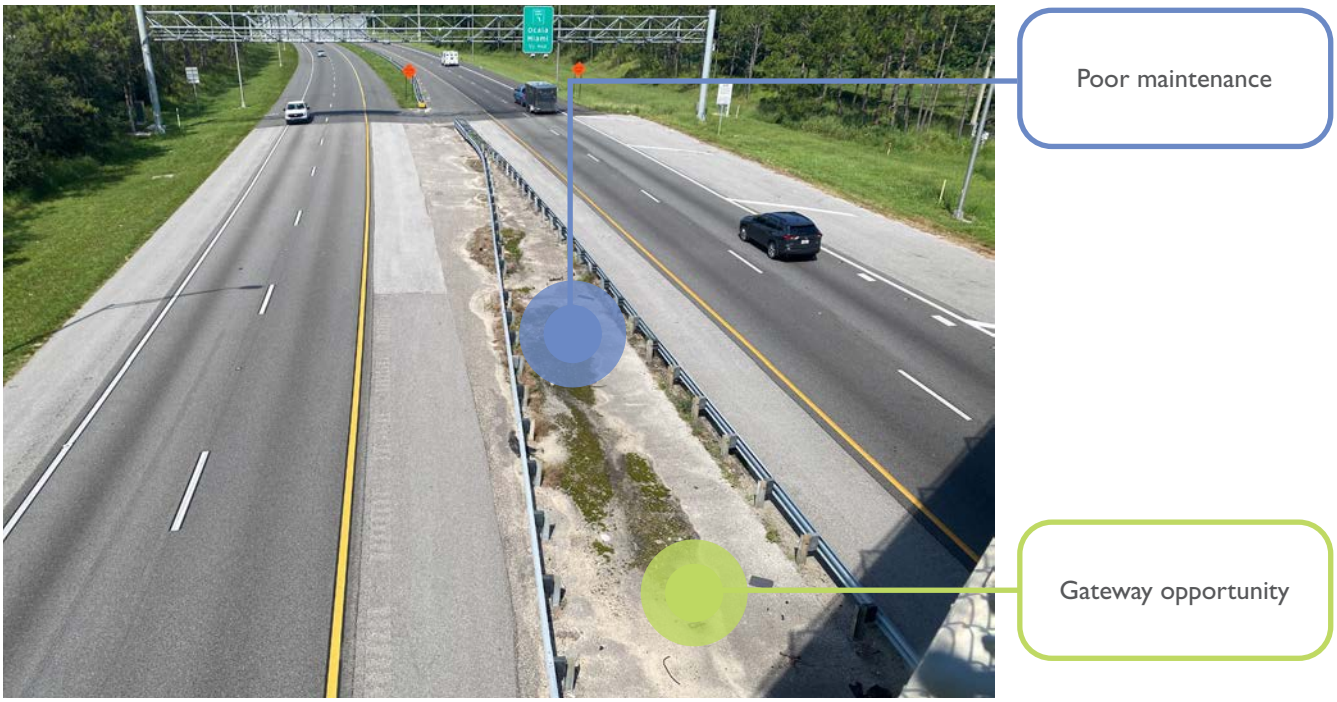


Image 2.9
SR 408 at Winter Garden Rd

Image 2.10
SR 408 at Winter Garden Rd

SR 408 OVERALL TAKEAWAYS

- The 408 expressway stands out as the crown jewel of the CFX system.
- The mature canopy provides an excellent foundation for refreshing the ground plane landscape.
- Landscape buffering treatments are crucial for enhancing underserved areas, and maintenance efforts should align with this priority.
- The planted median creates a wonderful green ribbon effect.
- The shrub material is displaying signs of aging and is due for a renewal.
- The raised terracing and neighborhood screening showcase a healthy mature canopy, but there is a need for groundcover refresh.
- The surface street treatment peeks over the sound walls, creates intriguing landscape moments along the corridor.

Summary diagrams (Figure 2.6) visualize how each corridor scored in the field.

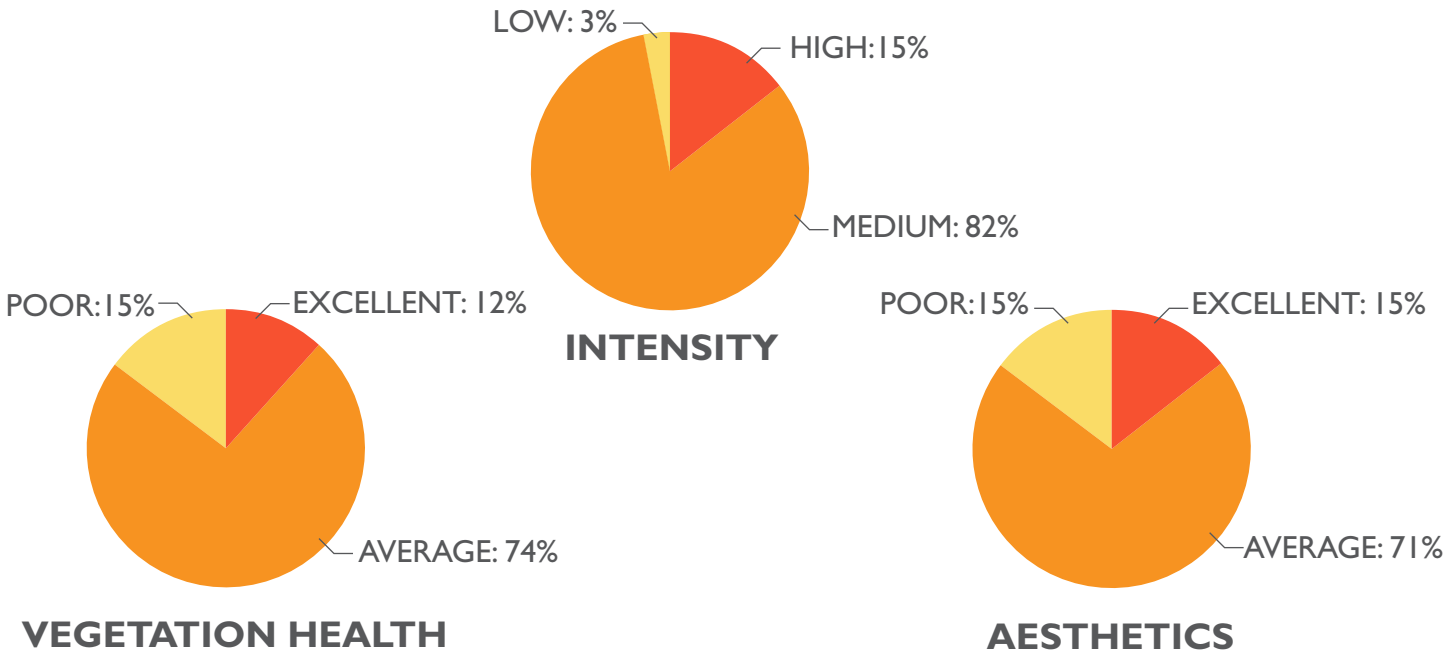


Figure 2.6 SR 408 Overall Takeaways

TYPICAL PLANT PALETTE

High Intensity Mix: Bald Cypress, Fakahatchee, Sweet Gum, Live Oak, Willow, Spartina, Red Cedar, Loquat, Magnolia, Coontie, Firecracker Plant, Bougainvillea, Crape Myrtle, Date Palm, Sweet Bay Magnolia, Red Maple, Slash Pine, Sabal Palm, Oleander, Tabebuia, Washington Palm, Pindo Palm.

Medium Intensity Mix: Sabal Palm, Live Oak, Saw Palmetto, Coontie, Jasmine, Plumbago, Slash Pine, Red Maple, Bald Cypress, Laurel Oak, Oleander, Walters Viburnum, Duck Potato, Wax Myrtle, Nandina, Indian Hawthorn, Florida Privet, Fakahatchee, Cord Grass

Low Intensity Mix: Mowed Grass, Slash Pine, Red Cedars, Sabal Palm

PLANT PALETTE COMMENTS

- Live oak, sabal palm, slash pine, and bald cypress canopies are established and in good health.
- Cedar trees are doing well on the east side.
- Cordgrass and muhly grass need to be refreshed.
- Fakahatchee is performing well.
- Existing groundcover plant material is reaching the end of life and ready for a refresh along the terracing and median through the urban core.
- Saw palmetto, firebush, and coontie are standouts in this segment.
- The newly planted 408/417 interchange is performing well.
- Maintenance will need to be an emphasis to keep the landscape healthy.

CHAPTER 3:
SR 414 CORRIDOR

SR 414 extends south and east from the 429 to Maitland Boulevard, with a 3-mile shared section with the 429, designating it as an extension of the 429. The 414/429 interchange stands out with tightly planted groves of native trees and understory plantings adorning slopes, elegantly framing overpasses, ramps, and drainage basins. Occasionally, strategically placed oaks contribute to the emerging sculptural form of the canopy.

As you approach the 451 interchange, the consistent use of mixed groves persists and continues towards the toll gantry. This landscape treatment stands out for its simplicity and effectiveness, making it a notable feature within the CFX system. Continuing east on the 414, the greenhouses of Costa Farm come into view. The off ramps and edges along guardrails maintain the mixed canopy treatment, creating a pleasing visual experience as the expressway descends into Maitland Boulevard across the Orange Blossom Trail bridge.

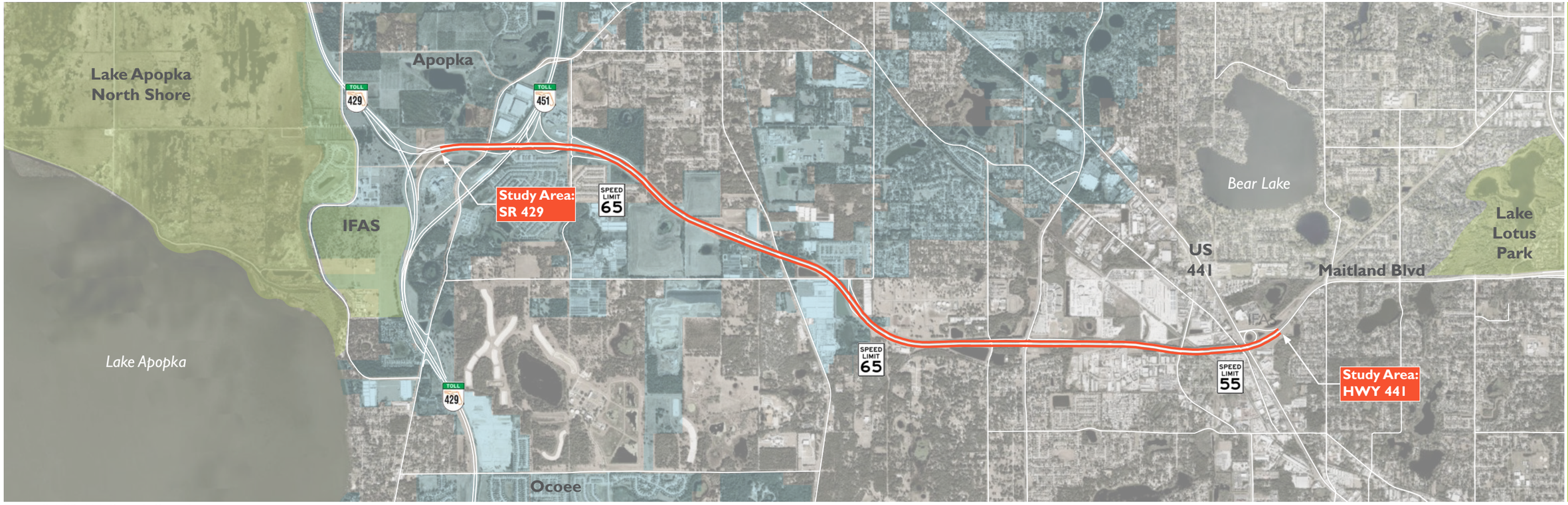


Figure 3.1 SR 414 Overall Corridor

SR 414

AT A GLANCE

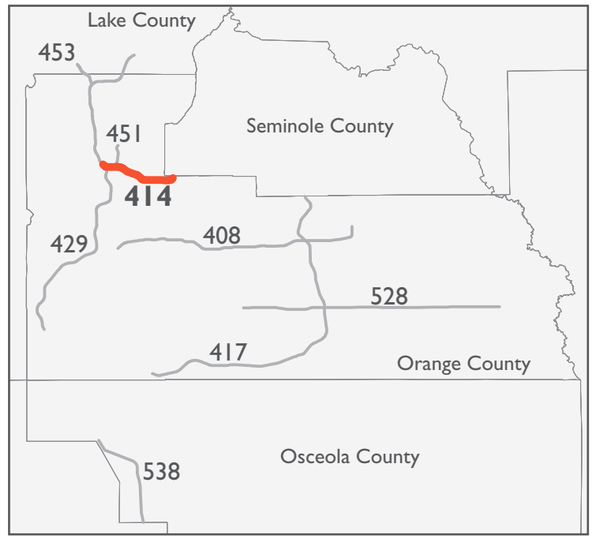
- The study area is approximately 6 miles.
- Nickname: John Land Apopka Expressway
- The elevated corridor improves access to Apopka, SR 429, I-4 and Maitland.

Traffic Count:

- AADT: 36,000

Adjacent Character:

- Urban, suburban and rural



Context Map

LEGEND

- SR 414 Study Corridor
- Major Roads
- Municipal Boundaries
- Open Space

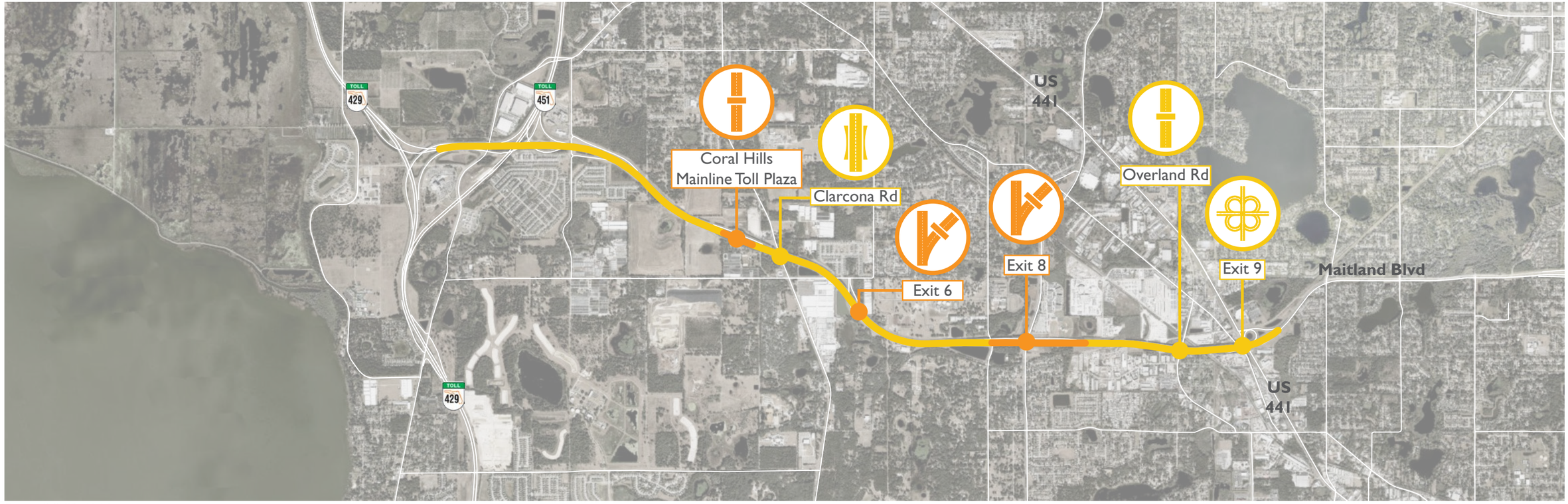


Figure 3.2 SR 414 Landscape Intensity

LANDSCAPE INTENSITY

The 414/451 interchange highlights a medium-intensity pine forest, resembling the one observed at the 429/414 interchange, and incorporates edge buffer treatments. More comprehensive information about these interchanges can be found in other chapters. This predominantly low-intensity elevated corridor moves through rural and suburban areas in an east-west direction. Interchanges, toll facilities, and bridges typically incorporate medium-intensity landscape treatments. The terminus interchange at US 441 (Orange Blossom Trail) is characterized by low intensity and lacks landscape gateway features.

TYPOLOGY AND INTENSITY LEGEND

INTERCHANGE | BRIDGE | MAINLINE TOLL GANTRY | TOLL RAMP | CORRIDOR

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

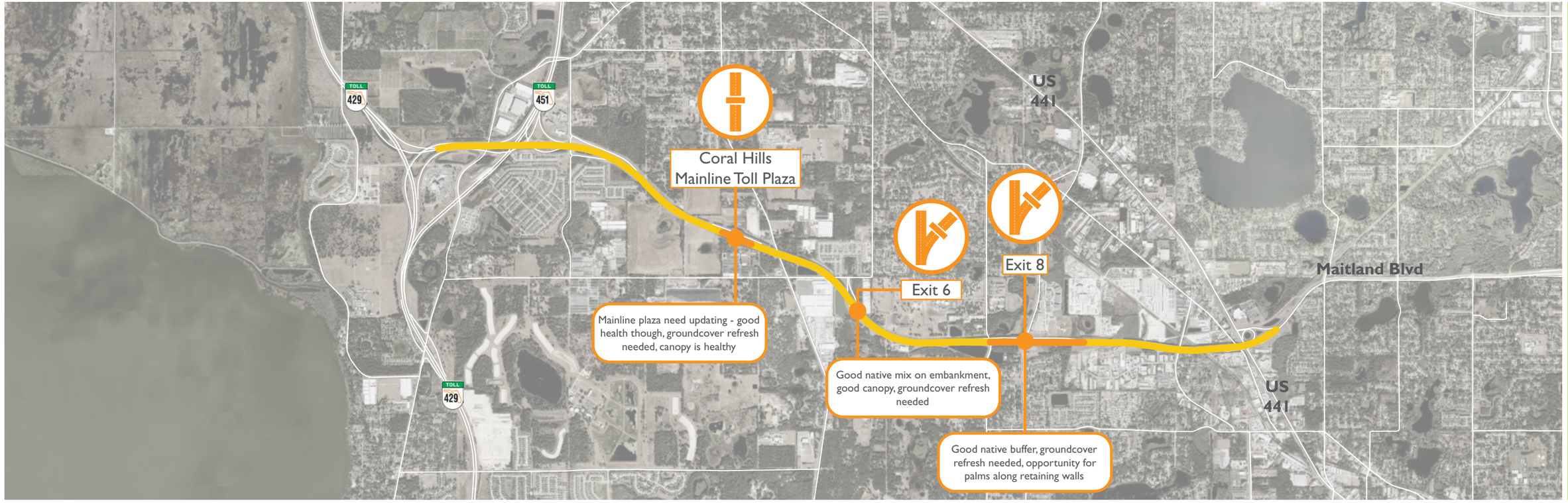


Figure 3.3 SR 414 Medium Intensity

NOTES

The medium-intensity landscapes of SR 414 encompass the mainline toll plaza and toll ramps, exhibiting an average aesthetic quality and vegetative health.

Table 3.1 Medium Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• Good existing canopy and palms • Good native mixes on embankments and buffer plantings	• Dated palette at mainline plaza • Spotty plant health • Groundcover refresh needed at most locations • Poor maintenance at some locations • Embankment erosion

TYPOLOGY AND INTENSITY LEGEND

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

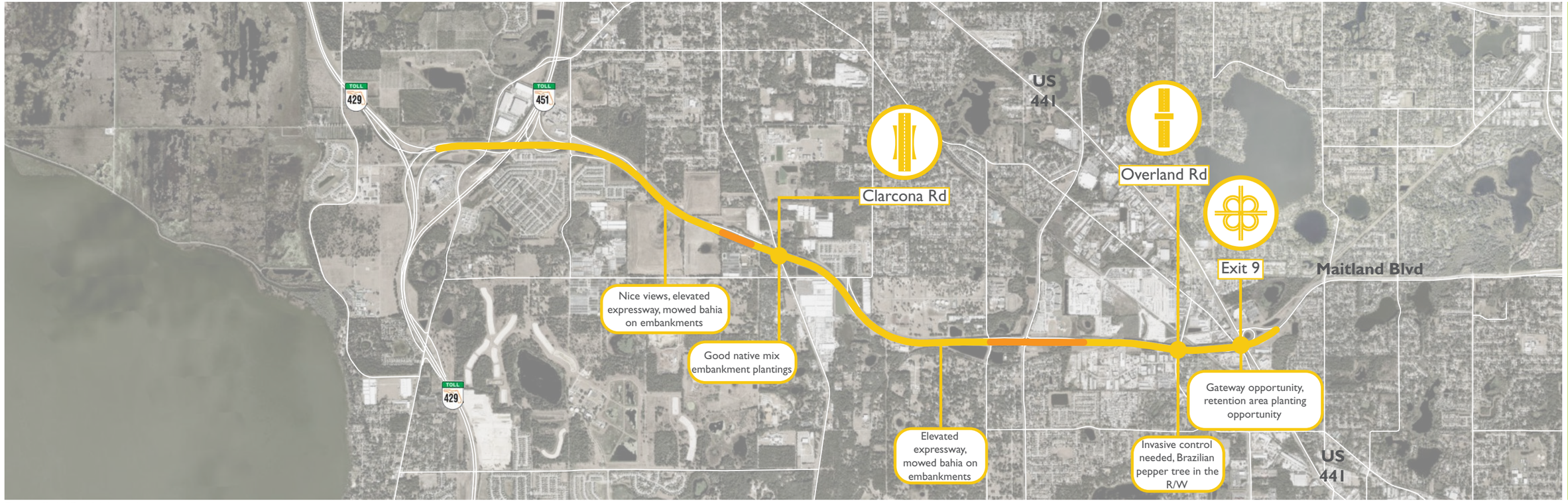
MEDIUM INTENSITY

Image 3.1
SR 414 at Coral Hills Mainline Gantry

Image 3.2
SR 414 at E Keene Rd

Image 3.3
SR 414 at E Keene Rd

Image 3.4
SR 414 at Hiawassee Rd



LOW INTENSITY

Figure 3.4 SR 414 Low Intensity

NOTES

The low-intensity landscapes of SR 414 incorporate the gateway opportunity at US 441, showing poor aesthetic quality and vegetative health.

Table 3.2 SR 414 Low Intensity Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• Good existing canopy and palms • Good native mix at buffers • Gateway opportunity at 441 bridge • Vegetate corridor	• Invasive plant species control needed

TYPOLOGY AND INTENSITY LEGEND

INTERCHANGE | BRIDGE | MAINLINE TOLL GANTRY | TOLL RAMP | CORRIDOR

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

Image 3.5
SR 414/US 441 interchange

Image 3.6
SR 414/US 441 interchange

SR 414
OVERALL TAKEAWAYS

- The 414/429 interchange features tightly planted groves of native trees and understory planting that are full, healthy, and effective, particularly with the well-placed oak trees.
- The 414/451 interchange employs mixed groves, maintaining consistency along with the approach to the toll gantry. This simple and effective landscape treatment persists throughout the area.
- Open spaces with mown bahia present opportunities for landscape interventions.
- As you approach Maitland Blvd, the landscape treatment is kept to a minimum.
- There is an opportunity to extend the successful landscape strategies of the 414 to the US 441 gateway.

Summary diagrams (Figure 3.5) visualize how each corridor scored in the field.

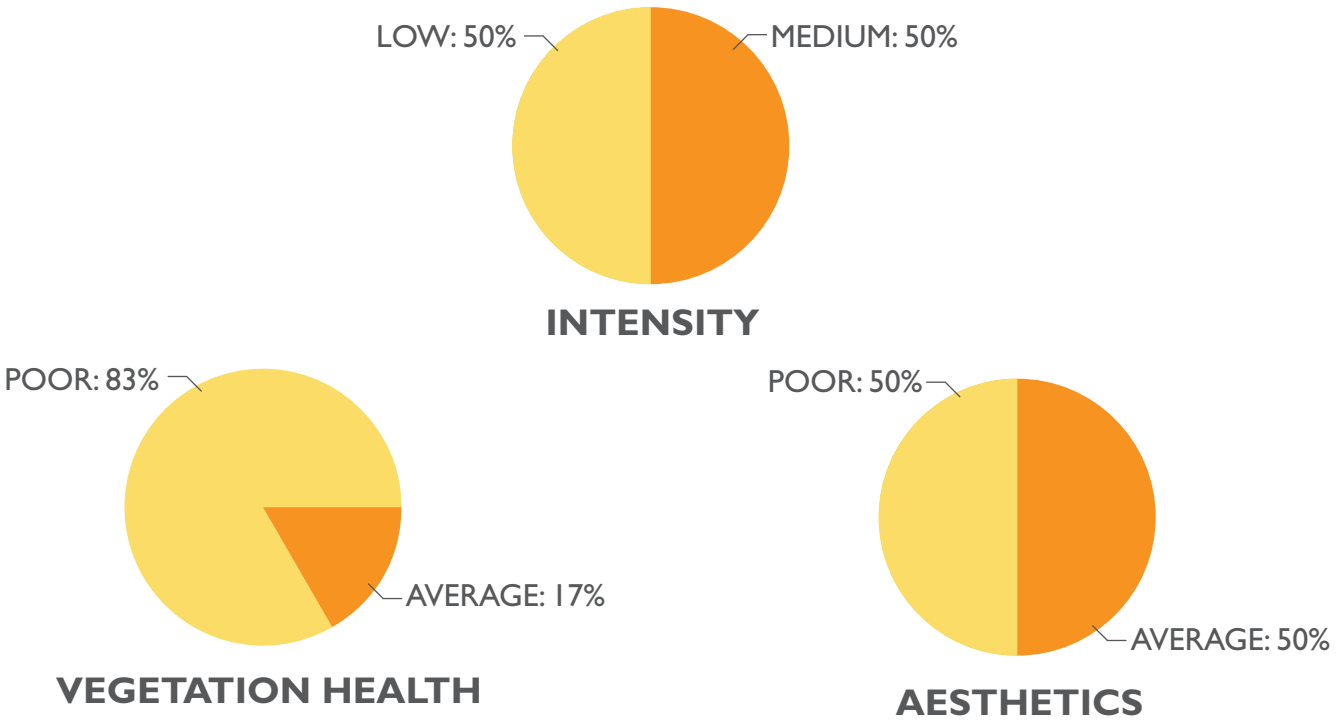


Figure 3.5 SR 414 Overall Takeaways

TYPICAL PLANT PALETTE

Medium Intensity Mix: Sabal Palm, Live Oak, Saw Palmetto, Coontie, Pine, Bald Cypress, Fakahatchee, Cordgrass, Fire Bush, Wax Myrtle, Plumbago, Jasmine, Walter's Viburnum, False Orchid

Low Intensity Mix: Mowed Grass, Sabal Palm, Slash Pine, Live Oak

PLANT PALETTE COMMENTS

- Live oak, sabal palm, and pine canopies are established and in good health.
- Cordgrass needs replacement.
- Existing groundcover plant material is reaching the end of life and ready for a refresh.
- Saw palmetto, firebush, and coontie are standouts in this segment.
- Good buffering achieved with wax myrtle and Walter's viburnum.

CHAPTER 4: SR 417 CORRIDOR

Driving on the Central Florida GreeneWay/417 provides a distinct sense of purpose, whether it's navigating home to various communities, heading towards the attraction area, or bypassing the hustle of Interstate 4 on a busy workday afternoon. The expressway, known for its smooth and efficient design, offers a diverse landscape experience.

In the northern stretch, the 417 exhibits a minimal and functional landscape. Pine and oak-filled forests line the right-of-way, with a well-defined mowed edge allowing understory species to thrive. Residential communities back up to the expressway, and tall screen walls, stark against the mown bahia grass, provide a buffer. Occasionally, oak buffers effectively screen adjacent industrial areas, and occasional wetlands offer a natural respite.

Heading south, the expressway opens up, and the landscape feels expansive. Power lines dominate the view, interrupted only by the occasional toll gantry. A notable landmark is the 417/528 interchange, a 30-year-old landscape inspired by natural ecology that still retains its allure. The canopy frames views as you approach, and the landscape becomes more open.

Approaching the airport, a plane landing is visible, and as the expressway curves westward, the VA Medical Center comes into full view across ranch land. The Boggy Creek interchange stands out with its striking green curves of bridge beams, marking the horizon. The borrowed view changes to open rangeland and cattle, with curved cypress domes rising and falling. Heavier landscaping surrounds the interchange.

Shingle Creek and its wetland system provide relief and compression, creating a transition before excitement builds with signs for the attractions. The journey terminates at the International Drive interchange, marked by a natural and bold landscape expression.

OVERALL CORRIDOR

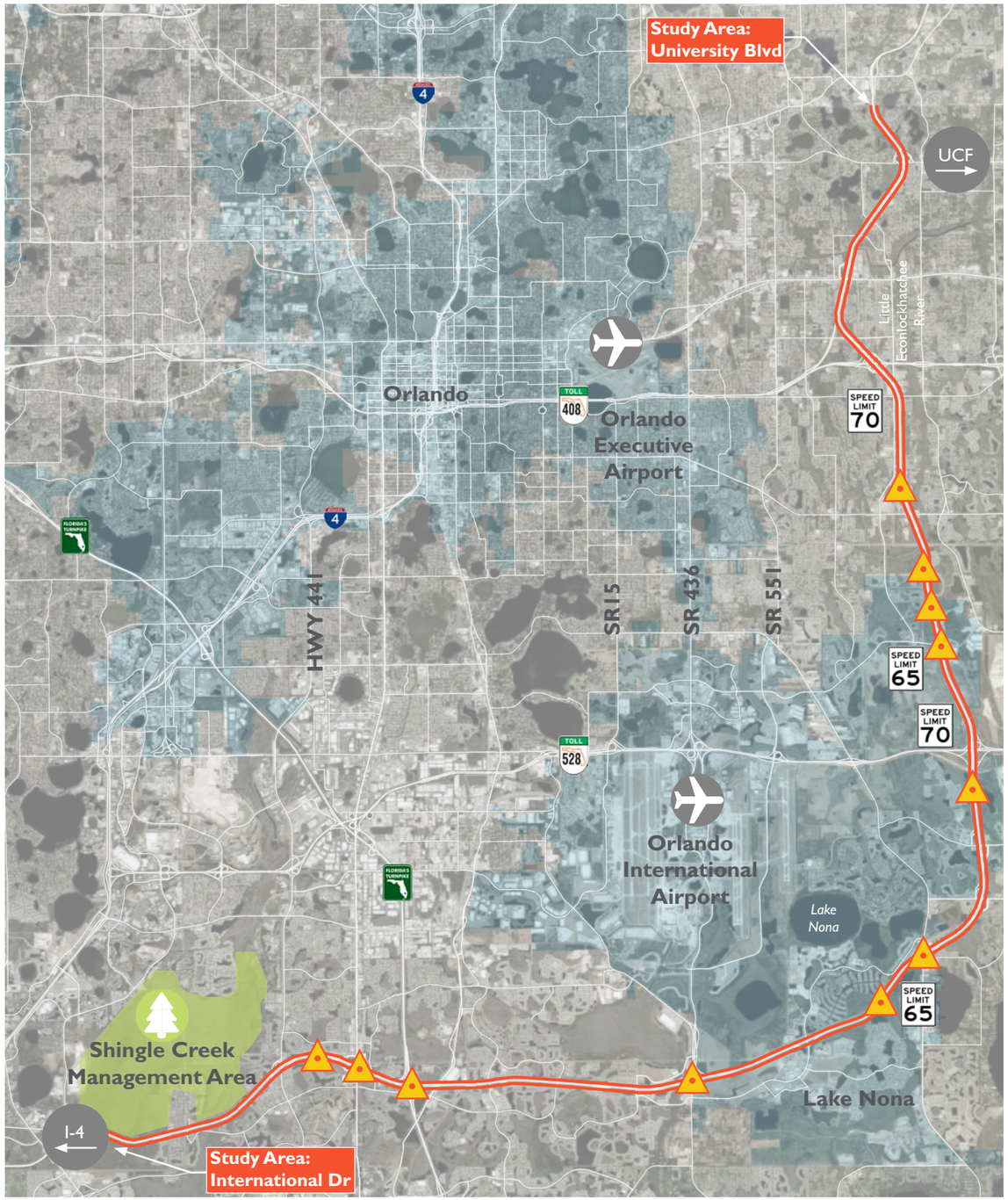


Figure 4.1 SR 417 Overall Corridor

SR 417

AT A GLANCE

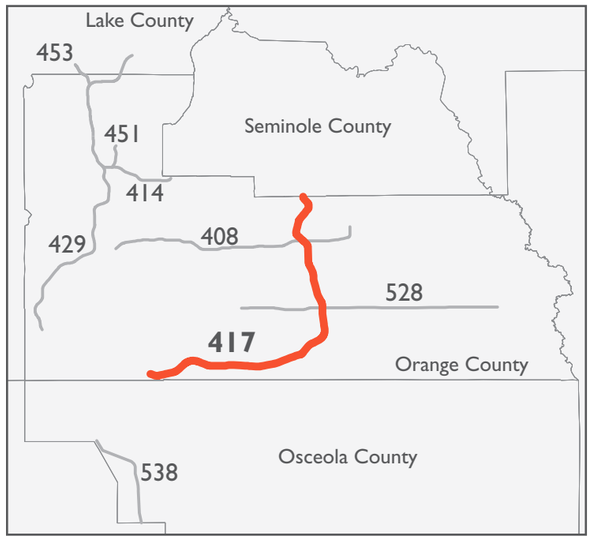
- The study area is 33 miles.
- Nickname: Central Florida GreeneWay
- The 55-mile expressway connects southeast Orlando with Sanford. CFX oversees the operation of 33 miles of the corridor, spanning from International Drive to Aloma Avenue at the Orange-Seminole County line.

Traffic Count:

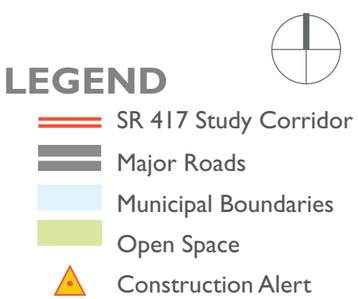
- AADT: 100,000 (north of SR 528)
- AADT: 65,000 (south of SR 528)

Adjacent Character:

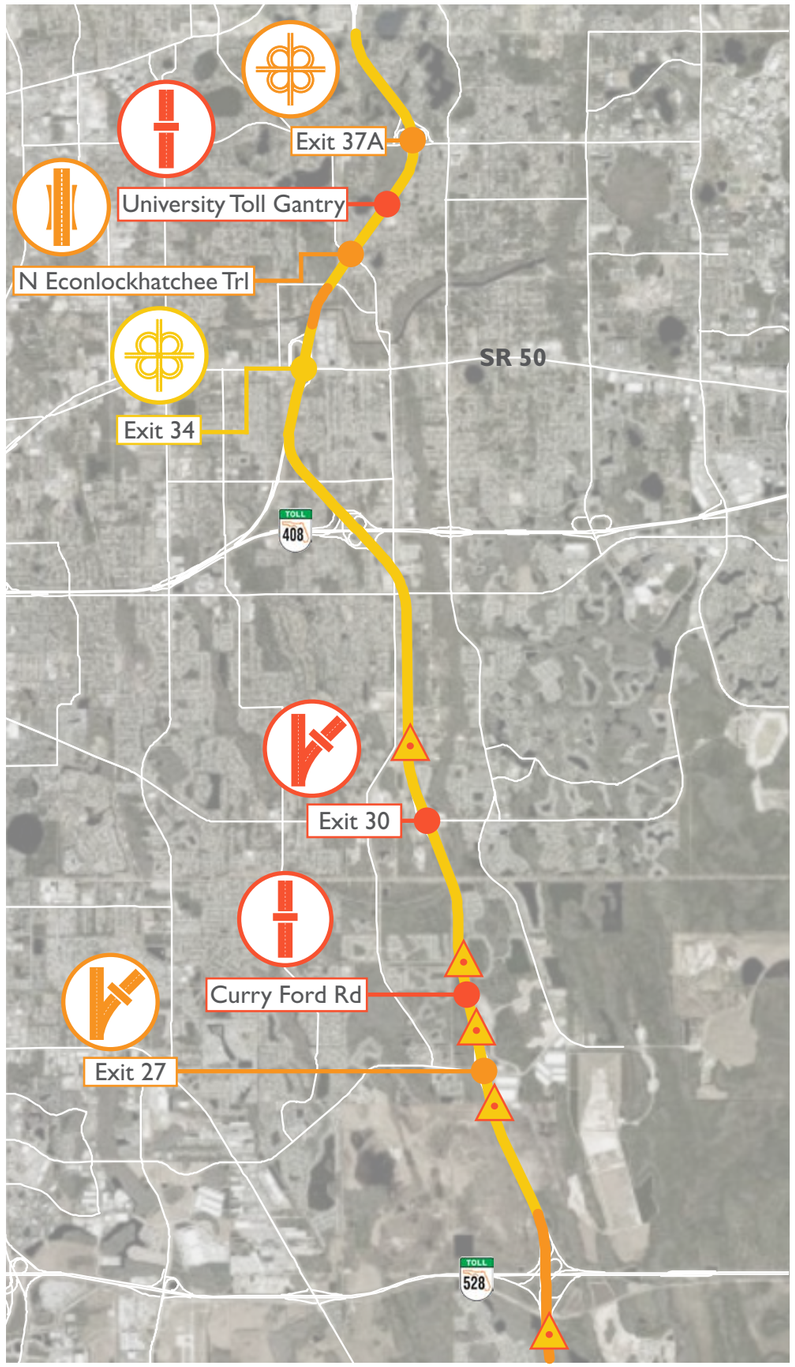
- Suburban and rural



Context Map



LANDSCAPE INTENSITY - NORTH OF SR 528



Construction Alert

Figure 4.2 SR 417 Landscape Intensity North of SR 528

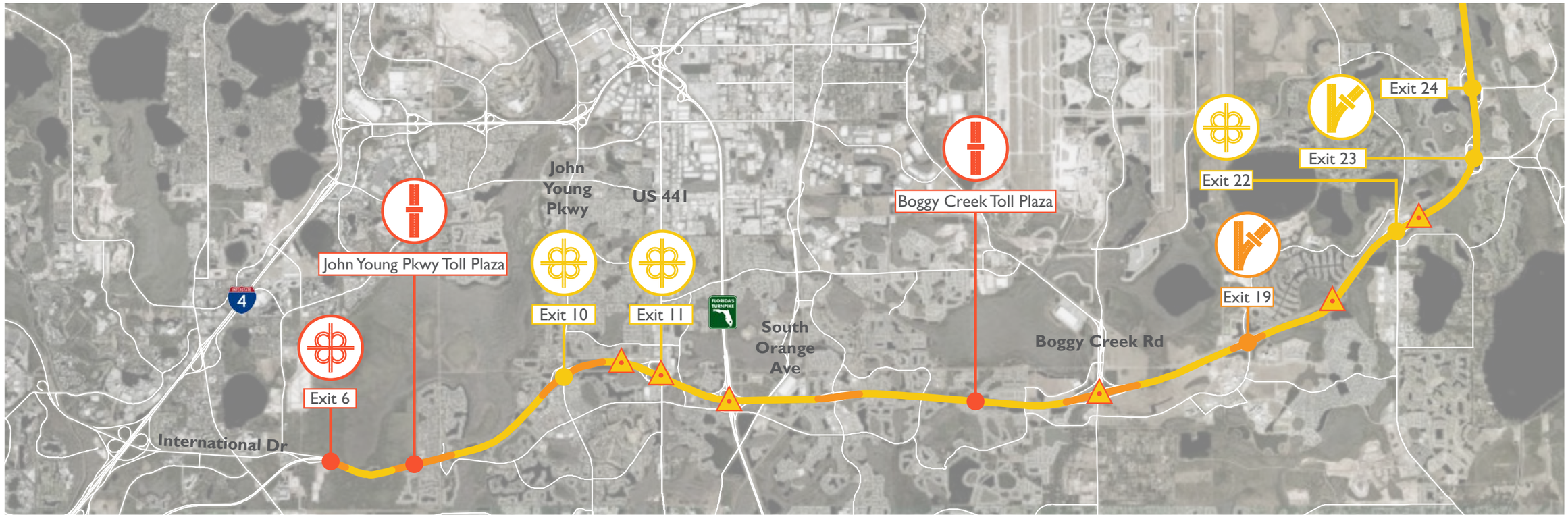
LANDSCAPE INTENSITY

Heading north, both the corridor and interchanges/bridges maintain a low-intensity landscape. The 417/528 interchange is characterized by medium intensity, featuring large existing canopy areas. Moving further north, the 417 becomes a mix of rural and suburban low-intensity corridor, with minimal medium-intensity toll plazas, interchanges, and bridges. The journey concludes at the medium-intensity gateway of the University Blvd interchange, toll plazas, and retention areas.

TYPOLOGY AND INTENSITY LEGEND

INTERCHANGE | BRIDGE | MAINLINE TOLL GANTRY | TOLL RAMP | CORRIDOR

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY



LANDSCAPE INTENSITY - SOUTH OF SR 528

Figure 4.3 SR 417 Landscape Intensity South of SR 528

LANDSCAPE INTENSITY

At the International Dr interchange, the landscape of the 417 transforms into one of high intensity, featuring large masses of plant materials and pond plantings—a highly manicured design. As you move north, this quickly transitions to a low-intensity corridor with wetland and cypress dome adjacencies, picking up to a medium intensity at the John Young Pkwy mainline plaza. Construction is ongoing throughout this southern leg until reaching Boggy Creek Rd.

Much of the corridor passes through low-intensity natural areas and sub-urban adjacencies. The Boggy Creek Rd interchange is a medium-intensi-ty mix of preserved vegetative areas and planted canopy and groundcover.

TYPOLOGY AND INTENSITY LEGEND

Construction Alert

INTERCHANGE | BRIDGE | MAINLINE TOLL GANTRY | TOLL RAMP | CORRIDOR

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

HIGH INTENSITY - NORTH OF SR 528

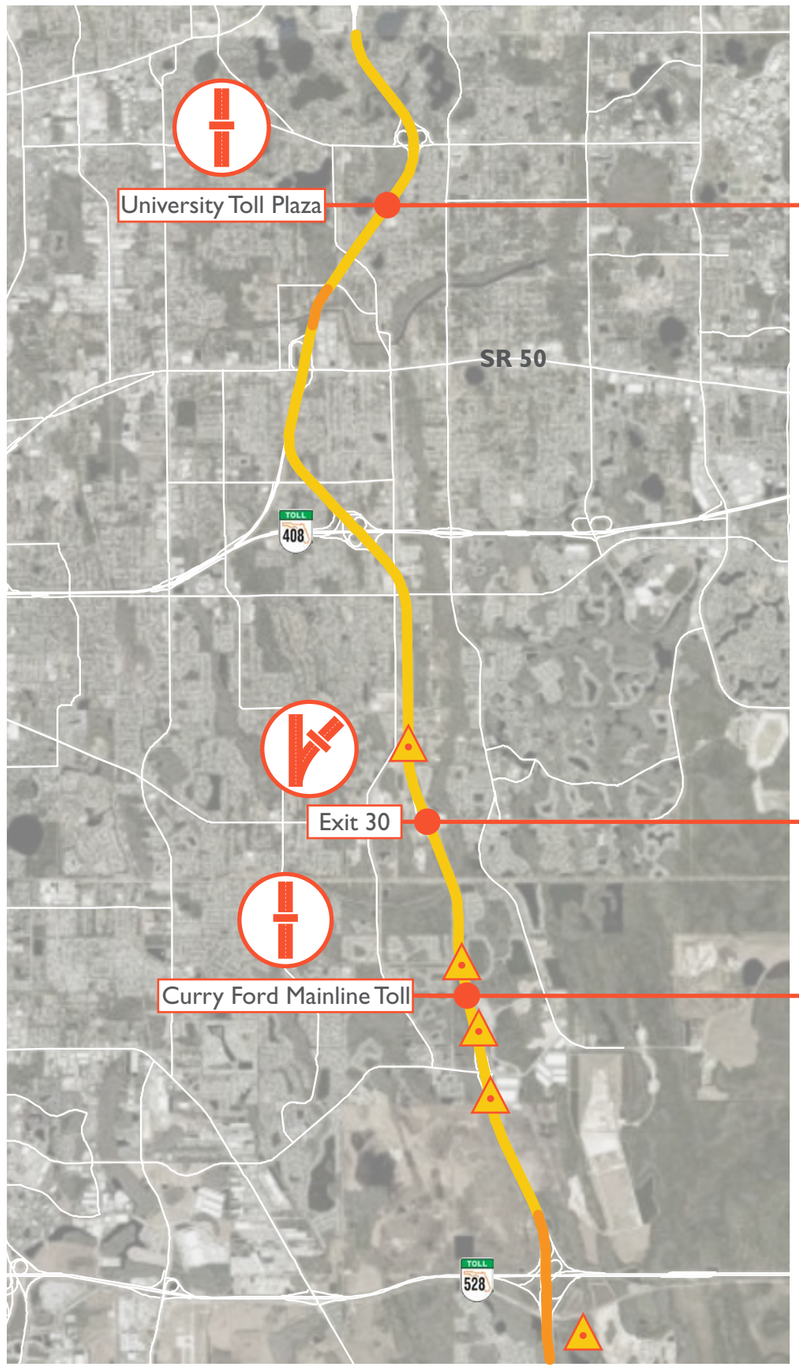


Figure 4.4 SR 417 High Intensity north of SR 528

NOTES

The high-intensity landscapes of SR 417 are present at mainline and ramp plazas, as well as interchanges. The aesthetic quality and vegetative health vary, ranging from average to excellent.

Table 4.1 SR 417 North of SR 528 Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• Naturalized buffer treatment • Great established canopy • Plants are in good condition • Refresh groundplane • Gateway into Curry Ford could be used as an example for planting	• Expanses of sod • Plumbago is hidden from driver's view • Erosion • Lack of canopy by bridges

TYPOLOGY AND INTENSITY LEGEND

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

HIGH INTENSITY - SOUTH OF SR 528

Figure 4.5 SR 417 Landscape Intensity South of SR 528

NOTES

The high-intensity landscapes along SR 417 are observed at mainline and ramp plazas and interchanges. The aesthetic quality and vegetative health within these areas vary, spanning from average to excellent.

Table 4.2 SR 417 South of 528 Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• Diverse ecological presence established • Large canopy and bed areas • Well maintained landscapes • New sound walls	• Needing better maintenance and cohesive design approach • Groundcover is dated • Update plantings around till plazas • Erosion on embankment • Utility/construction work

Construction Alert

TYPOLOGY AND INTENSITY LEGEND

INTERCHANGE | BRIDGE | MAINLINE TOLL GANTRY | TOLL RAMP | CORRIDOR

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

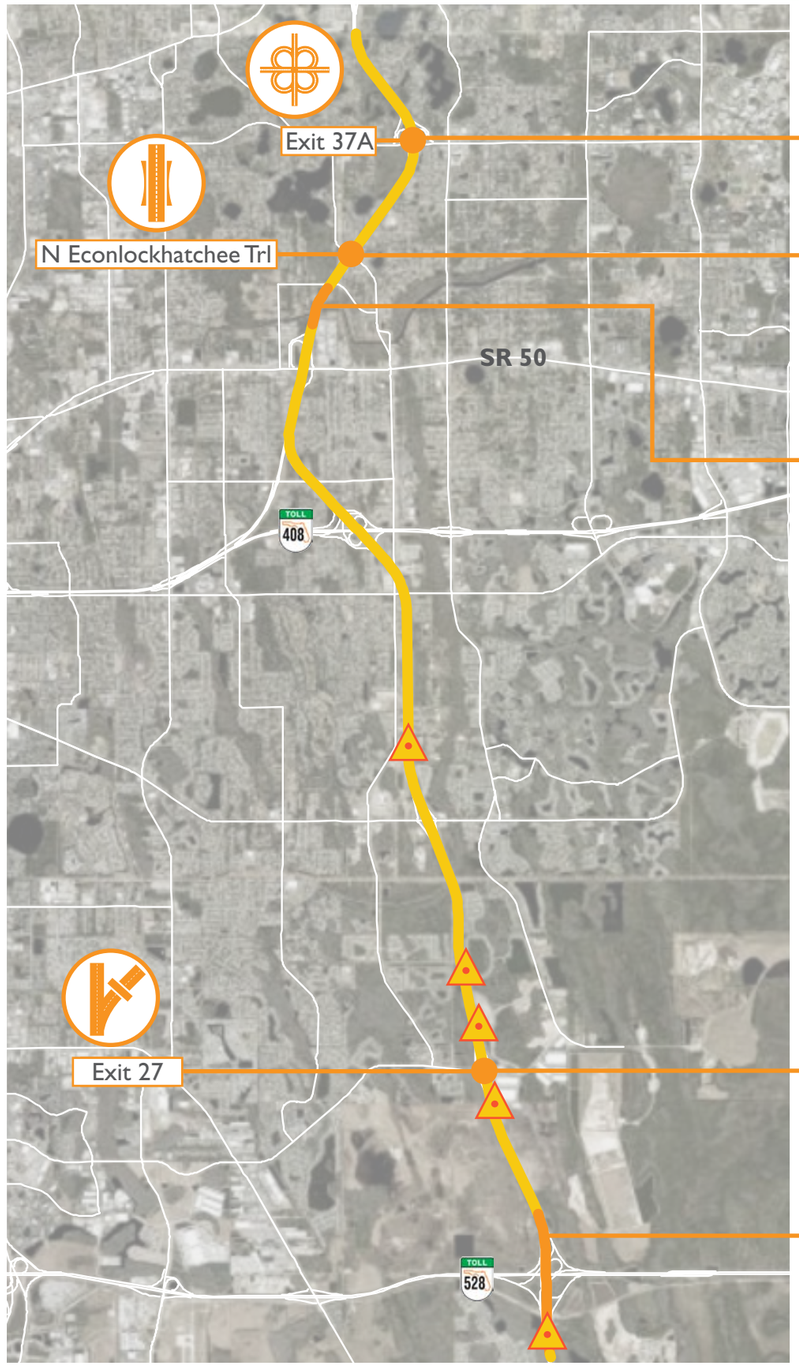
Image 4.1
SR 417 at International Dr

Image 4.2
SR 417 at Curry Ford Mainline Gantry

Image 4.3
SR 417 at Boggy Creek Mainline Plaza

Image 4.4
SR 417 at Curry Ford Rd

MEDIUM INTENSITY - NORTH OF SR 528



Nice palms on embankment, groundcover refresh and embankment plantings needed, nice adjacent retention area treatment

Good canopy, groundcover refresh needed, embankment plantings needed, borrowed views to adjacent wetland, retention area planting opportunity

Sabal palms, oleander and cordgrass in the median, pockets of pines on bridge overpass

Good canopy, groundcover refresh needed, landscape outside of toll plaza, borrowed views to adjacent wetland, retention area planting opportunity

Good use of sabal palms and pines, beds of oleander and ornamental grasses need to be refreshed, invasive plants species are choking pines and understory in naturalized areas

Construction Alert

Figure 4.6 SR 417 Medium Intensity North of SR 528

NOTES

The medium-intensity landscapes along SR 417 are situated at ramp plazas, bridges, and interchanges. The aesthetic quality and vegetative health within these areas exhibit a spectrum ranging from poor to excellent.

Table 4.3 SR 417 North of 528 Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• Great canopy • Borrowed views of adjacent wetland • Nice plant pallete established • Enhance littoral edge plantings • Refresh groundplane	• Groundplane needs to be updated • Firebush is overgrown under live oaks • Erosion on embankments • Steep, mowed littoral edge • Invasive plants

TYPOLOGY AND INTENSITY LEGEND

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

Figure 4.7 SR 417 Medium Intensity South of SR 528

NOTES

The medium-intensity landscapes along SR 417 are found at ramp plazas, bridges, and interchanges. Within these areas, the aesthetic quality and vegetative health vary, spanning from poor to excellent.

Table 4.4 SR 417 North of 528 Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• Plants appear healthy • Great canopy • Grasses need to be refreshed • Gateway enhancements • Opportunity for plantings on embankment	• Below average maintenance • Construction on mainline

TYPOLOGY AND INTENSITY LEGEND

Construction Alert

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

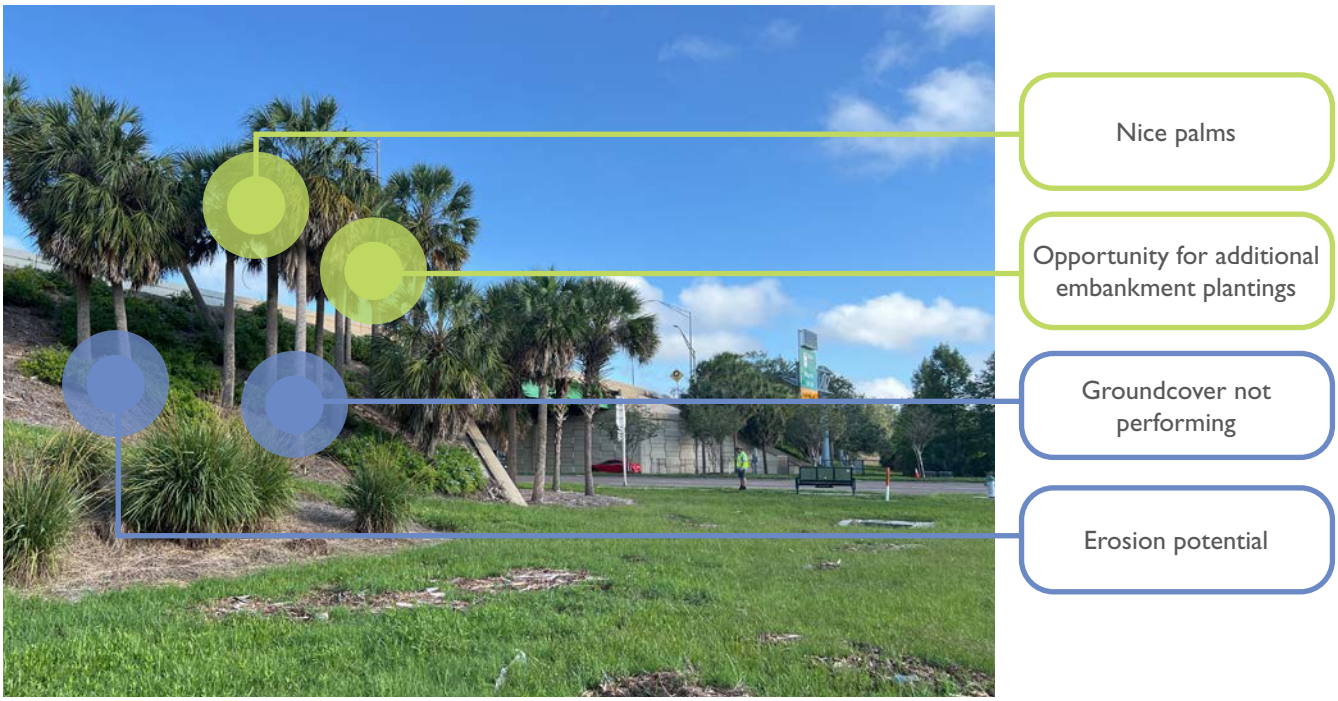


Image 4.5
SR 417 at University Blvd

Image 4.6
SR 417 at LeeVista Blvd

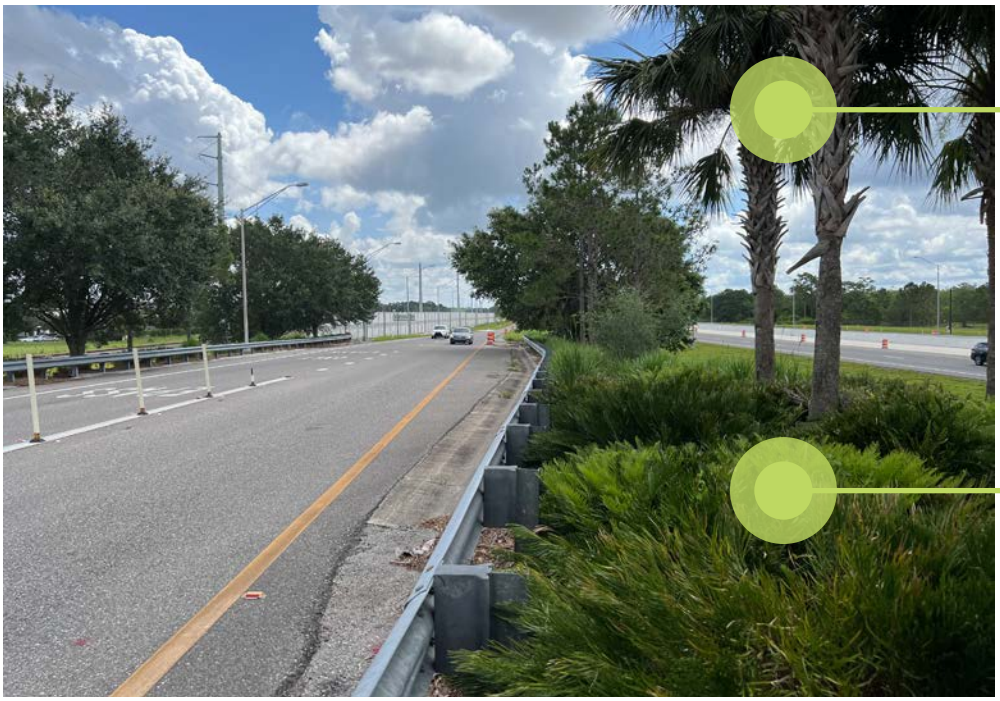


Image 4.7
SR 417 at Lake Nona Blvd

Image 4.8
SR 417 at Lake Nona Blvd

LOW INTENSITY - NORTH OF SR 528

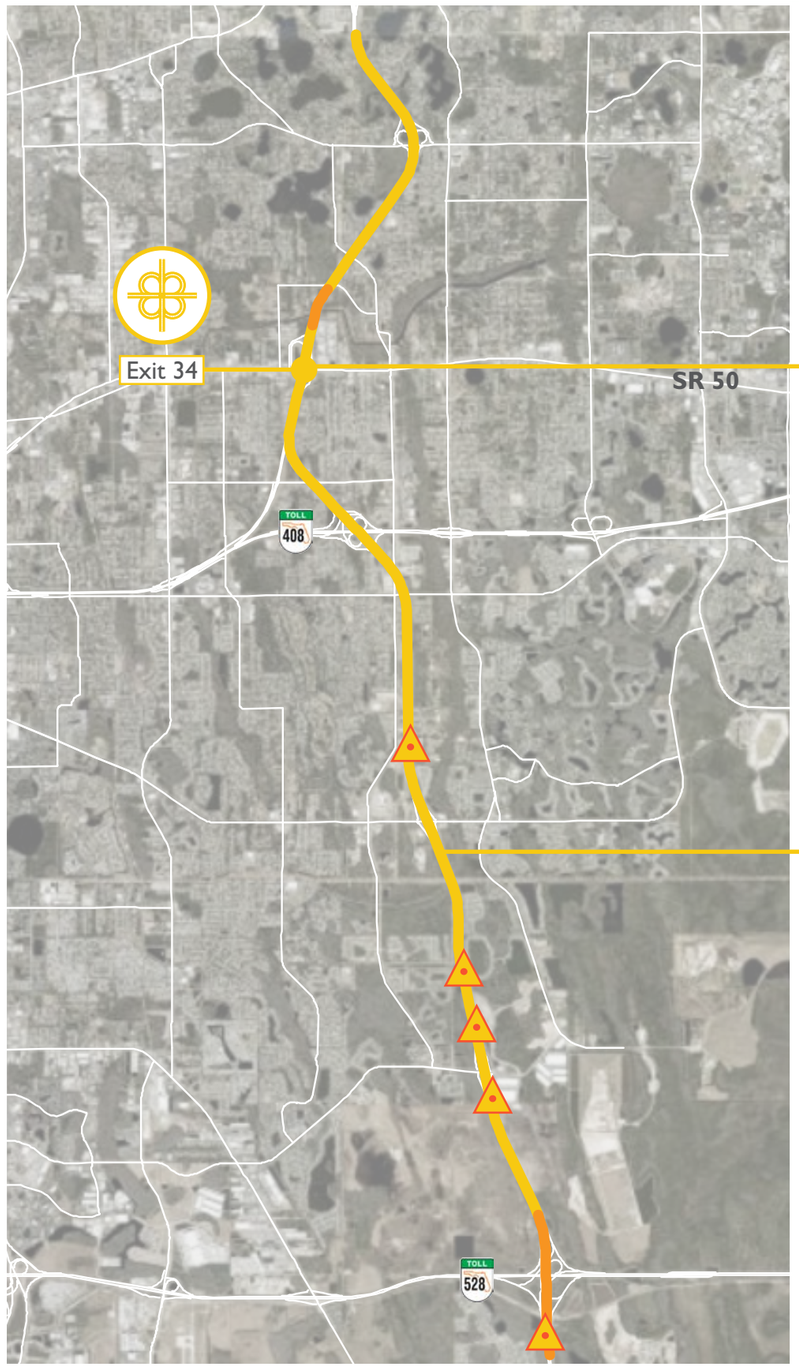


Figure 4.8 SR 417 Low Intensity North of SR 528

NOTES

The low-intensity landscapes of SR 417 are present at mainline and ramp plazas, bridges, interchanges, and the mainline corridor. Within these areas, the aesthetic quality and vegetative health vary from poor to average.

Table 4.5 SR 417 North of 528 Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• Simple plant pallete • Vegetate corridor	• Expansive use of Bahia

TYPOLOGY AND INTENSITY LEGEND

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

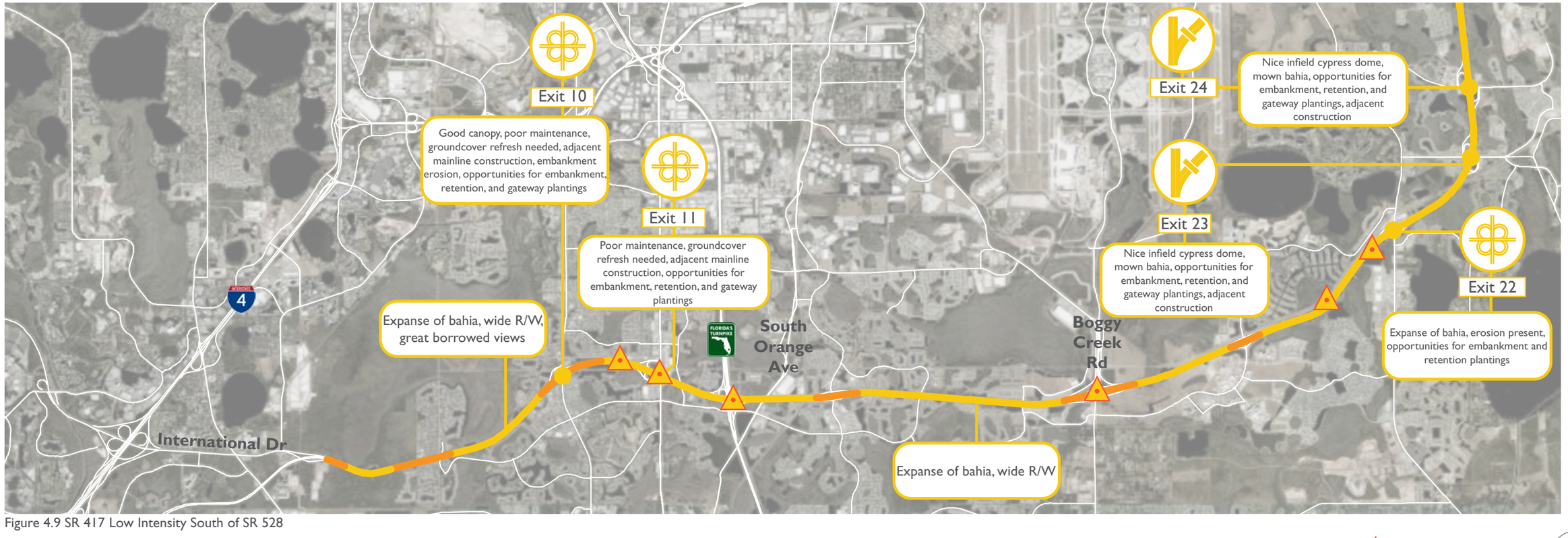


Figure 4.9 SR 417 Low Intensity South of SR 528

NOTES

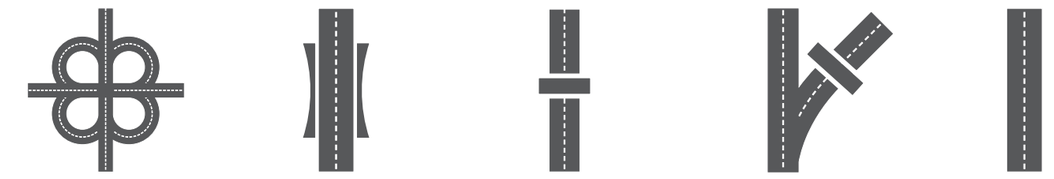
The low-intensity landscapes along SR 417 are situated at mainline and ramp plazas, bridges, interchanges, and the mainline corridor. The aesthetic quality and vegetative health within these areas exhibit a range from poor to average.

Table 4.6 SR 417 South of 528 Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• Great established trees • Borrowed views of cypress domes and multi-use trail adjacencies • Nice utilization of tree saves • Opportunity for embankment, stormwater, and gateway plantings • Groundplane refresh needed • Vegetate corridor	• Minimal maintenance • No littoral edge at Dowden Rd toll ramp • Construction present • Embankment erosion

TYPOLOGY AND INTENSITY LEGEND

Construction Alert



HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

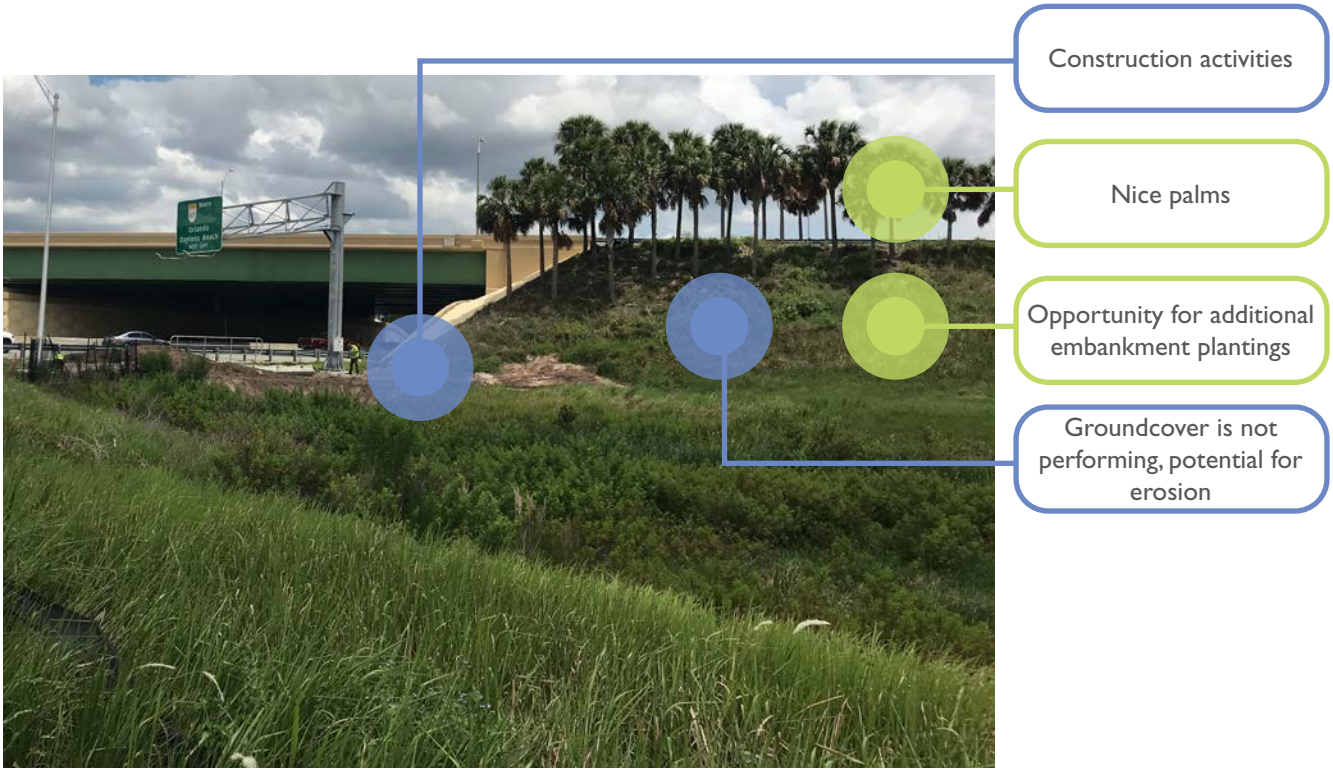


Image 4.9
SR 417/SR 423 Interchange

Image 4.10
SR 417/Dowden Rd

Image 4.11
SR 417 at Moss Park Rd

Image 4.12
SR 417 at Moss Park Rd

SR 417 OVERALL TAKEAWAYS

- From a landscape perspective, the 417 is characterized as minimal and functional.
- Along the R/W, residential communities back up to the expressway, featuring tall screen walls buffering adjacent homes with little or no landscape with buffer opportunities.
- Moving south, the expressway gives a sense of openness and expansiveness, lacking landscape features.
- The 417/528 interchange, despite having an established canopy, exhibits areas where the lack of maintenance has permitted invasive plants to establish themselves. Vines have climbed into established pines, and the understory is overgrown.
- The entire stretch of the 417 presents an opportunity for enhancing the landscape program.
- Newly installed buffer walls along the right-of-way, with ongoing construction, mown bahia to the R/W is the landscape standard.

Summary diagrams (Figure 4.10) visualize how each corridor scored in the field.

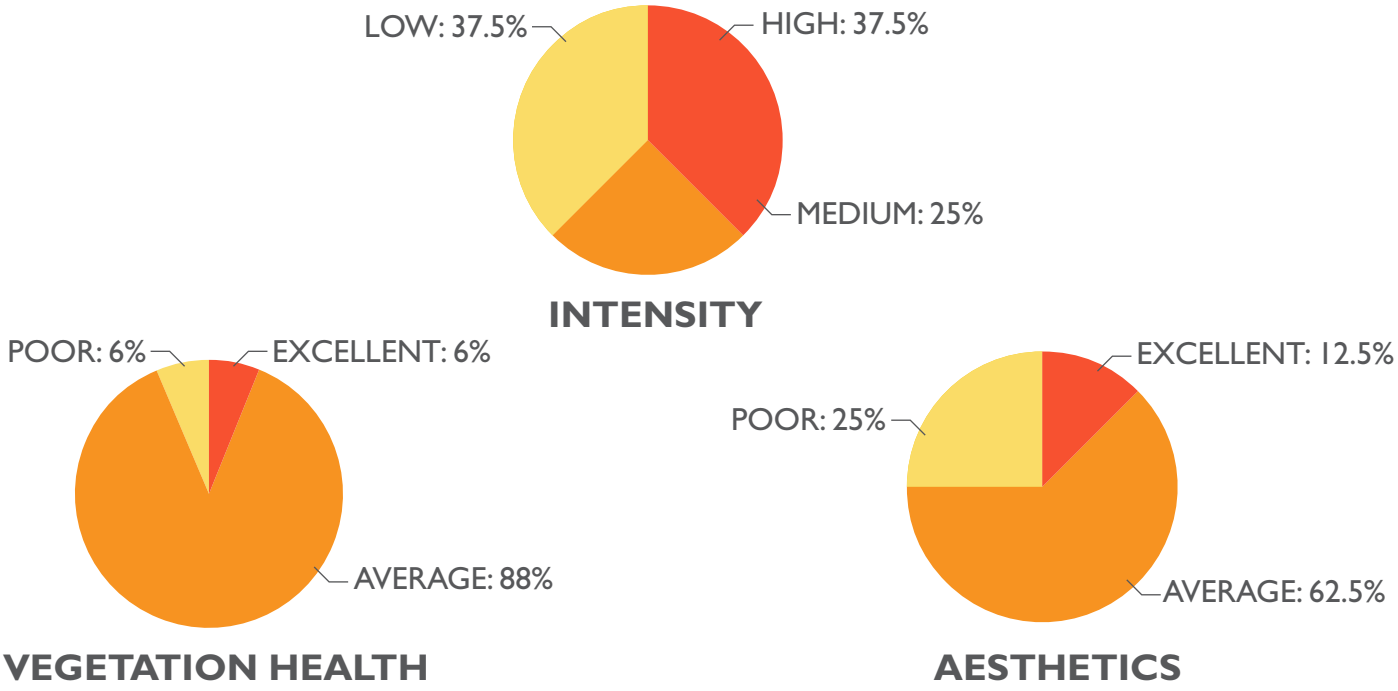


Figure 4.10 SR 417 Overall Takeaways

TYPICAL PLANT PALETTE

High Intensity Mix: Live Oak, Slash Pine, Bald Cypress, Sabal Palm, Pickerel, Cordgrass, Plumbago, Oleander, Pindo Palm, Fakahatchee, Coontie, Indian Hawthorn, Ilex Vomitoria, Crepe Myrtle, Loropetalum, Juniper, Jasmine, Ginger, Bahia, Laurel Oak, Lily, Viburnum, Dwarf Palmetto

Medium Intensity Mix: Coontie, Sabal Palm, Live Oak, Ilex Vomitoria, Slash Pine, Fakahatchee, Spartina, Magnolia, Walter's Viburnum, Saw Palmetto, Plumbago, Jasmine, Sabal Minor, Sweet Bay Magnolia, Firebush

Low Intensity Mix: Slash Pine, Sabal Palm, Oleander, Fakahatchee, Bald Cypress, Sweet Bay Magnolia, Bahia, Elm, Plumbago

PLANT PALETTE COMMENTS

- Live oak, sabal palm, and pine canopies are established and in good health. Cordgrass and muhly need replacement.
- Fakahatchee is performing well.
- Existing groundcover plant material is reaching the end of life and ready for a refresh.
- Saw palmetto, firebush, and coontie are standouts in this segment.
- Construction activities have reduced maintenance in areas of the corridor.
- The southern leg of the corridor is a wide-open blank palette of bahia fields and sound walls.
- Understanding the plant material successes on existing areas will be key for landscape design post-construction.

CHAPTER 5:
SR 429 CORRIDOR

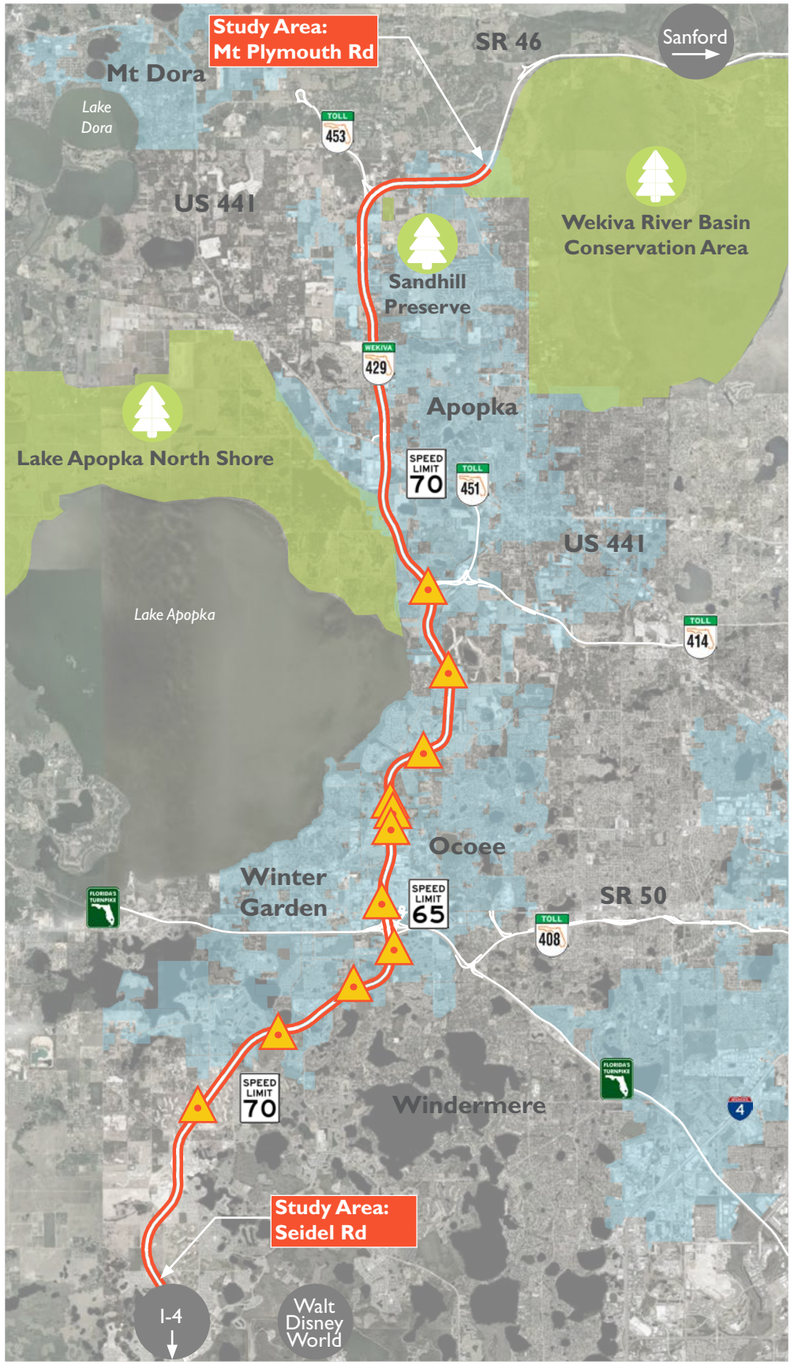
Traveling through this stretch of the beltway offers expansive and ever-changing views of the rolling sandy hills in west Orange County. Once home to vast orange groves, the landscape has transformed into a dynamic mix of forested pine, pasture, and the villages of Horizon West. The journey unfolds with wide-open views of mown Bahia to the right-of-way. The village of Hamlin at Independence Parkway comes into view, with retail offerings and the rhythmic pattern of residential rooftops passing by. Canopies of pines, palms, and occasional oak clusters provide a respite from the open expanses. Mixed wetland forests emerge, featuring cypress trees and vibrant red maples and sweetgum glimpsed for fleeting moments.

As the expressway transitions to the Turnpike, the landscape contrasts with CFX's natural and native palette. Tall date palms and the silver hue of Bismark palms mark the gateway. Further north, open views to industrial rooftops prevail. Borrowed views unveil mixed hardwood forests and pasture, with established oak and pine canopy buffering views from the Forest Lake Golf Club. The Forest Lake plaza is framed by mature oaks and sabal palms, creating a punctuation in the wide-open expanse. Continuing north, occasional glimpses of Lake Apopka and open pasture with greenhouses catch the eye.

Ascending through the 414 towards 441, there is a notable shift in landscape treatment integrated into the expressway. Dense groves of pines, interspersed with cedars and oaks, form a maturing mixed heavy canopy that effectively buffers and frames views. Lone oaks stretch their branches, adding punctuations to the expression. Planted pine and citrus groves complement the expressway experience. The Lake Apopka basin becomes prominent, showcasing its vast expanse of freshwater marsh.

The Wekiva Parkway stands out as the natural jewel of the expressway system. Natural medians, landscape features, and well-designed hardscape finishes enhance the parkway experience. The gateway heading north from 441 is heavily landscaped, featuring sweeping beds and mixed canopy. Expansive parkway edges are planted with widely spaced trees, promising future framing and buffering as they mature. The rolling topography, bridge crossings over wildlife corridors, and sweeping curves accentuate the parkway driving experience, passing through pastureland, planted pine forests, and over dry and wet prairies framed by distant hardwood forests.

OVERALL CORRIDOR



LEGEND

- SR 429 Study Corridor
- Major Roads
- Municipal Boundaries
- Open Space
- Construction Alert

Figure 5.1 SR 429 Overall Corridor

SR 429

AT A GLANCE

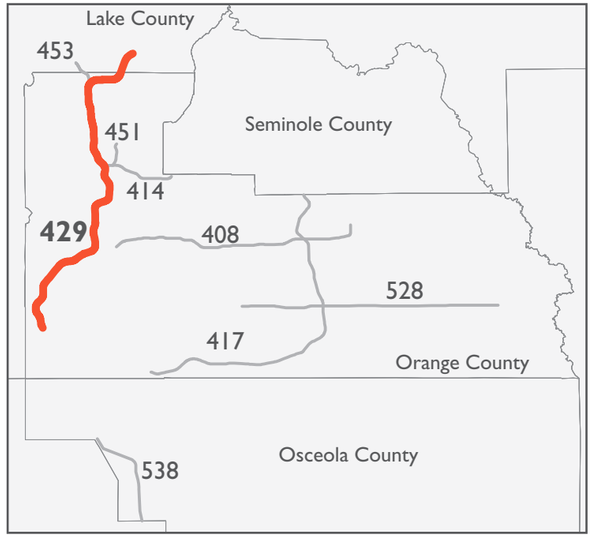
- The study area is approximately 32 miles.
- Nickname: Daniel Webster Western Beltway
- SR 429 offers an alternative north-south route to I-4 while improving connectivity to the Florida Turnpike.
- SR 429 becomes the Wekiva Parkway at the 441 interchange. The scenic parkway provides travel alternatives to congested area roads and relieves U.S. Highway 441 and State Road 46.

Traffic Count:

- AADT: 68,000 (Seidel Rd to SR 438)
- AADT: 61,000 (SR 438 to SR 414)
- AADT: 10,500 (SR 414 to SR 46)

Adjacent Character:

- Urban, suburban, rural and natural



Context Map

LANDSCAPE INTENSITY

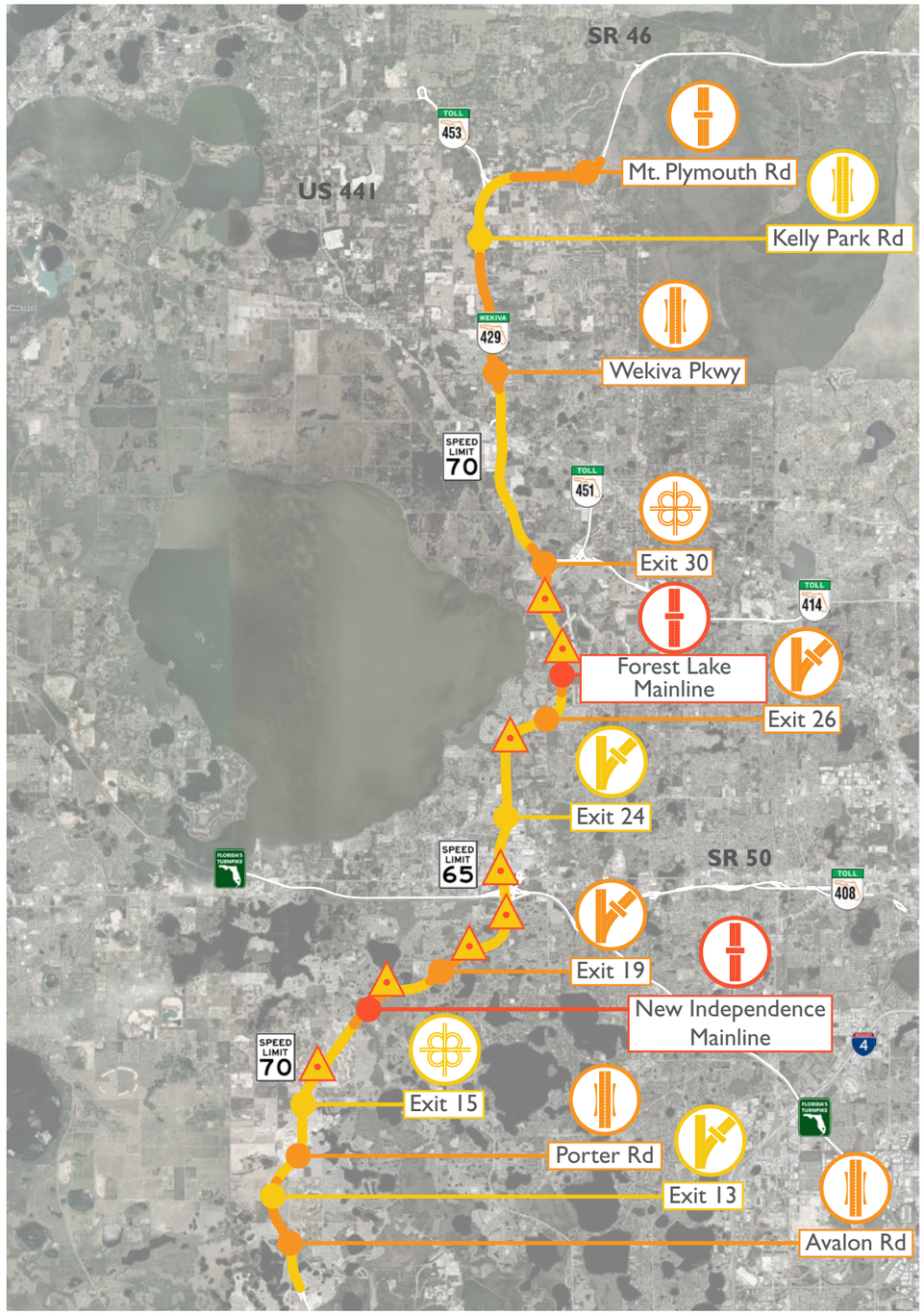


Figure 5.2 SR 429 Landscape Intensity

LANDSCAPE INTENSITY

Traveling north from Seidel Rd, the 429 passes through a low-intensity corridor, with canopy massing at the Avalon Rd and Porter Rd overpasses. Interchanges and overpasses in this area typically exhibit low intensity. High-intensity landscapes are notable at the New Independence and Forest Lake mainline plazas. Most interchanges/bridges moving north from New Independence Pkwy show a medium level of intensity, featuring canopy and groundcover gateway plantings.

Construction north of the Turnpike is impacting intensity along the corridor and facilities. The 429/414 interchange comprises medium-intensity pine forests that follow the road movement, framing views and providing buffering and infill. As you proceed into the more rural Wekiva Pkwy, the corridor exhibits low to medium intensity in canopy placement. Medium-intensity embankment plantings at key bridge points create framing and erosion control.

The segment concluding at the Mount Plymouth mainline gantry, with its medium-intensity native palette landscape, serves as a noteworthy example of design and context awareness.

TYPOLOGY AND INTENSITY LEGEND

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

HIGH INTENSITY

Figure 5.3 SR 429 High Intensity

NOTES

The high-intensity landscapes of SR 429 encompass the mainline toll plazas, featuring aesthetic quality and vegetative health that vary from average to excellent.

Table 5.1 SR 429 High Intensity Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• High aesthetic value • High traffic locations • Densely planted around highly visual areas • Excellent vegetation health • Strong established plant pallet • Material infill in sparse areas	• Lacks detailed maintenance on the outskirts of each site • Plant health declining after a period of time • Installation age - end of life cycle

TYPOLOGY AND INTENSITY LEGEND

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

Image 5.1
SR 429 at New Independence Mainline Gantry

Image 5.2
SR 429 at New Independence Mainline Gantry

Image 5.3
SR 429 at New Independence Mainline Gantry

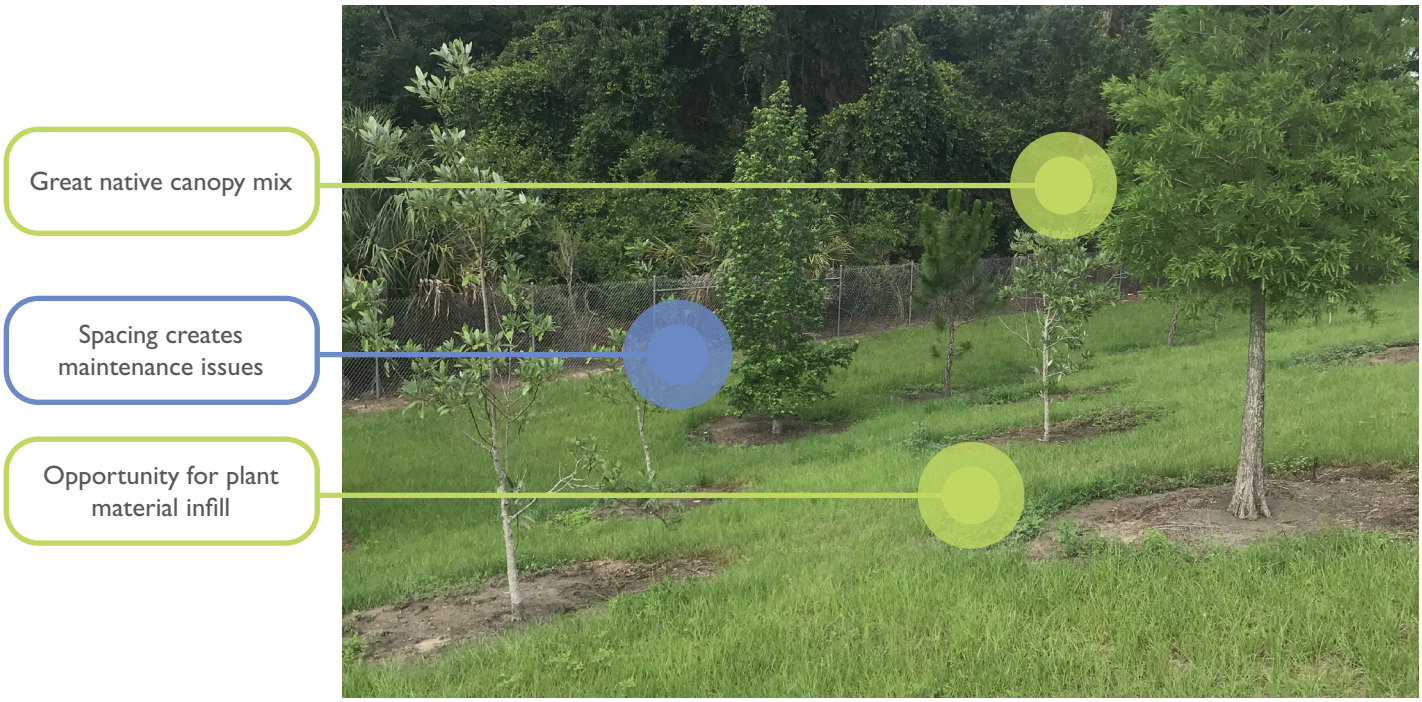


Image 5.4
SR 429 at Mt Plymouth Mainline Gantry

MEDIUM INTENSITY

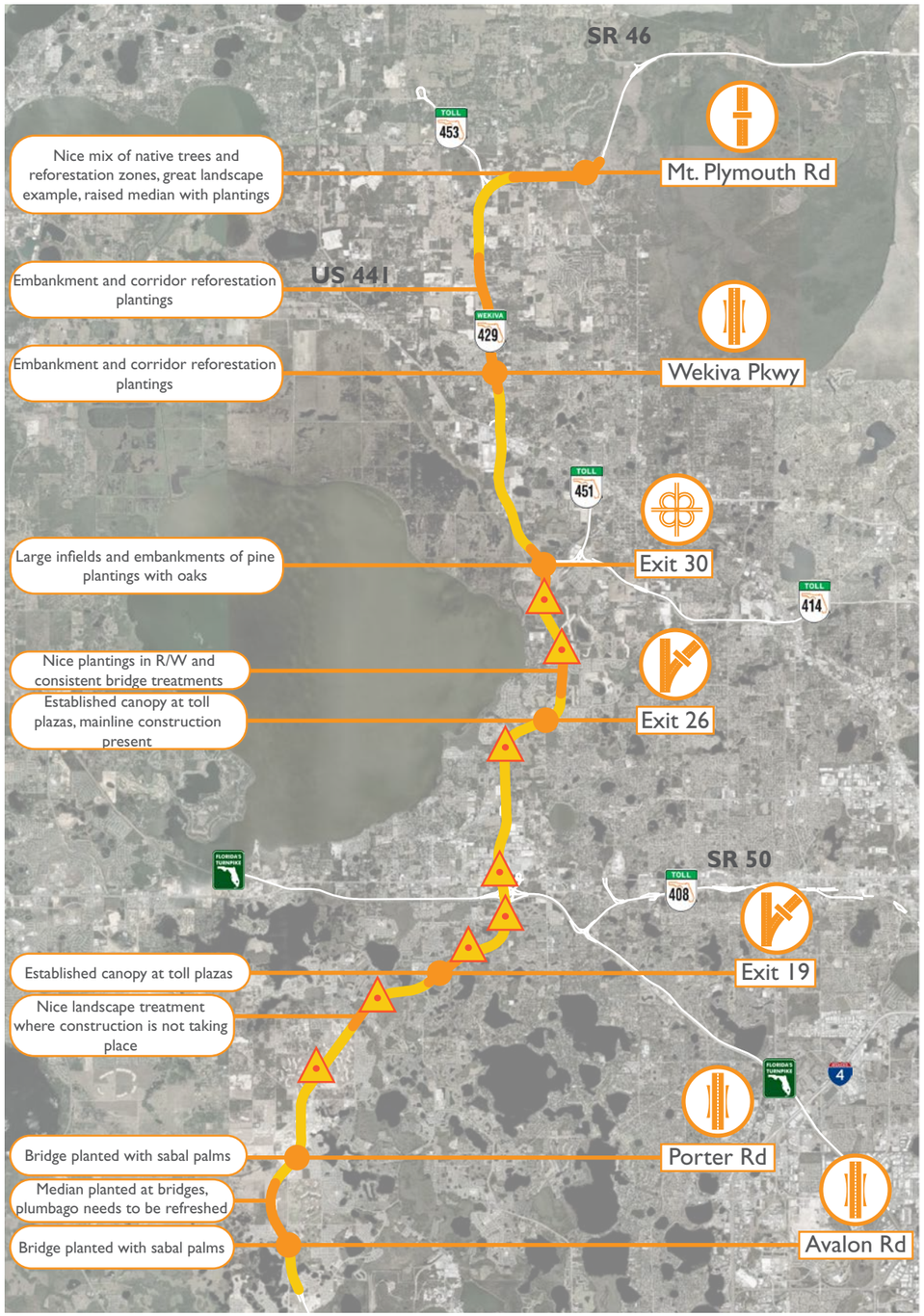


Figure 5.4 SR 429 Medium Intensity

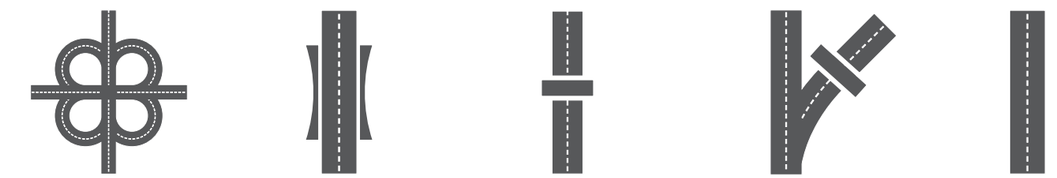
NOTES

The medium-intensity landscapes of SR 429 encompass mainline toll plazas, interchanges, toll ramps, and corridor treatments. The aesthetic quality and vegetative health within these areas vary, ranging from poor to excellent.

Table 5.2 SR 429 Medium Intensity Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• Presence of guardrails allow for tree plantings • Established plant groups • Established canopy • Swale offers opportunity to plant low maintenance • Green infrastructure and stormwater control measures	• Harsh conditions • Planting beds are not defined • Lacks detailed maintenance - edging, replacing plants and weeding existing vegetation • Washouts occur in beds planted with pine needles • Erosion • Trees planted in close proximity to each other; sod maintenance issues could arise

TYPOLOGY AND INTENSITY LEGEND



HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

Image 5.5
SR 429 at Porter Rd

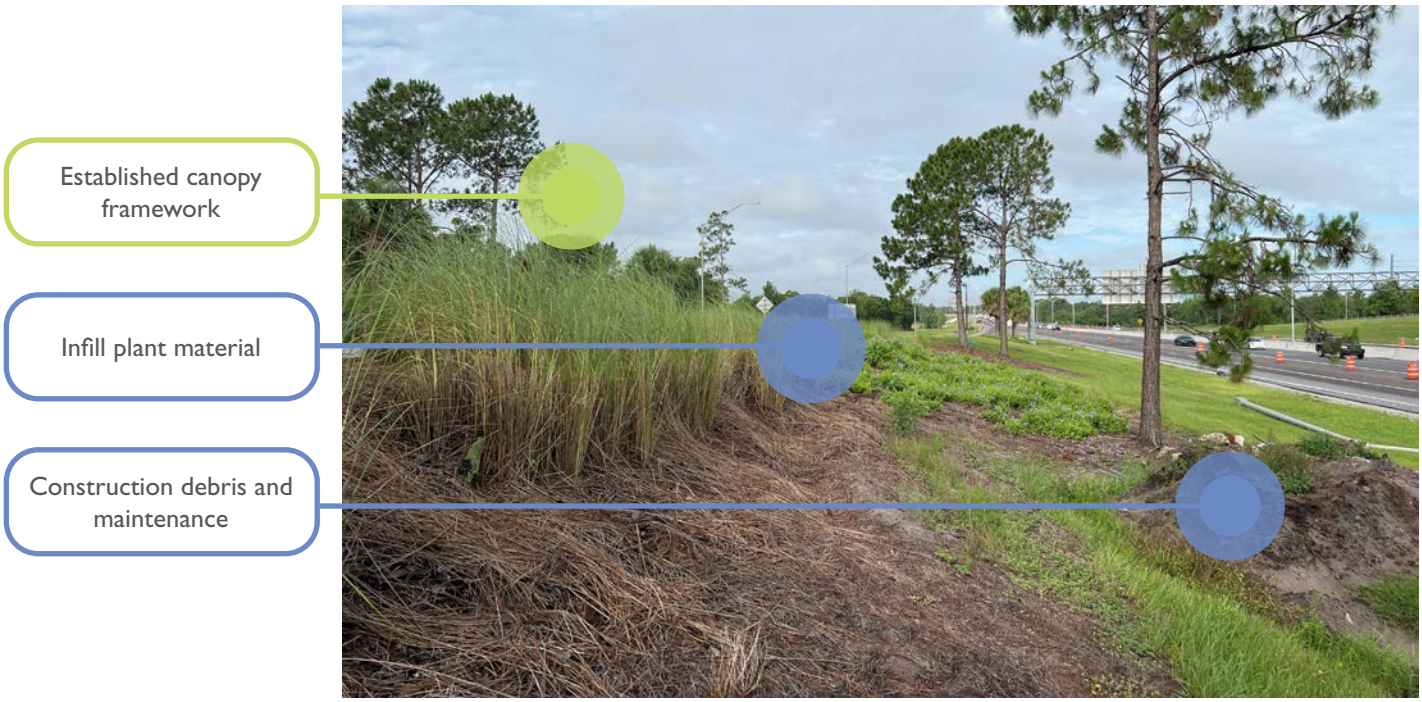


Image 5.6
SR 429 at Claracona Ocoee Rd

Image 5.7
SR 429 at Winter Garden Vineland

Image 5.8
SR 429 at Franklin St

LOW INTENSITY

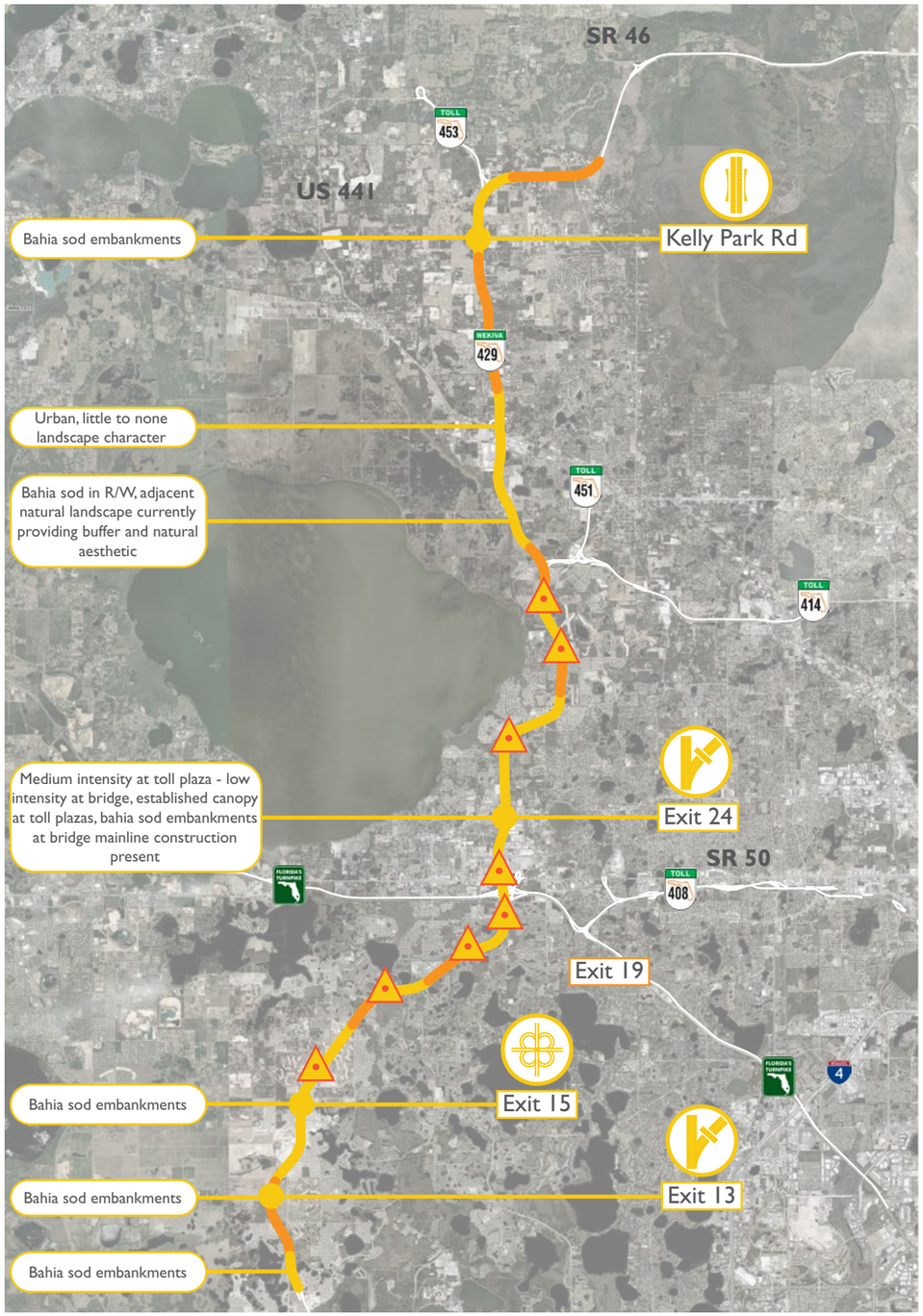


Figure 5.5 SR 429 Low Intensity

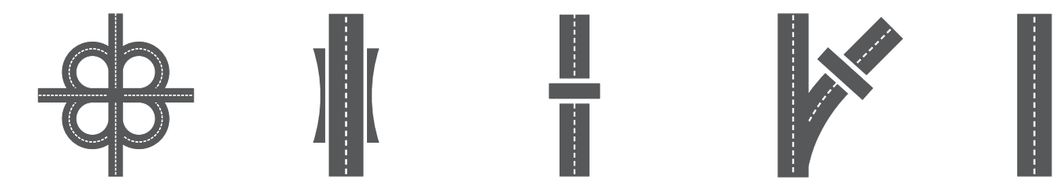
NOTES

The low-intensity landscapes of SR 429 consist of mainline toll plazas, bridges, interchanges, and corridor treatments. Within these areas, the aesthetic quality and vegetative health vary, ranging from poor to average.

Table 5.3 SR 429 Low Intensity Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• Healthy existing bahia sod • Highly visible spaces • Plant palette not yet established • Green infrastructure and stormwater control measures • Native low- maintenance wildflowers could add visual interest to non-accessible areas • No-mow meadows • Vegetate corridor	• Steep slopes • Drainage trends • Possible maintenance issues due to slopes • Erosion

TYPOLOGY AND INTENSITY LEGEND



HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

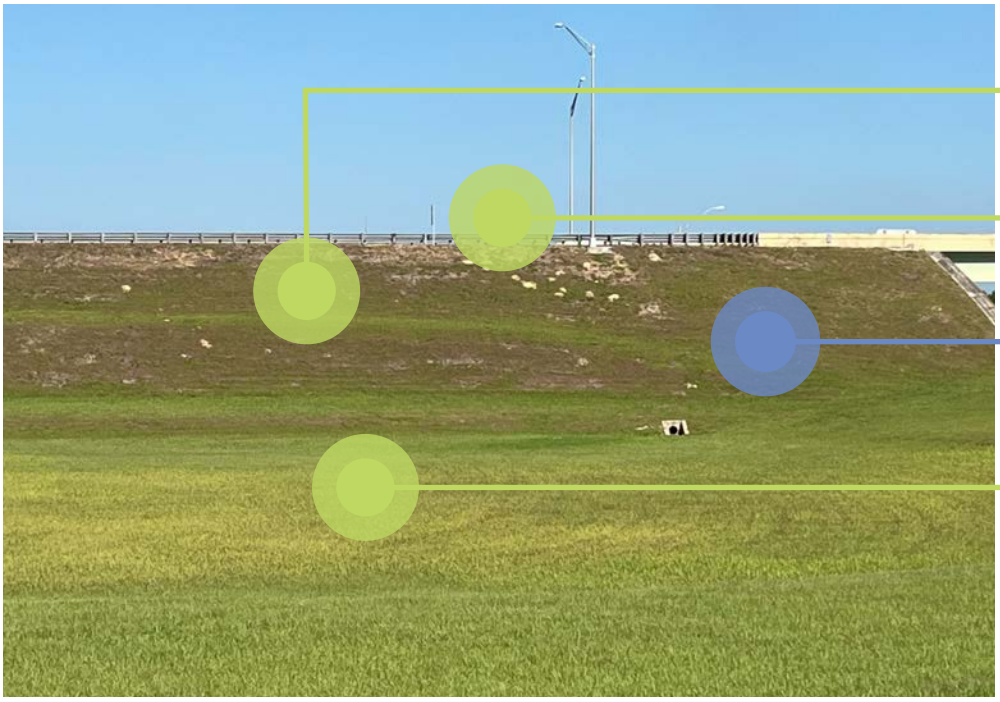


Image 5.9
SR 429 at Schofield Rd

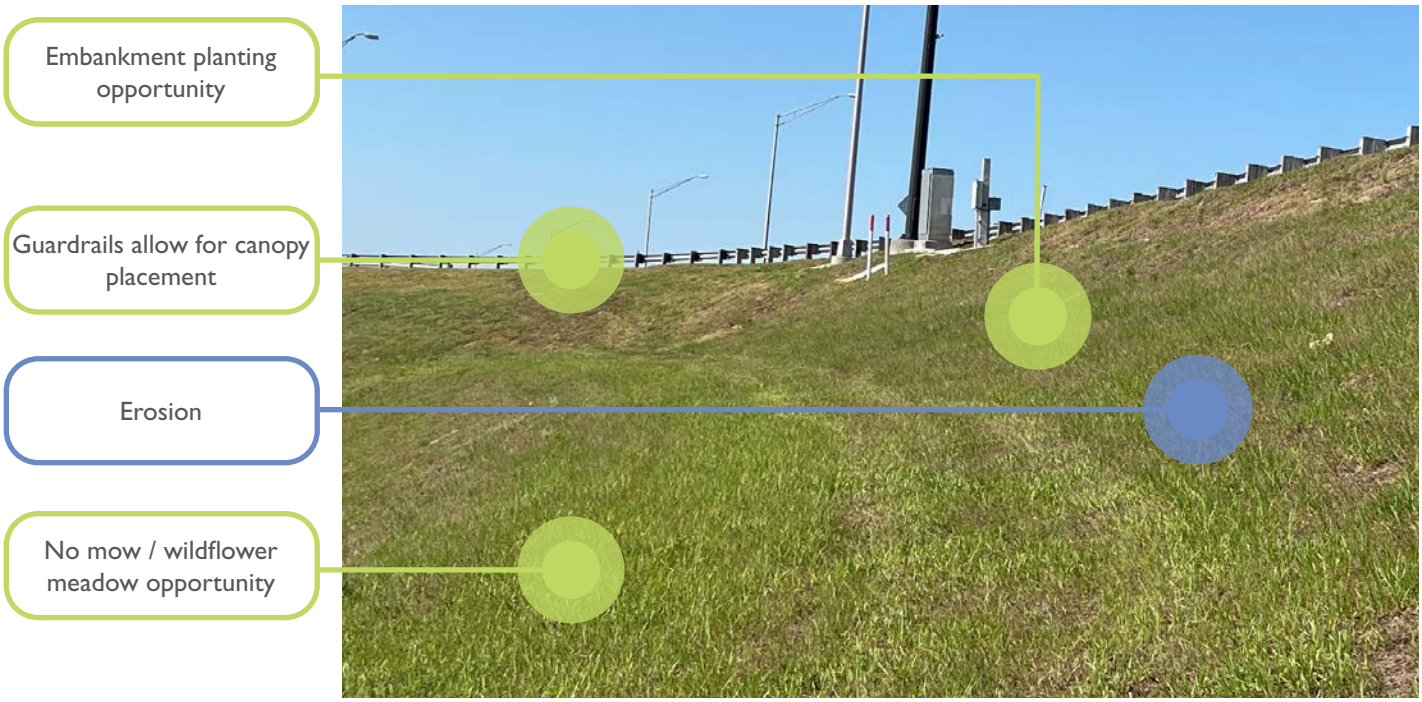


Image 5.10
SR 429 at Schofield Rd

Image 5.11
SR 429 at Kelley Park Rd

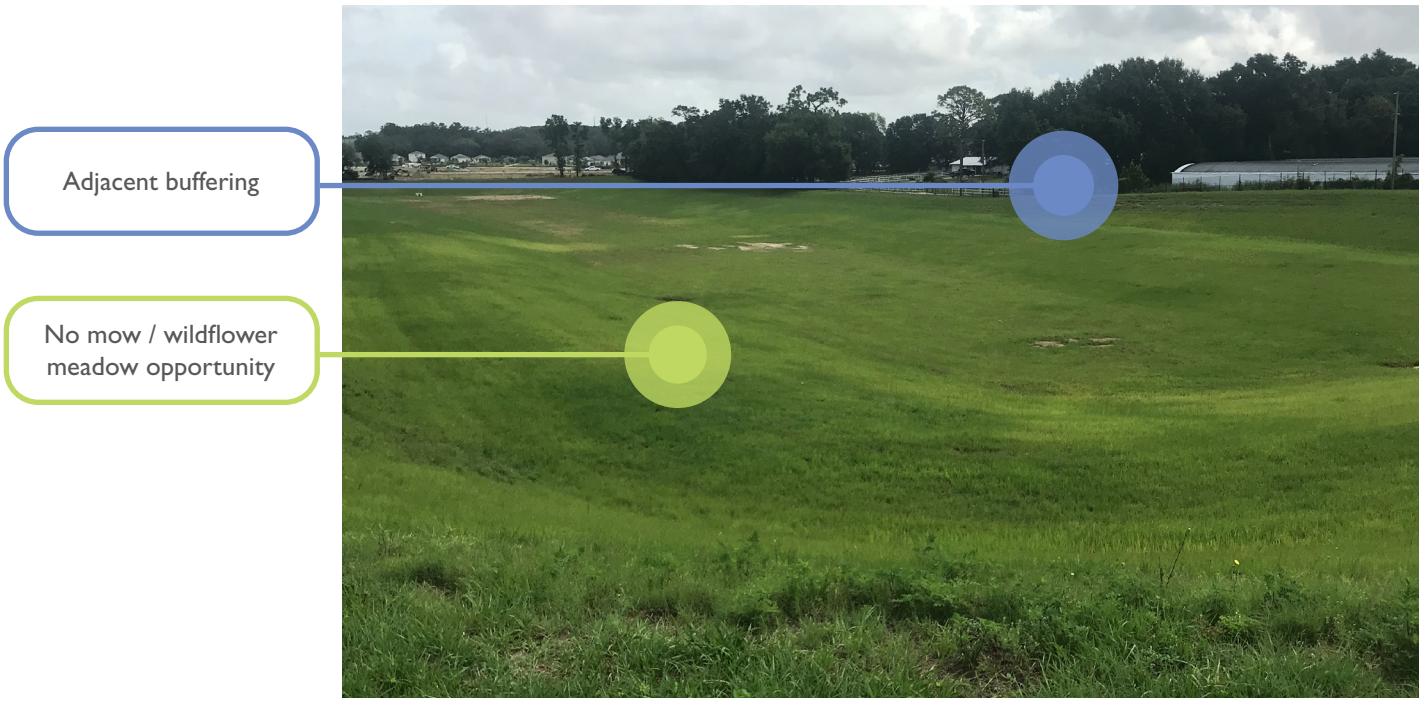


Image 5.12
SR 429 at Kelley Park Rd

SR 429
OVERALL TAKEAWAYS

- The landscape experience along the southern leg of the beltway is characterized by a wide-open expanse with mown bahia to the right-of-way.
- There are ample opportunities for improvement and contextually driven landscape responses.
- The gateway heading north from SR 414 is extensively landscaped.
- The expansive parkway edges are planted with young trees spaced widely apart, posing a challenge for mowing around each one.
- There is an opportunity for refining the tree planting technique by incorporating a mix of understory and smaller trees to achieve a more forested approach to establishment.

Summary diagrams (Figure 5.6) visualize how each corridor scored in the field.

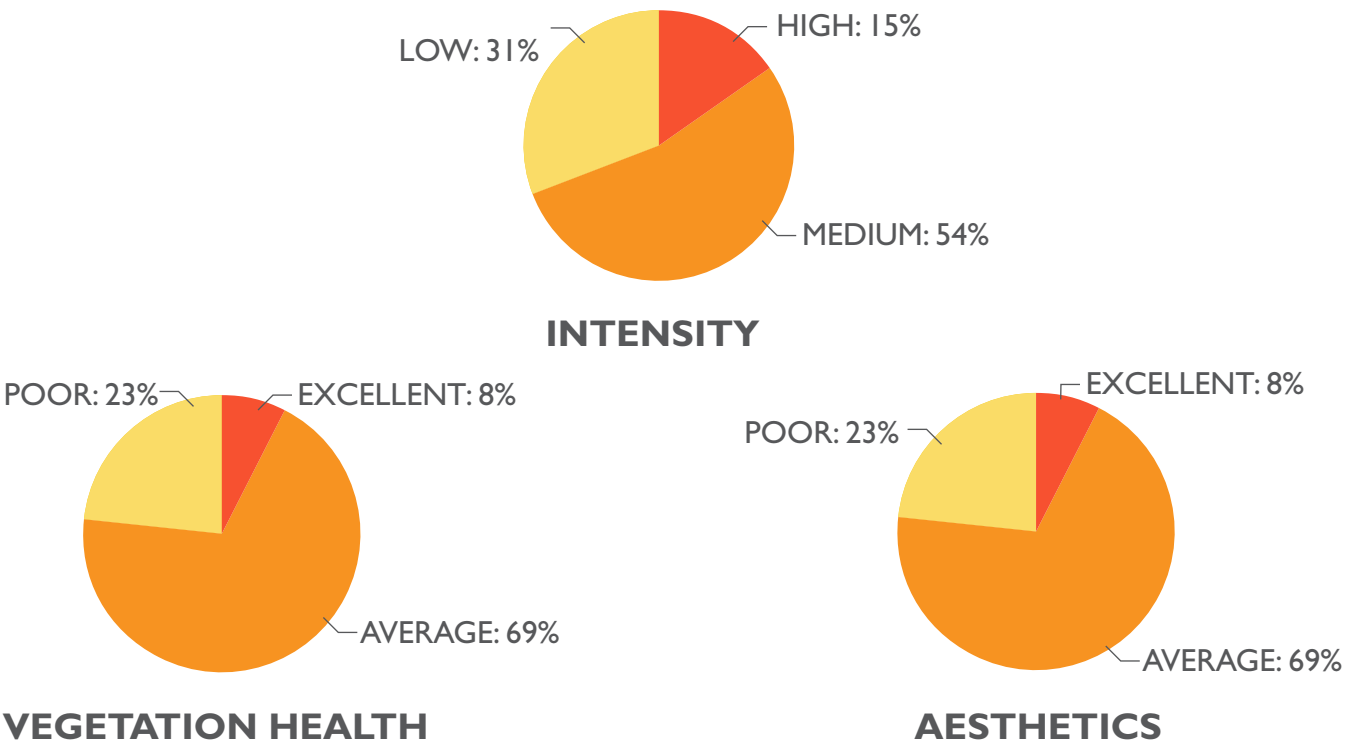


Figure 5.6 SR 429 Overall Takeaways

TYPICAL PLANT PALETTE

High Intensity Mix: Sabal Palm, Oleander, Firebush, Crepe Myrtle, Ginger, Indian Hawthorn, Juniper, Plumbago, African Iris, Live Oak, Fakahatchee, Viburnum, Cordgrass, Loropetalum, Slash Pine, Muhly Grass, Bald Cypress, Tulip Poplar, Sycamore, Sweet Bay Magnolia, Sweetgum, Saw Palmetto

Medium Intensity Mix: Bahia Sod, Sabal Palm, Oleander, Plumbago, Fakahatchee, Cordgrass, Live Oak, Slash Pine, Longleaf Pine, Coontie, Confederate Jasmine, Muhly Grass, Sycamore, Sweetgum, Firebush, Cedar, Bald Cypress

Low Intensity Mix: Bahia Sod

PLANT PALETTE COMMENTS

- Live oak, sabal palm, and pine canopies are established and in good health.
- Cordgrass and muhly grass need to be refreshed or replaced.
- Existing groundcover plant material is at the end of life and ready for a refresh.
- Saw palmetto and firebush are a standout in this segment.
- Construction activities have reduced maintenance in areas of the corridor.
- The southern leg of the corridor is a wide-open blank palette of bahia fields and embankments.
- Understanding the plant material successes on existing areas will be key for this area.

CHAPTER 6: SR 451 CORRIDOR

The landscape character of the 451 seamlessly aligns with the design principles of the 414. As you drive through the 451/414 interchange, the journey unfolds with the continued effective use of tightly spaced mixed pine and oak groves, creating buffers and framing the driving experience. The interchange is traversed swiftly, and between interchanges, the right of way opens up, revealing views of rooftops, rolling hills, planted pines, and wet prairies.

Approaching Orange Blossom Trail, the landscape matures, with pines stretching above the ramps, skillfully framing and buffering views. The spur provides access to Apopka and the charming neighborhoods nestled between Lake Apopka and the Wekiva River basin in northwest Orange County. This area is marked by rolling hills and offers a picturesque setting for residents.

OVERALL CORRIDOR

LEGEND

- SR 451 Study Corridor
- Major Roads
- Municipal Boundaries

Figure 6.1 SR 451 Overall Corridor

SR 451

AT A GLANCE

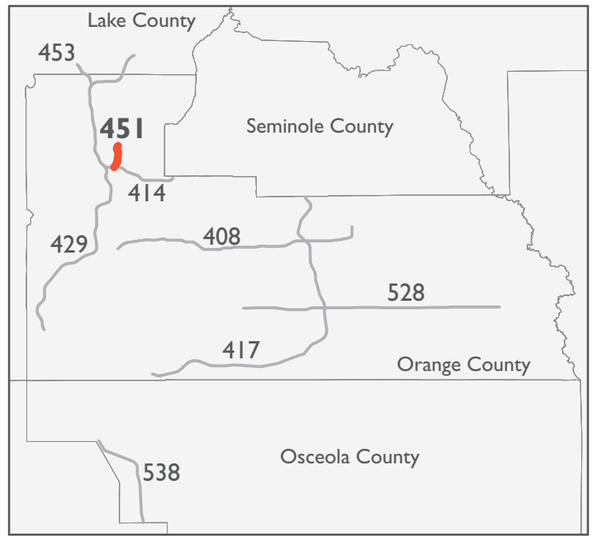
- The study area is 1.9 miles.
- SR 451 is the only non-tolled expressway within the CFX system. The roadway links SR 414 and SR 429 to US 441, State Road 451 is a frequently traveled route for commuters in northwest Seminole County and northeast Orange County.

Traffic Count:

- AADT: 13,000

Adjacent Character:

- Suburban, rural and natural



Context Map

LANDSCAPE INTENSITY

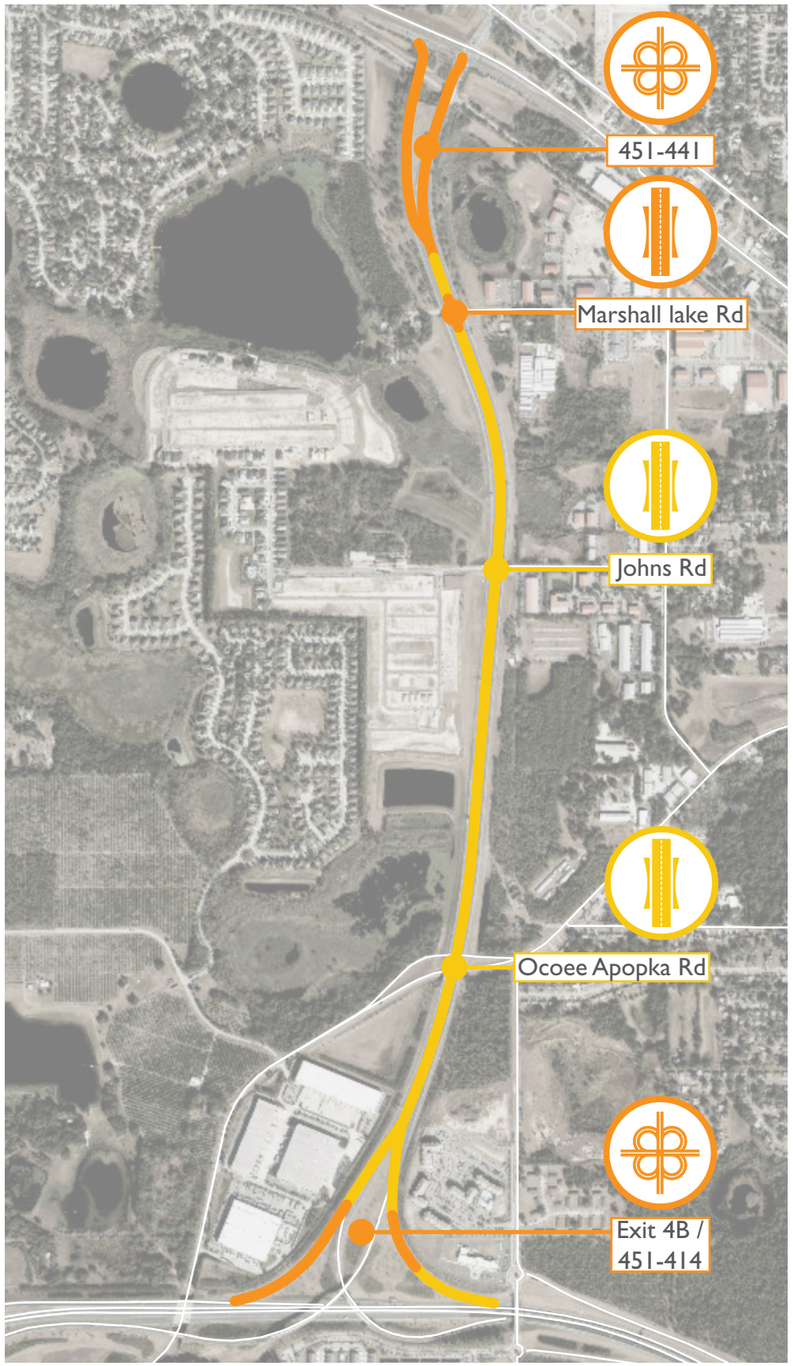


Figure 6.2 SR 451 Landscape Intensity

INTENSITY

The 451 spans a brief stretch, commencing at the 414/451 interchange and concluding at US 441 (Orange Blossom Trail). The corridor maintains a low intensity, with the landscape at the two terminus interchanges featuring medium intensities. The overpasses at Ocoee Apopka Rd and Johns Rd, as well as Marshall Lake Rd, exhibit low intensity, while the latter includes a medium intensity landscape with canopy.

TYPOLOGY AND INTENSITY LEGEND

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

MEDIUM INTENSITY

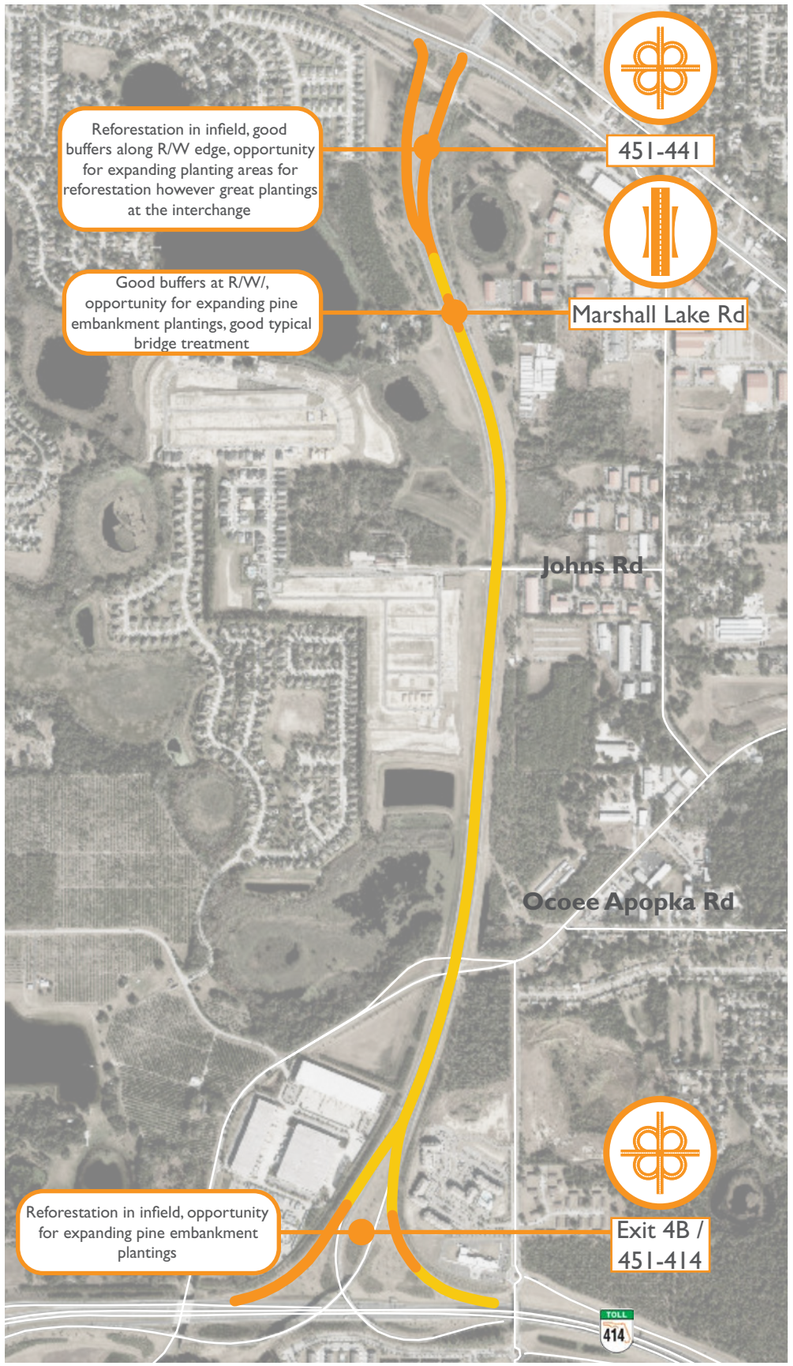


Figure 6.3 SR 451 Medium Intensity

NOTES

SR 451 features medium-intensity landscapes predominantly at its north and south ends, displaying exceptional aesthetic quality and robust vegetative health.

Table 6.1 SR 451 Medium Intensity Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• Great canopy and palms • No mow meadow/wildflower opportunities	• Grasses not performing well • Groundcover refresh needed • Erosion

TYPOLOGY AND INTENSITY LEGEND

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

Image 6.1
SR 451 at SR 414 Interchange

Image 6.2
SR 451 at SR 414 Interchange

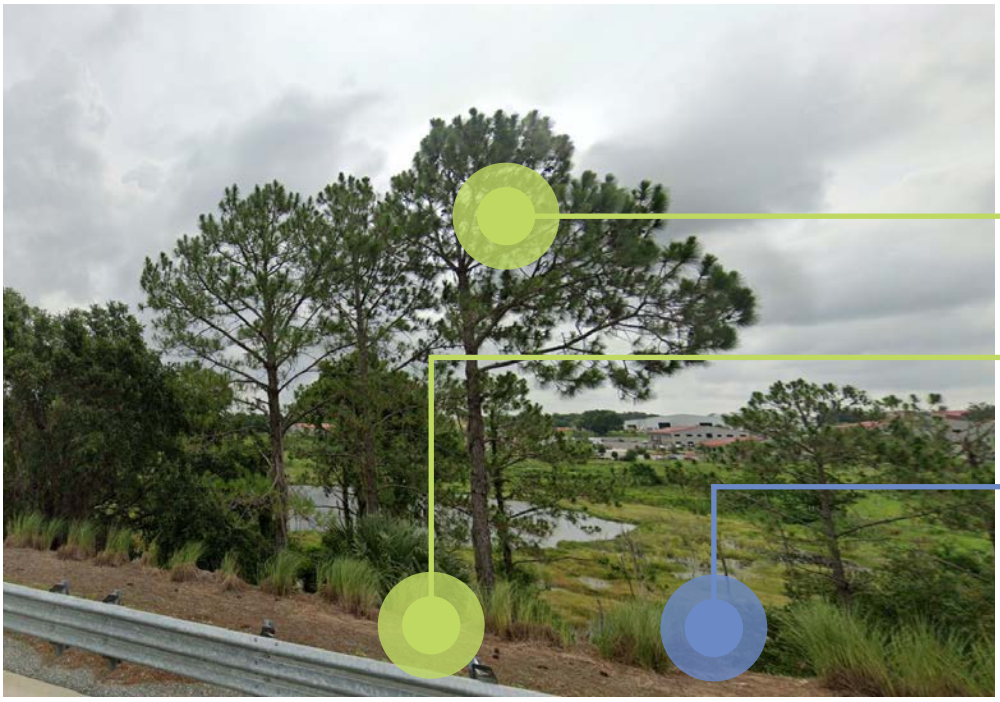


Image 6.3
SR 451 at Marshall Lake Rd

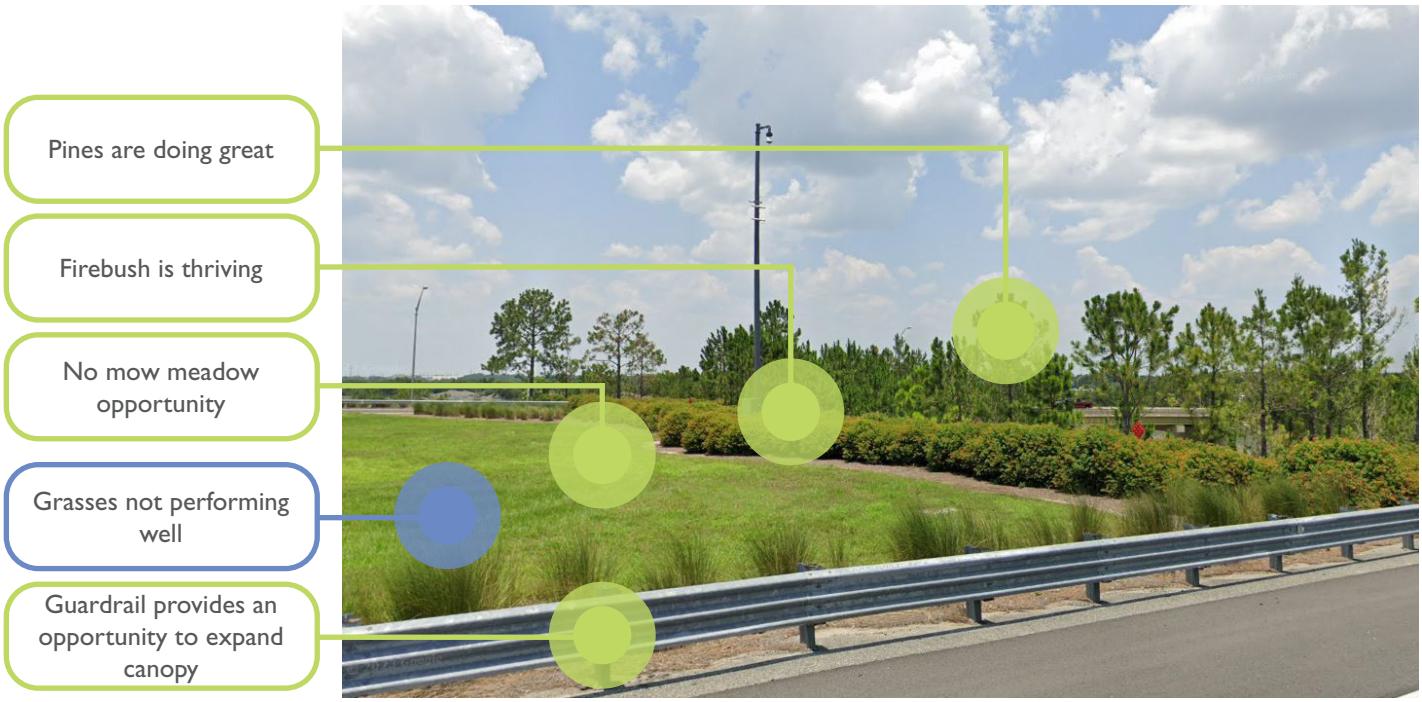


Image 6.4
SR 451 at US 441 Interchange

LOW INTENSITY

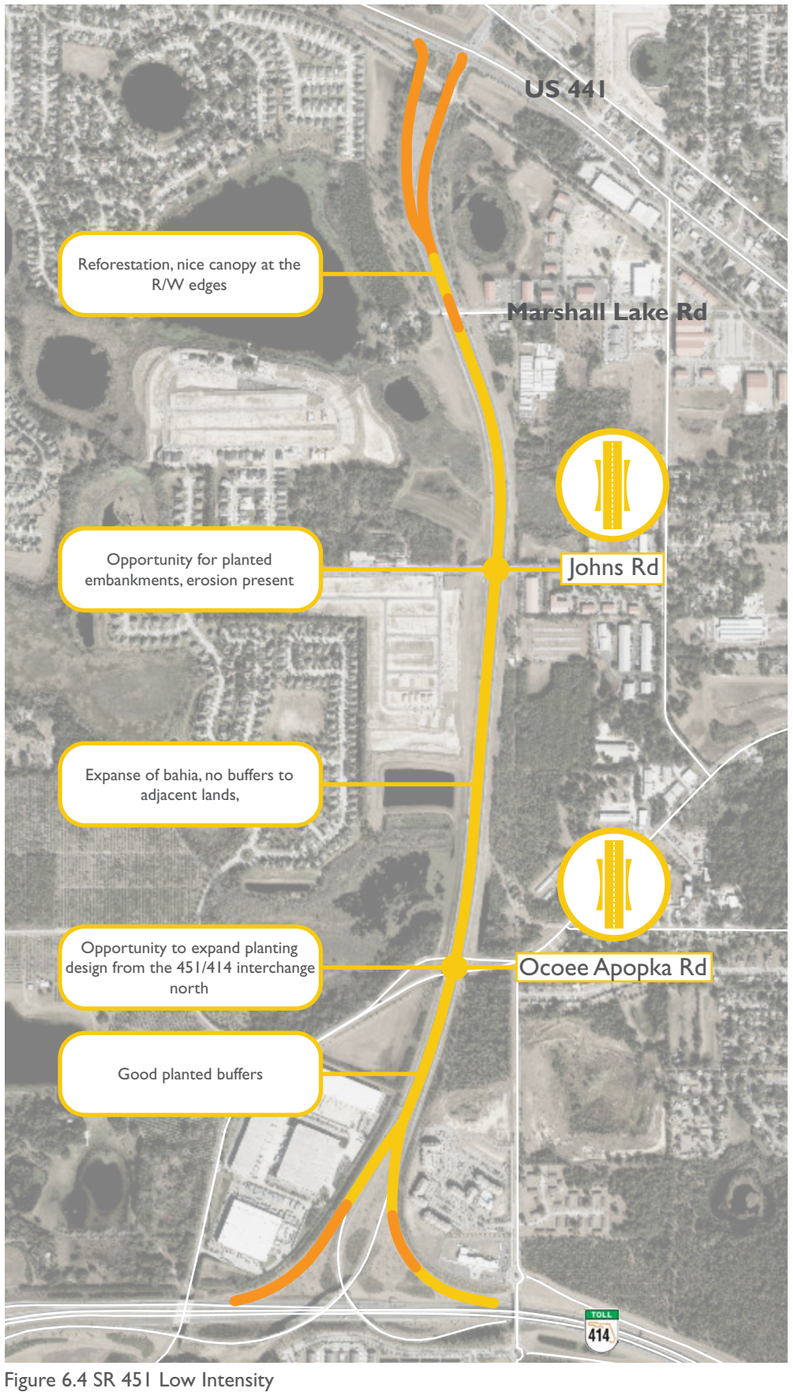


Figure 6.4 SR 451 Low Intensity

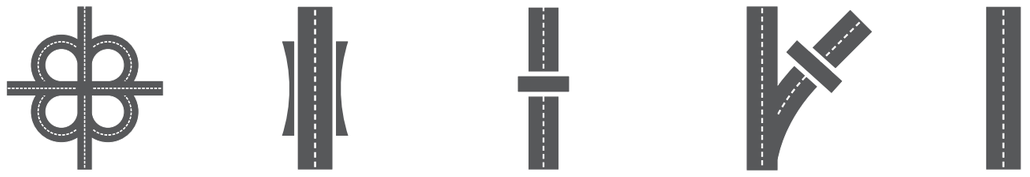
NOTES

The low-intensity landscapes of SR 451 are mainly situated along the corridor and bridges. In these areas, the aesthetic quality and vegetative health vary from poor to average.

Table 6.2 SR 451 Low Intensity Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• Good native buffers • Opportunities for embankment plantings • No mow meadow/wildflower opportunities • Vegetate corridor	• Erosion

TYPOLOGY AND INTENSITY LEGEND



HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

Image 6.5
SR 451 at 437 Interchange

Image 6.6
SR 451 at 437 Interchange

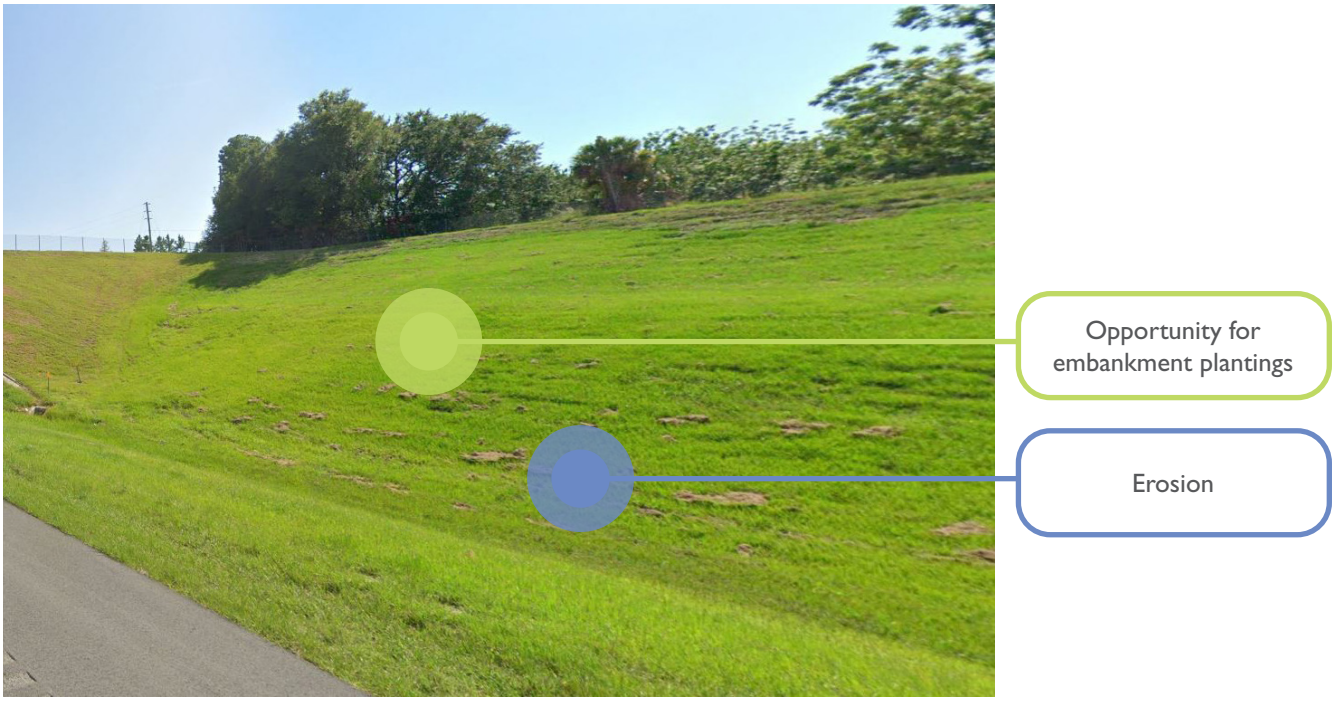


Image 6.7
SR 451 at John Rd

Image 6.8
SR 451 at John Rd

SR 451
OVERALL TAKEAWAYS

- The landscape is consistent with SR 414.
- The 451/414 interchange continues the effective utilization of closely spaced mixed pine and oak groves, contributing to the creation of buffers and framing in the surrounding landscape.
- The R/W between interchanges is open mown bahia, with views to rooftops, rolling hills, planted pines, and wet prairies.
- Opportunities for buffers are available where necessary.

Summary diagrams (Figure 6.5) visualize how each corridor scored in the field.

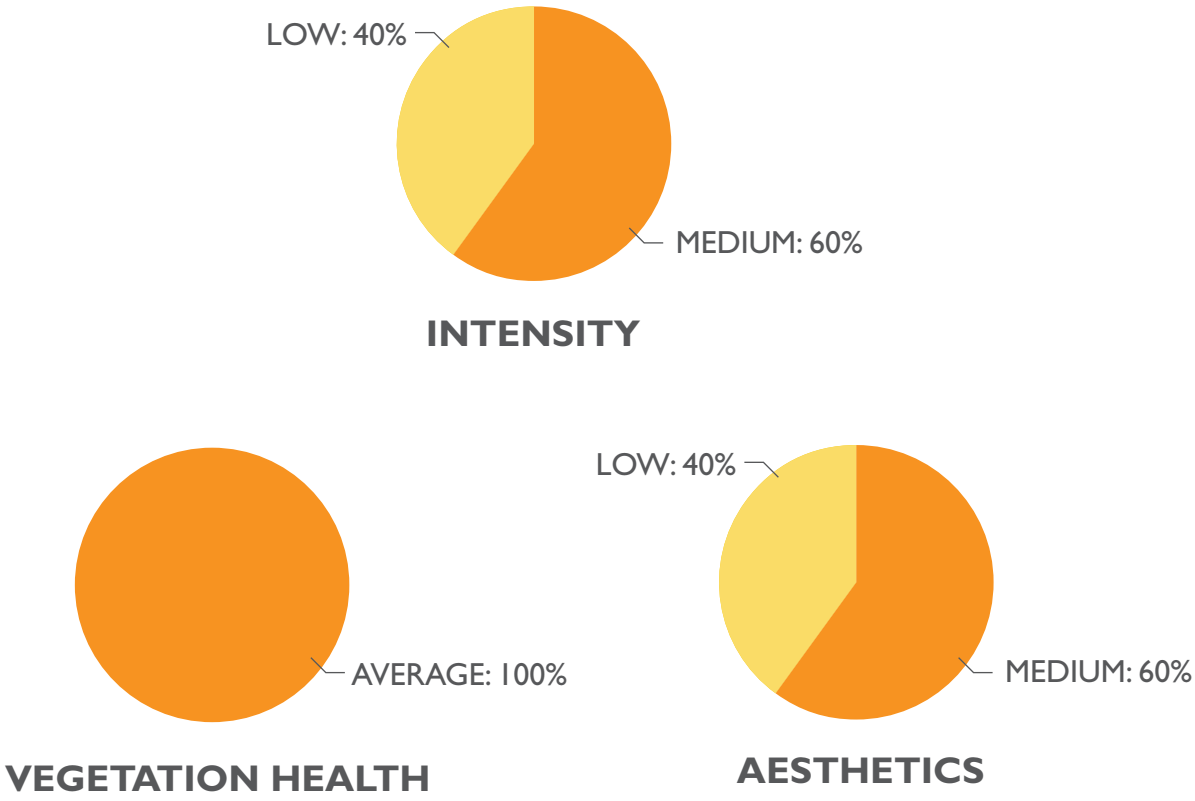


Figure 6.5 SR 451 Overall Takeaways

TYPICAL PLANT PALETTE

Medium Intensity Mix: Sabal Palm, Live Oak, Saw Palmetto, Coontie, Slash Pine, Cordgrass, Firebush

Low Intensity Mix: Mowed Grass, Sabal Palm, Slash Pine, Live Oak

PLANT PALETTE COMMENTS

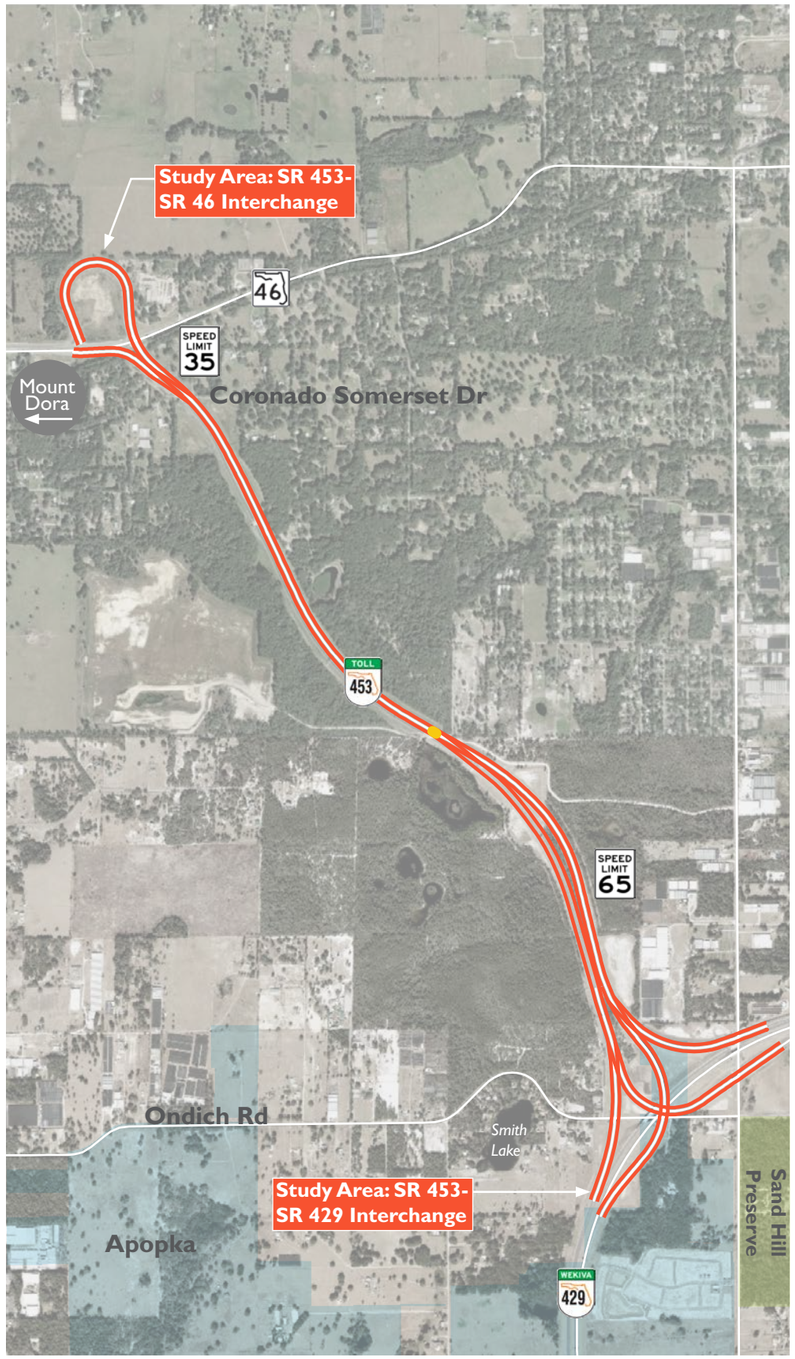
- Live oak, sabal palm, and pine canopies are established and in good health.
- Cordgrass needs replacement.
- Existing groundcover plant material is reaching the end of life and ready for a refresh.
- Saw palmetto and firebush are standouts in this segment.

CHAPTER 7:
SR 453 CORRIDOR

The 453 spur, extending from the Wekiva Parkway to SR 46 near Mount Dora, seamlessly continues the scenic experience of the Wekiva Parkway. Natural medians, landscape features, and well-designed hardscape finishes enhance the overall driving experience. Upon entering the 453 from the Parkway interchange at Haas Road and Ondich Road, bold groves of canopy and swaths of grasses have matured well, with visible trees creating a picturesque scene as you traverse the interchange expanse.

One of the most remarkable features of the Parkway spur is the expansive median and natural edges as you pass through a mature sand pine – Turkey Oak Sandhill hammock. The roadway carefully bifurcates to preserve existing trees, maintaining forested edges within the right-of-way that frame and enhance the driving experience. The journey up the spur is swift, and soon you find yourself exiting onto SR 46, circling around a naturalized dry pond with intentional plantings of young trees. The intentional design is palpable, and over time, it will evolve into a beautiful canopy, adding to the aesthetic appeal of the area.

OVERALL CORRIDOR



LEGEND

- SR 453 Study Corridor
- Major Roads
- Open Space
- Municipal Boundaries

Figure 7.1 SR 453 Overall Corridor

SR 453

AT A GLANCE

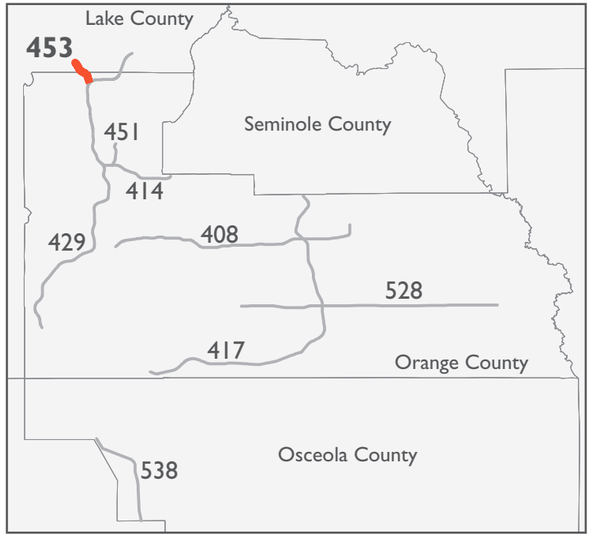
- The study area is 1.6 miles.
- Nickname: Mount Dora Connector.
- The spur road connects the Wekiva Pkwy (SR 429) with SR 46 near Mount Dora in Lake County.

Traffic Count:

- AADT: 6,800

Adjacent Character:

- Rural and natural



Context Map

LANDSCAPE INTENSITY

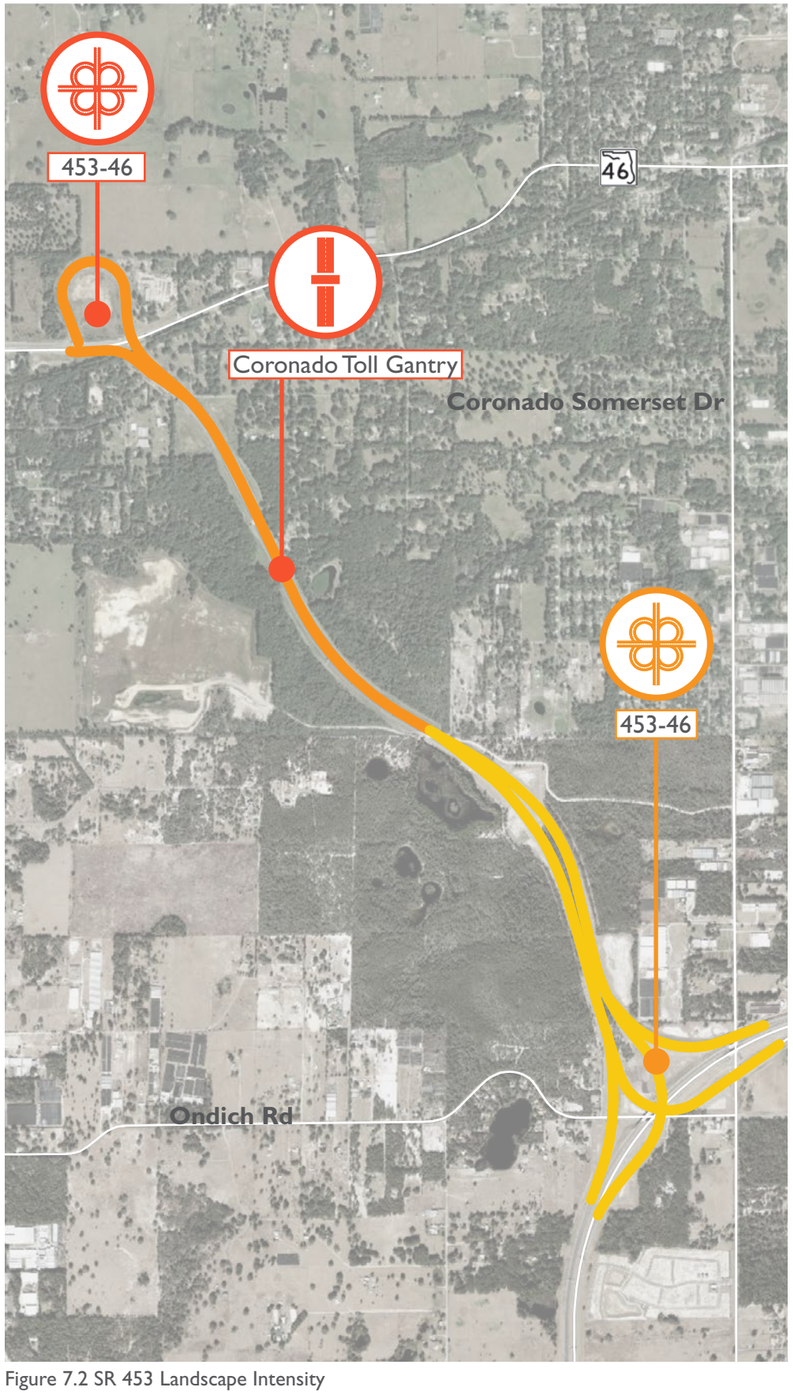


Figure 7.2 SR 453 Landscape Intensity

INTENSITY

The 453 represents another short section, starting at the 429/453 interchange and concluding at SR 46. At the 429/453 interchange, there are canopy save areas and additional low-intensity canopy plantings arranged in grids. The corridor median features a canopy save zone near the 429/453 interchange and is predominantly planted with low to medium intensity canopy and groundcover, extending the length of the segment. The 453/SR 46 interchange presents a medium-intensity landscape with gridded canopy and a massing of groundcover.

TYPOLOGY AND INTENSITY LEGEND

INTERCHANGE | BRIDGE | MAINLINE TOLL GANTRY | TOLL RAMP | CORRIDOR

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

HIGH INTENSITY

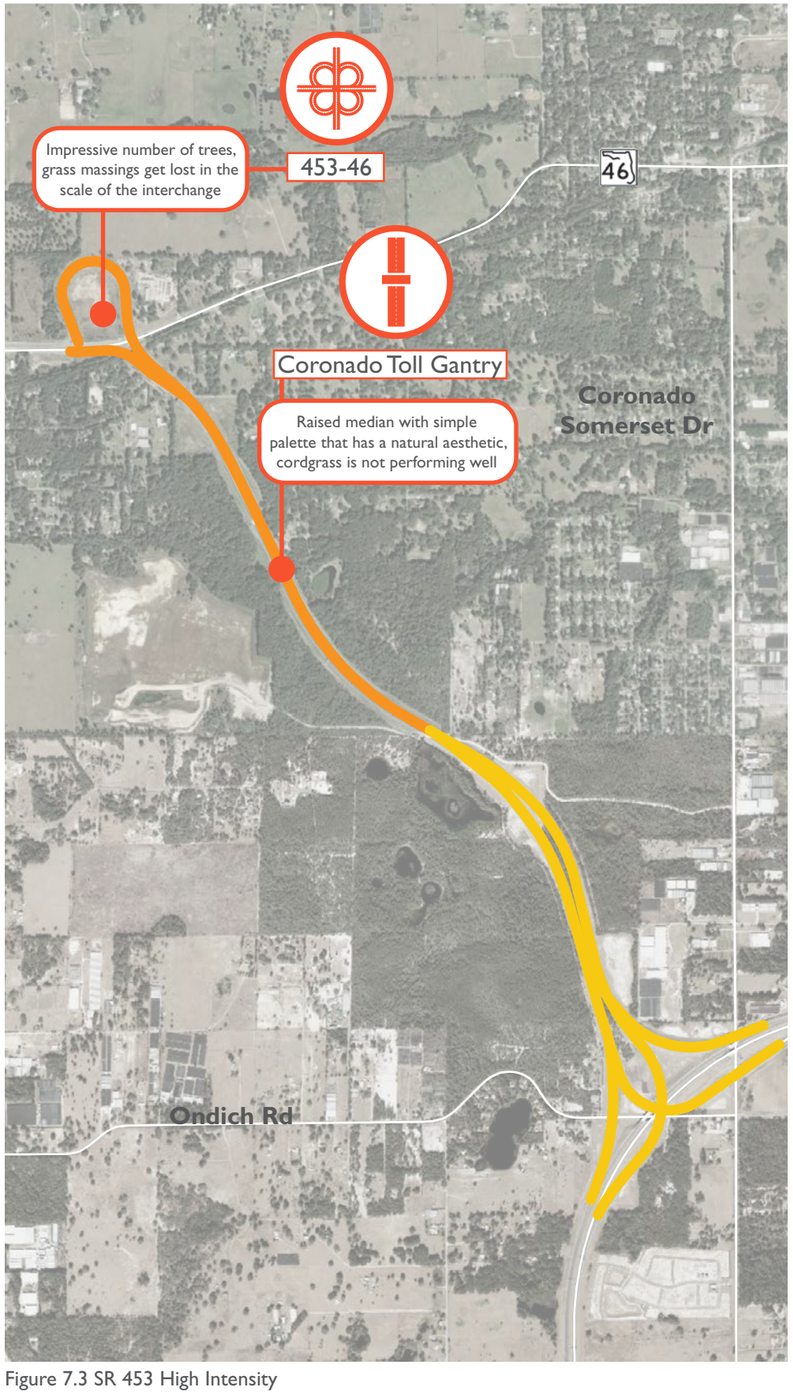


Figure 7.3 SR 453 High Intensity

NOTES

The high-intensity landscape of SR 453 is concentrated at the north interchange of SR 46 and the mainline toll gantry, showcasing excellent aesthetic quality and vegetation health.

Table 7.1 SR 453 High Intensity Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• Native pallete reflected in both the north and south • Reforestation areas • Extensive canopy cover • Pine embankment planting could be expanded	• Planting design lack cohesiveness • Non-native palms look out of place • Tree spacing creates sod maintenance issues in R/W • Erosion risk

TYPOLOGY AND INTENSITY LEGEND

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

Image 7.1
SR 453 at Coronado Toll Gantry

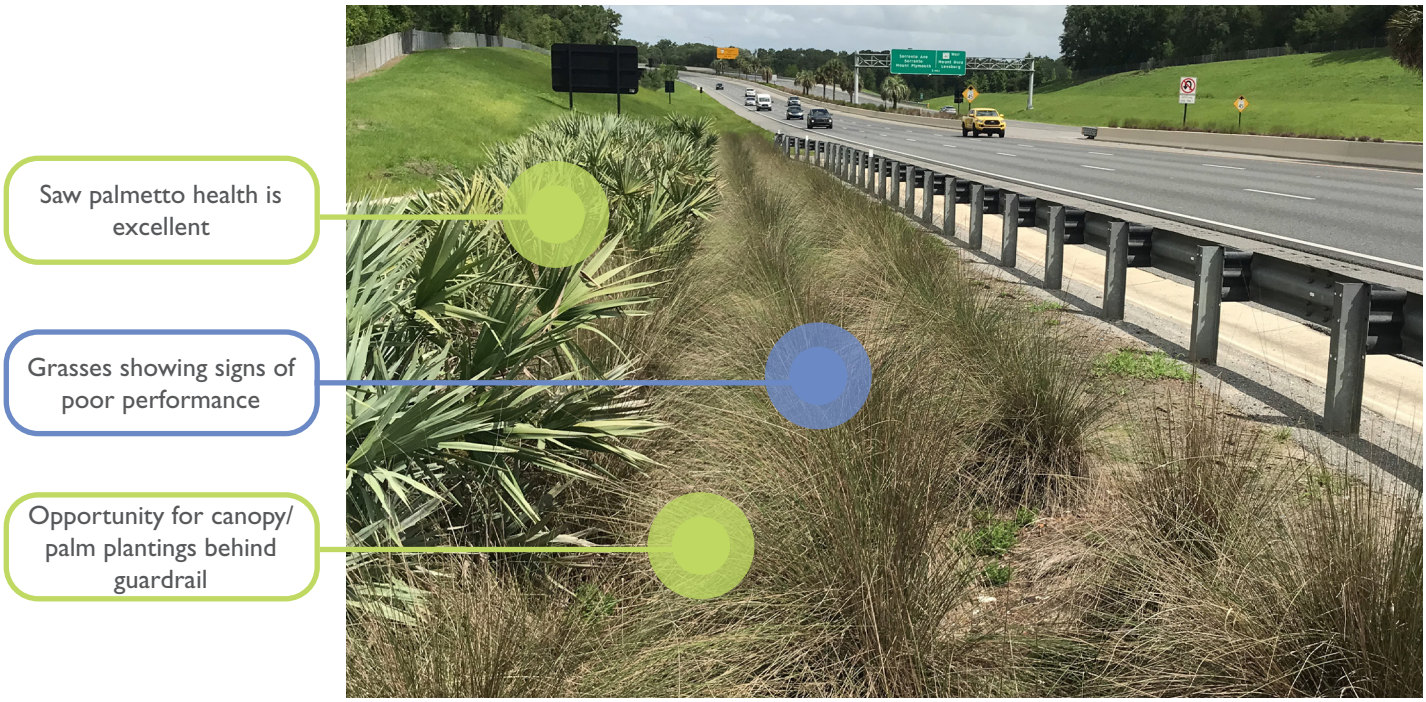


Image 7.2
SR 453 at Coronado Toll Gantry

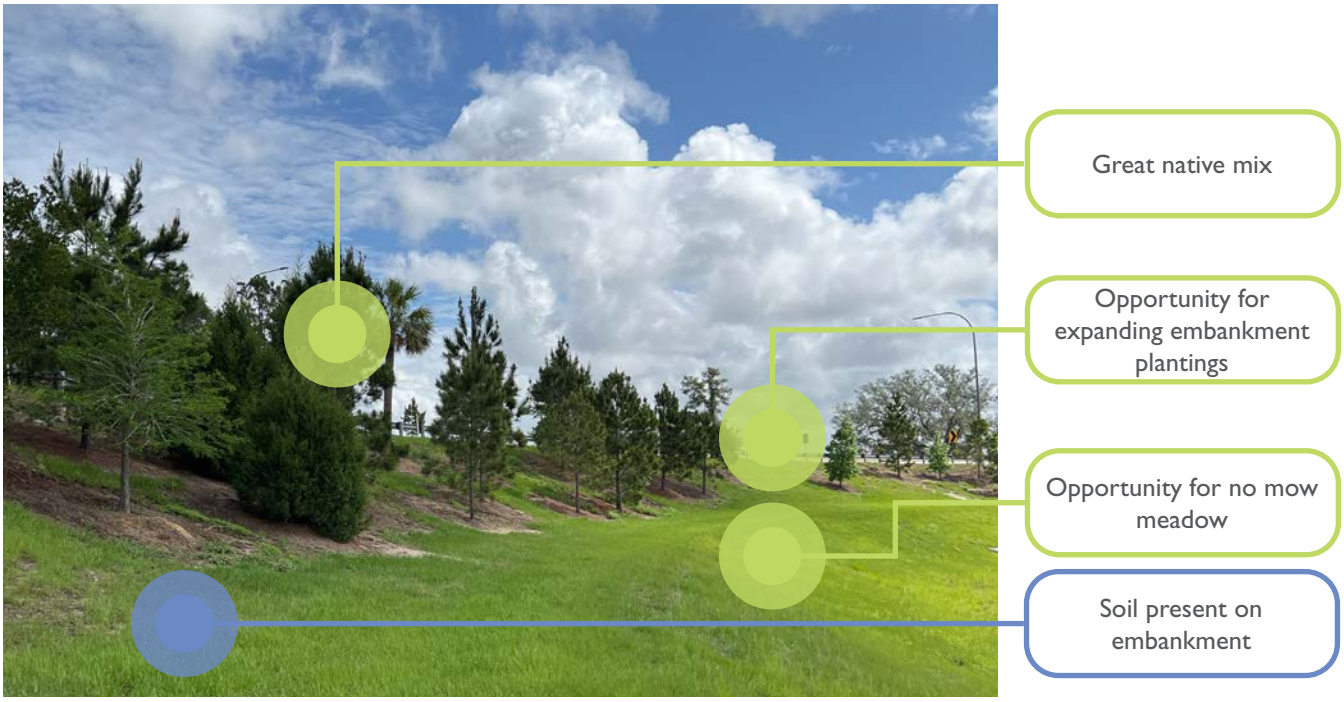


Image 7.3
SR 453 at HWY 46 Interchange

Image 7.4
SR 453 at HWY 46 Interchange

MEDIUM AND LOW INTENSITY

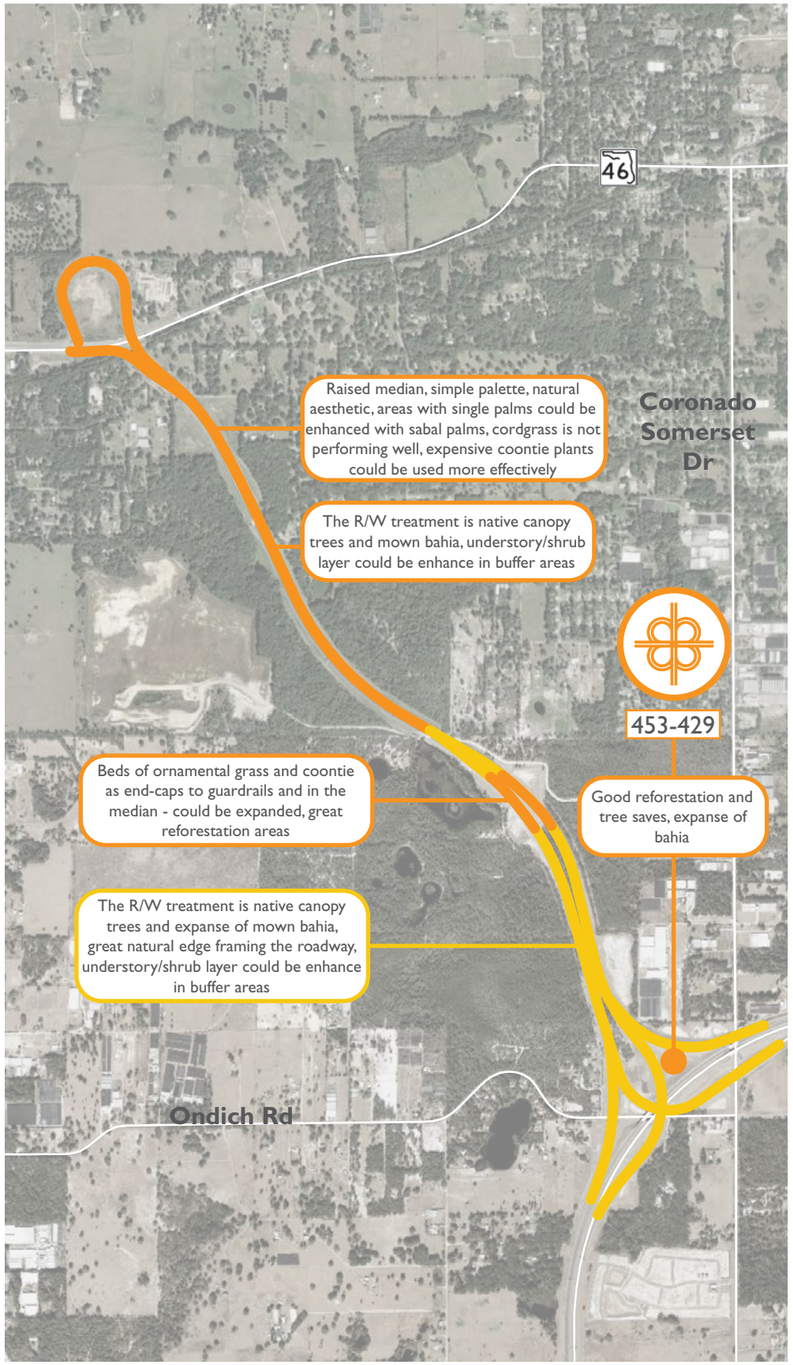


Figure 7.4 SR 453 Medium Intensity

NOTES

The medium-intensity landscape of SR 453 is situated at the 453/414 interchange, displaying excellent aesthetic quality and vegetative health.

Table 7.2 SR 453 Medium Intensity Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• Expansion of the palmetto-grass mix • Simple, nearly native plant palette • Experimentation for no mow, wildflower, and reforestation testing areas	• Muhly grass in raised median is not performing well. • Cordgrass get lost visually in the median • High quality plant material (coontie) used in area of limited visual interest for roadway users. • Invasive plant species in the tree save and naturalized areas

TYPOLOGY AND INTENSITY LEGEND

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

Image 7.5
SR 453 at HWY 429 Interchange

Image 7.6
SR 453 at HWY 429 Interchange

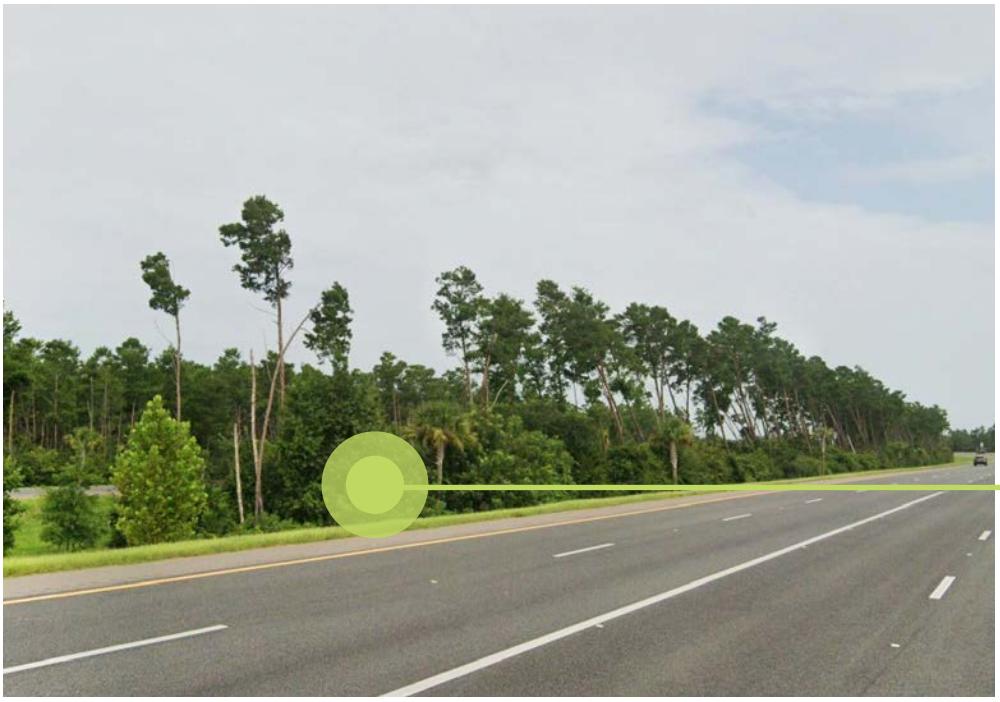


Image 7.7
SR 453 at HWY 429 Interchange

SR 453 OVERALL TAKEAWAYS

- Continuation of the scenic Wekiva Parkway design approach with naturalized plantings.
- Road bifurcation saves existing trees.
- Preserved forested edges within the R/W.
- 453/46 interchange's intentional planting of groves of native trees will create a beautiful canopy over time.
- Reducing sod maintenance in expansive tree planting areas can be achieved by removing sod, enhancing tree density, and implementing pine straw mulch.

Summary diagrams (Figure 7.5) visualize how each corridor scored in the field.

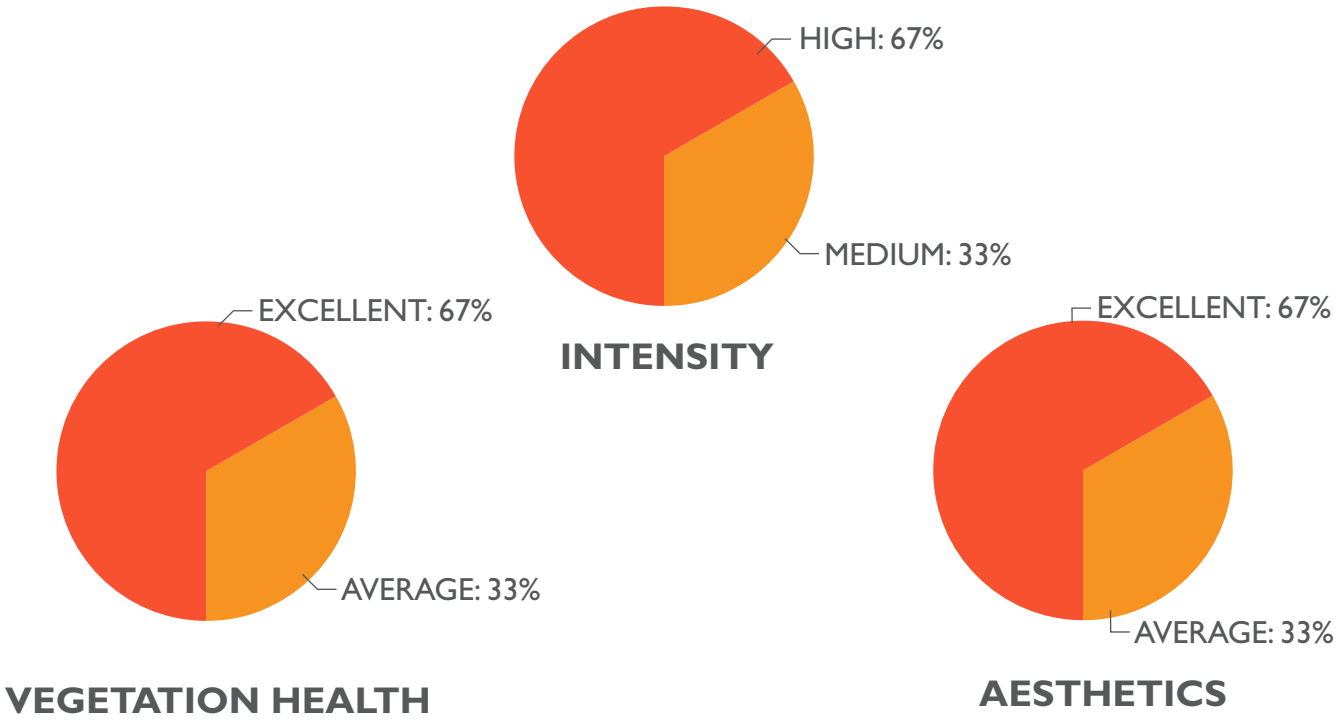


Figure 7.5 SR 453 Overall Takeaways

TYPICAL PLANT PALETTE

High Intensity Mix: Tulip Poplar, Bald Cypress, Slash Pine, Live Oak, Red Cedar, Sweet Gum, Eastern Red Bud, Sycamore, Shumard Oak, Green Ash, Sabal Palm, Sabal Minor, Crape Myrtle, Muhly Grass, Cord Grass, Coontie

Medium Intensity Mix: Pines, Live Oak, Sycamore, Bahia Sod

PLANT PALETTE COMMENTS

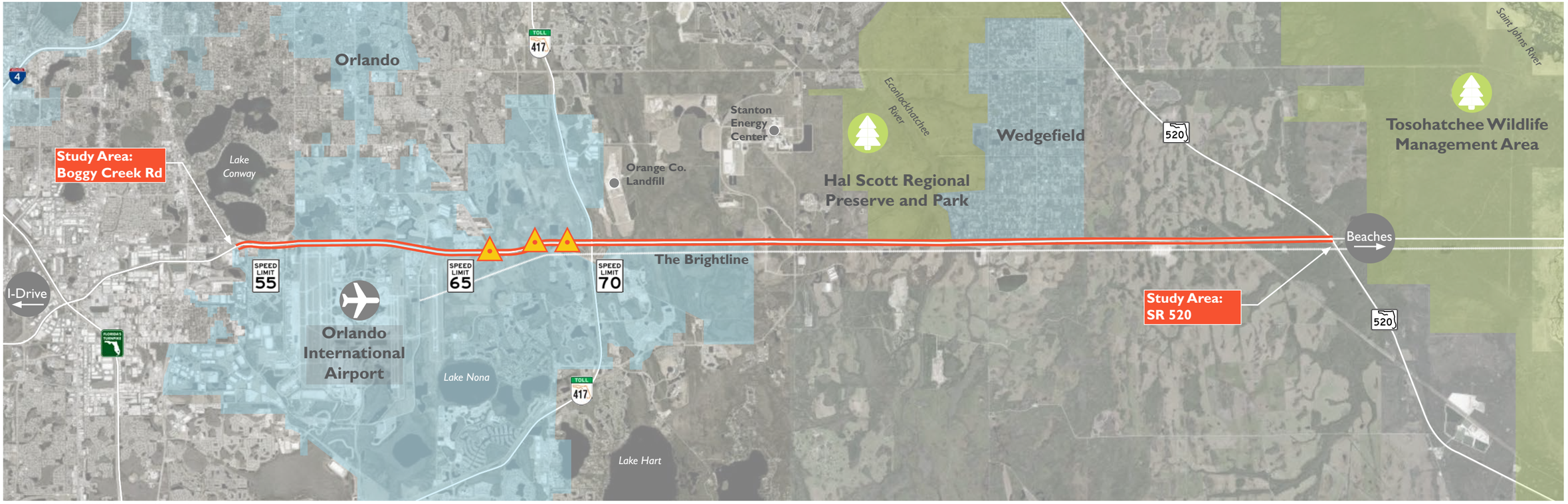
- Live oak, sabal palm, pine, and tulip poplar canopies are established and in good health.
- Cordgrass and muhly are showing some stress – monitor for replacement.
- Groundcover plant material was recently planted and in good condition.
- Saw palmetto, coontie, and firebush are standouts in this segment.

CHAPTER 8:
SR 528 CORRIDOR

As you enter the 528, a sense of adventure often accompanies the journey, serving as a vital link for residents and visitors connecting to Interstate 4, the attractions area, Orlando International Airport, and the east coast beaches, including Cape Canaveral. CFX oversees the 23 miles extending from near Boggy Creek Road to State Road 520.

Entering the corridor from US 441, the views are characterized by adjacent commercial and industrial uses, occasionally softened by mature buffers. Approaching MCO, planes on approach signal the proximity to the airport. Passing through the 528/SR 436 interchange, newly planted sweeps of grasses and groves of palms and pines frame the ramps and overpasses. Moving swiftly eastward, the Goldenrod interchange is well planted, contrasting with the Narcoossee interchange that follows.

Approaching the 417, the ramps and overpasses curve around mixed wetland hardwood and cypress, with the introduced landscape seamlessly blending into the natural surroundings. Continuing east, borrowed views of mixed wetland hardwoods, pine flatwoods, dry prairies, and cypress domes dominate the rural landscape. The right-of-way remains open, with occasional native vegetation making inroads into the corridor. The new Brightline tracks parallel the roadway, and further east, ranchland and striking cypress domes become visible in the distance.



OVERALL CORRIDOR

Figure 8.1 SR 528 Overall Corridor

SR 528

AT A GLANCE

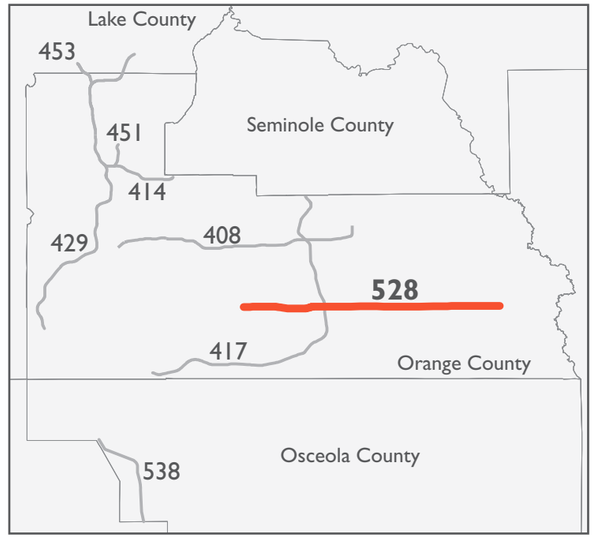
- The study area is 23 miles.
- Nickname: Martin Anderson Beachline Expressway
- The expressway connects residents and visitors to the airport, the east coast beaches and theme parks at I-Drive.

Traffic Count:

- AADT: 90,500 (west of SR 417)
- AADT: 62,500 (east of SR 417)

Adjacent Character:

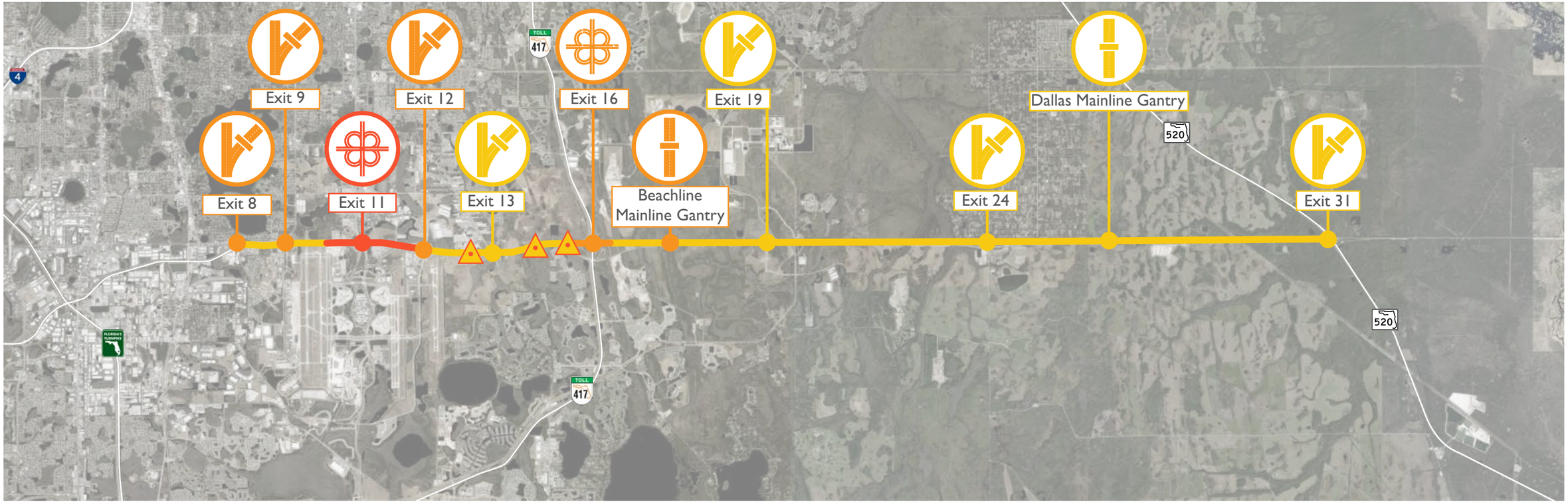
- Urban, suburban, rural and natural



Context Map

LEGEND

- SR 528 Study Corridor
- Major Roads
- Municipal Boundaries
- Open Space
- Construction Alert



LANDSCAPE INTENSITY

Figure 8.2 SR 528 Landscape Intensity

LANDSCAPE INTENSITY

The landscape alongside the 528 is predominantly characterized by urban/suburban medium intensity, particularly east at Boggy Creek Rd interchanges with low-intensity corridors. Notably, the landscape transforms into high intensity at the 528/SR 436 interchange and the corridor leading to this significant gateway to Orlando and the Orlando International Airport.

The 528/417 interchange presents a medium intensity with extensive natural vegetation pockets. Moving eastward, the intensity diminishes to low as the route traverses more natural and rural areas, with interchanges and gantries adhering to this pattern.

TYPOLOGY AND INTENSITY LEGEND

Construction Alert

INTERCHANGE | BRIDGE | MAINLINE TOLL GANTRY | TOLL RAMP | CORRIDOR

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

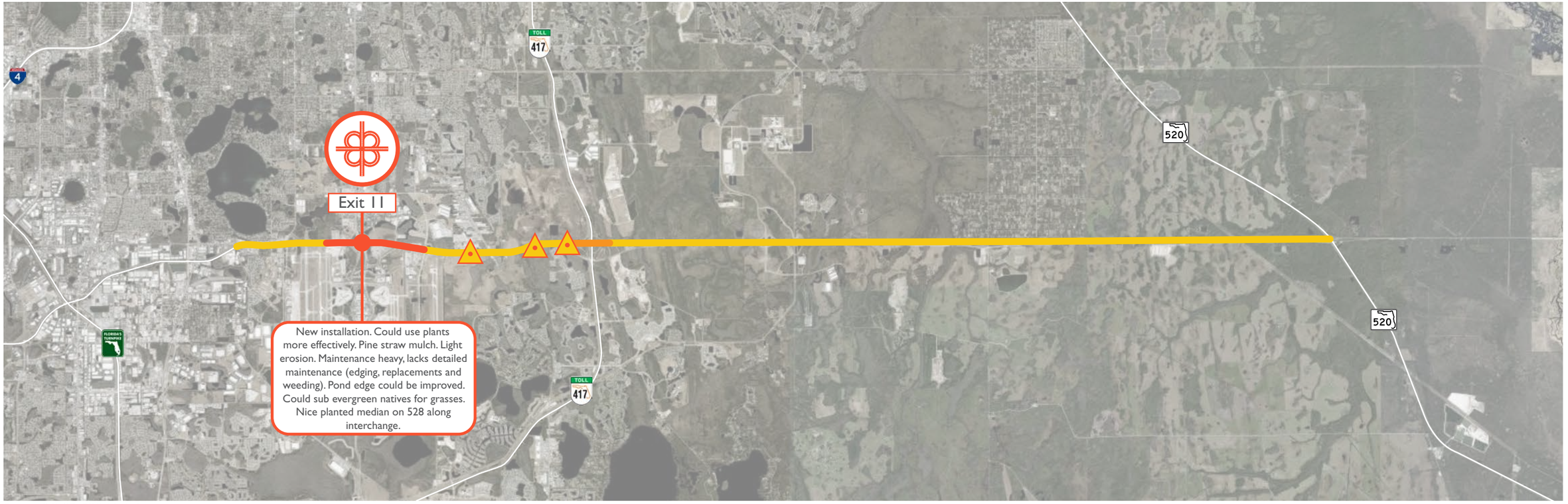


Figure 8.3 SR 528 High Intensity

NOTES

The high-intensity landscape of SR 528 is concentrated around the 538/436 interchange, serving as the gateway to Orlando International Airport. Within this area, both aesthetic quality and vegetation health are excellent.

Table 8.1 SR 528 High Intensity Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• Excellent aesthetics • Excellent vegetation health • Pond edge • A phased reduction of temporary irrigation to ensure vegetation establishment	• New installation could use plants more effectively • Lacks detailed maintenance - edging, replacing plants and weeding • Heavy maintenance and the edge condition • Vegetation resiliency, as landscape irrigation transitions from temporary to non-irrigated • Edge condition between turf and beds • Erosion

Construction Alert

TYPOLOGY AND INTENSITY LEGEND

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

Image 8.1
SR 528 / SR 436 Interchange (Exit 11)

Image 8.2
SR 528 / SR 436 Interchange (Exit 11)

Clusters of sabal palms emphasize sense of place upon approach

Remove stakes
Taper watering for plant resiliency

Edge condition is a maintenance risk

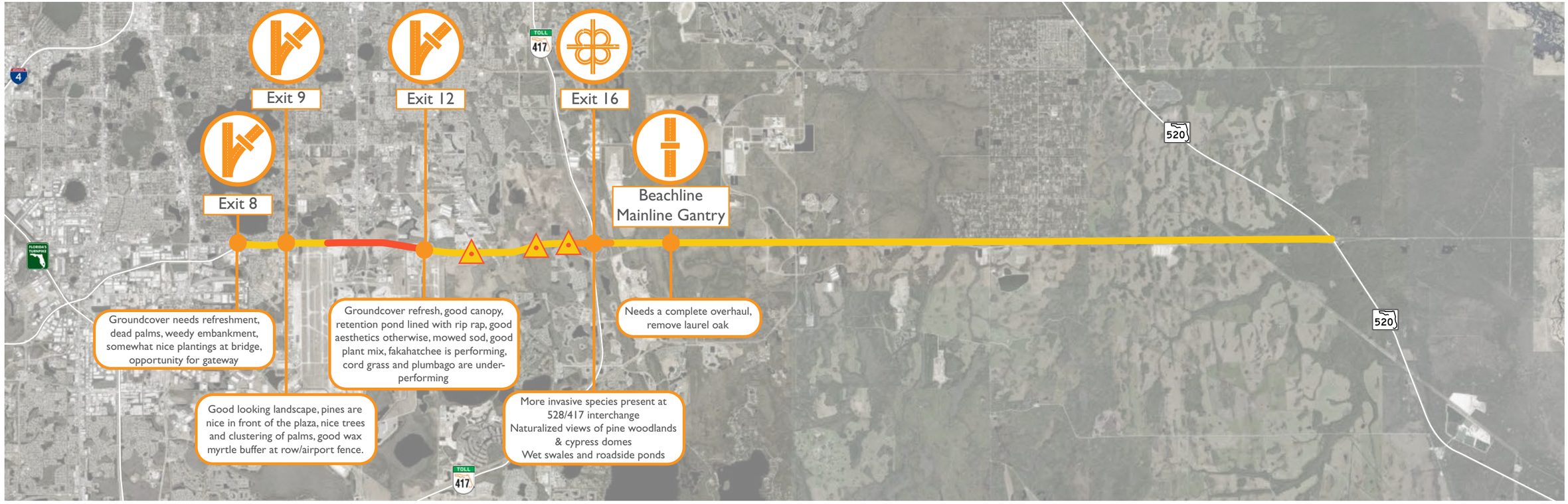
Image 8.3
SR 528 / SR 436 Interchange (Exit 11)

Coontie, a bulletproof plant

Erosion

Edge-zones and beds lack detailed maintenance

Image 8.4
SR 528 / SR 436 Interchange (Exit 11)



MEDIUM INTENSITY

Figure 8.4 SR 528 Medium Intensity

NOTES

The medium-intensity landscapes of SR 528 feature a combination of mainline and ramp toll plazas, including the 528/417 interchange. The aesthetic quality and vegetation health within these areas vary from excellent to average. Notably, S Goldenrod Rd and 528/417 serve as exemplars of achieving a natural aesthetic and experience.

Table 8.2 SR 528 Medium Intensity Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• Improve the aesthetics and littoral edge of stormwater ponds • Edge, wetland enhancement • Green infrastructure and stormwater control measures • Plant slopes more naturally	• Invasive plant species need to be managed • Washouts occur more often in areas mulched with pine bark • Understory plants need to be refreshed and/or replaced

TYPOLOGY AND INTENSITY LEGEND

Construction Alert

INTERCHANGE | BRIDGE | MAINLINE TOLL GANTRY | TOLL RAMP | CORRIDOR

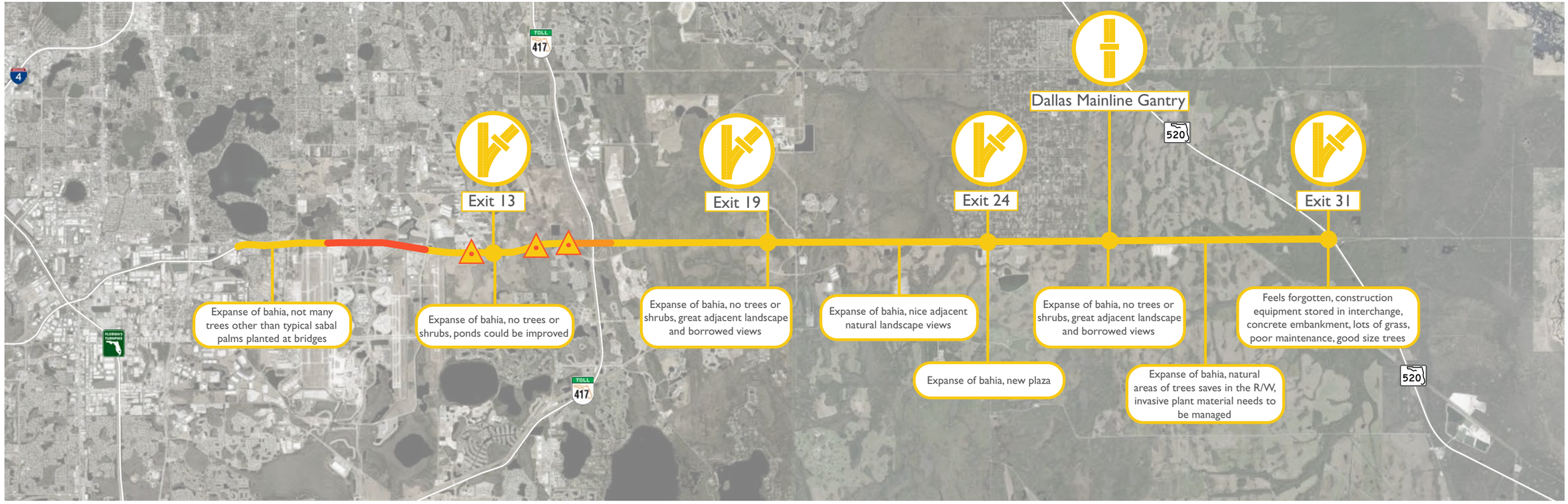
HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

Image 8.5
SR 528 / Goldenrod Rd (Exit 12)

Image 8.6
SR 528 / Goldenrod Rd (Exit 12)

Image 8.7
SR 528 / SR 417 Interchange (Exit 16)

Image 8.8
SR 528 / Conway Rd (Exit 9)



LOW INTENSITY

Figure 8.5 SR 528 Low Intensity

NOTES

The low-intensity landscapes within the SR 528 right-of-way consist mainly of mowed grass. These areas exhibit poor aesthetic quality and average vegetation health. Occasionally, there are occurrences of slash pines, red cedars, and sabal palms.

Table 8.3 SR 528 Low Intensity Opportunities and Constraints

OPPORTUNITIES	CONSTRAINTS
• Blend adjacent plant communities into the right of way • Borrowed views • Outstanding adjacent plant communities • Vegetate corridor	• Construction crews were using the R/W at the SR 520 exit as lay-down yards • The east-end of this corridor feels forgotten or in transition • Lacks gateway experience • The Dallas Mainline Plaza landscape lacks character and distinctiveness

TYPOLOGY AND INTENSITY LEGEND

Construction Alert

HIGH INTENSITY | MEDIUM INTENSITY | LOW INTENSITY

Image 8.9
SR 528 at Innovation Way (Exit 19)

Image 8.10
SR 528 at Dallas Mainline Gantry

Image 8.11
SR 528 at Innovation Way (Exit 19)

Image 8.12
SR 528 at SR 520 (Exit 31)

SR 528
OVERALL TAKEAWAYS

- The views along Boggy Creek Rd and Conway Dr are predominantly characterized by adjacent commercial and industrial uses, occasionally punctuated by mature buffers comprising sabal palm and pine groves.
- The 528/436 interchange features newly planted sweeps of grasses and groves of palms and pines that elegantly frame the ramps and overpasses.
- Goldenrod Rd is well planted, while Narcoossee Rd appears stark due to construction, presenting an opportunity for additional plantings.
- The ramps and overpasses of the 417 navigate around mixed wetland hardwood and cypress, and the introduced landscape mirrors this context, seamlessly blending into the natural surroundings.
- The 520 off ramps are unimproved, an opportunity for the integration of contextually sensitive rural landscapes.

Summary diagrams (Figure 8.6) visualize how each corridor scored in the field.

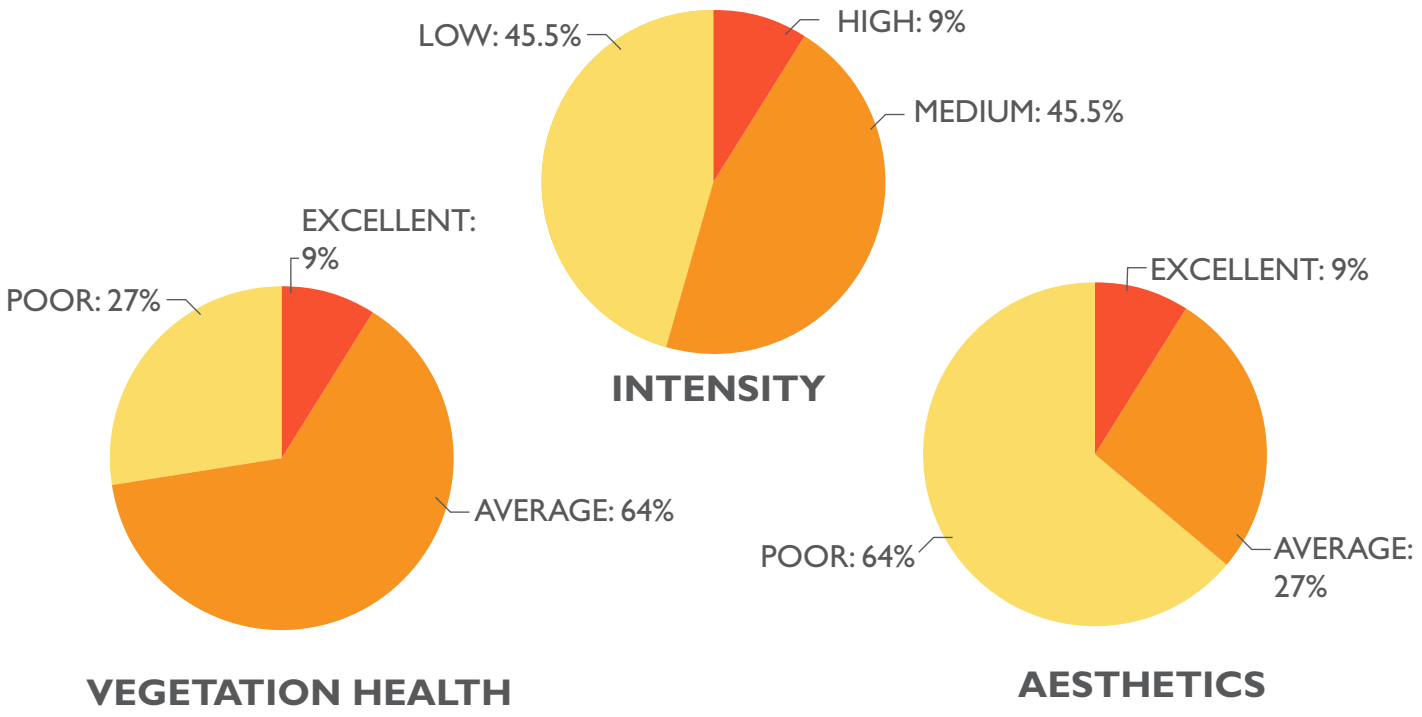


Figure 8.6 SR 528 Overall Takeaways

TYPICAL PLANT PALETTE

High Intensity Mix: Bald Cypress, Fakahatchee, Sweet Gum, Live Oak, Willow, Cordgrass, Red Cedar, Loquat, Magnolia, Coontie, Firecracker Plant, Bougainvillea, Crape Myrtle, Date Palms, Sweet Bay Magnolia, Red Maple, Pine, Sabal, Oleander, Tabebuia, Washington, Pindo Palm

Medium Intensity Mix: Sabal, Live Oak, Palmetto, Coontie, Jasmine, Plumbago, Slash Pine, Coontie, Jasmine, Plumbago, Oleander, Walters Viburnum, Duck Potato, Cord Grass, Wax Myrtle, Nandina, Indian Hawthorne, Laurel Oak, Ligustrum, Bald Cypress, Red Maple

Low Intensity Mix: Bahia, Red Cedar, Slash Pine, Sabal Palm

PLANT PALETTE COMMENTS

- Canopy trees and palms are in general good health and established providing a great framework.
- Grasses are hit and miss - cordgrass and muhly need replacement with fakahatchee showing hardiness in the corridor conditions.
- Coontie, firebush, and saw palmetto are very strong groundcovers whereas oleander and plumbago look good or bad depending on location.

CHAPTER 9: SR 538 CORRIDOR

Final landscaping along SR 538 within CFX R/W was not yet in place during evaluation of the systemwide landscape assessment. This report does not assess SR 538 landscaping

Source: DRMP

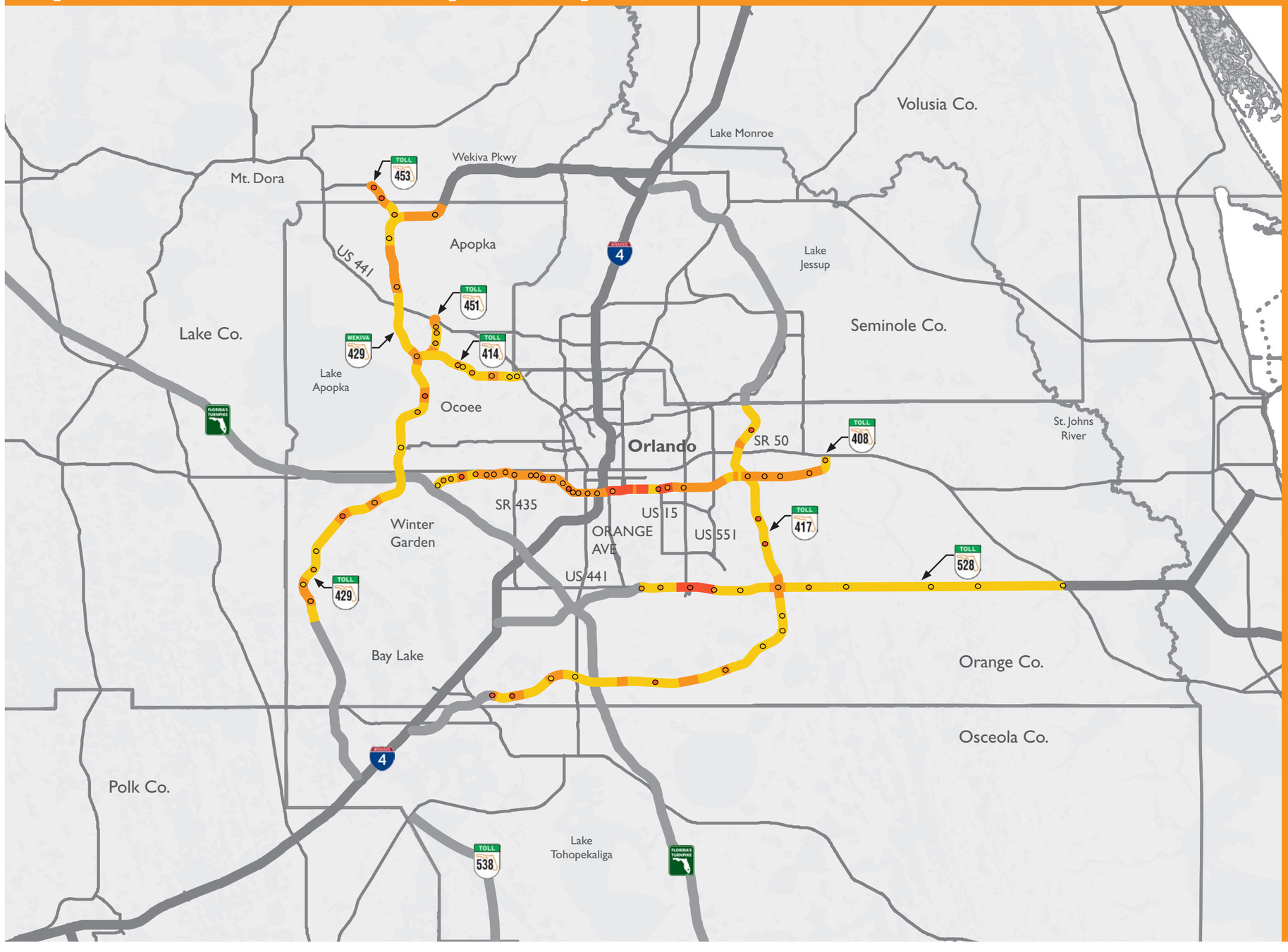
CHAPTER 10: RECOMMENDATIONS

Roadside landscapes should be considered opportunities for creating sustainable spaces rather than mere beautification areas. Landscapes within the CFX R/W need to be planned, constructed, and maintained in an environmentally responsible manner to ensure their long-term health and viability.

By incorporating the CFX landscape sustainability initiative and its key principles, landscapes can be designed and managed to be both aesthetically pleasing and environmentally responsible. This approach contributes to the overall health and resilience of the ecosystem. With over a million daily toll transactions, CFX has a chance to influence the region and future travel trends. The region served by CFX has over 3 million residents and attracts over 75 million visitors annually, making it one of America's most visited destinations.

The strategies in this chapter are meant to be integrated into the agency's design process and management system as opportunities arise.

Systemwide Intensity Study



This map depicts the existing landscape intensity, delineating high, medium, and low intensities. Distinct patterns emerge, showcasing elevated intensity levels concentrated around key nodes and corridors, gradually transitioning to medium and lower intensities as one moves toward the more rural expanses of the system. This data holds potential for integration into strategies aimed at enhancing and refining the system.

LEGEND

- Low Intensity
- Medium Intensity
- High Intensity
- Low Intensity Corridor
- Medium Intensity Corridor
- High Intensity Corridor

Figure 10.1 Systemwide Intensity Diagram

Key Recommendations

1. Landscape Design Standards
2. Low Investment / High Impact
3. Urban Ecology Showcase

Strategies

4. Targeted Mowing Strategies
5. Landscape Maintenance Zones
6. Typology Maintenance Zones
7. Life Cycle Tool Kit
8. Workflow And Collaboration
9. Test Plots As Living Labs
10. Soil Amendments And Compost
11. Roadside Carbon Sequestration
12. Florida Wildlife Corridor

1. Landscape Design Standards

Establishing landscape standards is essential for providing a solid foundation for design that aligns with CFX's vision and brand. This involves incorporating standardized design principles and selecting plant palettes informed by adjacent communities—both natural and cultural—to create a cohesive aesthetic throughout the system.

The planning concept of geo-design involves studying landscape systems to uncover clues for selecting aesthetic principles and plant materials. These layered elements encompass current and future land use, ecoregions, lake regions, soils, slope, solar aspect, plant communities, wildlife corridors, lakes, rivers, open space facilities, and other natural and built landscapes.

Once standards have been established, designers can begin to define different design districts along the corridor. At this level of analysis, multiple contextual elements can be distinguished. The aesthetic design of these districts would reflect the contextual ecoregions and plant communities, and inform overarching systemwide sustainable landscape design principles.

Key Elements:

- Develop comprehensive landscape design standards that adopt a holistic approach, considering intensity and ecology, to ensure suitability for the surrounding environment and culture.
- Create a strategic master plan for landscaping, grounded in the current life cycle and condition of the landscape. Establish a program to systematically implement improvements over time.
- The aesthetic character of a roadside should be predominantly influenced by its context, making it one of the most crucial factors to consider.
- Invest existing $750,000 budget towards plant replacement and conduct an analysis to identify suitable replacement species.

2. Low Investment / High Impact

Noteworthy areas that caught our attention include:

- The presence of a tree canopy, where it is established, significantly enhances the user experience on CFX.
- Maintain a healthy canopy through arbor care, and selectively add or remove material as needed.
- Refresh shrub areas in landscapes that are underperforming or in need of replacement.
- Replace shrub material with suitable alternatives when it dies.
- Ensure proper maintenance by mowing and edging planting beds.
- Keep mulch in beds well-maintained.
- Ensure irrigation occurs within the prescribed timeframe in newly established landscapes and gradually taper the irrigation to avoid shocking plants.
- There is a need to replant, reestablish, emphasize, and maintain the beds. Starting with SR 408, which is the most heavily landscaped area.
- A dedicated champion is required for landscape design and review. GEC should focus on reviewing rather than performing the designs.
- Develop a landscape budget for mainline and legacy projects that currently lack landscaping.

3. Urban Ecology Showcase

Big picture thinking is necessary to make substantive changes in the management of roadside landscapes. Moving away from traditional maintenance practices takes research and planning, and shifting aesthetic preferences comes with education and appreciation. Therefore, CFX could assist in spreading the word to change perceptions about roadside landscapes. We must ask ourselves, what other services could this roadway provide? What if we rethink the relationship between roadways and the adjacent landscape? What if we view the roadside landscape as an opportunity to create an urban ecological showcase?

For example, botanical gardens have served a variety of purposes throughout history. In modern times, most botanical gardens are concerned primarily with exhibiting plants in a scheme that emphasizes natural relationships. As world populations become more urbanized, botanical gardens are recognized as important cultural resources. Botanical gardens offer the public part of the natural environment that they may no longer have access to; furthermore, they offer a mental respite and suggest new interests with sustainability and the natural world. The R/W of CFX could provide this cultural resource by showcasing best practices for corridor landscapes.

4. Targeted Mowing Strategies

The CFX roadsides are mowed 12 times per year, and slopes are mowed 8 times per year. Reducing mowing frequency can result in immediate benefits, such as lower costs and reduced carbon emissions. However, considerations for vegetation management extend beyond budget considerations; both the timing and frequency of mowing have ecological consequences for native plants, animals, and pollinators.

Reducing mowing frequency also involves educating the public about the benefits associated with a more sustainable management approach. Without understanding the intrinsic values linked to a less manicured aesthetic, public responses may be critical. Although roadside mowing is a standard practice in the United States, it has not necessarily translated to an environmental perspective on roadside vegetation.

Implementing targeted mowing that aligns with safety and aesthetic goals, while reducing maintenance requirements, can maximize benefits for all. If these goals can be achieved with less frequent mowing, financial resources could be redirected toward more productive uses.

Key Elements:

- Implement mowing reduction strategies by focusing on mowing the edges and establishing designated no-mow areas.
- Decrease mowing frequency to enhance carbon uptake.
- Develop precise mowing schedules to safeguard nesting birds and preserve pollinator habitat.
- Explore unmanned mowing technologies.
- Explore electric mowing technologies.

5. Landscape Maintenance Zones

Creating maintenance zones in the R/W allows for functional use that aligns with safety requirements, reduces areas that need maintenance, and maximizes ecosystem benefits.

Zone 1

The initial 15 feet of the R/W will undergo regular mowing during the growing season, commonly referred to as "strip mowing". The mowing height can range from 4 to 8 inches, depending on the terrain and existing plant species. It is crucial to maintain a tidy edge along the roadside next to the pavement for the following reasons:

- It fulfills the criteria of the "designed clear zone."
- It creates an "orderly frame," as described by Joan Nassauer, contributing to positive public perceptions.
- It enables safe runoff of water from the pavement surface.

Zone 2

From 15 to 35 feet, depending on the right-of-way width, the operational zone can be planted with various plant species to achieve multiple goals. Plantings in this area will not exceed 24 inches in height and will consist of grasses or herbaceous flowering plant species (forbs).

- This continues to fulfill the criteria of the "designed clear zone."
- Decreases the need for mowing while enhancing the beauty and ecological advantages of the R/W.

Zone 3

This area starts 30-50 feet away from the outer through lane. It can be planted with a variety of plant species to achieve multiple goals, with a particular emphasis on enhancing the environmental impact and ecological benefits of the roadside R/W.

Planting strategies include but are not limited to:

- Restoring native grasslands and creating pollinator meadows.
- Producing seeds from native plants.
- Cultivating canola or other biodiesel crops.
- Planting for the purpose of carbon sequestration.
- Growing crops for hay or other fiber production.
- Replanting or restoring forests.

Source: CA DOT, Alternatives to Labor Intensive Tasks in Roadside Vegetation Maintenance, 2008.
M. Quirey, GDOT and The Ray Highway, Roadside Landscape Typologies, 2020.

6. Typology Maintenance Zones

Similar to the concept of creating maintenance zones in the R/W, establishing zones based on typology offers similar opportunities, albeit in different ways.

Medians

In this typology, a mowed edge might be unnecessary if planted with native grasses or forbs that stay under 18 inches in height. Innovative methods can be applied to plant in the designated clear zone, minimizing the need for frequent mowing and achieving an aesthetically pleasing result.

Behind the Guardrail

As this typology lacks the specified clear zone requirements, it is the sole typology allowing for permanent structures, trees, or shrubs in proximity to the roadway.

Interchanges

Interchanges frequently feature expansive, flat regions alongside steep bridge embankments, encompassing both exceptionally dry and wet areas. These diverse conditions present unique opportunities for innovative approaches to integrated roadside vegetation management. Navigating the large flat spaces between on/off ramps and the main roadway presents both challenges and prospects.

Toll Ramp Plaza & Mainline Toll Gantries

Where guardrails are present, plant dense trees and shrubs to enhance the landscape and to create a distinctive landscape experience.

Bridges

Bridges are unique structures with their own appeal. Emphasize erosion control on embankments and highlight architectural features. Utilize guardrails to plant native trees, shrubs, grasses, and flowers, introducing color and seasonal interest.

Corridor

Emphasize extensive restoration, particularly beyond the clear zone. Given the grasslands' status as one of the most endangered ecosystems in the US, these corridors provide a chance for landscape rehabilitation and serve as research test plots.

Source: CA DOT, Alternatives to Labor Intensive Tasks in Roadside Vegetation Maintenance, 2008.
M. Quirey, GDOT and The Ray Highway, Roadside Landscape Typologies, 2020.

7. Life Cycle Tool Kit

Infrastructure planning demands extensive coordination within a transportation organization and across various agencies. This collaboration ensures the alignment of shared goals, objectives, performance measures, and targets. Geographic Information Systems (GIS) technology serves as a framework for data sharing, enabling agencies to collaborate, share information, and have a unified understanding of project details.

Currently, CFX tracks lifecycle costs for pavement and hardscape features but not for landscape assets or maintenance activities. Adopting an integrated maintenance approach is crucial for sustaining a healthy roadside environment. Strategies conceived during design and construction may seem cost-effective initially but could incur higher expenses over a product's lifecycle, considering long-term replacement costs.
Maintenance personnel can monitor sustainable roadside commitments and assess the maintenance level needed for each strategy. Annual data evaluation can reveal common themes, successes, failures, and unique circumstances requiring attention. Some strategies may need adjustments or removal, while others may serve as successful models for replication on future projects.

In Europe, governments have implemented whole information life cycle requirements (building information modeling [BIM] standards) for major publicly funded projects, anticipating cost savings of around 20 percent per project. It's time for American infrastructure to follow this lead.

Key Elements:

- Implement comprehensive life-cycle monitoring through a Geographic Information System (GIS) to create, manage, analyze, and map landscape performance.

8. Workflow and Collaboration

In addition to plant materials and project site conditions, effective communication and collaboration among various disciplines early in the design process are crucial. This ensures a shared understanding of diverse project goals and objectives from each group. Early interaction allows for open discussions and the identification of potential conflicts.

Key Elements:

- Revise the structure of the CFX, General Engineering Consultant (GEC), and Continuing Services Consultants (CSC) workflow for landscape projects to align with the management approach used for engineering projects. Incorporate Design Standards to direct CSCs' work, enabling peer review by the GEC and, ultimately, CFX. This adjustment aims to enhance capacity to keep pace with new construction.

- Initiate discussions with other jurisdictions to facilitate the exchange of ideas and inspiration. Organize annual workshops to foster the sharing of ideas and lessons learned.

- Conduct internal design charrettes to collaborate with stakeholders. Participate in focused planning or design sessions to tackle specific challenges and generate creative solutions for projects or communities.

9. Test Plots as Living Labs

CFX has conducted planting bed tests at their headquarters, demonstrating a commitment to advancing sustainability efforts across the right-of-way (R/W).

Collaboration opportunities exist with the University of Florida and the University of Central Florida to explore designed test plots. In partnership with CFX, these studies would examine installation practices, plant material, watering methods, soil mediums, and innovative maintenance techniques to achieve optimal aesthetic, ecological, and financial outcomes for CFX's roadsides.

Key Elements:

- Partner with research institutions to conduct systematic testing and measurement of trials.

10. Soil Amendments and Compost

Soil information is crucial for creating sustainable landscapes but is often overlooked in construction plans. To enhance the likelihood of plant survival, understanding the soil type and condition is essential. If there's limited existing topsoil, consider using furnished topsoil or producing it on-site. Take soil samples for analysis in a laboratory to assess organic, mineral, and pH composition, guiding any necessary soil treatments before planting.

Optimizing soils in a cost-effective way improves the chances of vegetation establishment and long-term survival compared to planting directly in existing soils. Amended topsoil also fosters a healthier environment for insects and micro-organisms, enhancing overall landscape resilience. While soil testing and amendments incur costs, having this information before planting can save expenses associated with revegetation in the long run.

Key Elements:

- Gradually improve and enhance the quality of soils over time through amendments.
- Consider using perennial plants that contribute to building and improving soil quality.
- Consider employing phytoremediation plants to address erosion, minimize maintenance, and restore soil ecology.
- Employ soil testing to determine the necessary amendments for each project site.
- Improve the soil to support optimal growth and enhance the survival of plant materials, reducing the need for replacements and associated costs.

11. Roadside Carbon Sequestration

The primary human activity emitting CO2 is the burning of fossil fuels for energy in transportation. Thus, the transportation industry must find ways to reduce its impact on climate change and preserve crucial natural resources. Leveraging CFX R/W for carbon sequestration provides an opportunity. Through natural absorption and tailored landscape management, the biomass and root systems of R/W vegetation can capture and store carbon. This can be achieved through CFX landscape projects or partnerships with private entities looking to offset their carbon footprints by supporting landscape and maintenance projects. Encouraging natural growth is the simplest way to capture carbon, but larger-scale efforts like reforestation, landscape rehabilitation, and reclaiming land for agriculture in the R/W can significantly contribute to carbon capture.

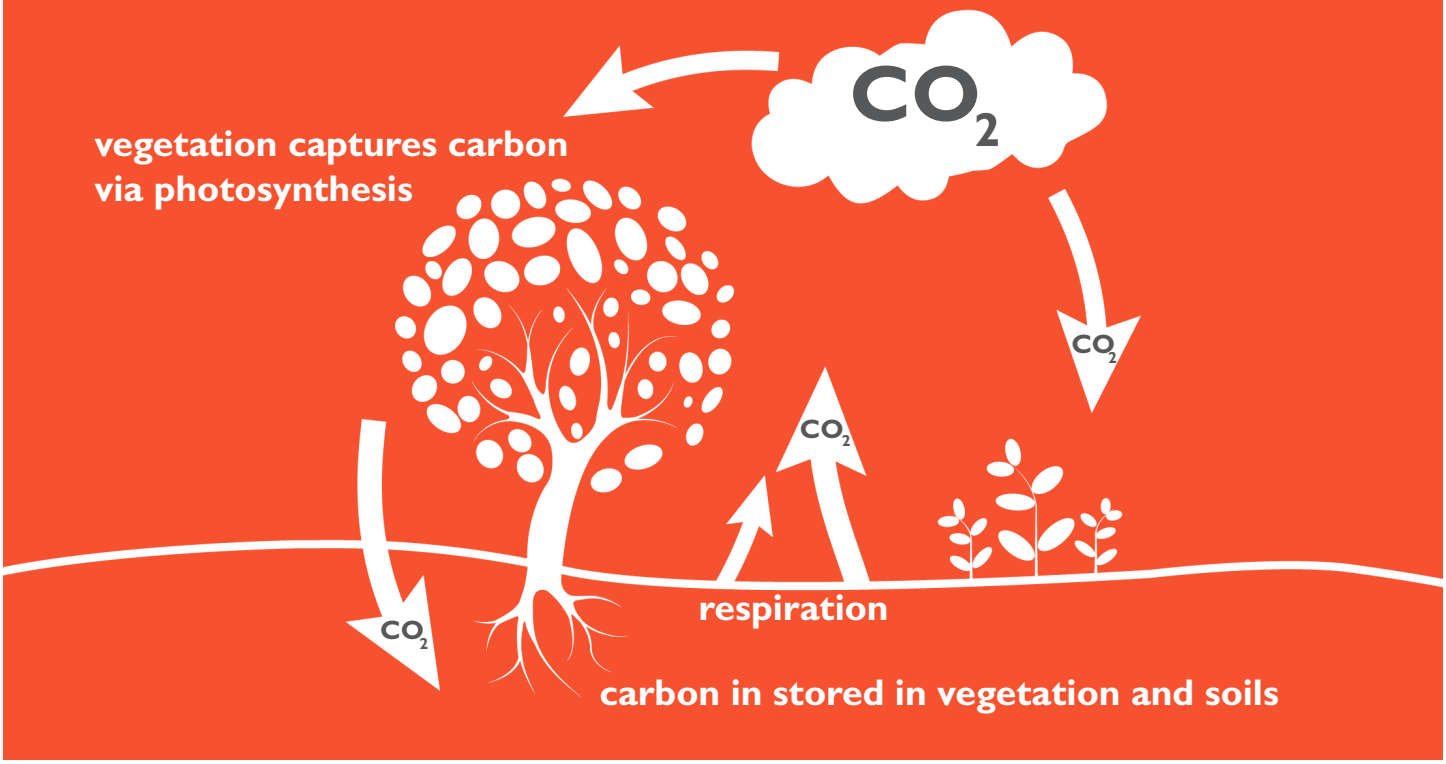
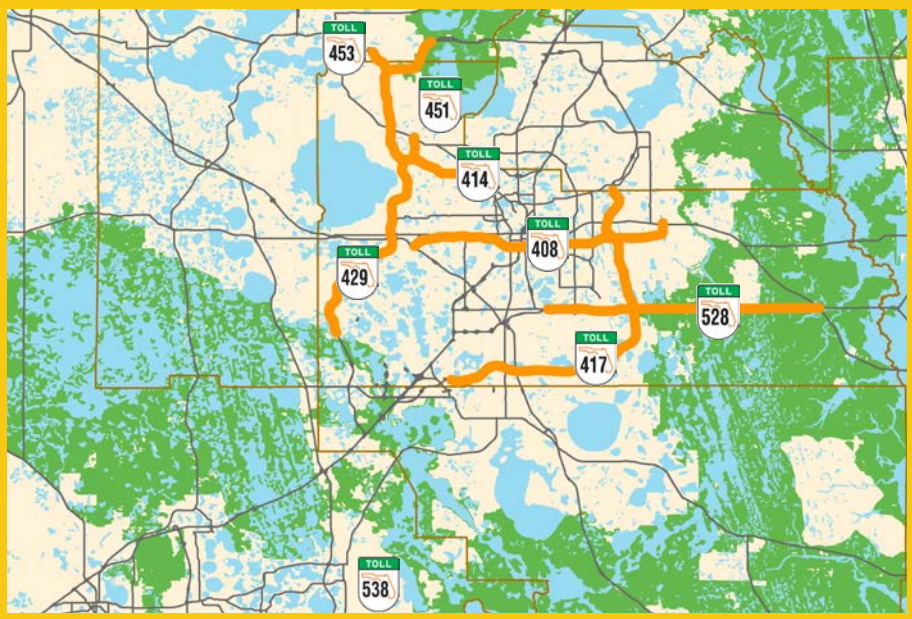


Figure 10.2 Carbon Sequestration Diagram, *Source: NJ Dept. of Environmental Protection*

12. Florida Wildlife Corridor

The Florida Wildlife Corridor is a part of state law designed to safeguard around 18 million acres of connected systems of public and private land and waterways. The goal is to permanently protect, connect, and restore this corridors, crucial for preserving Florida's biodiversity, water resources, and other ecosystem services. This legislation prioritizes the safeguarding of wildlife and ecological hubs, aligning with a strategic plan for Florida's future. The corridor plan unites ecology and the economy, bringing together leaders from business, conservation, and government to find solutions that balance Florida's growth with the protection of the wildlife corridor, a vital and at-risk resource.

Wildlife Corridors of Central Florida



In designing roadways and functional corridors, it's vital to consider specific criteria that promote the protection of habitats, facilitate wildlife movement, and sustain ecosystem services within wildlife corridors.

Legend

- Wildlife Corridor
- Surface Water
- CFX Roadway
- Major Roadways
- County Lines

Figure 10.3 Wildlife Corridors of Central Florida, *The Florida Wildlife Corridor, 2021*

Conclusion

The expansive right-of-way maintained by the Central Florida Expressway represents an enormous and largely untapped potential for ecosystem rehabilitation and the promotion of sustainable practices. To progress effectively, it is imperative to recognize that roadside landscapes, often overlooked, can be leveraged as a valuable resource. Indeed, treating the landscape as a resource requires recognizing its complexity and contemplating how to maximize its potential. This perspective implies viewing the natural or designed environment not merely for its aesthetic appeal but also as a versatile asset that can be utilized, managed, or optimized for purposes such as ecosystem services, sustainability efforts, or aesthetic enhancement.

The recommended approach involves a comprehensive analysis of current practices in comparison to sustainable strategies. This process aims to identify areas for improvement and innovation in maintenance practices, ultimately enhancing efficiency and promoting more sustainable outcomes. Through experimentation and the implementation of forward-thinking methods, the goal is to redefine the conventional approach to roadside landscapes.

Critical to the success of these endeavors is a commitment to continuous monitoring and evaluation. This ongoing assessment ensures that the implemented strategies align with their intended goals and contribute positively to safety, sustainability, and aesthetic enhancements. By actively seeking feedback and adapting strategies based on real-world performance, the Central Florida Expressway can foster a dynamic and evolving approach to its roadside landscapes.

Furthermore, this study and its recommendations serve as a guide for enhancing not only safety, sustainability, and beauty but also for positioning roadside landscapes as influential contributors to broader environmental goals. As ecosystems within the right-of-way flourish and showcase sustainable practices, they have the potential to act as catalysts, driving a broader acceptance of sustainability principles in the built environment. This ripple effect extends benefits not only to the present community but also lays the foundation for a more sustainable and appreciated environment for future generations.