Speed Management Network Screening

Final Report

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Prepared for MetroPlan Orlando

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Executive Summary

The Speed Management Network Screening is a planning level analysis to identify roadways of critical speeding concern in the MetroPlan Orlando planning area. Critical speeding roadways were identified by reviewing existing vehicular speeds and crash data. These roadways were then consolidated into a critical speed management network and each segment evaluated to determine preliminary target speeds. The goal is that future projects can incrementally redesign roadways to achieve these target speeds (typically lower than existing operating and posted speeds) to create safer conditions for all modes of transportation along these critical speeding roadways.

To support the Speed Management Network Screening, MetroPlan Orlando evaluated the Context Classification (CC) on non-state road facilities to complement the Florida Department of Transportation (FDOT) State Roadway Context Classification. **Figure 3** provides the preliminary Context Classification for the MetroPlan Orlando planning area and a technical memorandum summarizing the methodology and process is provided in **Appendix A.** It should be noted that these preliminary context classifications are meant as a starting point for study teams working on future corridor-specific projects. It is expected that future study teams will review the preliminary context classification in greater detail and either concur with the preliminary context classification or propose a revised context classification as part of the corridor-specific project.

The Project Team acquired Wejo vehicle speed data to identify 85th and 95th percentile speed on all functionally classified, non-limited access state and non-state roadways within the MetroPlan Orlando planning area. Crash data was also collected and analyzed for the study roadways to identify high crash rate and high injury severity roadway segments. Roadway segments with their 85th percentile speed 10 MPH or greater than the posted speed, and a very high crash rate or injury severity score, were included in the critical speed management network. Additionally, roadways with a 95th percentile speed 20 MPH or greater than the posted speed were included in the critical speed management network. The critical speed management network is shown in **Figure 10** through **Figure 13**. There were 339 roadway segments (617 miles) identified in the critical speed management network across the three-county area. Of the 339 critical speed management segments, 247 (73 percent) were partially or fully within Equity Analysis Areas, indicating that vehicle speeding is occurring on corridors where we expect our most vulnerable roadway users.

A target speed methodology was then developed to assess preliminary target speeds on non-state roadways identified in the critical speed management network. The target speed methodology used the context classification and federal functional classification of each roadway segment to first set a target speed range. Access to transit and crash rate/injury severity score were then used to determine if the recommended target speed should be at the low, middle, or high end of the speed range. **Figure 14** is an illustration of the target speed methodology. As shown in **Table 8**, there were a total of 176 roadway segments with a preliminary target speed that is proposed to be less than the existing posted speed limit. **Figure 15** through **Figure 18** illustrate the preliminary target speeds recommended for roadways on the non-state roadway critical speed management network.

MetroPlan Orlando's Vulnerable Users Safety Working Group, which included members of the Technical Advisory Committee, Community Advisory Committee, and Transportation Systems

Management and Operations Advisory Committee, was the key sounding board for the study. The Project Team met with the Working Group three times throughout the study to check in on study progress and obtain feedback on various elements of the network screening:

- The first Working Group meeting was held in April 2022. The Project Team introduced the study and reviewed the preliminary Context Classifications for roadways in the MetroPlan Orlando study network. The Working Group was asked to provide comments/input on the preliminary Context Classifications.
- The second Working Group meeting was held in July 2022. The Project Team provided an overview of how Wejo speed data and crash information was used to identify the critical speed management network. The Working Group was asked to provide comments/input on the roadways identified in the critical speed management network.
- The third and final Working Group meeting was held in October 2022. The Project Team presented the final critical speed management network, the target speed methodology, and the preliminary target speeds for roadways on the critical speed management network. The Working Group was asked to provide comments/input on the preliminary target speed recommendations.

The Speed Management Network Screening is a key step in MetroPlan Orlando's goal to prioritize safety for all roadway users. By addressing the corridors with the most acute speeding issues and where operating and posted speeds are mismatched with existing users and uses of the roadway, safety for all modes, and especially for vulnerable users will be improved. MetroPlan Orlando and its partner agencies can advance results from the study through the following next steps:

- Identify a priority list of roadways to implement changes and achieve recommended target speeds in the critical speed management network.
- If corridors are not already programmed on funded project lists, work with partner agencies to adopt policies and programs to incrementally advance roadway design changes to and achieve target speeds on the critical speed management network.
- Advance priority corridors/projects to planning, design, and construction.
- Work with partner agencies to identify funding opportunities to implement the speed management countermeasures. Potential funding sources can include existing funding (e.g., Highway Safety Improvement Program (HSIP) funds) as well as new Federal funding (e.g., Safe Streets and Roads for All (SS4A) grant).
- Leverage roadways that are in the MetroPlan Orlando Prioritized Projects List, Transportation Improvement Programs (TIP), candidate resurfacing projects, and/or local Capital Improvement Programs (CIP) to immediately advance speed management solutions.
- Coordination with FDOT and other partner agencies to advance any of these steps identified.

Introduction

Study Purpose

National reports have found that eight of the top ten United States metropolitan areas with the highest Pedestrian Danger Index are in Florida, with the Orlando-Kissimmee-Sanford area ranking #8.[1] Research has also shown there is a 75 percent chance of a pedestrian fatality if struck by a vehicle traveling at 45 MPH. This percentage reduces to a 30 percent chance of a pedestrian fatality if the vehicle is traveling 35 MPH.[2] Throughout Central Florida, many roadways with context classification of Suburban Commercial (C3C) and above have posted speeds at or above 45 MPH, including roadways where pedestrian/bicycle activity is relatively high. On roadways with these higher context classifications and higher pedestrian/bicycle activity, vehicles are frequently observed traveling 45 MPH or greater which increases the fatality chance in a pedestrian/bicyclist collision.

MetroPlan Orlando is committed to prioritizing roadway safety and addressing this through a regionwide evaluation of speeding and speed management strategies. While there are many on-going activities in the Orlando Metropolitan Area to improve pedestrian and bicyclist safety, a more comprehensive and targeted approach is still needed to support MetroPlan Orlando's performance-based prioritization process and address the safety performance measures in the Infrastructure Investment and Jobs Act (IIJA). This study is a continuation of MetroPlan Orlando safety initiatives on identifying and improving roadways with speeding and safety concerns.

Speed Management Network Screening Overview

The Speed Management Network Screening is a planning level analysis to identify roadways of critical speeding concern in the MetroPlan Orlando planning area. Critical speeding roadways were identified by reviewing existing vehicular speeds and crash data. These roadways were then consolidated into a critical speed management network and each segment evaluated to determine preliminary target speeds. The goal is that future projects can incrementally redesign roadways to achieve these target speeds (typically lower than existing operating and posted speeds) to create safer conditions for all modes of transportation along these critical speeding roadways.

Study Area

The study area for the network screening included all functionally classified, non-limited access state and non-state roadways within the MetroPlan Orlando three-county area of Osceola, Orange, and Seminole Counties. **Figure 1** is a map of the MetroPlan Orlando planning area and the roadways reviewed in the Speed Management Network Screening analysis.

[1] "Dangerous by Design, 2022," 2022, Smart Growth America, https://smartgrowthamerica.org/dangerous-by-design/

[2] Florida Department of Transportation, "FDOT Context Classification Guide," State of Florida, February, 2022

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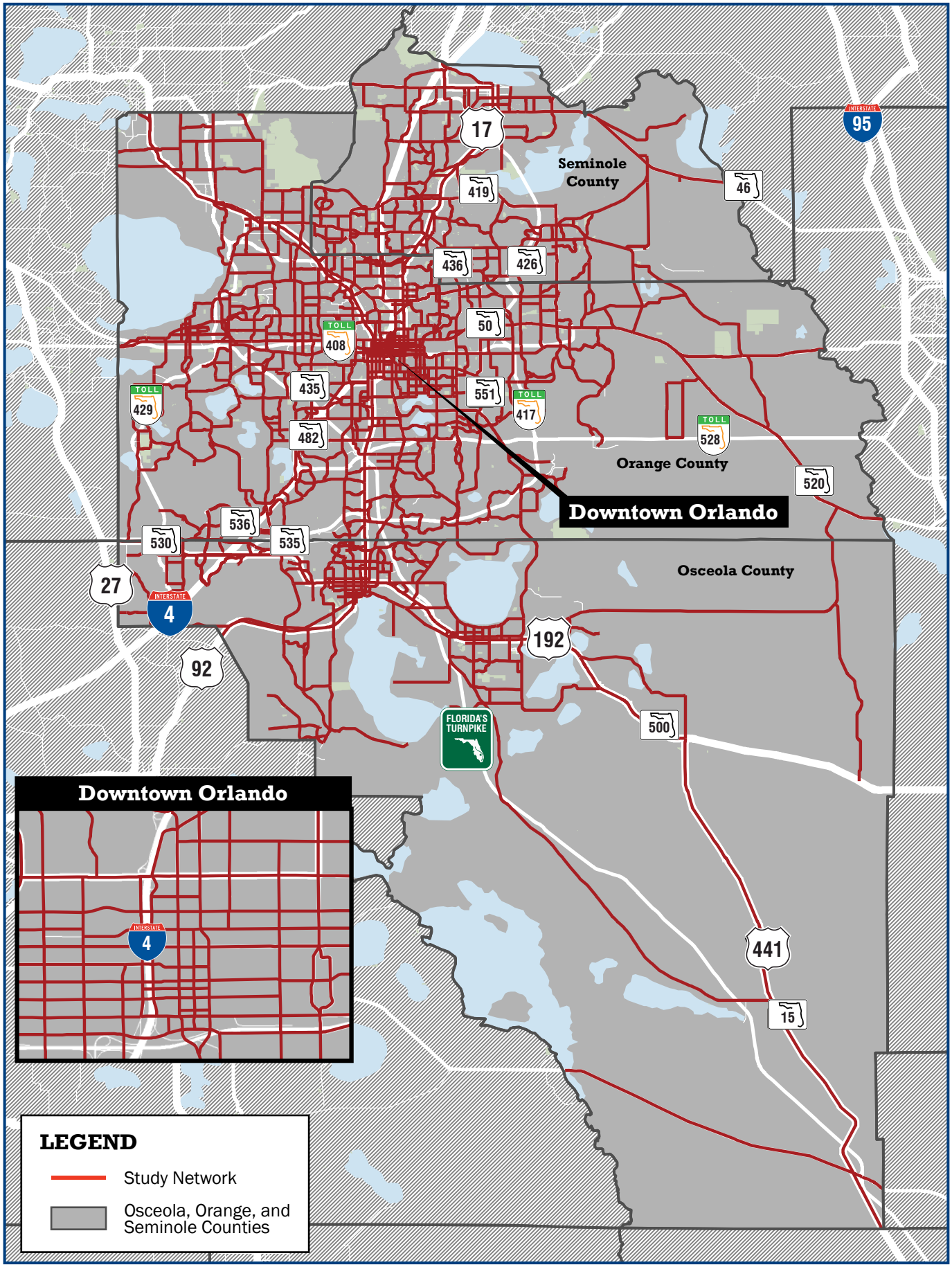

Study Area | Figure 1

Preliminary Context Classification

To support the Speed Management Network Screening, MetroPlan Orlando evaluated the Context Classification (CC) on non-state road facilities to complement the Florida Department of Transportation (FDOT) State Roadway Context Classification. Context Classification is the classification of roadways based on a list of adjacent land use and development characteristics to inform the type and frequency of multimodal users along the roadway. FDOT's Context Classification was developed as part of the State's Complete Streets 360 initiative. Through this effort, all non-access limited state roadway design is grounded on a roadway's context classification. The FDOT Design Manual (FDM) and other statewide manuals outline design criteria and design standards based on Context Classification so that safety strategies can be implemented through programmatic means and systemic approaches. **Figure 2** displays the FDOT Context Classification designations from the Context Classification Guide.

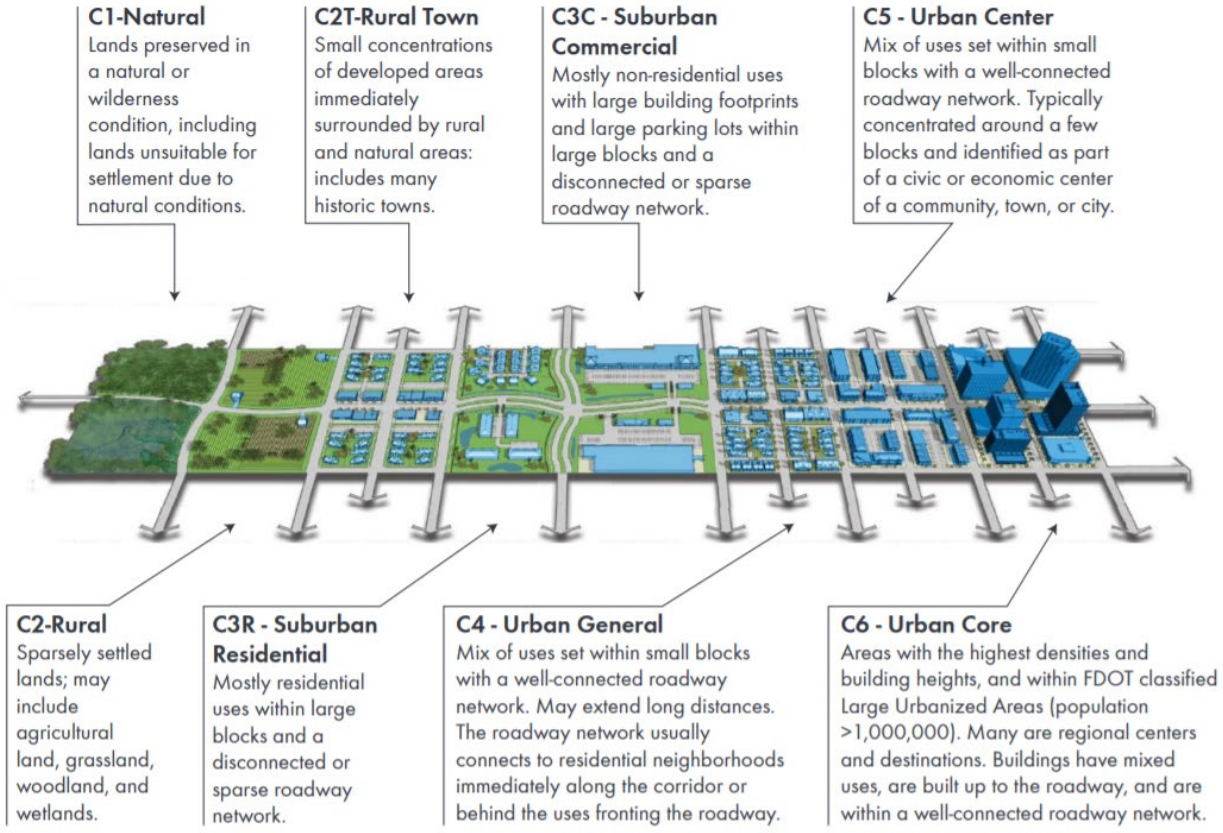

Figure 2: FDOT Context Classification Designations

A technical memorandum summarizing the methodology and process used to identify preliminary context classifications for non-state roadways within the MetroPlan Orlando network is provided in **Appendix A**. The preliminary context classification network is shown in **Figure 3**. It should be noted that these preliminary context classifications are meant as a starting point for study teams working on corridor-specific projects. It is expected that future study teams will review the preliminary context classification in greater detail and either concur with the preliminary context classification or propose a revised context classification as part of the corridor-specific project.

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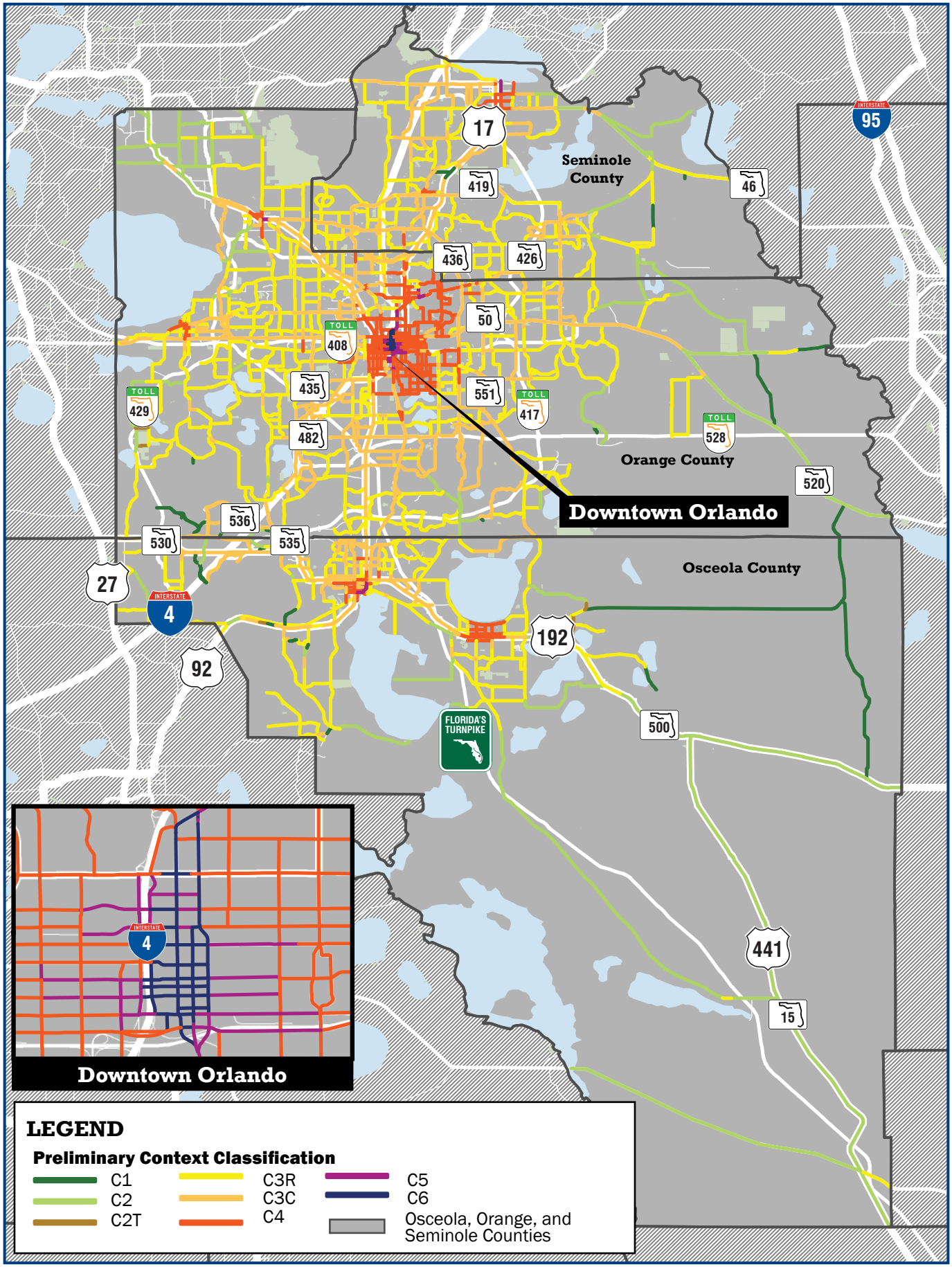

Preliminary Context Classification Network | Figure 3

Data Collection and Analysis

Initial steps to identify a critical speed management network required obtaining vehicle travel speed and crash data for the roadways analyzed. Vehicle travel speed data was obtained from Wejo, and crash data was obtained from FDOT's Crash Analysis Reporting (CAR) online database and the University of Florida's Signal Four (S4) crash database. This section reviews the data collection sources and analysis of that data.

Wejo Speed Data Analysis

Connected vehicle (CV) data was obtained from Wejo, an England-based aggregator and provider of such data. Wejo's data is sourced from General Motors (GM) vehicles with model years 2015 and newer. A review of the data conducted as part of the Connected Vehicle Data Exploration completed for MetroPlan Orlando found that approximately three percent of vehicles in the Orlando area are included in the dataset, although the sample rate generally varies between one percent and eight percent for individual roadways. The Wejo dataset for "vehicle movements" was used to identify the operating speed of vehicles on segments throughout the MetroPlan Orlando area. This dataset contains timestamped locations and speeds from anonymized individual trips. MetroPlan Orlando has previously used this dataset for the following tasks:

- FY 20/21 Travel Time Traffic Studies;
- Connected Vehicle Data Exploration;
- 2021 – 2022 Travel Time Traffic Studies;
- Equity Audit – Analysis Support; and
- TSM&O Miscellaneous Technical and Planning Support.

For this study, the Wejo analysis used data collected from November 2020, January 2021, April 2021, and May 2021 on Tuesdays, Wednesdays, and Thursdays. The data was filtered to 4-6 AM and 8-10 PM based on an initial review demonstrating that those times have a higher incidence of speeding, while also retaining enough traffic volume to collect adequate samples.

Vehicle operating speed was estimated on the roadway study segments by analyzing CV data along 300-foot subsegments. Subsegments were chosen outside of the signal influence area, approximately halfway along the segment. If a segment was more than two miles long, the segment was split into one-mile segments allowing a more granular analysis of speeds. This methodology is similar to traditional speed studies completed with pneumatic tubes. Typically, datapoints within 150-feet of the subsegments were considered, although on some subsegments with closely spaced parallel roadways (for example access roads along limited-access facilities) a reduced distance was used. This methodology is outlined further in **Appendix B**.

To represent the vehicle operating speed of the segment most accurately, the following filters were applied to the CV data:

- Only consider data for vehicles travelling along the segment (did not include data from intersecting streets); and

- Only considered data for vehicles travelling along the segment without stopping or slowing (did not include data for vehicles that slow to below 20 MPH or are along the segment more than 10 minutes apart).

Several statistics were calculated to describe the vehicle operating speed along segments. Statistics were calculated for each direction of travel independently for the following metrics:

- 85th percentile: The speed at which 85% of drivers drive below; and
- 95th percentile: The speed at which 95% of drivers drive below.

To help screen the roadway network for critical segments, this study reviewed roadways where the 85th percentile speeds exceeded the posted speed by 10 MPH (shown in **Figure 4**), as well as roadways where the 95th percentile exceeded the posted speed by 20 MPH (shown in **Figure 5**). Detailed figures showing the 85th and 95th percentile speed analysis for each individual county are available in **Appendix C**.

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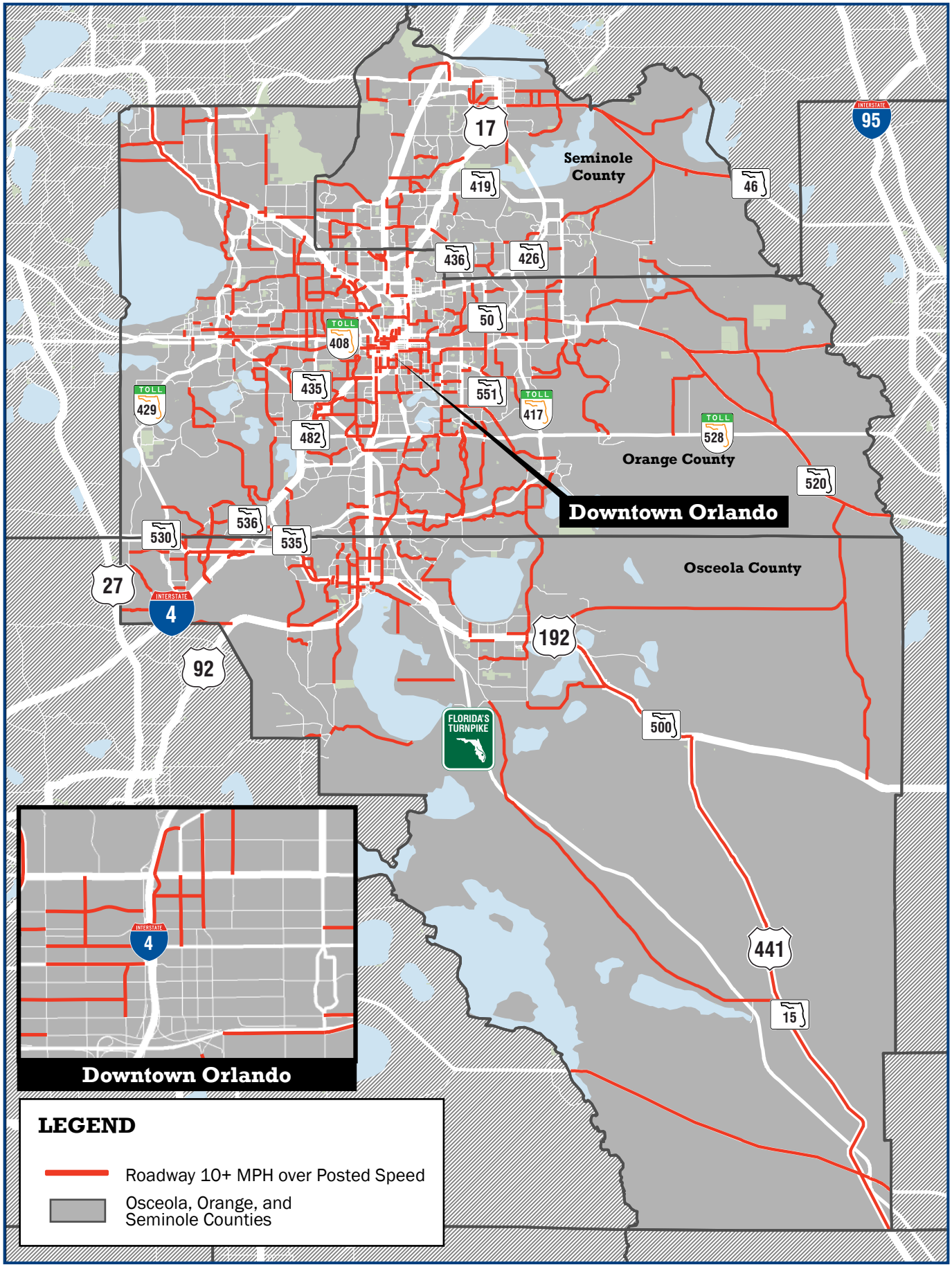

NORTH

Scale in Miles
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85th Percentile Speed 10+ MPH over Posted Speed | Figure 4

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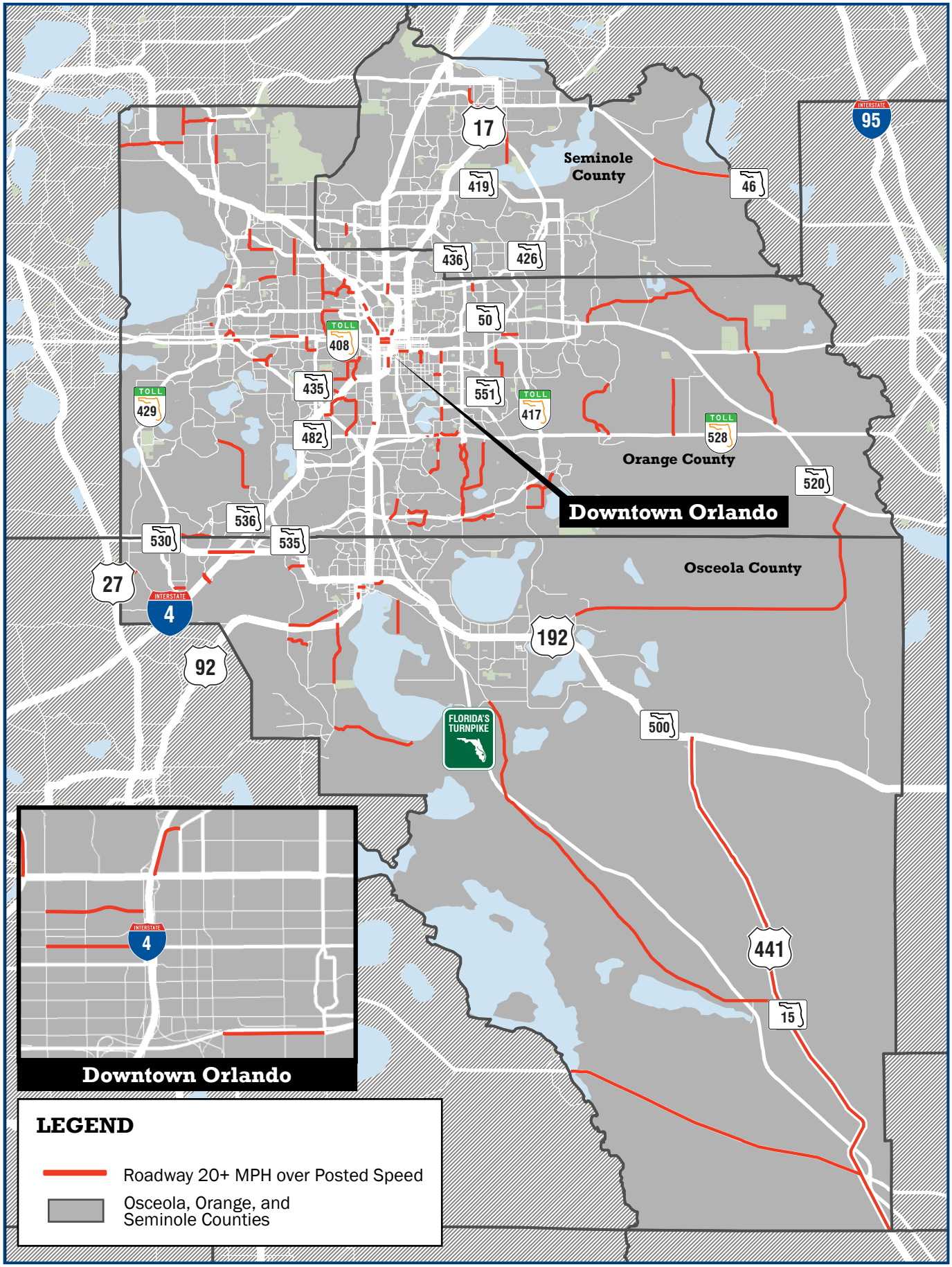

95th Percentile Speed 20+ MPH over Posted Speed | Figure 5

Crash Data Analysis

Five years (2016-2021) of crash data was obtained from the CAR online and S4 crash databases. S4 was the primary crash data repository used for the study and CAR data was used to validate that the number of observed crashes was accurate on study roadways. The crash data was analyzed using ArcGIS and crashes that were within 100 feet of the roadway network were spatially joined to the roadway network. This process resulted in an understanding of total crashes, crash types, and crash severity for each roadway segment. Ultimately, crash rates and equivalent property damage only (EPDO) scores (following Highway Safety Manual methodologies) for each study roadway were calculated utilizing the crash data.

To generate the crash rate for each roadway segment, the following equation was used:

Crash Rate = (5-year total crashes x 100,000,000) / (traffic volume x 365 days x 5 years x segment length)

Figure 6 below illustrates an example of how the crash rate equation was calculated for Airport Boulevard overpass at SR 417.

$$\frac{91 \times 100{,}000{,}000}{4{,}900 \times 365 \times 5 \times 1.01} = 1{,}007 \text{ Crash Rate}$$

Figure 6: Airport Boulevard Crash Rate

The EPDO score quantifies the cost of each vehicle crash based on its severity. **Table 1** shows the weighting factors for each crash severity.

Table 1: Estimated Property Damage Only Scoring Criteria

Severity	Crash Cost	Ratio	Weighting Factor
Fatal	$10,890,000	$10,890,000 / $7,700	1,414
Incapacitating Injury	$888,030	$888,030 / $7,700	115
Non-Incapacitating Injury	$180,180	$180,180 / $7,700	23
Possible Injury	$103,950	$103,950 / $7,700	14
PDO	$7,700	$7,700 / $7,700	1

Figure 7 below shows an example of how the EPDO score was calculated for Airport Boulevard overpass at SR 417.

(0 Fatal x 1,414) + (0 Incapacitated Injury x 115) + (12 Non-Incapacitated Injury x 23) + (12 Possible Injury x 14) + (67 PDO x 1)

= 511 EPDO Score

Figure 7: Airport Boulevard EPDO Score

Crash rates and EPDO scores were analyzed in ArcGIS and categorized into quartiles to reflect very high, high, medium, and low categories. Due to differences in population and traffic volumes on roadways within each of the three counties, the crash rate and EPDO score quartiles were generated for each county individually, versus at a regional scale. **Table 2** provides a breakdown of the crash rate and EPDO quartiles for each county.

Table 2: Crash Rate and EPDO Score Quartiles for Each County

	Very High		High		Medium		Low	
County	Crash Rate (VMT)	EPDO Score	Crash Rate (VMT)	EPDO Score	Crash Rate (VMT)	EPDO Score	Crash Rate (VMT)	EPDO Score
Osceola County	15-400	8-2,300	5-14	3-7	1-4	1-2	0	0
Orange County	350-23,000	900-11,000	200-349	350-899	100-199	150-349	1-99	1-149
Seminole County	400-4,600	500-2,500	200-399	200-499	100-199	100-199	1-99	1-99

Figure 8 and **Figure 9** illustrate the roadways with a very high crash rate or very high EPDO score in the study area. Detailed figures showing the crash analysis for each individual county are available in **Appendix C**.

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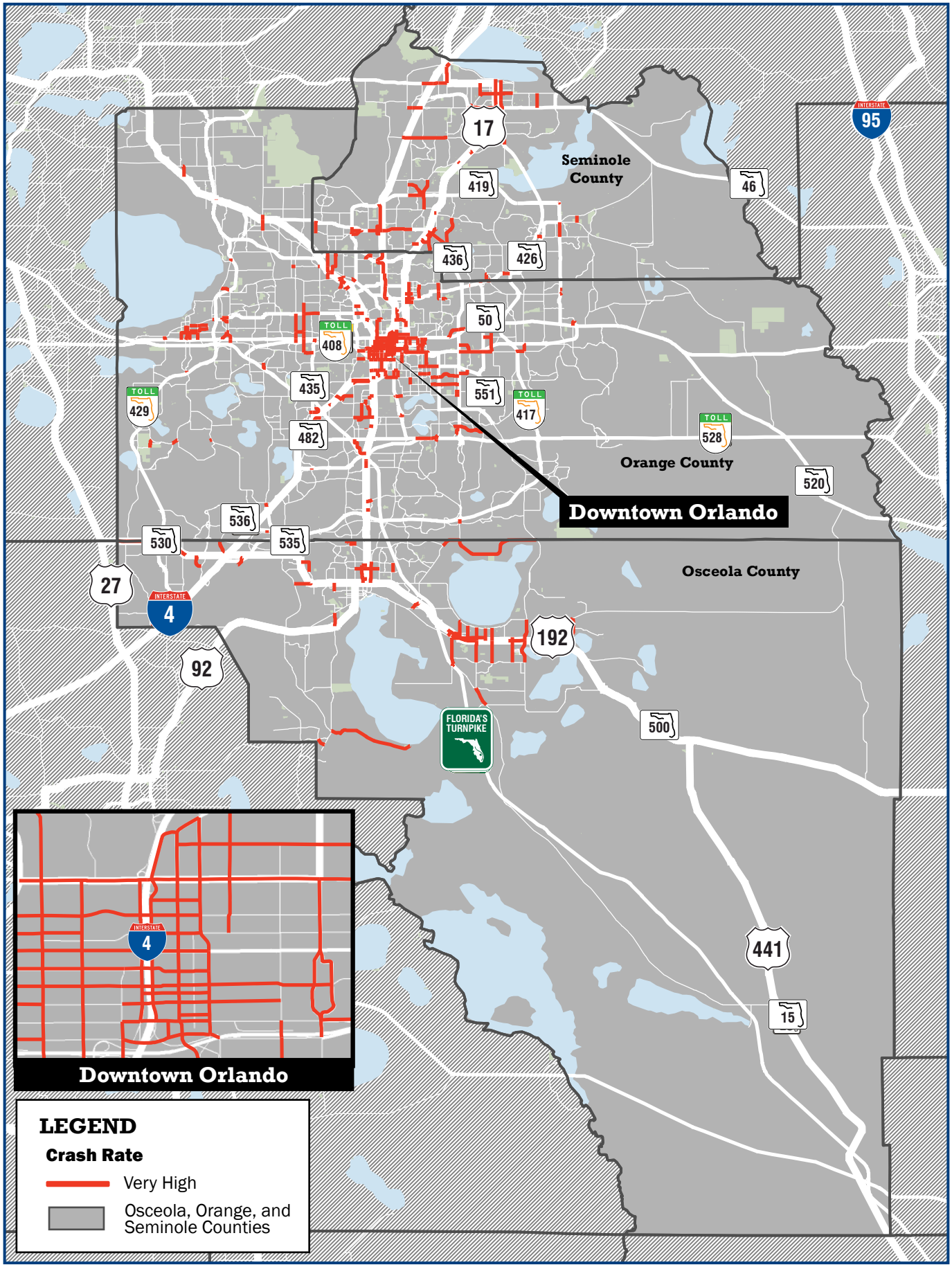

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Scale in Miles
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Roadways with Very High Crash Rate | Figure 8

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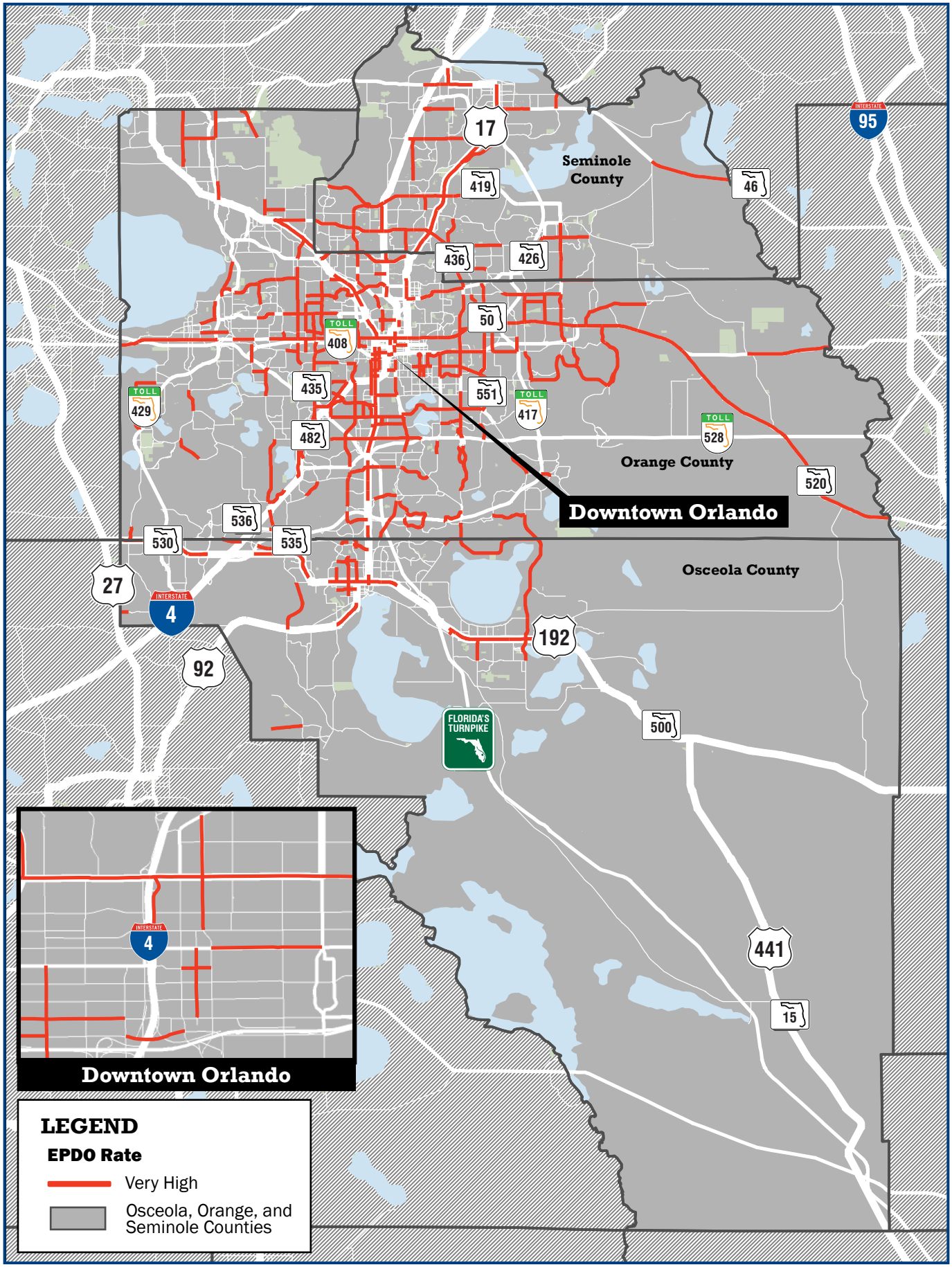

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Scale in Miles
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Roadways with Very High EPDO Score | Figure 9

Critical Speed Management Network Identification

Once the speed and crash data were collected and analyzed, a three-step methodology was used to identify roadways for inclusion in the critical speed management network:

1. Start with roadway segments that had an 85th percentile vehicle operating speed greater than or equal to 10 MPH over the posted speed limit, as identified in the Wejo speed analysis.
2. Any roadways identified in first step that also had a very high crash rate OR very high EPDO score were included in the critical speed management network.
3. In addition to roadways identified through steps 1 and 2, roadways with a 95th percentile speed greater than or equal to 20 MPH over the posted speed limit were also included in the critical speed management network.

The critical speed management network identified through this three-step process is shown in **Figure 10**. **Figure 11**, **Figure 12**, and **Figure 13** show a breakdown of the critical speed management network by county. There were 339 roadway segments (617 miles) identified in the critical speed management network across the three-county area, of which 259 were non-state roadway segments. The non-state roadways were further analyzed to recommend preliminary target speeds as discussed in the following sections.

Equity Areas Analysis

In the "Equity Audit – Analysis Support" prepared for MetroPlan Orlando in July 2022, population demographics within census blocks and census block groups were used to develop "Equity Analysis Areas" (EAAs). EAAs were defined as geographies with populations composed of greater than 50 percent of minority, below the Asset Limited, Income Constrained, and Employed (ALICE) threshold, and meeting the Historically Disadvantaged Community (HDC) threshold.

The Project Team overlayed the critical speed management network on the EAAs, as can be seen in **Figure 10**. **Figure 11**, **Figure 12**, and **Figure 13** to identify roadway segments that are within areas of equity concern. Results indicated 73 percent of roadway segments in the critical speed management network were within EAA areas. **Table 3** summarizes the percentage of roadway segments overlaying EAAs.

Table 3: Critical Speed Management Overlaying EAAs

Counties	Critical Speed Network Segments	Segments Intersecting Equity Areas	Segments Not Intersecting Equity Areas
Osceola	57	44 (77%)	13
Orange	259	186 (72%)	73
Seminole	23	17 (74%)	6
Grand Total	339	247 (73%)	92

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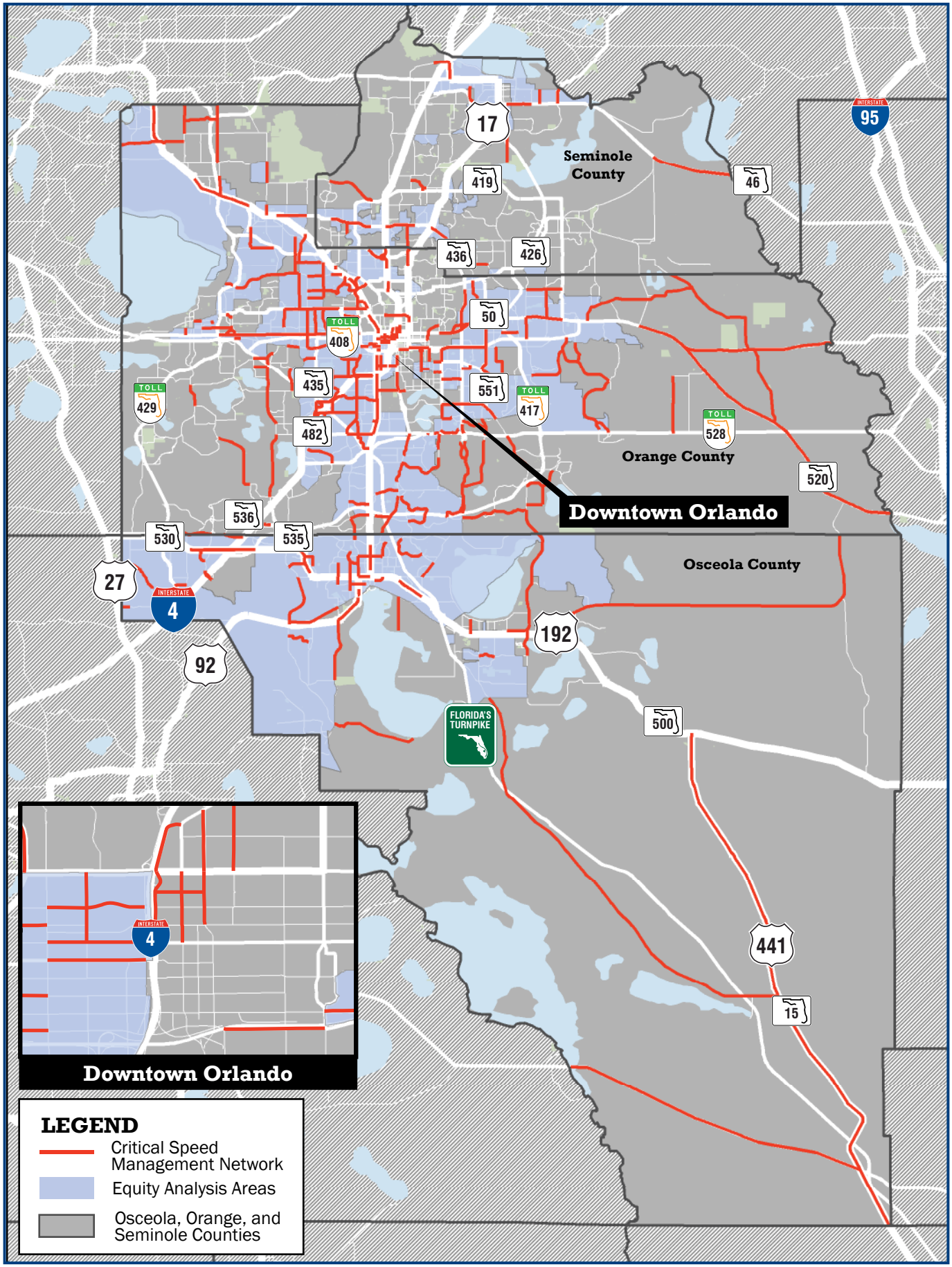

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Scale in Miles
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Critical Speed Management Network | Figure 10

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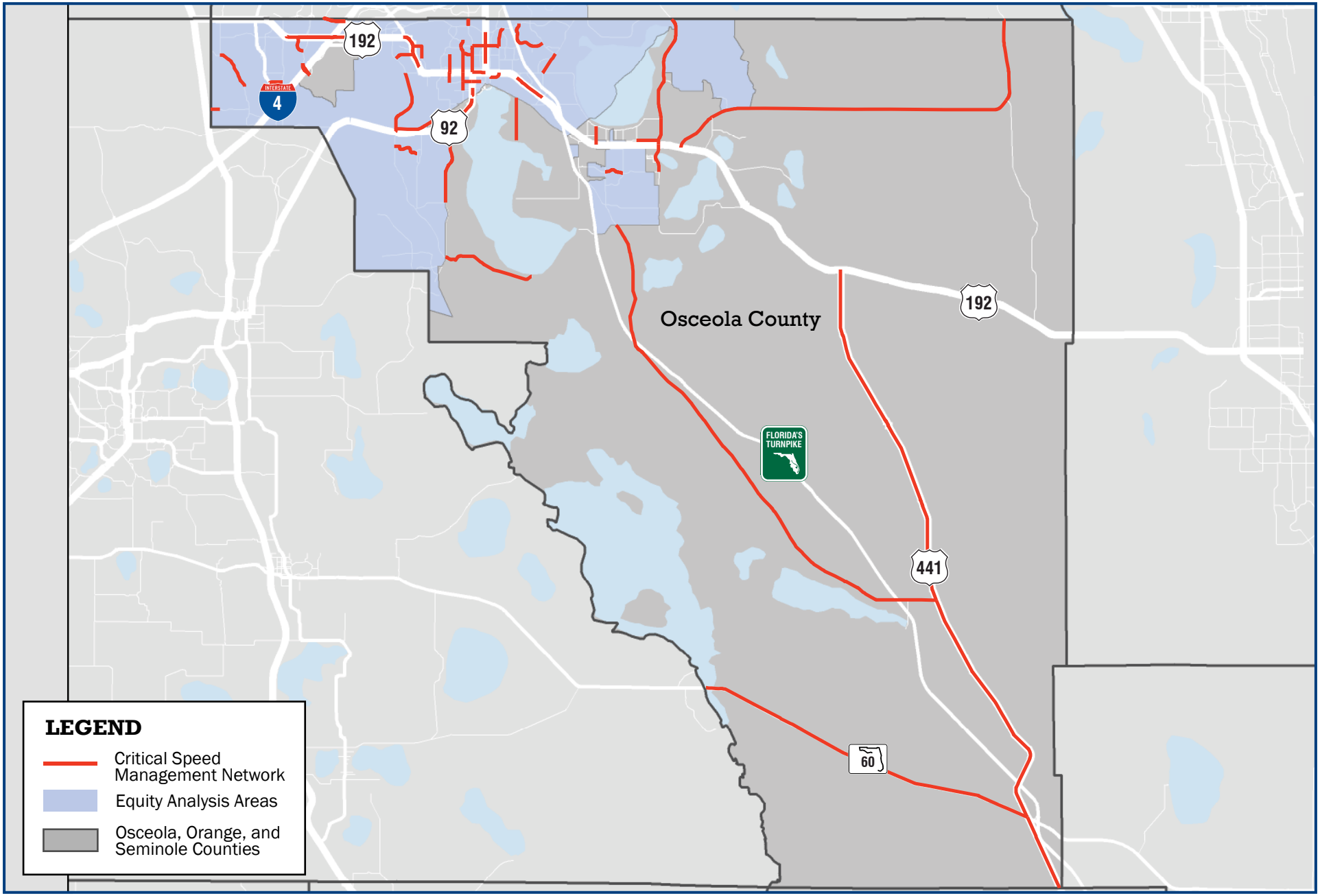

Critical Speed Management Network: Osceola County | Figure 11

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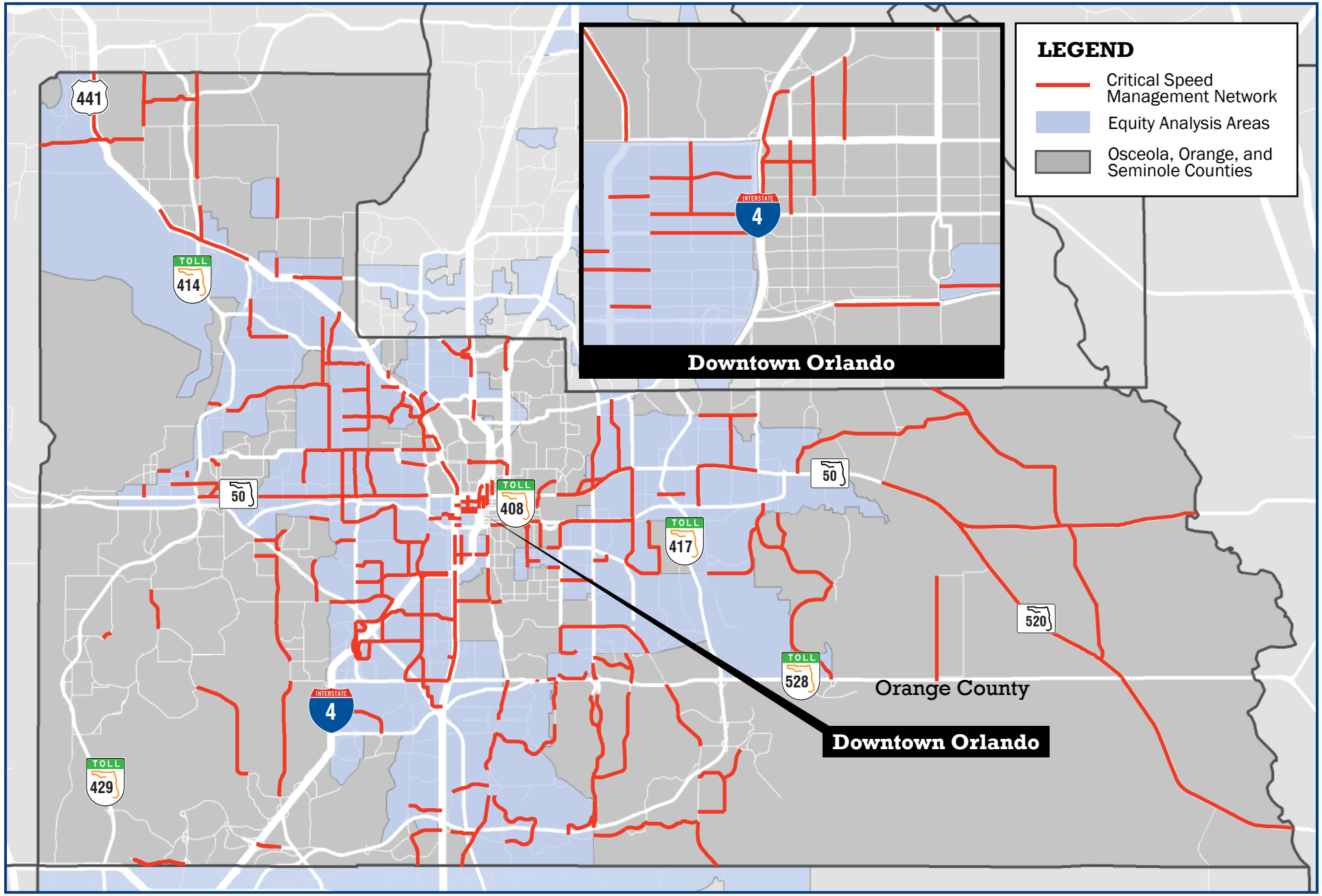

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Scale in Miles
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Critical Speed Management Network: Orange County | Figure 12

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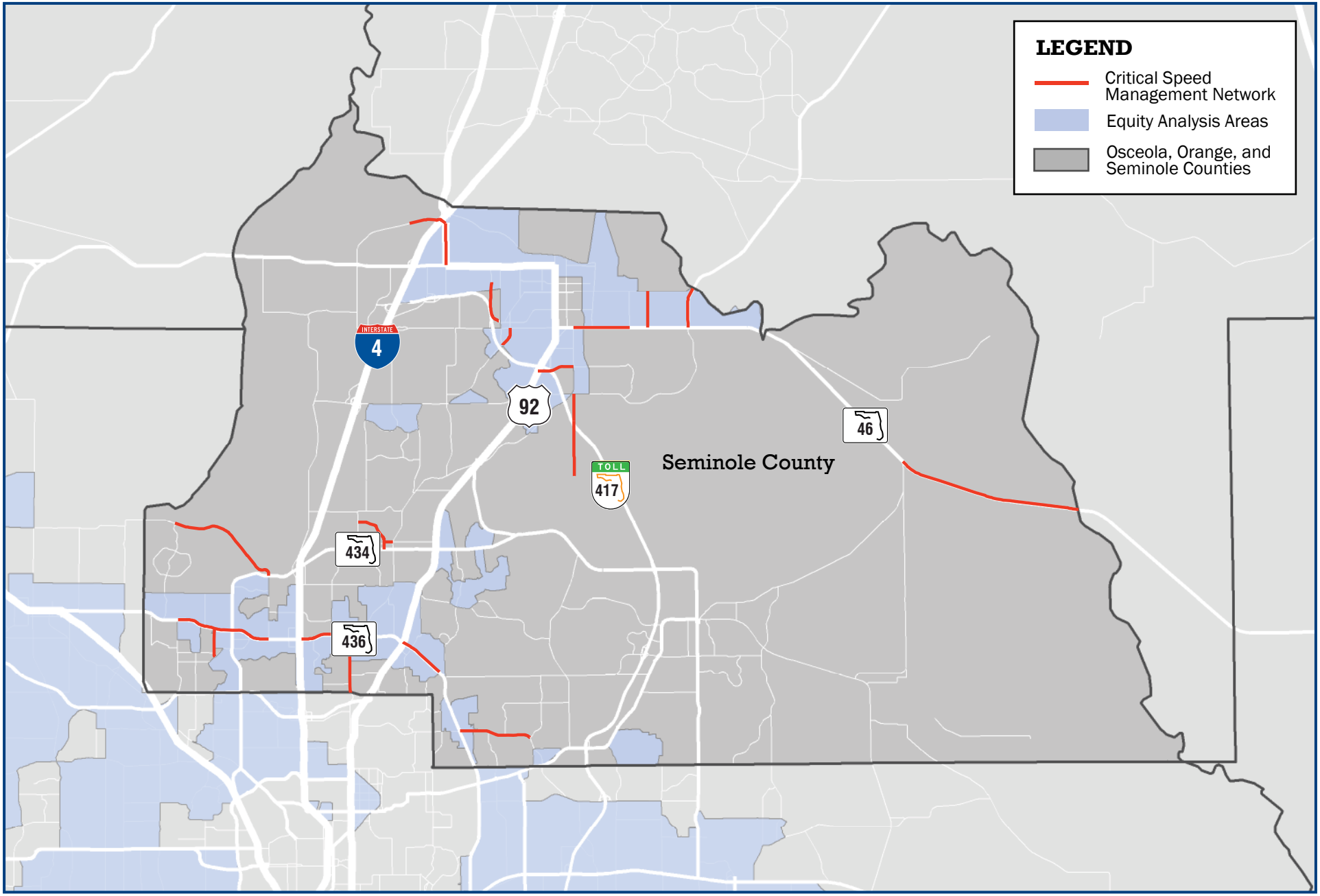

Critical Speed Management Network: Seminole County | Figure 13

Preliminary Target Speed Analysis

The goal of this analysis was to provide preliminary target speed recommendations for roadways identified on the critical speed management network. The analysis considered a variety of roadway characteristics to recommend a preliminary target speed for each of the critical speed management network segments.

Speeding Definitions

There are four main ways to measure and report vehicular speeds[3]:

- **Operating Speed** is the measured speed at which vehicles are currently traveling.
- **Posted Speed** is the legal allowable speed traditionally based on the 85th percentile operating speed.
- **Design Speed** is a selected speed used to determine the various geometric design features of the roadway. Design speed could be set higher than the posted speed.
- **Target Speed** is the speed at which drivers are intended to drive based on the types of users and context of the area considering –
    - Multi-modal activity generated by adjacent land uses;
    - Mobility for motor vehicles; and
    - Creating a supportive environment for pedestrians, bicyclists, and public transit users.

The target speed sets the goal for the future operations and design of a roadway. With an established target speed, speed management countermeasures could be implemented on a corridor to help better align the operating, posted, and design speeds with the recommended target speed.

Target Speed Research

The Project Team reviewed existing industry best practices on target speeds to develop a methodology for setting target speeds. The following outlines the key elements that contributed to the methodology:

FDOT Context Classification Guide

The FDOT Context Classification Guide discusses a methodology to set target speeds along the state highway system. The Guide provides a base range of design speeds for roadways within each Context Classification, as shown in **Table 4**, and is also used as the allowable speed range for setting target speeds.

To determine where within the allowable speed range the target speed should be, FDOT offers a list of guiding questions and a decision matrix based on Context Classification, fronting uses, population density, vulnerable users, cross section elements (parking, bicycle facility), access classification, transit presence, pedestrian/bicycle generators, vehicle trip type, trip length, and safety conditions. All these factors together help determine who the users of the roadway are and how fast vehicles should be traveling in response to the context of the area. The FDOT decision matrix and questions from the Guide are listed in **Appendix D.**

[3] Florida Department of Transportation, "FDOT Speed Zoning Manual," State of Florida, August, 2018

Table 4: FDOT Context Classification Allowable Design Speed Ranges

Context Classification	Allowable Design Speed Range (MPH)	SIS Minimum (MPH)
C1 Natural	55 to 70	65
C2 Rural	55 to 70	65
C2T Rural Town	25 to 45	40
C3 Suburban	35 to 55	50
C4 Urban General	30 to 45	45
C5 Urban Center	25 to 35	35
C6 Urban Core	25 to 30	30

Twenty is Plenty

Twenty is Plenty is an initiative which recognizes the need for 20 MPH posted speeds throughout residential and business districts within urban areas. Hundreds of communities throughout the world have adopted this policy and the following are examples of communities that adopted this policy in the US:

- The State of Oregon (ORS 810.180): Allowed the default posted speed as 20 MPH in a business district and 25 MPH in a residential district. Many municipalities in Oregon have adopted this.
- The City of Madison, WI: Implemented this in a two-phase approach throughout their downtown area to lower speeds to 20 MPH.
- The City of Denver, CO: Reduced the speed limit on all residential streets from 25 MPH to 20 MPH.

In Florida, Florida Statute 316.183.2 states that a "county or municipality may set a maximum speed limit of 20 or 25 miles per hour on local streets and highways after an investigation determines that such a limit is reasonable." Therefore, different agencies are allowed to set speed limits of 20 MPH per Florida Statutes as deemed reasonable.

Oregon Department of Transportation (ODOT)

ODOT has developed target speed ranges for different urban contexts within an urban growth boundary. These target speed ranges are much lower than FDOT's allowable target speed ranges but provide a similar framework for determining target speed based on the context of the area. ODOT target speed ranges are listed in Table 5.

Table 5: ODOT Target Speeds for Urban Areas

Urban Context	Target Speed (MPH)
Traditional Downtown/CBD	20-25
Urban Mix	25-30
Commercial Corridor	30-35
Residential Arterial	30-35
Suburban Fringe*	35-40
Rural Community	25-35

***The "fringe" context is typically adjacent to rural areas of urban development, but often is in the process of developing. For projects in the "fringe" context zone, practitioners should consider likely future development and consider applying designs for "residential arterial,""commercial corridor," or "urban mix" contexts if this type of development is likely to occur.**

City of Tampa

The City of Tampa has recently developed draft target speed ranges based on a corridor's Context Classification and functional classification. The Context Classification accounts for the types of users that are expected to be seen along a corridor, and the functional classification accounts for the type of trips occurring along the corridor (regional vs. local trips). The draft City of Tampa target speed ranges are listed in Table 6.

Table 6: Draft City of Tampa Target Speed Ranges (MPH)

	C1/C2 Natural/ Rural	C3R Suburban Residential	C3C Suburban Commercial	C4 Urban General	C5 Urban Center	C6 Urban Core
Arterial	35 to 55	30 to 40	30 to 35	25 to 35	25 to 30	20 to 25
Collector	30 to 45	30 to 35	30 to 35	25 to 30	25 to 30	20 to 25
Local	20-25	20-25	20-25	20-25	20-25	20-25

Target Speed Methodology

Based on the industry best practices and iterative testing/discussion with the MetroPlan Orlando project management team, the Project Team developed a target speed methodology for the critical speed management network. The methodology considers context classification, facility type, transit, and safety to determine a preliminary target speed recommendation for the non-state critical speed management network.

The MetroPlan Orlando target speed methodology used a similar approach of considering both context classification and functional classification that was in the draft City of Tampa approach. The speed ranges were adjusted to reflect national best practices and further refinements were made through

iterative testing of the methodology on MetroPlan Orlando non-state roadways. **Table 7** shows the speed ranges based on Context Classification and functional classification that were used to set the allowable target speed ranges for the critical speed management network.

Table 7: Allowable Speeds based on Context Classification and Functional Classification

		C1/C2	C3R/C3C	C4	C2T/C5	C6
FDOT Ranges	All Functional Classes	55 to 70	35 to 55	30 to 45	25 to 45 (C2T) 25 to 35 (C5)	25 to 30
Proposed MetroPlan Orlando Ranges	Arterial/ Collector	35 to 55*	30 to 40	25 to 35	25 to 30	20 to 25
	Local	25 to 35	25 to 35	20 to 25	20 to 25	20 to 25

*Maximum target speed for C1/C2 collector is 45 mph

The target speed methodology is outlined below and illustrated in **Figure 14**.

1. **Allowable target speed range – What is the allowable target speed range to start with?**
    a. Determine the allowable target speed range based on the Context Classification and functional classification of the corridor using **Table 7**.
    b. For example, if a corridor is a C4 arterial, the allowable target speed range is 25 to 35 MPH.
2. **Transit – Is there transit present?**
    a. Transit is considered present along a corridor if there is a fixed-route route service with a minimum of one-hour headways along any section of the corridor.
    b. If there is transit present on a corridor, the preliminary target speed should be at the lower end of the allowable speed range.
3. **Safety – What is the crash rate and EPDO score?**
    a. Most of the critical speed management network roadway segments were considered to have a very high crash rate or EPDO score, while some in the network may have had lower crash rates and EPDO scores but very high speeding conditions (20 MPH over posted speed). Thus, these roadways will have a preliminary target speed at the lower end of the allowable speed range.
    b. For the purposes of determining preliminary target speeds along other roadways within the MetroPlan Orlando area, the crash rate/EPDO score should be considered very high, high, medium, or low based on the quartiles presented in **Table 2**. In cases where the crash rate and EPDO score are in different quartiles, pick the higher quartile of the two metrics (i.e., if the crash rate is high but the EPDO score is low, the crash rate should be selected to determine preliminary target speed).
4. **Pick the Lower Speed**
    a. When choosing the middle end of the allowable speed range, divide the range in half and round down to the lower of the speed range (for example, a C3R local corridor would be 30 MPH).
    b. If the posted speed is currently lower than the preliminary target speed based on the methodology, set the preliminary target speed to the current posted speed.

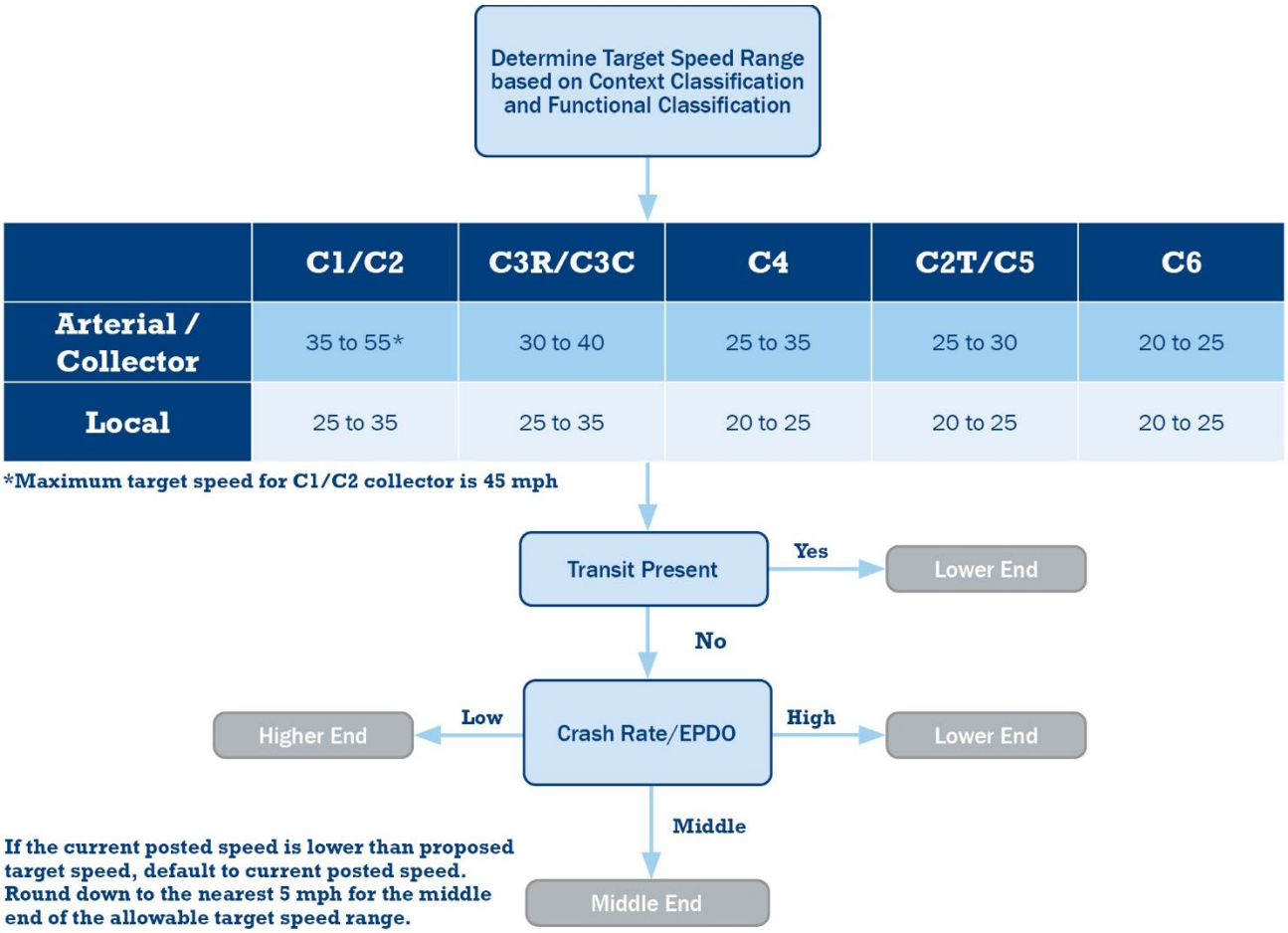

Figure 14: Target Speed Methodology

Preliminary Target Speed Analysis Results

The 259 non-state roadway segments were evaluated using the target speed methodology. The output was summarized into two categories:

- Preliminary Target Speed Below Posted Speed –
  - Roadways having a preliminary target speed recommendation lower than the current posted speed.
- Preliminary Target Speed Same as Posted Speed –
  - Roadways having a preliminary target speed recommendation that was the same as the current posted speed.
  - Roadways having a preliminary target speed recommendation higher than the current posted speed. In these cases, the recommendation would be to use the current posted speed as the preliminary target speed.

Table 8 summarizes the results of roadways reviewed using the target speed methodology.

Table 8: Preliminary Target Speed Analysis Results

Target Speed Analysis Results	Osceola Co.	Orange Co.	Seminole Co.	Total
Recommend Target Speed Below Posted Speed	26 (59%)	144 (72%)	6 (43%)	176 (68%)
Recommend Target Speed Same as Posted Speed	18 (41%)	57 (28%)	8 (57%)	83 (32%)

As shown in **Table 8**, there were a total of 176 roadway segments with a preliminary target speed that is proposed to be less than the existing posted speed limit. **Figure 15** through **Figure 18** illustrate the preliminary target speeds recommended for roadways on the non-state roadway critical speed management network. A breakdown of each roadway evaluated using the target speed methodology can be found in **Appendix E**.

While the preliminary target speeds presented in this report can be used as a starting point, they should be further refined using additional metrics (access classification, parking, bicycle and pedestrian facilities, etc.) and finalized with input from agency and local stakeholders when a specific project is proposed along a roadway. MetroPlan Orlando recognizes that some corridors may need more than one project to achieve a recommended target speed, especially if the corridor has a target speed recommendation that is 15+ mph less than the existing posted speed. While the outcome from this project was to provide preliminary target speed recommendations for corridors with speeding and/or crash issues, the primary goal is to raise awareness about target speed with all of our local partners and provide a starting point for project-specific discussions.

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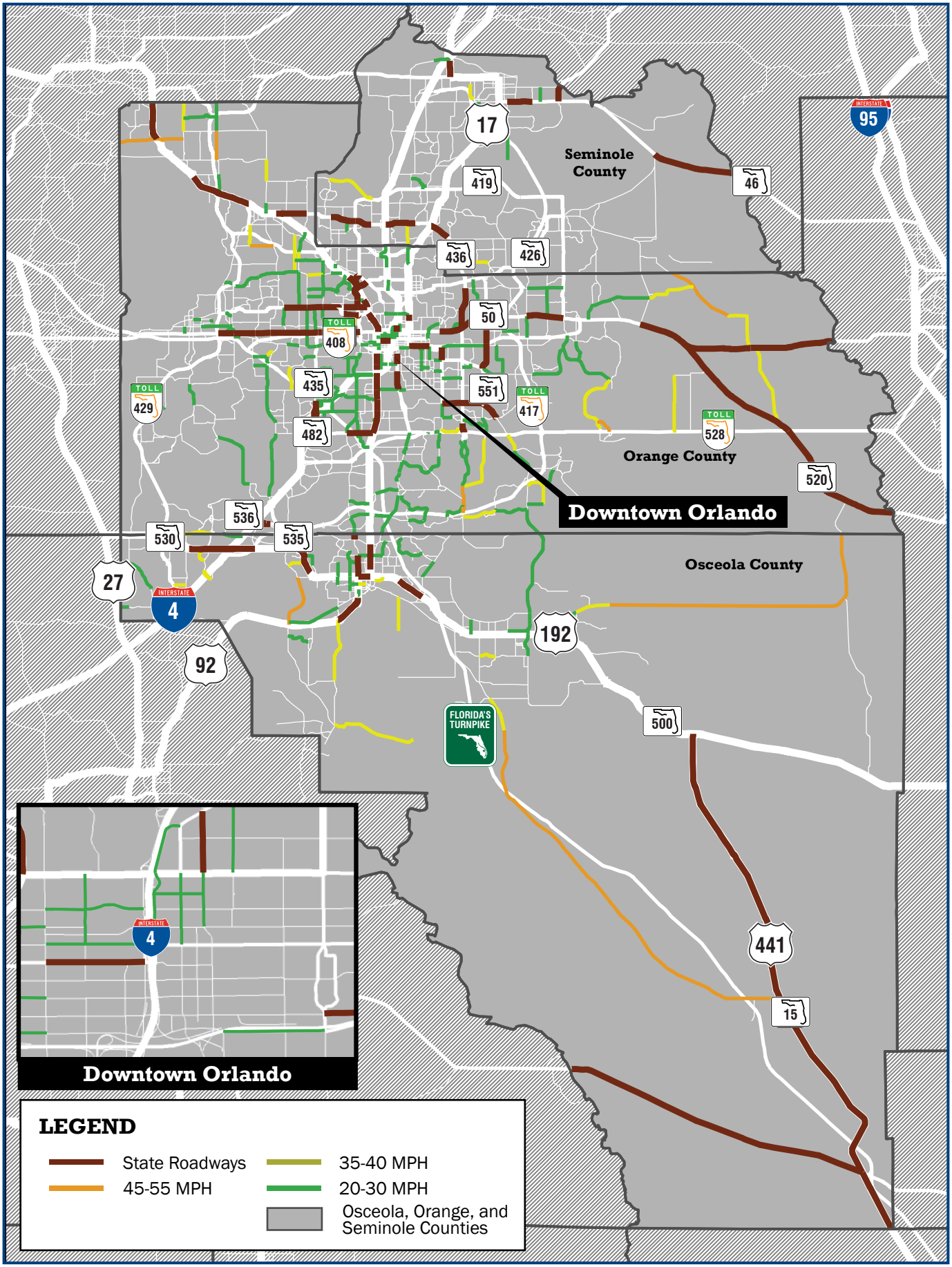
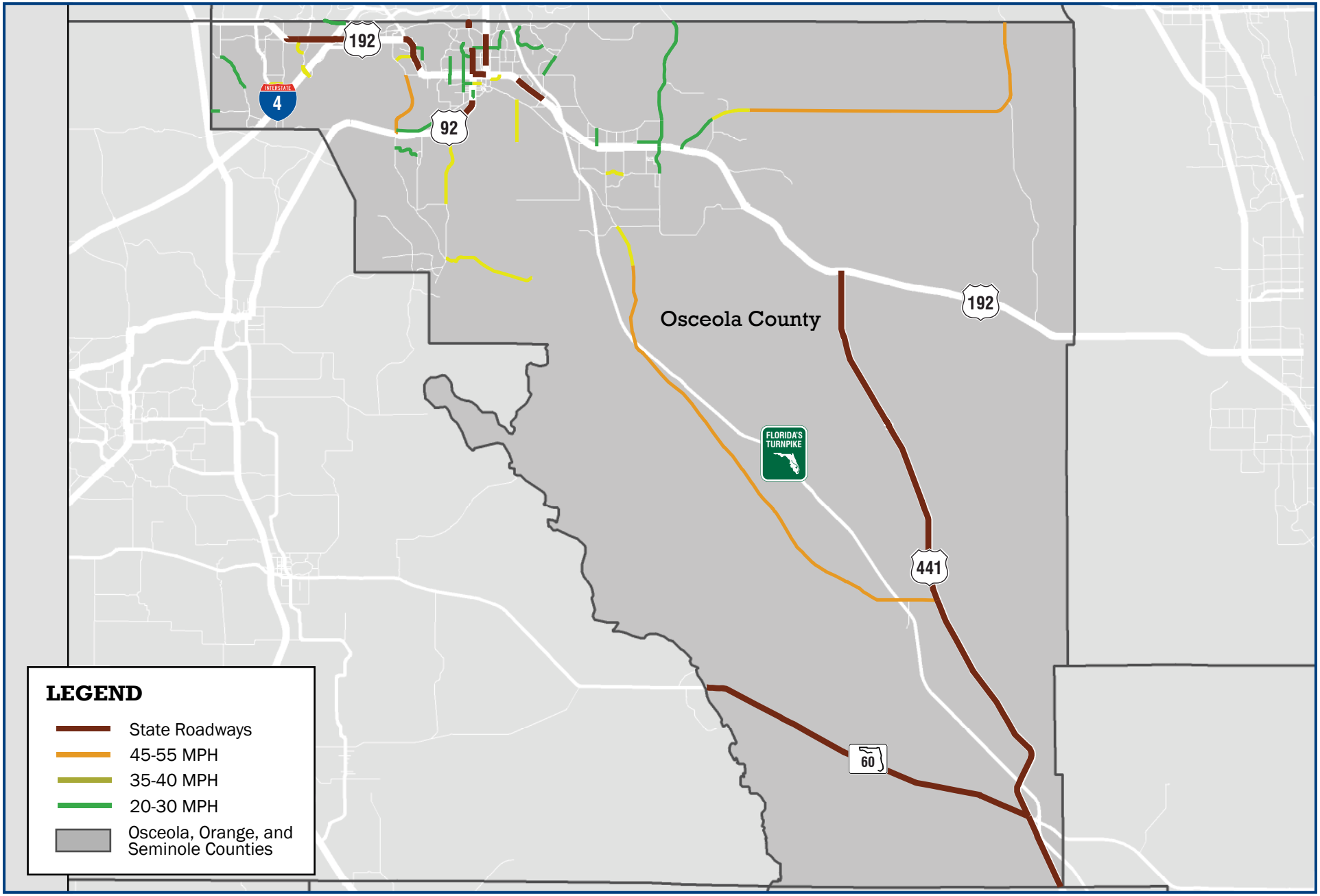


Preliminary Target Speed Analysis Results | Figure 15



Preliminary Target Speed Analysis Results: Osceola County | Figure 16

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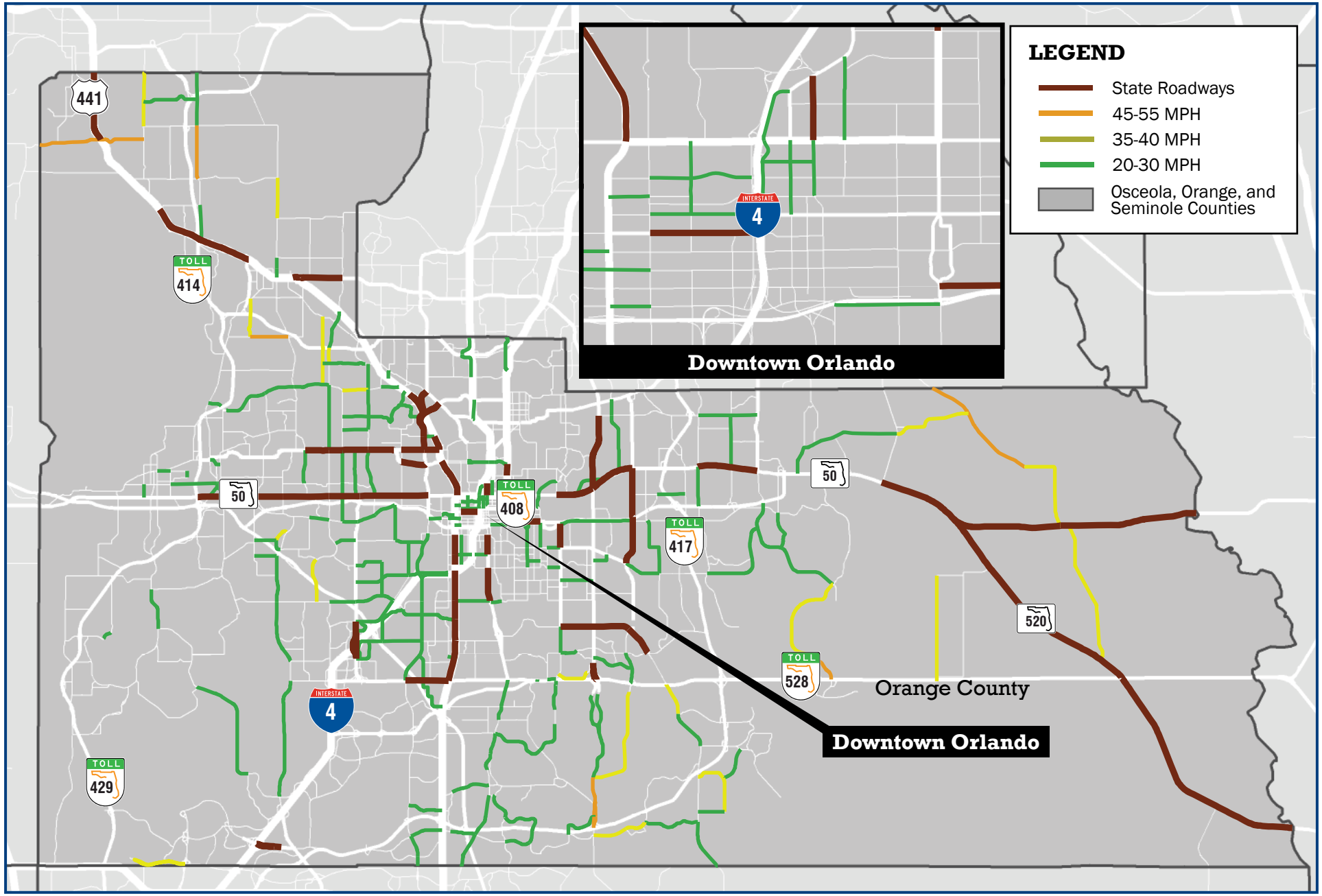

NORTH

Scale in Miles
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Preliminary Target Speed Analysis Results: Orange County | Figure 17

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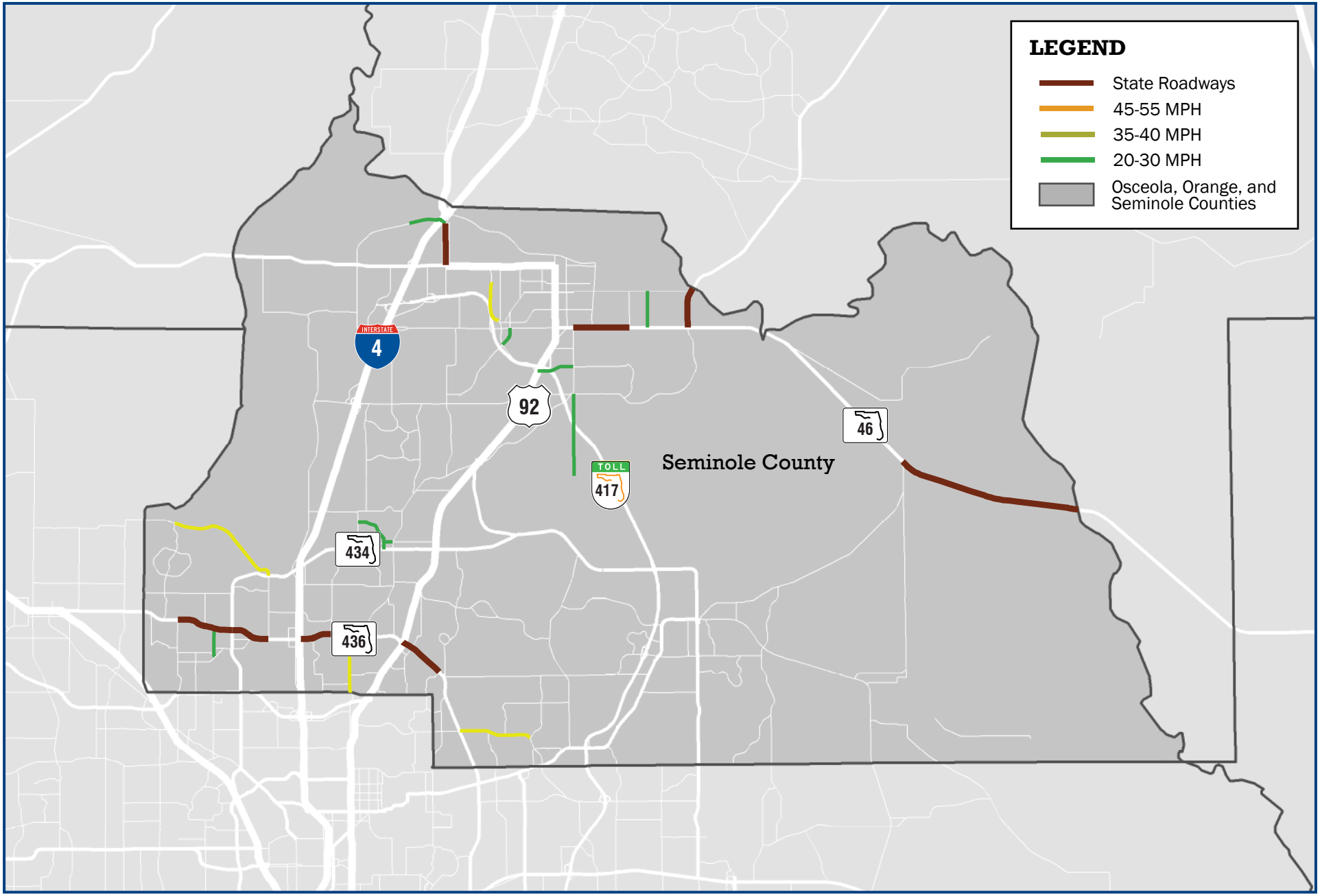

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Scale in Miles
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Preliminary Target Speed Analysis Results: Seminole County | Figure 18

Vulnerable Users Safety Working Group

MetroPlan Orlando's Vulnerable Users Safety Working Group focuses on decreasing fatal and serious injuries involving pedestrians and bicyclists, with an emphasis on corridor speed reduction. The Working Group includes members of the MetroPlan Orlando Technical Advisory Committee, Community Advisory Committee, the Transportation Systems Management and Operations Advisory Committee, and other local partners.

The Project Team collaborated with the Working Group and used them as a sounding board. The Team met with the Working Group three times throughout the duration of the study. The first Working Group meeting was held on April 19, 2022. In this meeting, the Project Team presented:

- Introduction and overview of the goals and objectives for the Speed Management Network Screening;
- Refresher of FDOT's Context Classification methodology; and
- Overview of how and why the Project Team assigned context classification to non-state roadways in the MetroPlan Orlando area.

The second Working Group meeting was held on July 19, 2022 where the Project Team presented:

- Introduction and overview of the Wejo speed data collected and used;
- Introduction and overview of how crash data was collected, and how crash rates and EPDO scores were calculated; and
- Explanation of how speed and crash data was used to identify the draft critical speed management network.

The third and final Working Group meeting was held on October 18, 2022. In this meeting, the Project Team presented:

- The final critical speed management network;
- The methodology used to assign preliminary target speeds for roadways on the critical speed management network; and
- The recommended preliminary target speeds for the critical speed management network.

The presentations for each of the Working Group Meetings are provided in **Appendix F**.

Next Steps

The Speed Management Network Screening is a key step in MetroPlan Orlando's goal to prioritize safety for all roadway users. By addressing the corridors with the current, most acute speeding issues and where operating and posted speeds are mismatched with existing users and uses of the roadway, safety for all modes, and especially for vulnerable users will be improved. This study identified the critical speed management network and recommended preliminary target speeds for this network. MetroPlan Orlando and its partner agencies can advance results from the study through the following next steps:

- Identify a priority list of roadways to implement changes and achieve recommended target speeds in the critical speed management network.
    - The roadways identified within EAAs as shown in **Figure 13** could be prioritized first.
    - The roadways that are in the MetroPlan Orlando Prioritized Projects List, Transportation Improvement Programs (TIP), candidate resurfacing projects, and/or local Capital Improvement Programs (CIP) could be leveraged to immediately advance speed management solutions.
- If corridors are not already programmed on funded project lists, work with partner agencies to adopt policies and programs to incrementally advance roadway design changes to and achieve target speeds on the critical speed management network.
- Advance priority corridors/projects to planning, design, and construction:
    - Conduct more in-depth studies to identify speed management countermeasures at the corridor level to achieve the recommended preliminary target speed.
    - Perform feasibility analyses on identified recommendations and prepare concept plans/cost estimates for improvements.
- Work with partner agencies to identify funding opportunities to implement the speed management countermeasures. Potential funding sources can include existing funding (e.g., Highway Safety Improvement Program (HSIP) funds) as well as new Federal funding (e.g., Safe Streets and Roads for All (SS4A) grant).
- Leverage roadways that are in the MetroPlan Orlando Prioritized Projects List, Transportation Improvement Programs (TIP), candidate resurfacing projects, and/or local Capital Improvement Programs (CIP) to immediately advance speed management solutions.
    - Develop countermeasures and incorporate these as part of these projects' development processes (scoping, design, and construction) to advance speed management solutions and achieve target speeds.
- Coordination with FDOT and other partner agencies to advance any of these steps identified.

FDOT's Speed Zoning Manual as well as their Design Manual are good resources to use for the next steps. Both resources provide recommended procedures to achieve target speeds that benefit all users and list a range of options from low-cost systematic improvements integrated into a resurfacing project, to larger roadway reconstruction projects adopted into an improvement program.

APPENDIX A: PRELIMINARY CONTEXT CLASSIFICATION FOR NON-STATE ROADWAYS TECHNICAL MEMORANDUM

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Preliminary Context Classification for Non-State Roadways

Methodology & Analysis Results

September 2022

Prepared for MetroPlan Orlando
Prepared by Kittelson & Associates, Inc.

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Context Classification & Critical Speed Management Network

To support the Speed Management Network Screening Project, MetroPlan Orlando evaluated the Context Classification (CC) on the MetroPlan Orlando roadway network to complement the Florida Department of Transportation (FDOT) State Roadway Context Classification. Context Classification is the classification of roadways based on a list of adjacent land use and development characteristics to inform the type and frequency of multimodal users along the roadway. FDOT's Context Classification was developed as part of the State's Complete Streets 360 initiative. Through this effort, the Context Classification system evaluates roadways and designates a process where all roadway design is grounded on a roadway's context. The FDOT Design Manual (FDM) and other statewide manuals outline design criteria and design standards based on Context Classification so that safety strategies can be implemented through programmatic means and systemic approaches.

The full spectrum of classifications is shown in **Figure 1**. Starting with C1 and ending with C6, the classifications start with the most natural, undeveloped lands that are traversed by roadways (C1 – Natural) and are endcapped with those roads that serve the State's densest cities (C6 – Urban Core). The designations in between these areas represent Florida's rural areas and towns as well as suburban and other development patterns found within the State and within the MetroPlan Orlando region.

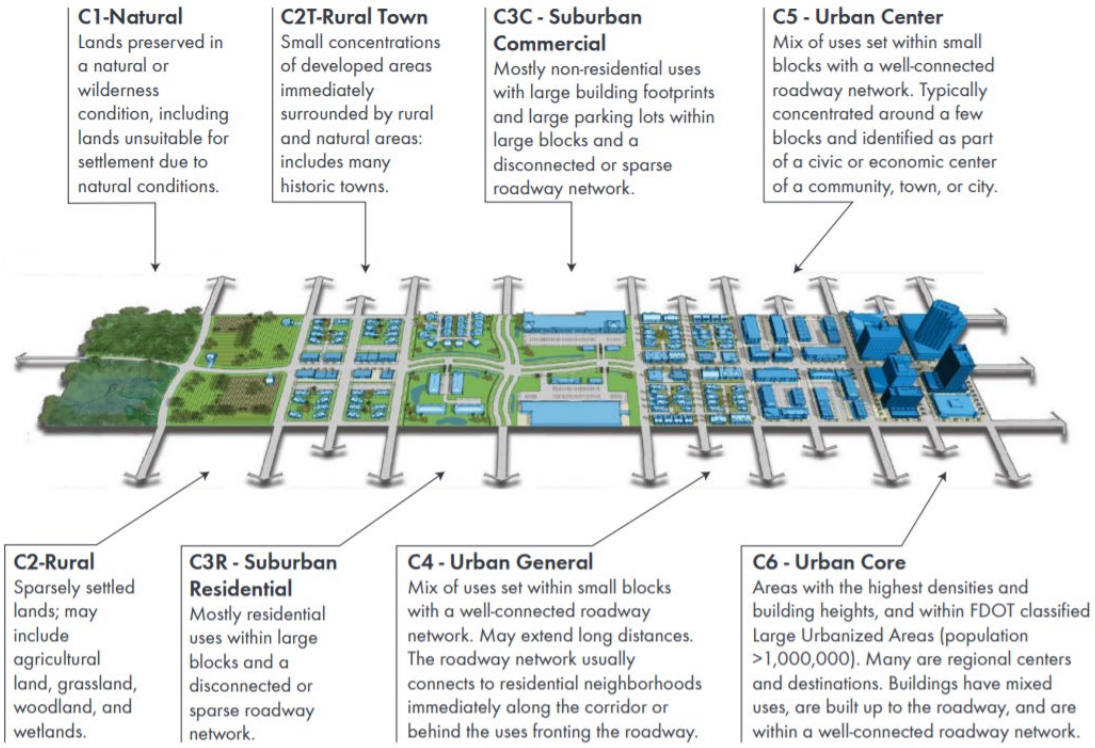

Figure 1 Context Classification Designations

The use of Context Classification was initially intended to be applied to FDOT-owned roadways (known as the State Highway System or SHS), but its utility in coupling land use, demographics, and development patterns to inform roadway planning and design has been valuable to local agencies as well. This is notably poignant when aligning crash statistics with Context Classification. Data suggests roadways with a posted speed of 40-45 MPH in suburban areas (C3C and C3R) and urban general (C4) overlap with areas with a high propensity for severe injury and fatal traffic crashes.[1]

In the development of MetroPlan Orlando's Critical Speed Management Network, Context Classification will provide the link to appropriate design speed ranges (as described in the FDOT Design Manual), and an understanding of where misalignment of current posted speeds and ideal design speed ranges may be occurring in the region.

MetroPlan Orlando Context Classification Analysis Methodology

FDOT's approach to developing CC utilized a districtwide automated GIS methodology to arrive at a preliminary set of Context Classifications. This memorandum describes a similar automated process and GIS approach to determine the CC of the MetroPlan Orlando roadway network based on FDOT District 5's automated methodology. This memorandum outlines:

- The data utilized and their sources related to network conditions, population and employment densities, and land use;
- The methodology of data preparation in GIS and Excel to automate the Context Classification Determination; and
- The limitations and key assumptions of the methodology.

The details of this memorandum are intended to help MetroPlan Orlando replicate and update the Context Classification of off-system roadways in the future. This effort solely focused on the process to classify roadway segments not on the FDOT District 5 network which are eligible to receive federal aid. For the SHS, the project team utilized the latest FDOT District 5 CC database and GIS layer.

Data Utilized

The data inputs required for this task are summarized in **Table 1**. The MetroPlan Orlando roadway network consists of roadways both on the SHS and off-system roads of varying functional classifications (locals, collectors, major arterials) which are eligible to receive federal aid. The inputs for intersection density, block length, and block perimeter were a combination of inputs using U.S. Census Topologically Integrated Geographic Encoding and Referencing (TIGER) line files. TIGER files contain the most recently updated repository of

[1] FDOT Source Book: http://fdotsourcebook.com/

roadways in the nation. The methods for calculating intersection density, block length, and block perimeter are described in the **GIS Processing** section.

Table 1 Summary of Data Inputs and Sources

Type	Data Source	Data Shape
MetroPlan Orlando Roadway Network	*MetroPlan Orlando*	*Polylines*
Intersection Density	*TIGER Line Shapefiles 2019*	*Polylines*
Block Length	*MetroPlan Orlando Centerline File split at TIGER Line Intersections*	*Polylines*
Block Perimeter	*MetroPlan Orlando Centerline File split at TIGER Line Intersections*	*Polylines*
Employment Density	*Jobs/acre within adjacent Census Block Groups from UrbanFootprint*	*Polygons*
Population Density	*Persons/acre within adjacent Census Block Groups from UrbanFootprint (2021)*	*Polygons*
Land Use	*Land Use files Compiled from Local Agencies (2021)*	*Polygons*

The project team used a third-party mapping and geoprocessing program called UrbanFootprint to access employment density, population density, and land use data. This information is derived from the U.S. Census and a combination of national databases related to land uses.[2] The use of UrbanFootprint allowed the project team to streamline data collection and processing and unify these inputs into one GIS file.

GIS Processing

The methods used in preparing the inputs for automation in GIS and Excel are based on FDOT's GIS-driven Preliminary Context Classification Methodology. This process normally includes the aerial evaluation of building height, building placement (setback), fronting uses, parking location, and allowed residential and retail density (Floor Area Ratio). For the purpose of this analysis, these tertiary elements were omitted to streamline the automation process. A manual review of the network did analyze these characteristics on a segment by segment basis.

The data described in the previous section required post-processing to obtain accurate results from the measured outputs, which included:

- Intersection Density: number of intersections per square mile
- Block Length: distance between intersections
- Block Perimeter: perimeter of the blocks adjacent to the roadway on either side

[2] More information can be found here: https://urbanfootprint.com/wp-content/uploads/2018/07/Base-Canvas-Creation-Methodology.pdf

The preparation of these inputs was completed in ArcGIS using its built-in geoprocessing tools and third-party tools from ET Geowizards. These tools were primarily within the Linear Referencing Toolbox, used to overlay the layer characteristics onto a single polyline representing each side of the street. The two primary polyline features used to generate this information are the MetroPlan Orlando roadway network and the TIGER line files. The TIGER line files were scrubbed by removing limited access roadways, parking driveways, utility or access roads, highway ramps, and unpaved roads so the network connectivity measures would calculate appropriately. The scrubbed TIGER line file then served as the "local" network (meaning all roadways which are eligible for federal funding, including those found in the MetroPlan Orlando roadway network). The local network file and the MetroPlan Orlando roadway network file were then used to calculate roadway connectivity measures. The network was then segmented based on land uses and distinct changes in Context Classification – such as where land use districts made clear changes after the roadway traversed an intersection or jurisdictional boundary.

The polygonal components of employment, population density, and land use required less post-processing. In ArcGIS, employment and population estimates were calculated to reflect population and employment per acre within the census block group that encompasses the roadway. Land use was attributed to each segment based on its designation along the roadway. Roadways that were more than 50 percent of a particular land use were attributed to that majority land use designation. Instances where major changes in land use were reflected, the roadway was segmented at the transition points. These attributes were then spatially joined to the finalized MetroPlan Orlando roadway network to transition its data into a polyline format, along with the required roadway connectivity measures. The final polyline file was inclusive of the attributes needed to perform the analysis. The attributes from the polyline file were then exported to Excel to analyze the data and assign Context Classifications for each segment.

Use of Excel Model Workflow

The project team developed an Excel table to automate the classification process based on the workflow shown in **Figure 2**. Roadway connectivity measures exported from the polyline file were utilized to group the roadways in respective Context Classification "buckets" where they were then further evaluated based on secondary measures including land uses and employment/population density per acre.

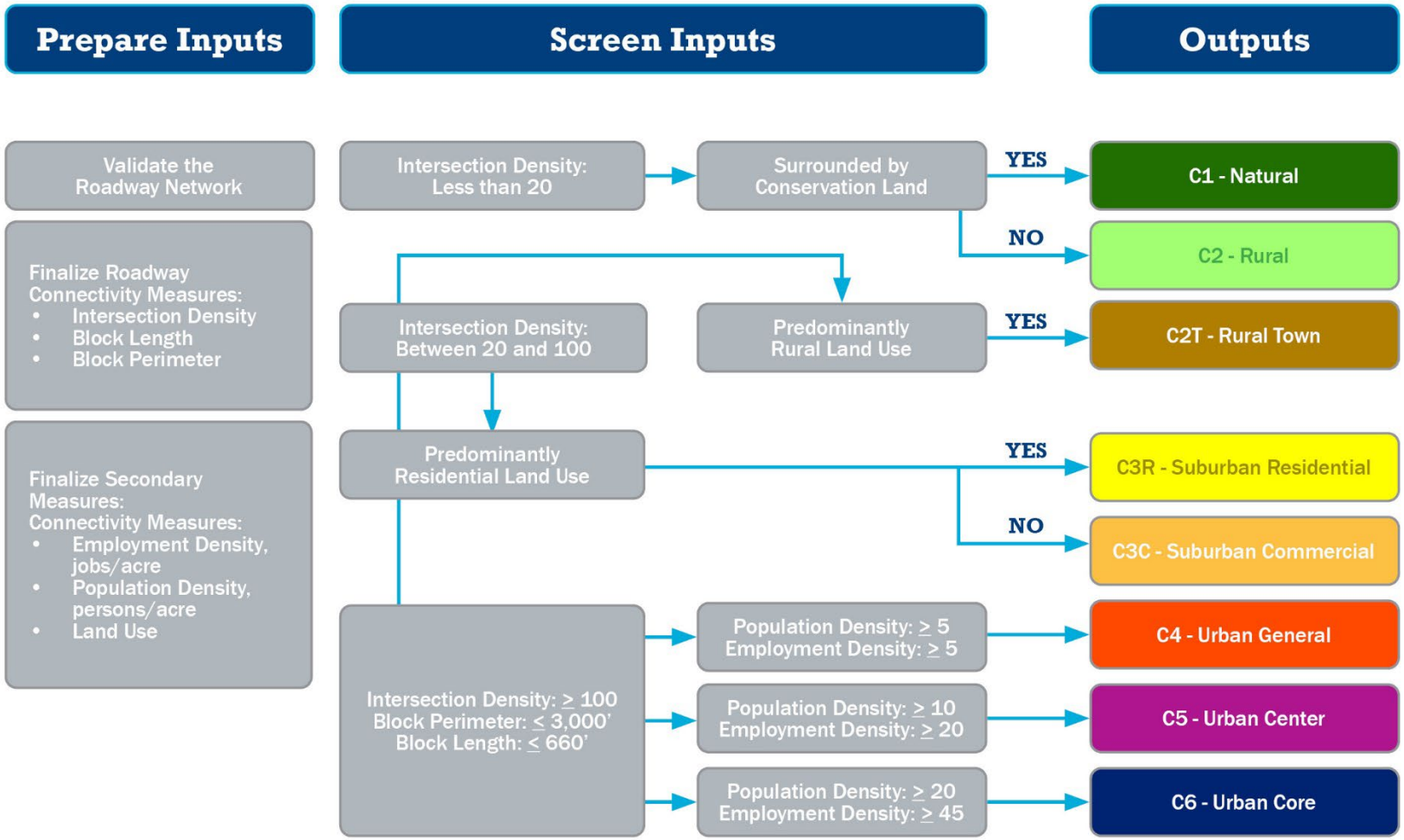

Figure 2 Context Classification Workflow

The output of the model generated a score between one (1) and eight (8). Each score represented a Context Classification starting with 1 (C1 – Natural) to 8 (C6 – Urban Core). The output from the Excel table was joined back to the polyline file in ArcGIS to project the scores on a map.

Manual Review of the Network

A manual review of the network was conducted to account for new developments (both land use and roadway networks) that are not reflected in the input data. This includes developments such as the Creative Village in downtown Orlando. Automated models used to generate categorical designations of a place will tend to overgeneralize these inputs and can up-classify or down-classify roadway segments. The manual review of the model output in ArcGIS allowed the project team to validate the model scored roadway segments, and provide additional segmentation of the roadway to accurately represent transitions in land use and context. MetroPlan Orlando staff also reviewed the network throughout the process and made classification suggestions based on their knowledge of the area and expertise.

Results

The results of the analysis are presented in the figures below, shown at the regional level as well as by county. Future updates to these classifications should consider contemporary land use, demographic, and roadway data for the area as well as any upcoming developments that may significantly change these measures. The results are illustrated in **Figure 3** through **Figure 6.**

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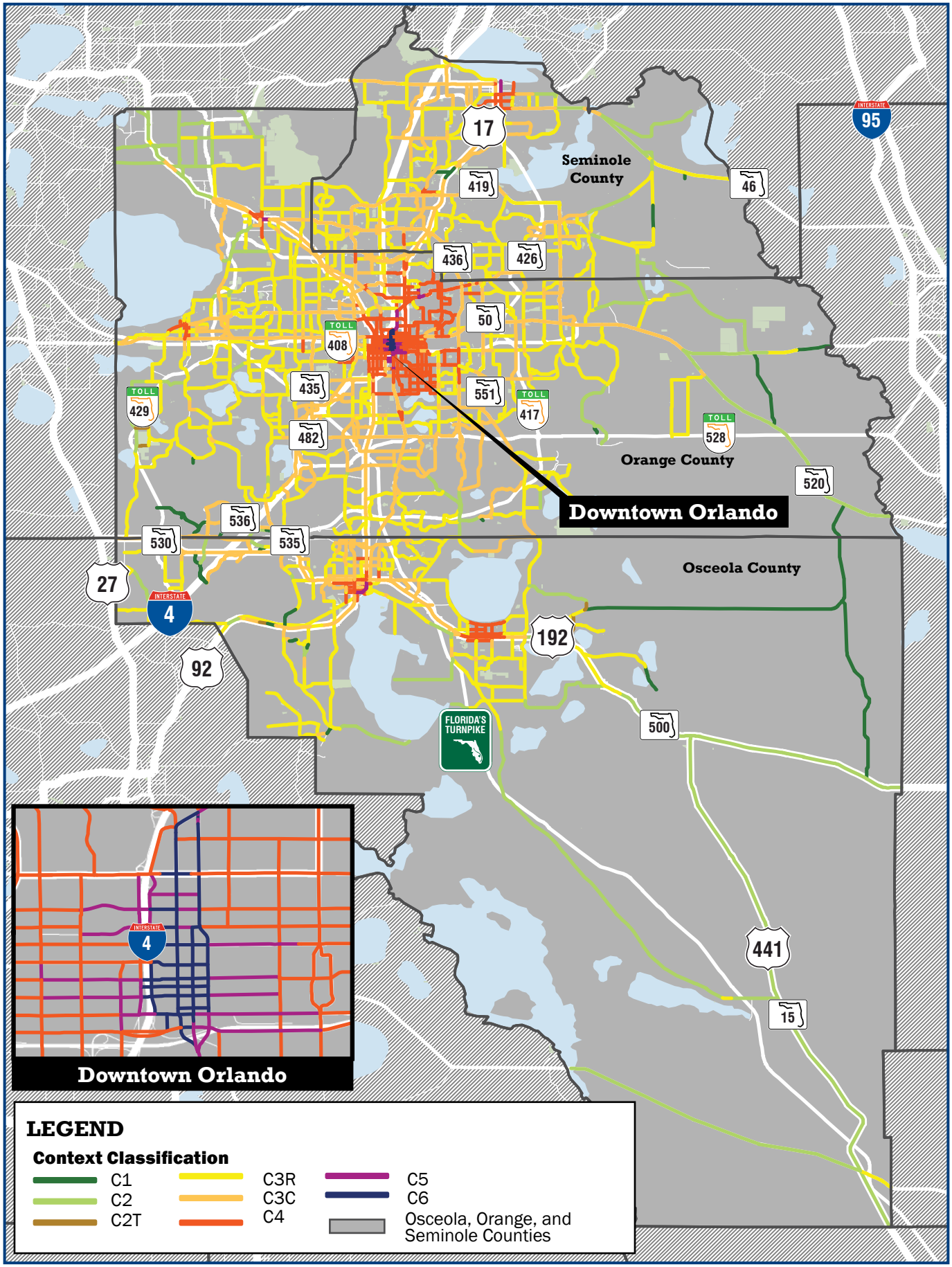

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Scale in Miles
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Preliminary Context Classification Network | Figure 3

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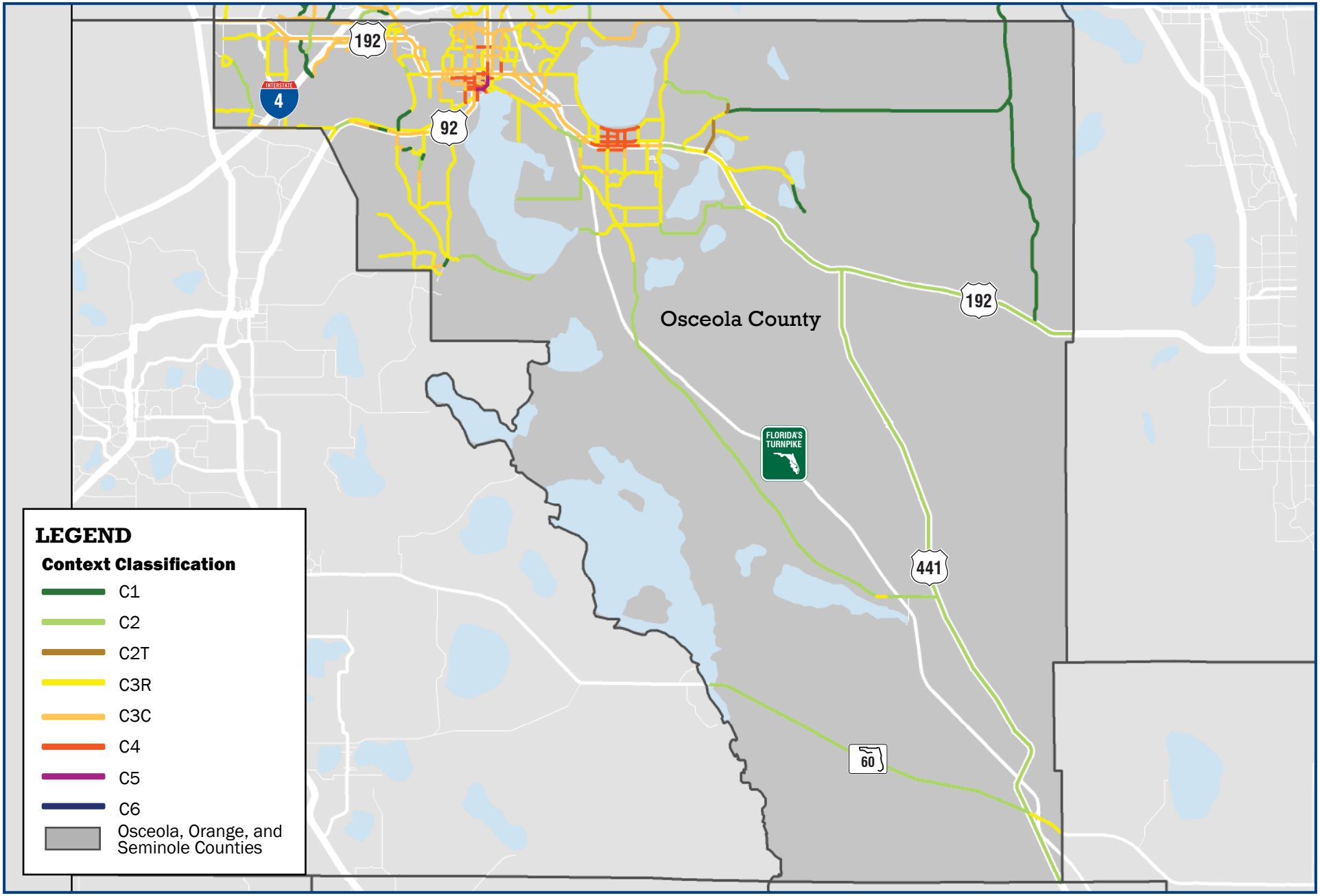

Preliminary Context Classification Network: Osceola County | Figure 4

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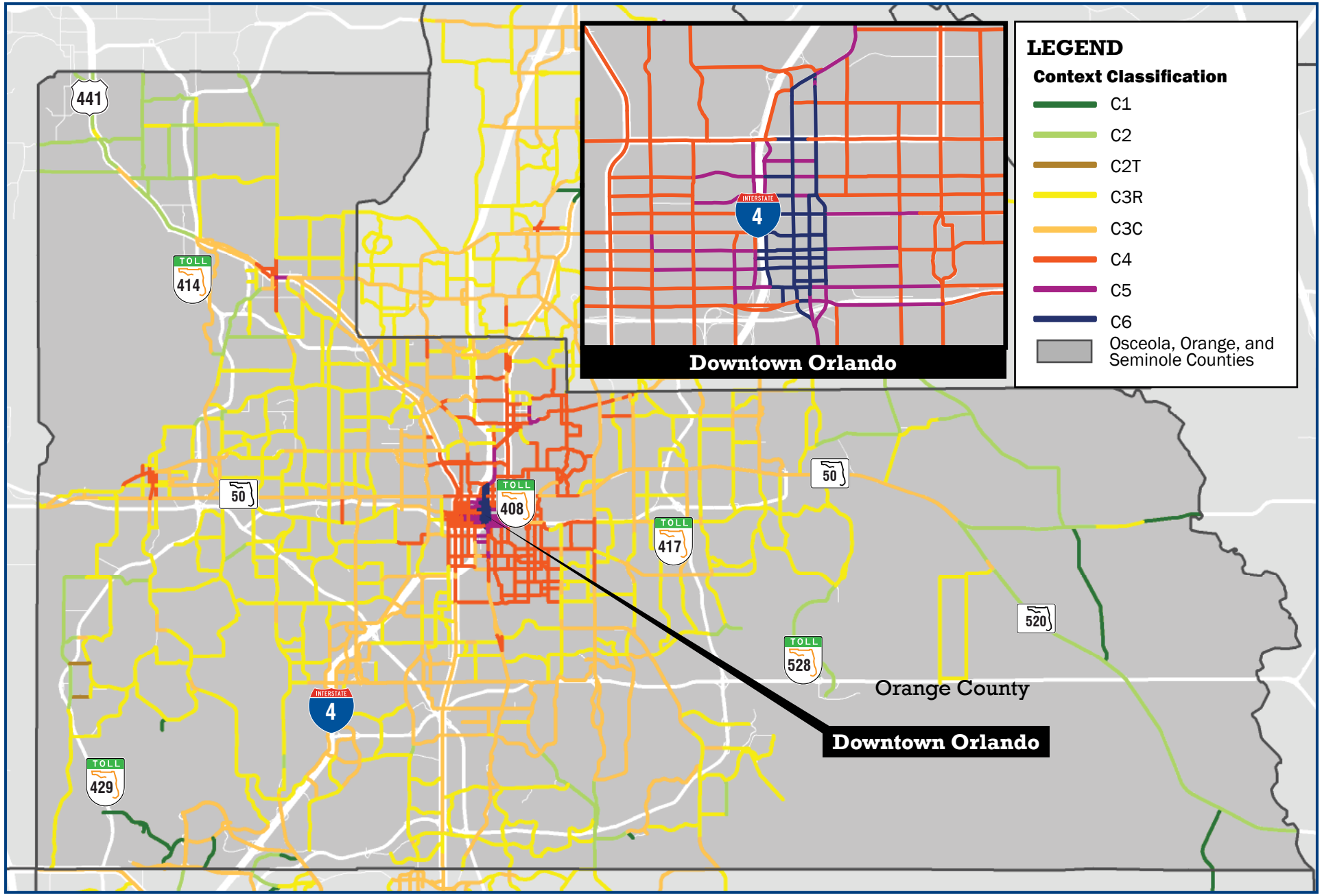

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Preliminary Context Classification Network: Orange County | Figure 5

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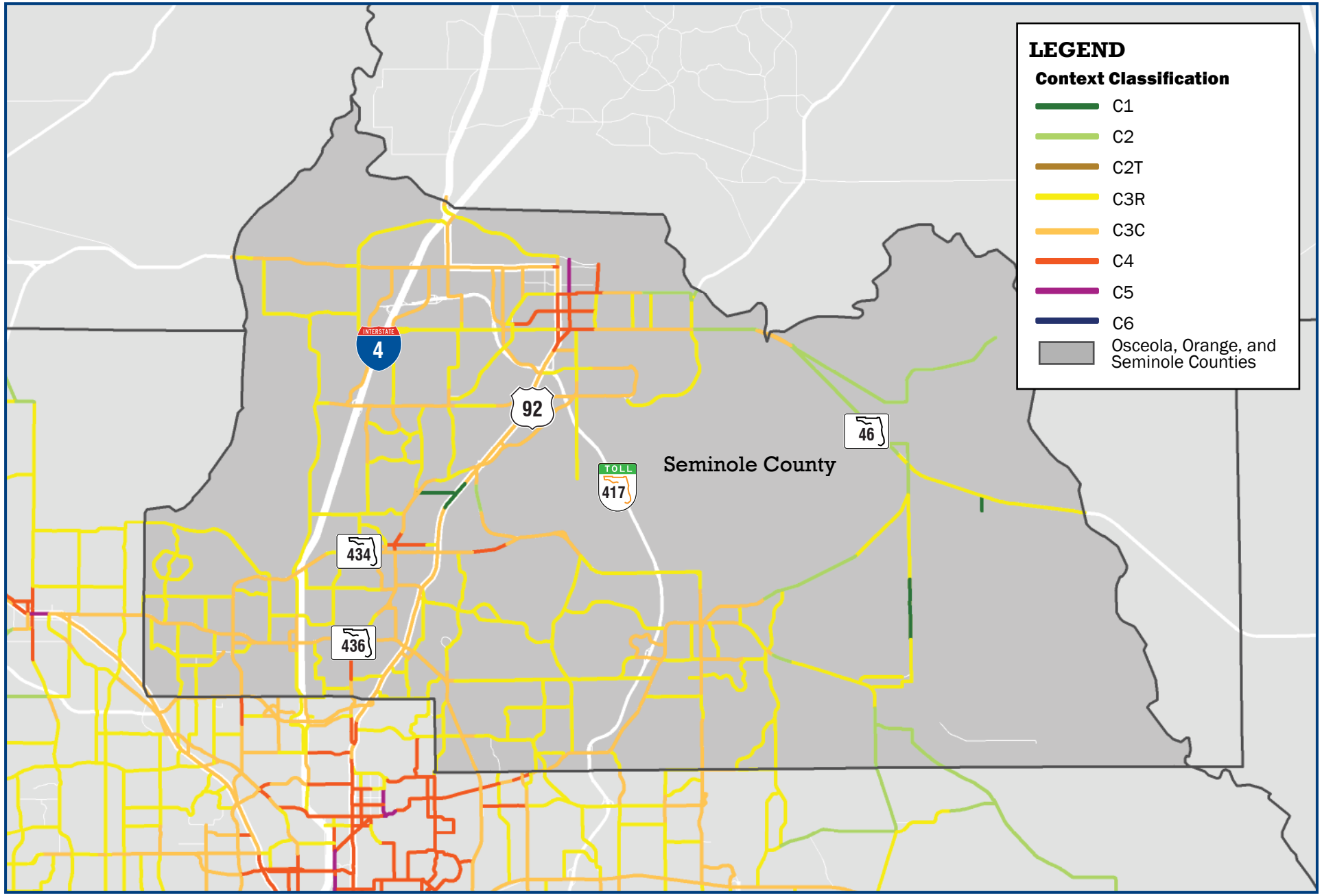
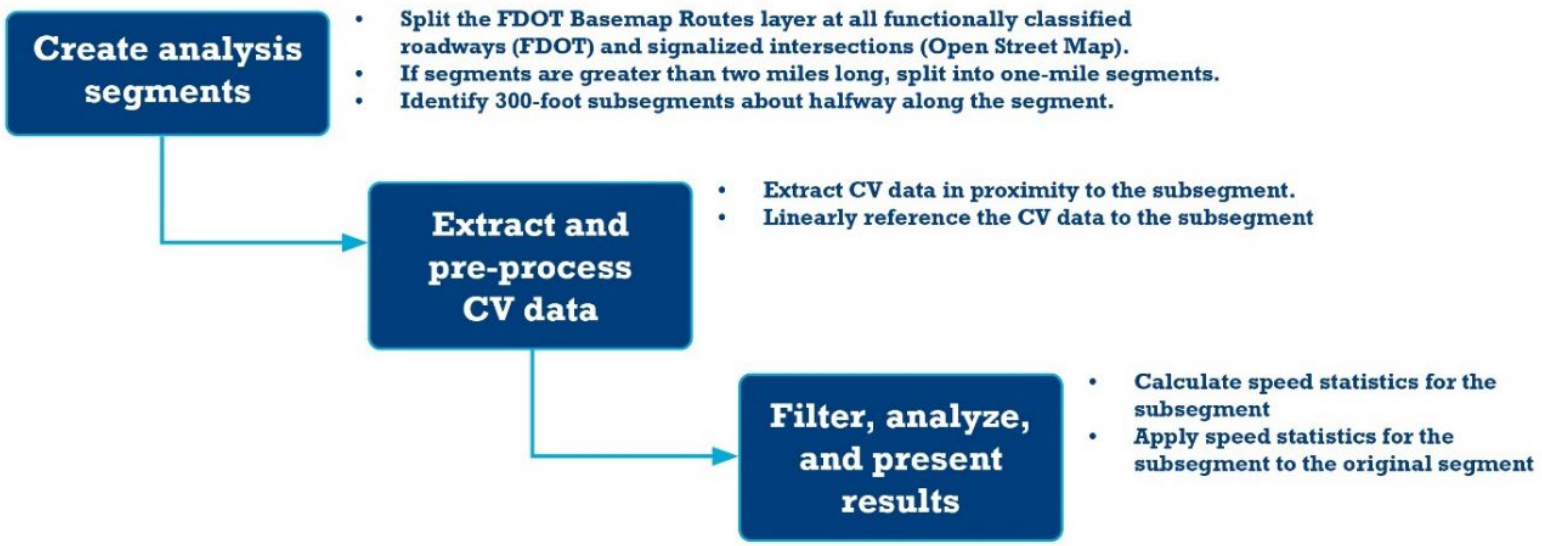


Preliminary Context Classification Network: Seminole County | Figure 6

APPENDIX B: WEJO DATA COLLECTION METHODOLOGY

Wejo Data Collection Methodology



APPENDIX C: COUNTY-SPECIFIC MAPS

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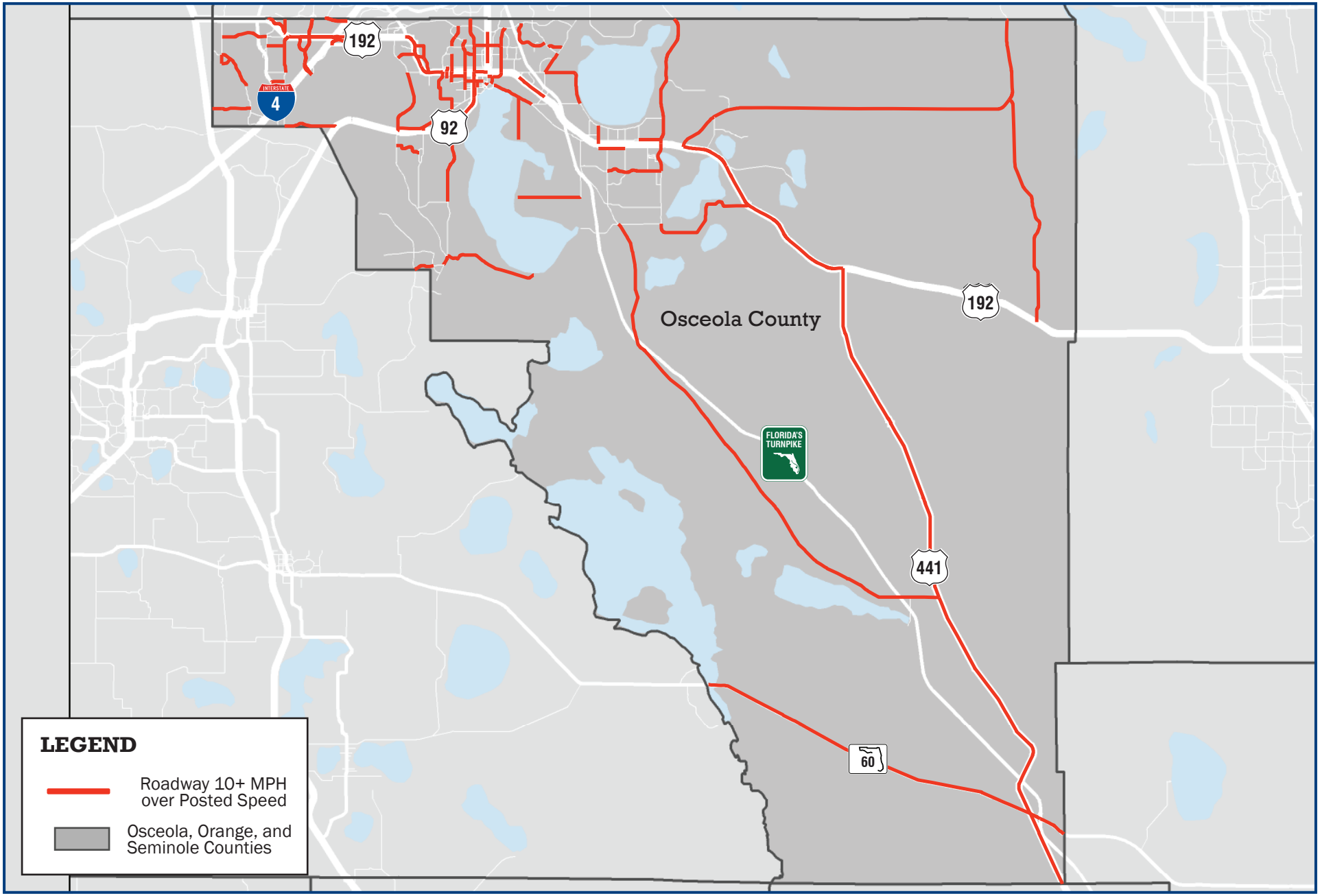

85th Percentile Speed 10+ MPH over Posted Speed: Osceola County | Figure 1A

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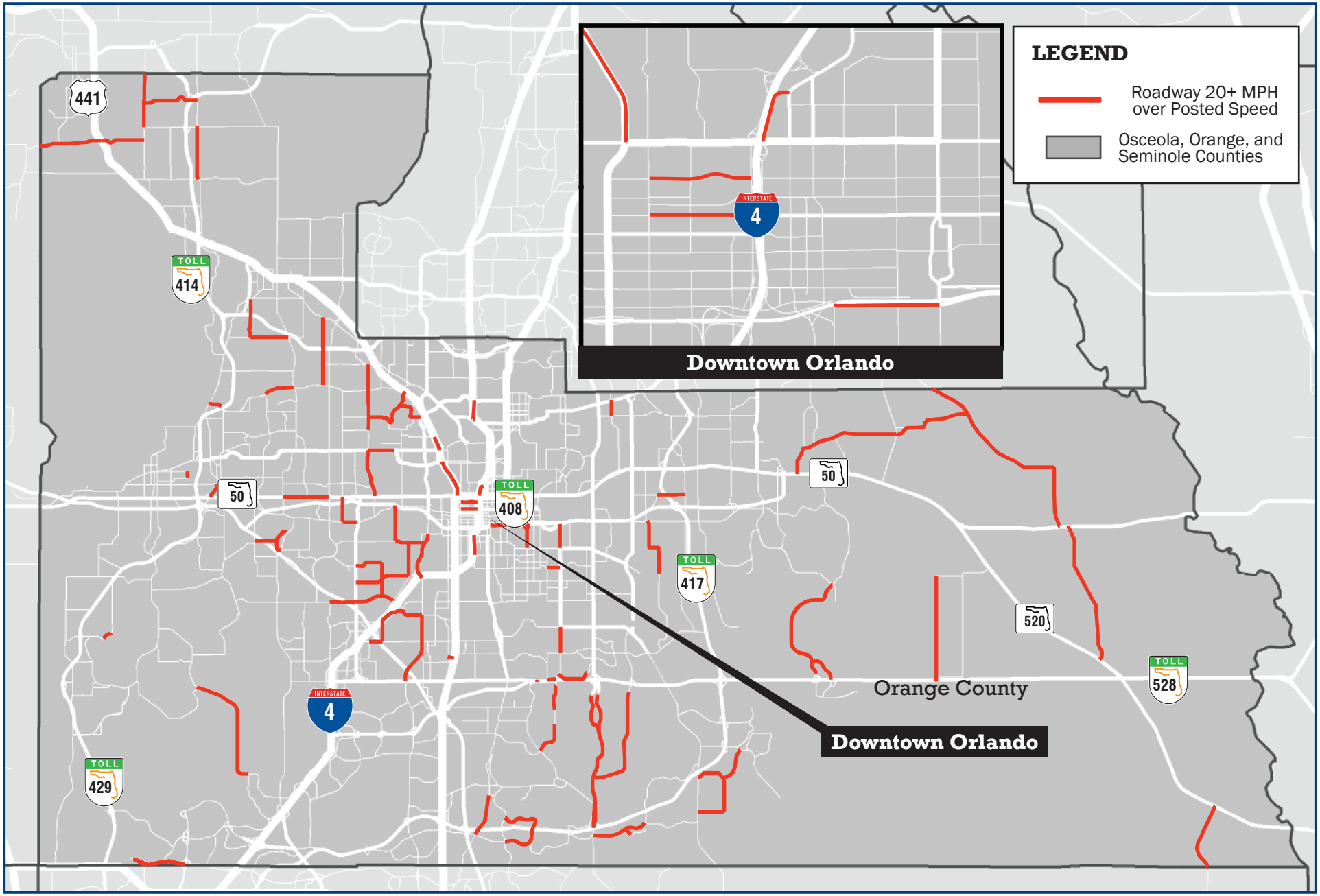

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Scale in Miles
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95th Percentile Speed 20+ MPH over Posted Speed: Orange County | Figure 1B

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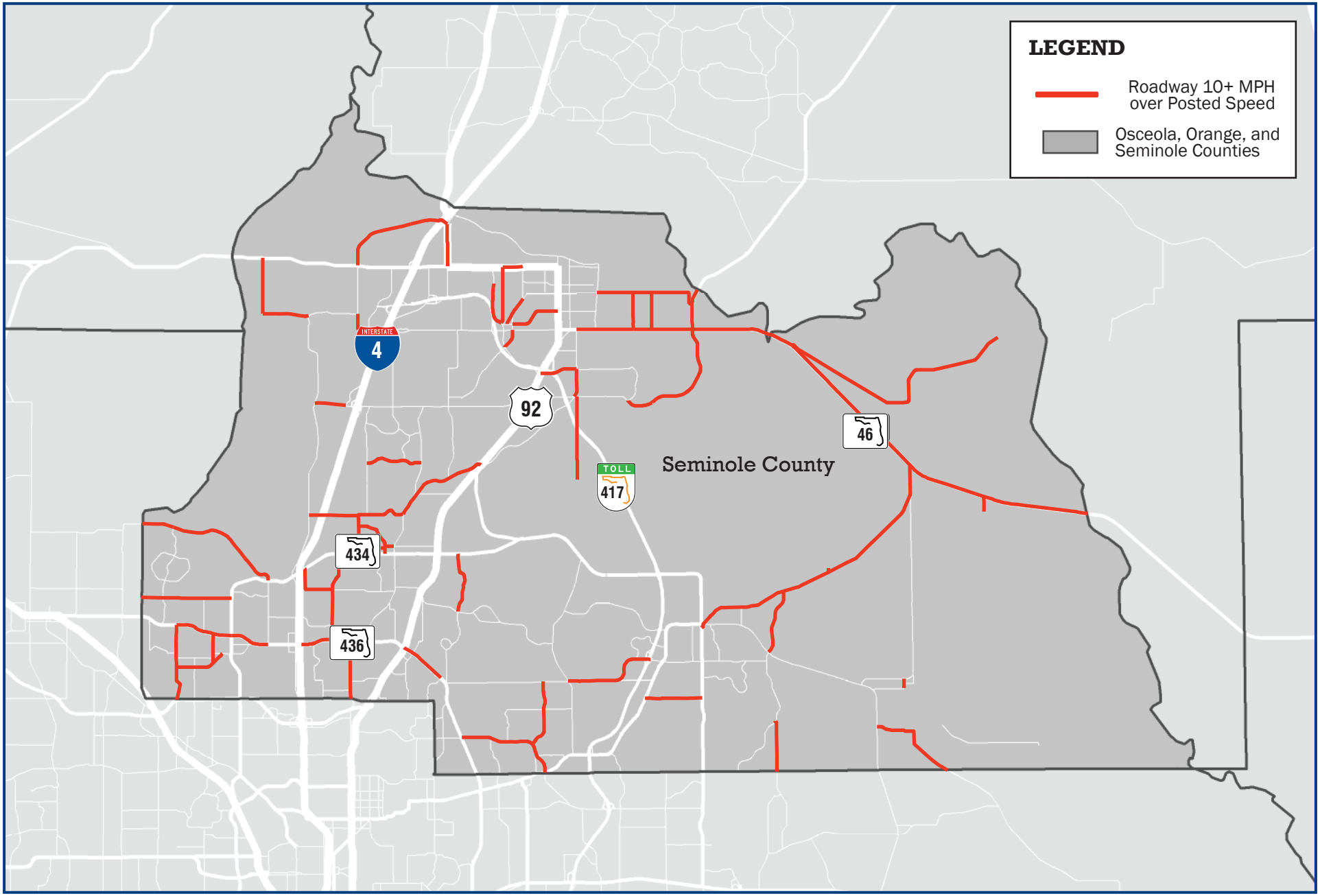

85th Percentile Speed 10+ MPH over Posted Speed: Seminole County | Figure 1C

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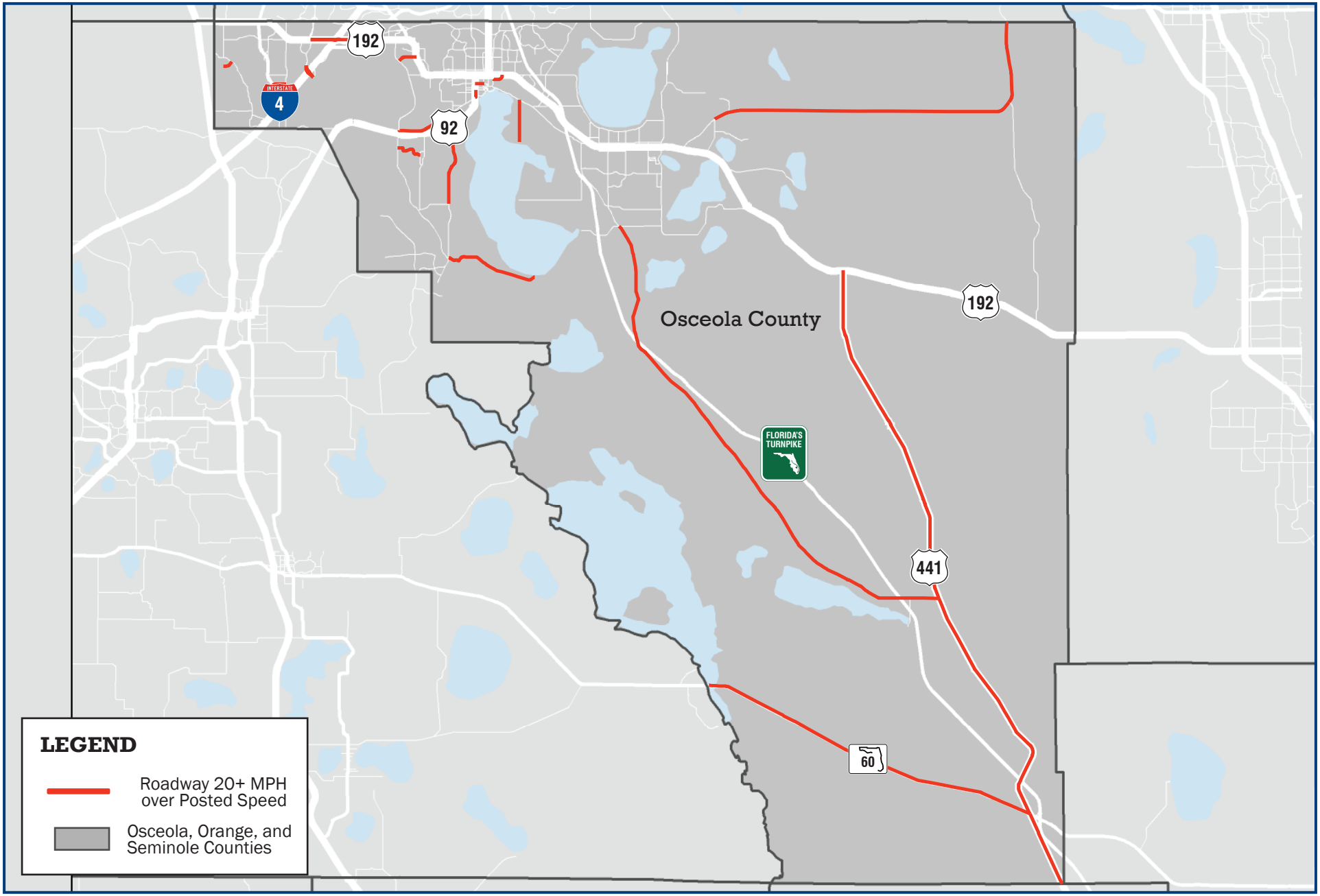

95th Percentile Speed 20+ MPH over Posted Speed: Osceola County | Figure 2A

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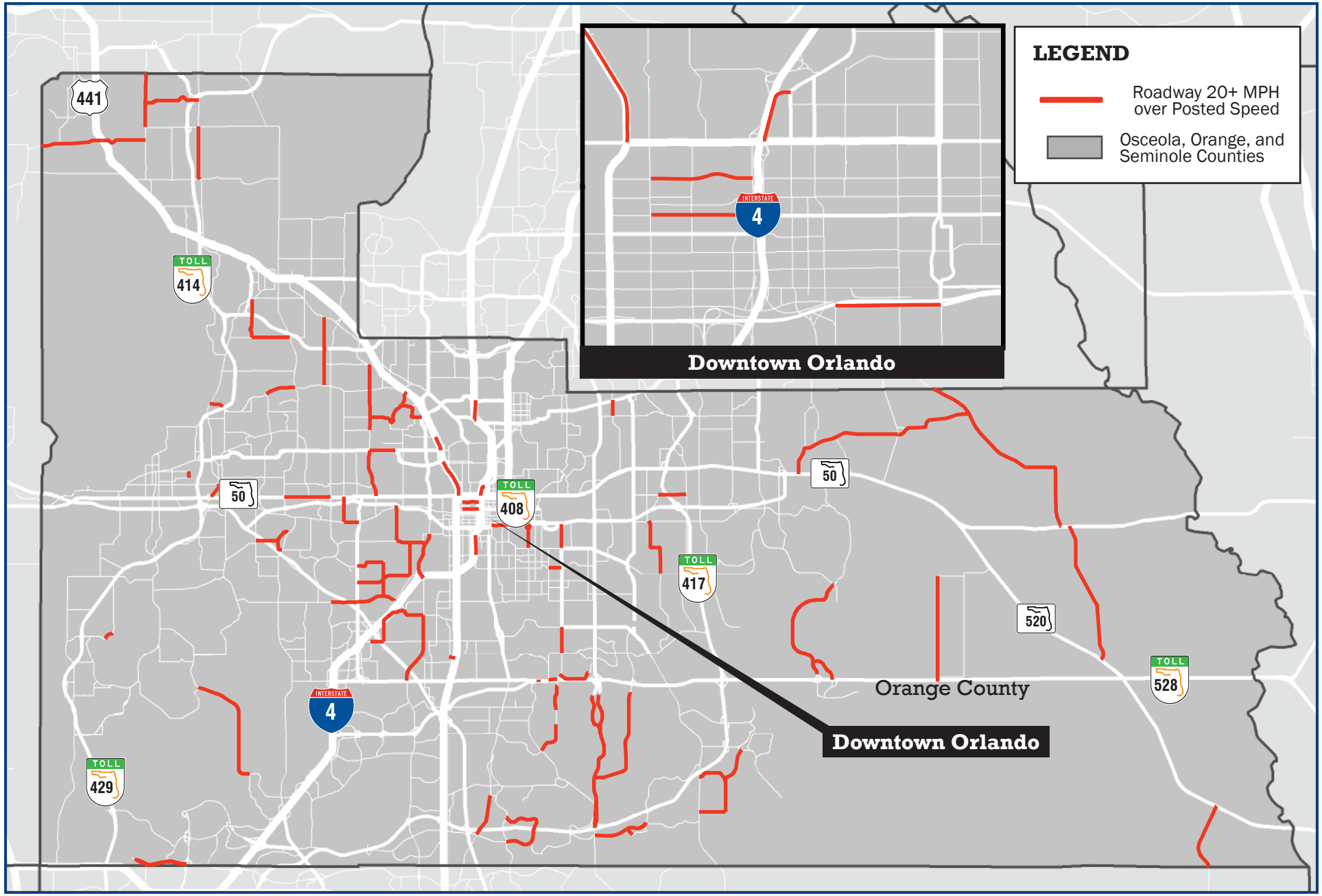

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95th Percentile Speed 20+ MPH over Posted Speed: Orange County | Figure 2B

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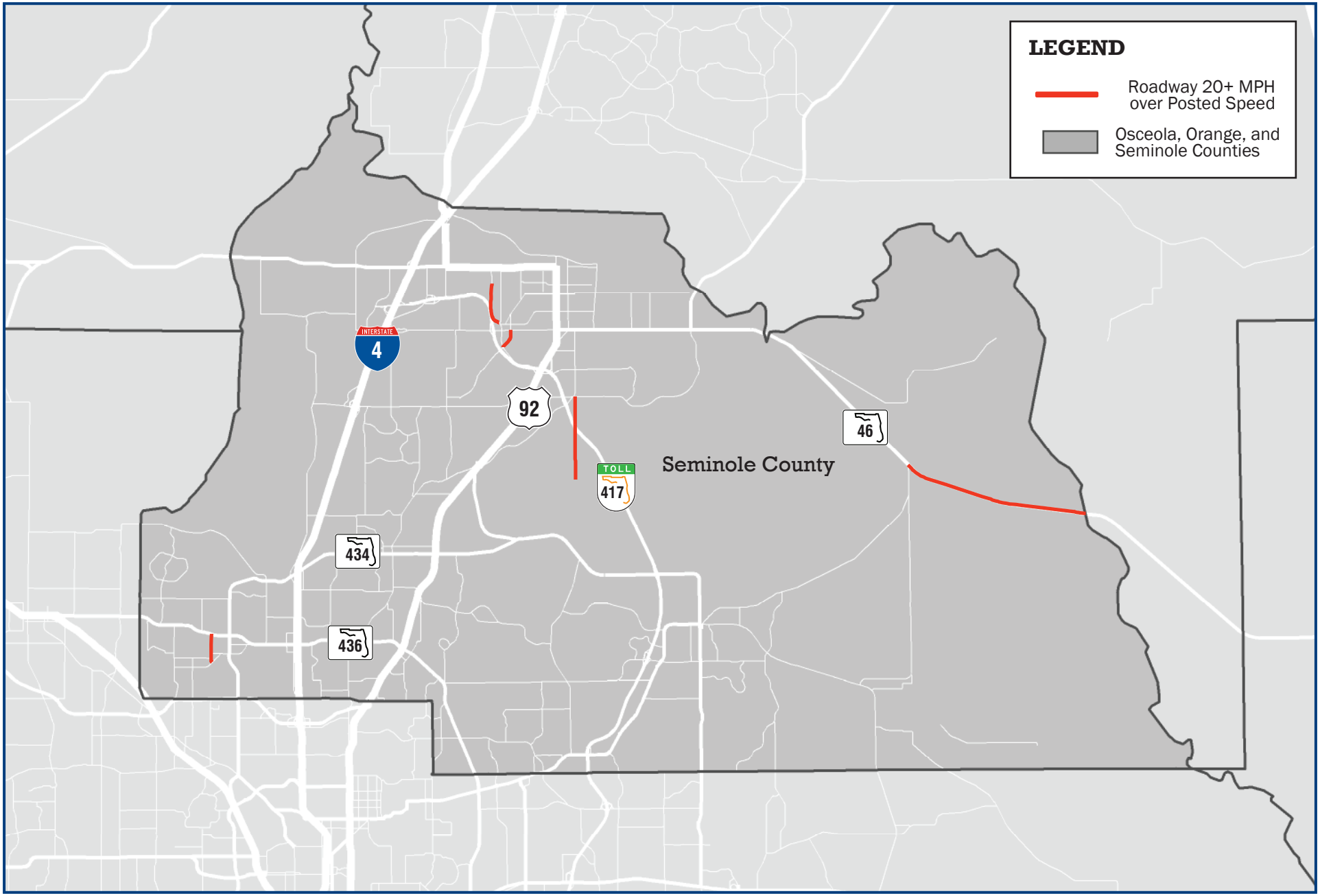

95th Percentile Speed 20+ MPH over Posted Speed: Seminole County | Figure 2C

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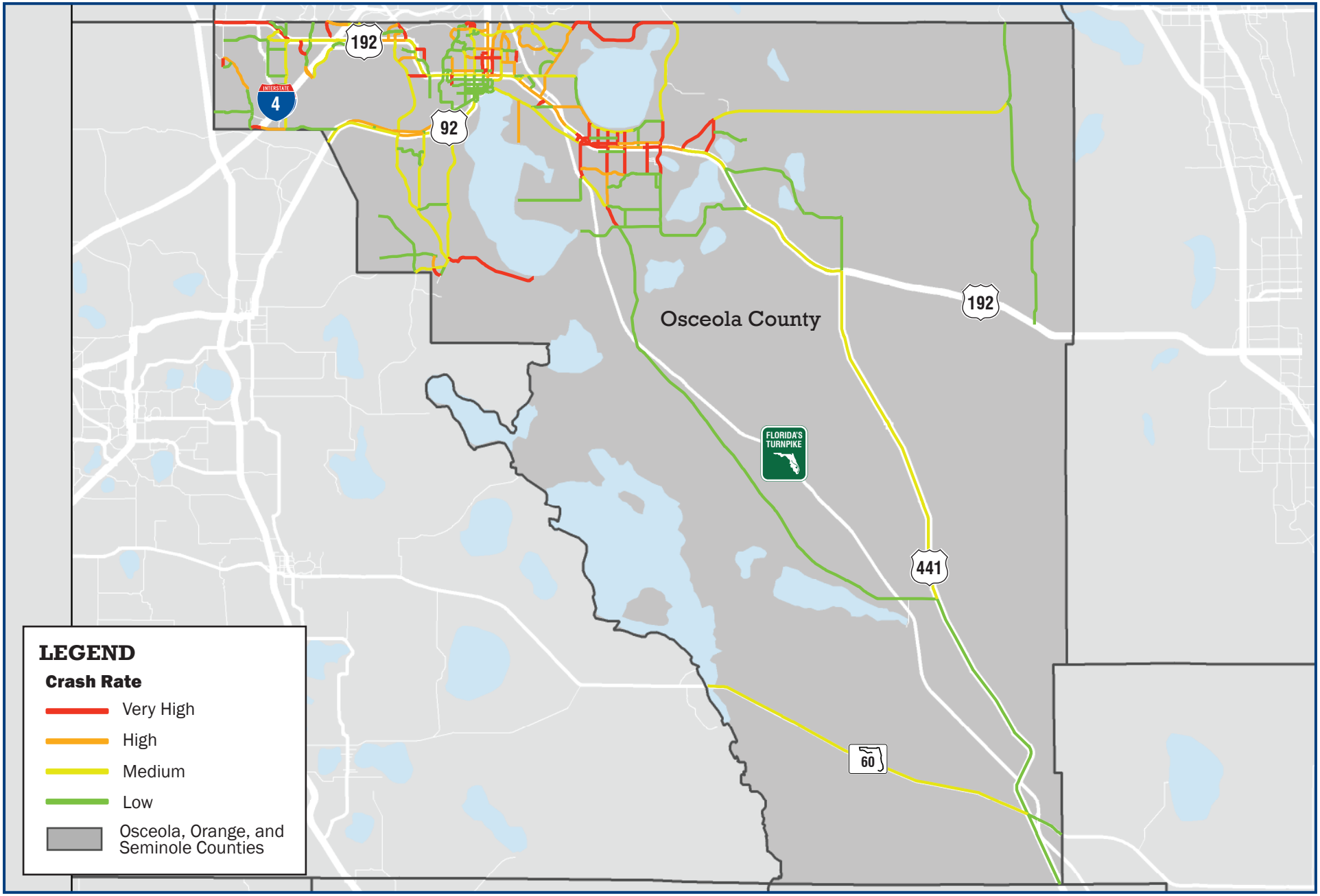

Roadway Crash Rate: Osceola County | Figure 3A

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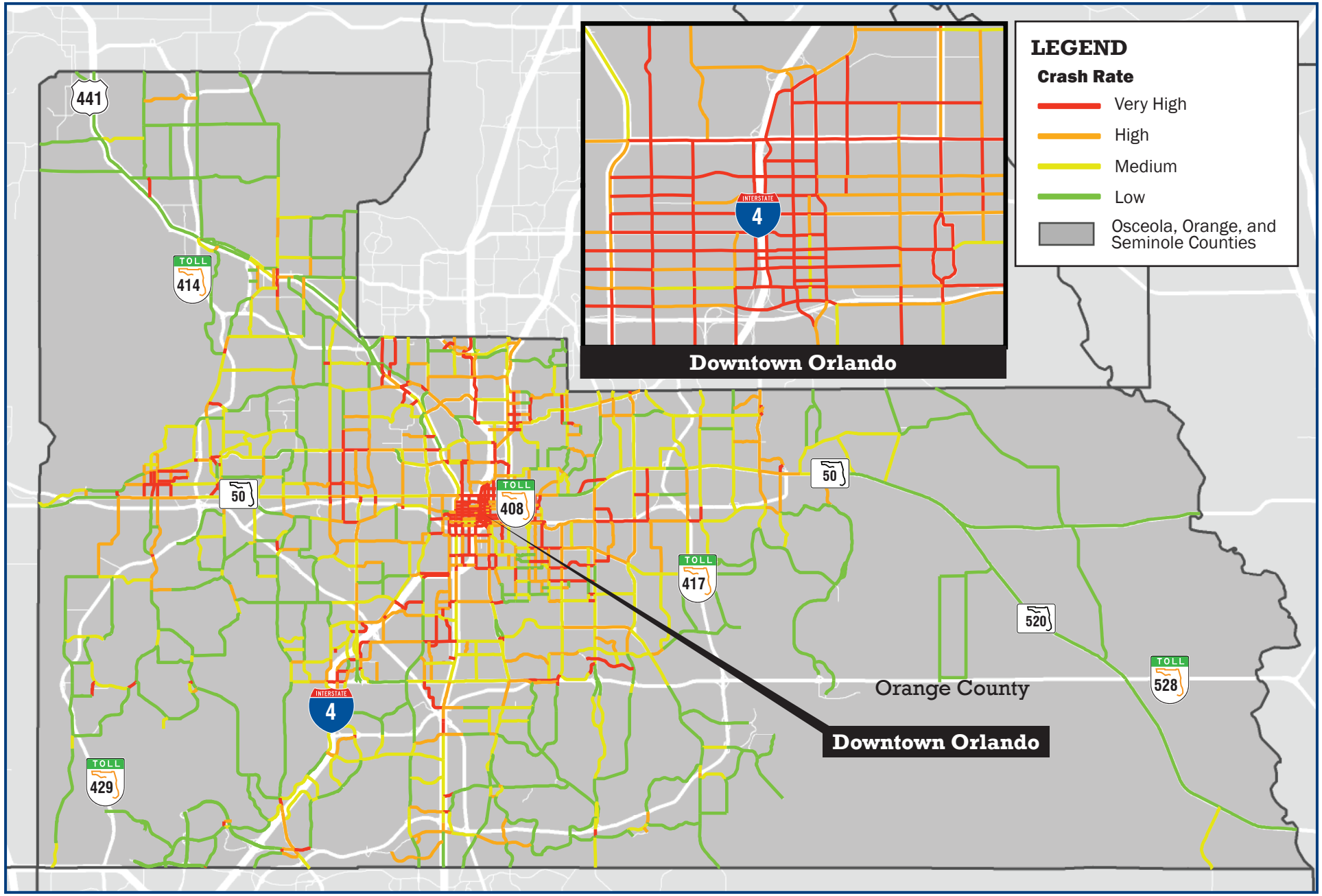

NORTH

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Roadway Crash Rate: Orange County | Figure 3B

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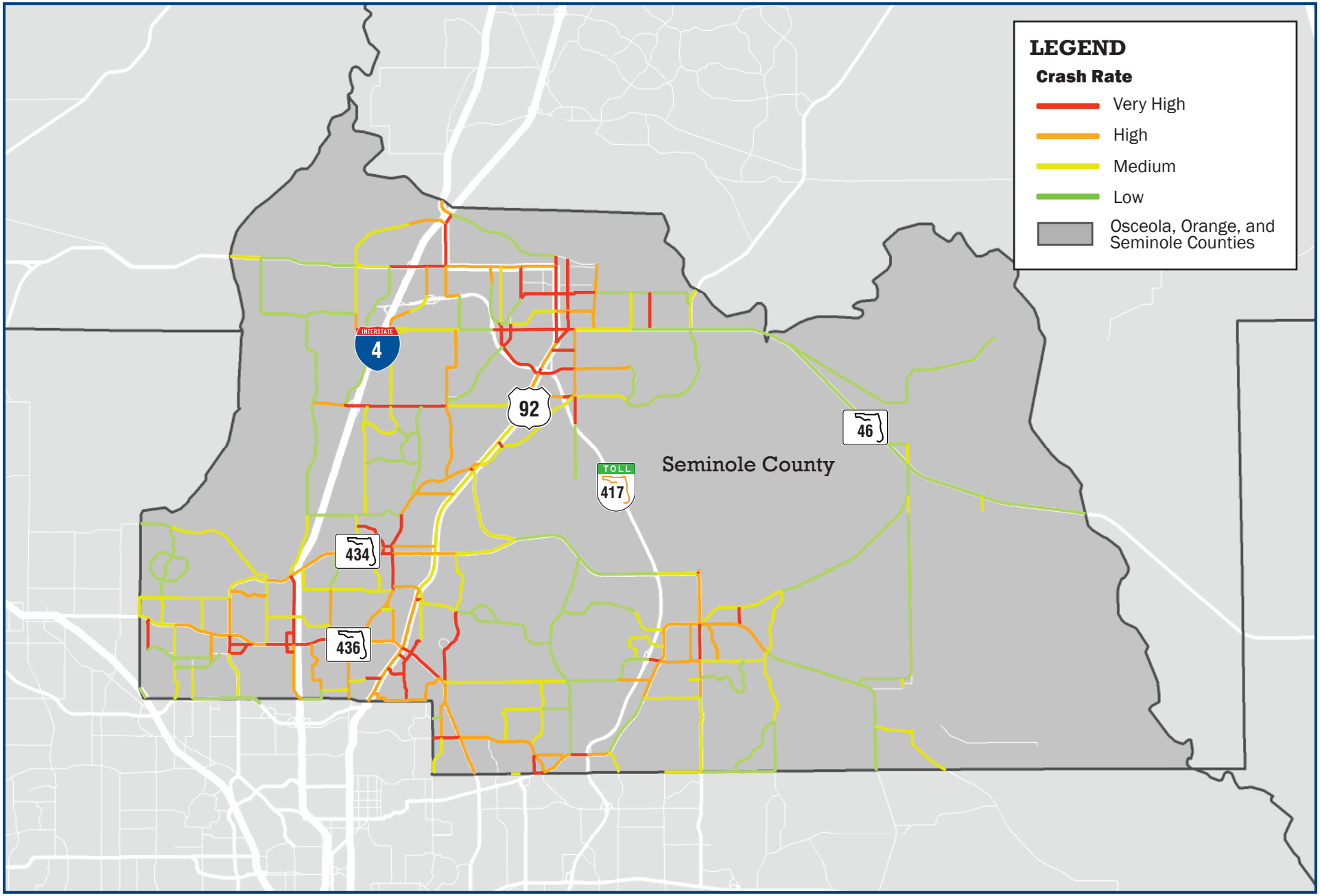

Roadway Crash Rate: Seminole County | Figure 3C

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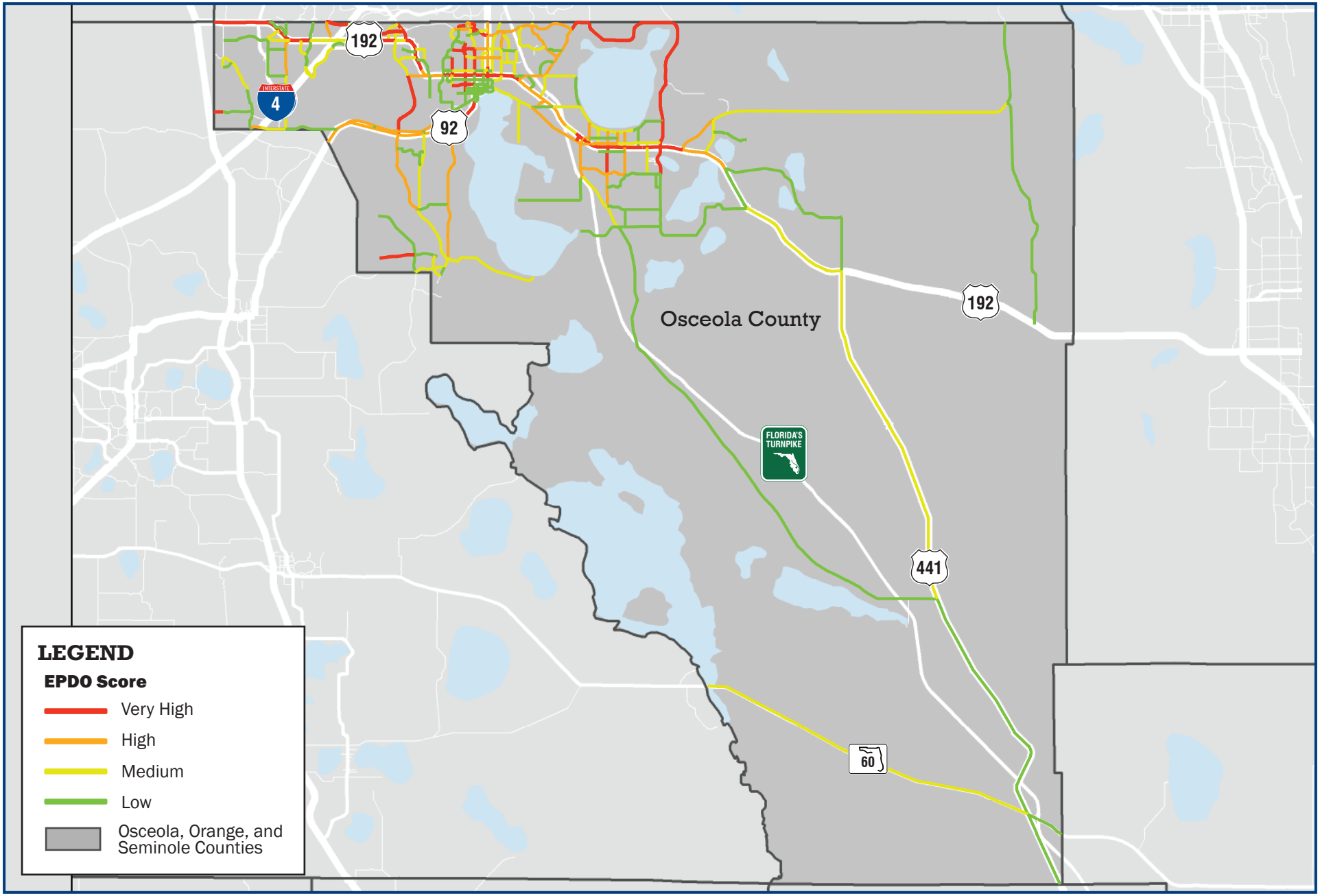

Roadway EPDO Score: Osceola County | Figure 4A

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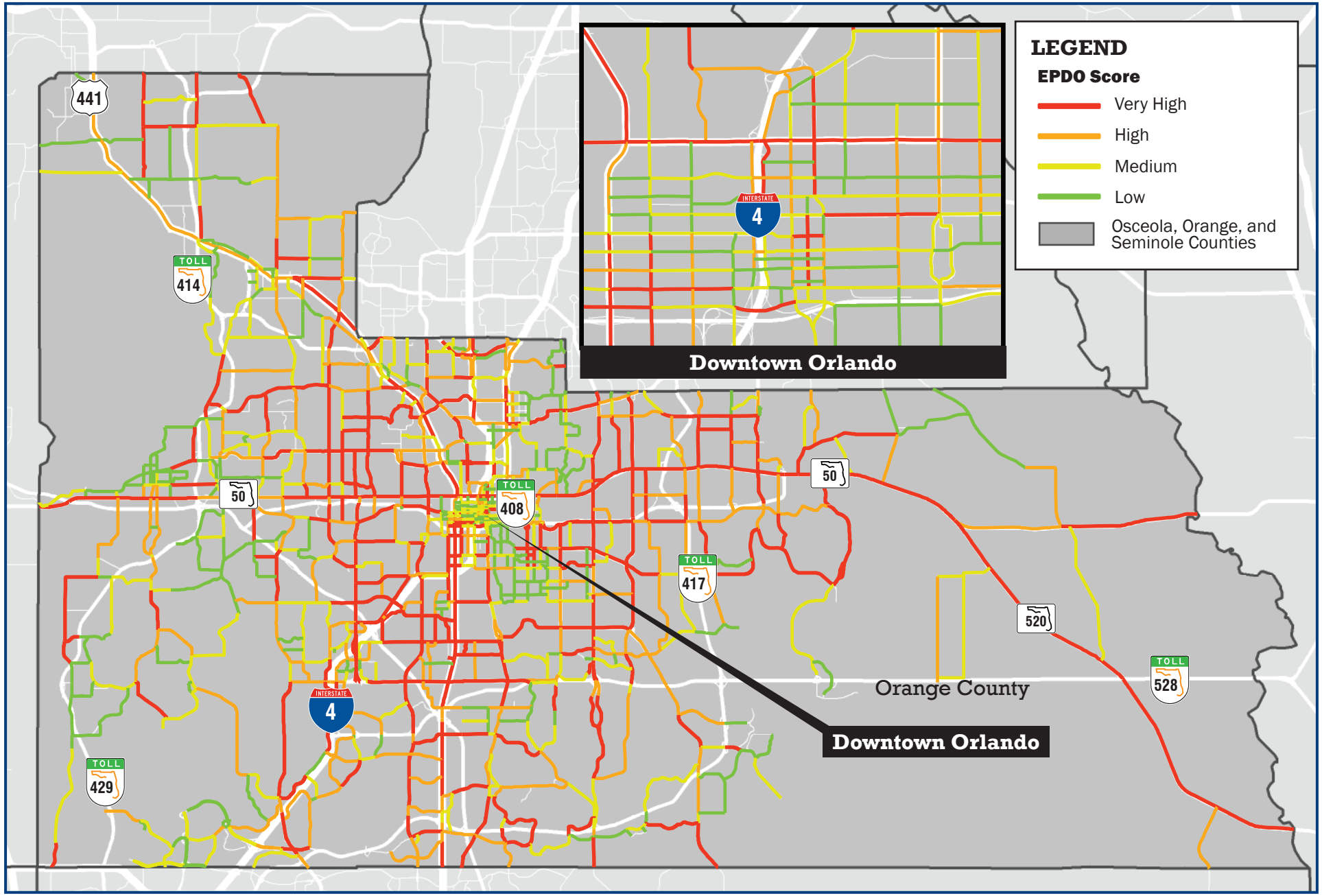

NORTH

Scale in Miles
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Roadway EPDO Score: Orange County | Figure 4B

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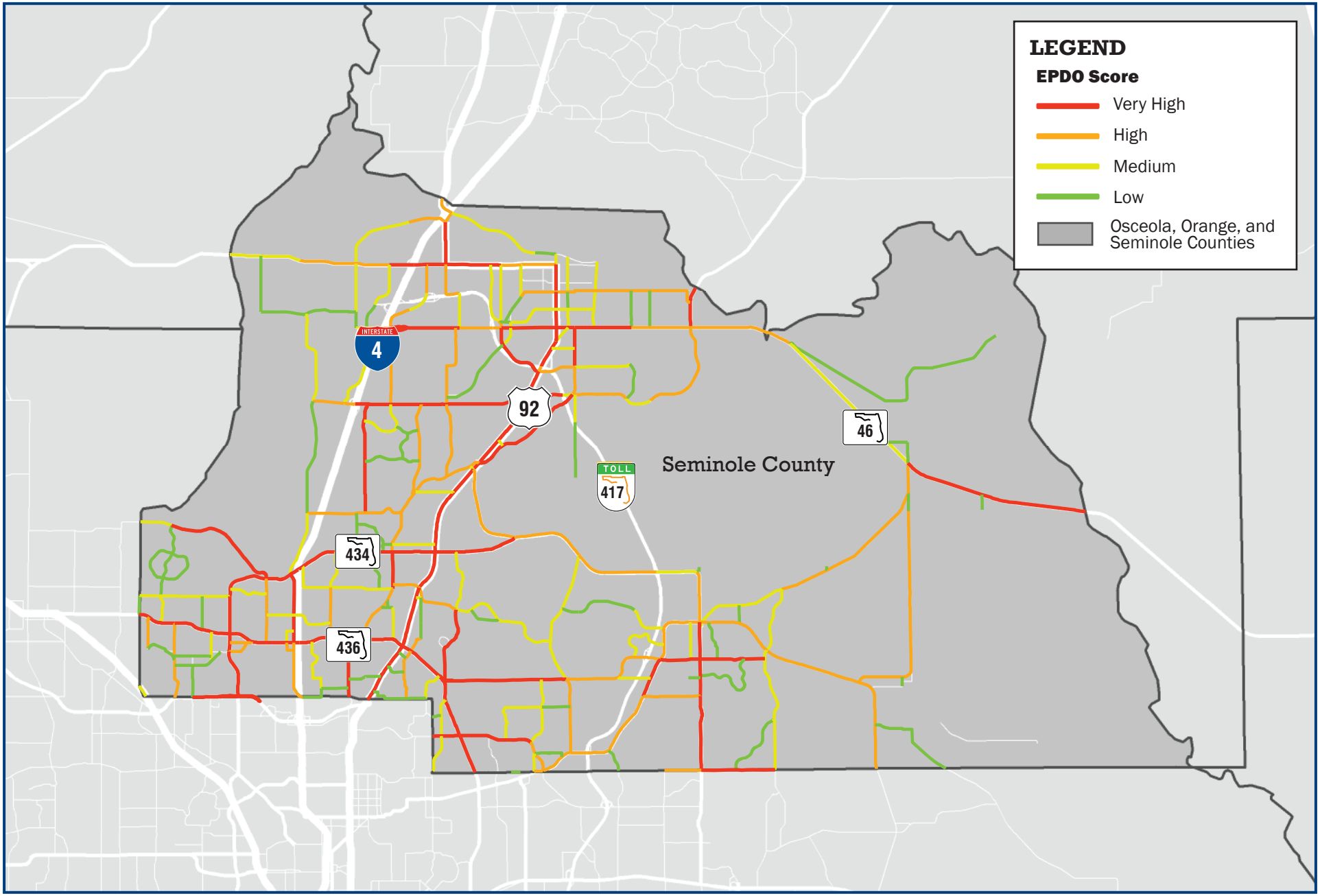


Roadway EPDO Score: Seminole County | Figure 4C

APPENDIX D: FDOT TARGET SPEED SUPPORTING INFORMATION

FDOT Target Speed Decision Matrix

Target Speed	25 MPH	30 MPH	35 MPH	40-45 MPH	50-55 MPH	60-70 MPH
Context Classification	C2T, C5, and C6	C2T, C4, C5, and C6	C2T, C3R, C3C, C4, and C5	C2T (rarely) C3R, C3C, C4 (rarely)	C1 and C2 C3R, C3C (rarely)	C1 and C2
Fronting Uses	Most parcels fronting street	Most parcels fronting street	Some parcels fronting street	N/A	N/A	N/A
Population Density	High	High	Medium to High	Medium	Low	Low
Vulnerable Users	High	High	Medium to High	Medium	Low	Low
Cross Section Elements	On-street parking; sharrows	On-street parking; sharrows	Separated bicycle lanes; buffered bike lanes	Shared use path	Shared use path	Shared use path
Access Classification	6 and 7	6 and 7	5, 6, and 7	3, 4, 5, and 6	2 and 3	2 and 3
Transit Service	Highest frequency and local serving	Highest frequency and local serving	High frequency and local serving	Moderate frequency and local + regional serving	Lower frequency and regional serving	Low to None
Transit Ridership	High	High	Medium to High	Medium to High	Low	Low to None
Pedestrian and Bicycle Generators	High	High	Medium	Sporadic	Low	Low to None
Vehicular Trip Type	>75% Local	>75% Local	>50% Local	>50% Regional	>75% Regional	>90% Regional
Average Trip Length	<3 miles	3 to 5 miles	3 to 5 miles	5 to 10 miles	>10 miles	>10 miles

FDOT Target Questions to Determine Target Speed

What is the context classification (existing and/or future)?

What is the allowable design speed based on the context classification?

What is the current posted speed limit and, if available, current operating speed? A wide variation between these speeds and the chosen target speed may require more extensive design interventions and may require multiple projects to achieve.

What is the Access Management Classification and how does it affect intersection and driveway spacing and modal priority, based on the Access Management Guidebook?

What is the transportation role of the roadway within the rest of the transportation network? Is it generally being used to access businesses and land uses along the roadway? Is this anticipated to happen in the future?

Are there transit stops/transit service along the roadway? What is the relative transit service level along the corridor?

Are there special population groups (lower income, 0-car households, transit dependent, aging population, school age children) walking/ biking along/across the roadway)?

Are there land uses that typically serve or require walking or bicycling trips in or near the corridor? Are there schools, parks, assisted living facilities, or community facilities within ½-mile of the corridor?

Does the safety data identify bicycle or pedestrian crashes along the corridor? What is the frequency and severity of auto crashes?

What target speed is appropriate based on the needs of our users and the role of the roadway?

APPENDIX E: PRELIMINARY TARGET SPEED RECOMMENDATIONS

Roadway Classification Definitions

	Context Classification
C1	Natural
C2	Rural
C2T	Rural Town
C3R	Suburban Residential
C3C	Suburban Commercial
C4	Urban General
C5	Urban Center
C6	Urban Core

	Functional Classification
Local	Local Road
MnC	Minor Collector
MC	Major Collector
MA	Minor Arterial
OPA	Other Principal Arterial

County	Roadway	From	To	Context Class	Functional Class	Speed Range	Transit	Crash Rate	Initial Target Speed (MPH)	Current Posted Speed (MPH)	Preliminary Target Speed Recommendation (MPH)
Osceola	10th St	Orange Ave	Narcoossee Rd	C3R	MC	30 to 40	No	High	30	30	30
Osceola	Bella Citta Blvd	Osceola/Polk CL	Westside Blvd	C3R	MC	30 to 40	No	High	30	40	30
Osceola	Canoe Creek Rd	Deer Run Rd	Sullivan Dr	C3R	MC	30 to 40	No	Low	40	55	40
Osceola	Canoe Creek Rd	Sullivan Dr	US 441	C2	MA	45 to 55	No	Low	55	55	55
Osceola	Carroll St	John Young Pkwy	US 17/92/441 Orange Blossom Tr	C4	MA	25 to 35	No	Middle	30	35	30
Osceola	Carroll St	US 17/92/441 Orange Blossom Tr	Michigan Ave	C4	MA	25 to 35	No	Middle	30	35	30
Osceola	Columbia Ave	US 192/441 / 13th St	Lakeshore Blvd	C3R	MC	30 to 40	No	High	30	25	25
Osceola	Dyer Blvd	US 192 / W Vine St	Donegan Ave	C3R	MC	30 to 40	No	High	30	35	30
Osceola	Dyer Blvd	MLK Jr Blvd	US 192 / W Vine St	C3R	MC	30 to 40	No	High	30	30	30
Osceola	E Oak St	Lawrence Silas Blvd	US 192/441 / E Vine St	C3R	MC	30 to 40	No	Low	40	35	35
Osceola	Florida Pkwy	Osceola Pkwy	Buenaventura Blvd	C3R	MC	30 to 40	Yes	Middle	30	30	30
Osceola	Griffin Rd	US 192 / W Irlo Bronson Memorial Hwy	World Dr	C2	MC	35 to 45	No	High	35	40	35
Osceola	Hickory Tree Rd	US 192/441 / E Irlo Bronson Memorial Hwy	Nolte Rd	C3R	MC	30 to 40	No	High	30	45	30
Osceola	John Young Pkwy	Osceola Pkwy	Orange/Osceola CL	C3C	OPA	30 to 40	No	High	30	45	30
Osceola	Kings Hwy	Grandview Blvd	Neptune Rd	C3R	MC	30 to 40	No	Low	40	50	40
Osceola	Mercantile Ln./Enterprise Dr	Poinciana Blvd	Cattle Dr	C4	MnC	25 to 35	No	Low	35	30	30
Osceola	Michigan Ave	Carroll St	Osceola Pkwy	C3C	MA	30 to 40	Yes	Middle	30	40	30
Osceola	MLK Jr Blvd	Thacker Ave	US 17/92 / John Young Pkwy	C4	MC	25 to 35	No	High	25	40	25
Osceola	MLK Jr Blvd	US 17/92 / John Young Pkwy	Central Ave	C3C	MA	30 to 40	No	Low	40	40	40
Osceola	N Goodman Rd	Westside Blvd	Happy Tr	C2	MC	35 to 45	No	Middle	40	30	30
Osceola	N Thacker Ave	US 192 / W Vine St	Carroll St	C3R	MC	30 to 40	Yes	High	30	40	30
Osceola	N Thacker Ave	Carroll St	Flora Blvd	C3C	MnC	30 to 40	No	High	30	35	30
Osceola	N Thacker Ave	MLK Jr Blvd	US 192 / W Vine St	C4	MC	25 to 35	Yes	High	25	30	25
Osceola	N Thacker Ave	Patrick St	MLK Jr Blvd	C3C	MC	30 to 40	Yes	High	30	30	30
Osceola	Narcoossee Rd	Rummell Rd	Osceola/Orange CL/Boggy Creek Rd	C3R	OPA	30 to 40	No	High	30	45	30
Osceola	Narcoossee Rd	US 192/441 / 13th St	Rummell Rd	C3R	OPA	30 to 40	No	High	30	45	30
Osceola	Nolte Rd	Canoe Creek Rd	Michigan Ave	C3R	MC	30 to 40	No	Middle	35	45	35
Osceola	Nova Rd	Pine Grove Rd	Sun Grove Ln	C3R	MC	30 to 40	No	Low	40	55	40
Osceola	Nova Rd	Sun Grove Ln	Deer Park Rd	C2	MC	35 to 55	No	Low	55	55	55
Osceola	Nova Rd	US 192/441 / E Irlo Bronson Memorial Hwy	Pine Grove Rd	C3R	MA	30 to 40	No	High	30	55	30
Osceola	Nova Rd	Deer Park Rd	Orange/Osceola CL	C1	MA	35 to 55	No	Low	55	55	55
Osceola	Old Tampa Hwy	Poinciana Blvd	Hoagland Blvd	C3R	MC	30 to 40	Yes	Middle	30	45	30
Osceola	Osceola Pkwy	Victory Way	I-4	C3C	MA	30 to 40	No	High	30	45	30
Osceola	Pleasant Hill Rd	Reaves Rd	US/17/92 / S Orange Blossom Tr	C3R	MA	30 to 40	Yes	Middle	30	45	30
Osceola	Ponciana Blvd	US/17/92 / S Orange Blossom Tr	Oren Brown Rd	C3R	OPA	30 to 40	No	High	30	55	45
Osceola	Princess Way	Seven Dwarfs Ln	Old Vineland Rd	C3R	MnC	30 to 40	No	High	30	25	25
Osceola	Randolph Ave	US 17/92 / John Young Pkwy	Emmett St	C4	MC	25 to 35	No	Low	35	30	30
Osceola	Seven Dwarfs Ln	US 192 / W Irlo Bronson Memorial Hwy	Princess Way	C3C	MnC	30 to 40	No	High	30	30	30
Osceola	Siesta Lago Dr	Poinciana Blvd	US 192 / W Irlo Bronson Memorial Hwy	C3R	MC	30 to 40	No	Middle	35	40	35
Osceola	Simpson Rd	Fortune Rd	Buenaventura Blvd	C3R	MA	30 to 40	Yes	High	30	45	30
Osceola	Sinclair Rd	SR 429	Old Lake Wilson Rd	C3R	MC	30 to 40	No	Low	40	35	35
Osceola	Southport Rd	Pleasant Hill Rd	Southport Park	C2	MnC	35 to 45	No	High	35	45	35
Osceola	W Donegan Ave	Thacker Ave	John Young Pkwy	C3R	MC	30 to 40	No	Middle	35	30	30
Osceola	World Dr	Celebration Blvd	I-4	C1	OPA	35 to 55	No	Middle	45	35	35
Orange	33rd St	John Young Pkwy	Rio Grande Ave	C3C	MC	30 to 40	Yes	High	30	40	30
Orange	Alafaya Trl	Curry Ford Rd	SR 408	C3R	MA	30 to 40	No	High	30	45	30
Orange	Alafaya Trl	Curry Ford Rd	Innovation Way	C3R	MA	30 to 40	No	High	30	45	30
Orange	Americana Blvd	John Young Pkwy	US 17/92/441 / Orange Blossom Trl	C3R	MnC	30 to 40	Yes	High	30	35	30
Orange	Apopka Vineland Rd	Balboa Dr	SR 438 / Silver Star Rd	C3R	MC	30 to 40	No	High	30	45	30
Orange	Apopka Vineland Rd	Conroy Windermere Rd	Westover Roberts Rd	C3R	MA	30 to 40	No	High	30	45	30
Orange	Apopka Vineland Rd	Wallace Rd	Conroy Windermere Rd	C3R	MA	30 to 40	No	High	30	45	30
Orange	Apopka Vineland Rd	CR 535	Sand Lake Rd	C3R	MA	30 to 40	No	High	30	45	30
Orange	Beggs Rd	Lakeville Rd	Hiawassee Rd	C3R	MC	30 to 40	No	High	30	40	30
Orange	Beggs Rd	Hiawassee Rd	Overland Rd	C3R	MC	30 to 40	No	High	30	40	30
Orange	Bethune Ave	Maple St	E Bay St	C3R	MC	30 to 40	No	High	30	30	30
Orange	Boggy Creek Rd	J Lawson Blvd	Jeff Fuqua Blvd	C2	MC	35 to 45	No	Low	45	45	35
Orange	Boggy Creek Rd	SR 417	J Lawson Blvd	C2	MC	35 to 45	No	Low	45	45	35
Orange	Bruton Blvd	LB McLeod Rd	Columbia St	C3R	MC	30 to 40	Yes	High	30	35	30
Orange	Bumby Ave S	Michgan St	Curry Ford Rd	C4	MC	25 to 35	Yes	High	25	30	25
Orange	Bumby Ave S	Curry Ford Rd	SR 15 / Anderson St	C4	MC	25 to 35	No	High	25	25	25
Orange	Chickasaw Trl S	Curry Ford Rd	Lake Underhill Rd	C3R	MC	30 to 40	No	High	30	35	30
Orange	Church St W	Rio Grande Ave	US 17/92/441 / Orange Blossom Trl	C4	MC	25 to 35	Yes	High	25	30	25
Orange	Church St W	US 17/92/441 / Orange Blossom Trl	Westmoreland Dr	C4	MC	25 to 35	Yes	High	25	25	25
Orange	Church St W	SR 423 / John Young Pkwy	Tampa Ave	C3R	MC	30 to 40	Yes	High	30	30	30
Orange	Cinderlane Pkwy	North Ln	US 441	C3R	MC	30 to 40	Yes	High	30	25	25
Orange	Clarcona Ocoee Rd	Lakewood Ave	Clarke Rd	C3R	Local	25 to 35	No	High	25	45	25
Orange	Clarcona Ocoee Rd	Clarke Rd	Apopka Vineland Rd	C3R	Local	25 to 35	No	High	25	45	25
Orange	Clarcona Ocoee Rd	Rose Ave	US 441	C3R	MA	30 to 40	No	High	30	45	30
Orange	Clarcona Ocoee Rd	Apopka Vineland Rd	Hiawassee Rd	C3R	MC	30 to 40	No	High	30	45	30

County	Roadway	From	To	Context Class	Functional Class	Speed Range	Transit	Crash Rate	Initial Target Speed (MPH)	Current Posted Speed (MPH)	Preliminary Target Speed Recommendation (MPH)
Orange	Clarcona Ocoee Rd	Powers Dr	Pine Hills Rd	C3R	MC	30 to 40	No	Middle	35	45	35
Orange	Columbia St	Ivey Ln	Bruton Blvd	C4	MA	25 to 35	Yes	High	25	30	25
Orange	Columbia St	Bruton Blvd	John Young Pkwy	C4	MA	25 to 35	Yes	High	25	30	25
Orange	Concord St W	Garland Ave	Magnolia Ave	C5	Local	20 to 25	Yes	High	20	25	20
Orange	Conroy Rd	Turkey Lake Rd	SR 435 / Kirkman Rd	C3R	MA	30 to 40	Yes	High	30	45	30
Orange	Conroy Rd	SR 435 / Kirkman Rd	Vineland Rd	C3R	MA	30 to 40	Yes	High	30	35	30
Orange	Conroy Rd	Millenia Blvd	John Young Pkwy	C3C	MA	30 to 40	Yes	High	30	35	30
Orange	Conway Rd	Lee Vista Blvd	SR 15 / Hoffner Ave	C3R	MA	30 to 40	No	High	30	45	30
Orange	Curry Ford Dr	Conway Gardens Rd	SR 15 / Conway Rd	C4	MA	25 to 35	Yes	High	25	35	25
Orange	Curry Ford Dr	SR 551 / Goldenrod Rd	Chickasaw Tr	C3C	MA	30 to 40	Yes	High	30	45	30
Orange	Curry Ford Dr	Young Pine Rd	Alafaya Tr	C3R	MA	30 to 40	No	High	30	45	30
Orange	Dallas Blvd	SR 528	Meredith Pkwy	C3R	MnC	30 to 40	No	Middle	35	40	35
Orange	Dean Rd N	SR 408	SR 50 / Colonial Dr	C3C	MA	30 to 40	No	High	30	45	30
Orange	Deerfield Blvd	John Young Pkwy	US 17/92/441 / Orange Blossom Trl	C3R	MC	30 to 40	No	High	30	30	30
Orange	E Anderson St	Delaney Ave	Mills Ave	C5	MA	25 to 30	Yes	High	25	30	25
Orange	E Bay St	Dillard St	9th St	C3C	MC	30 to 40	No	High	30	25	25
Orange	E Michigan St	Conway Gardens Rd	SR 15 / Conway Rd	C4	MC	25 to 35	No	High	25	35	25
Orange	Exchange Dr	SR 482 / Sand Lake Rd	US 17/92/441 / Orange Blossom Trl	C3R	MC	30 to 40	No	High	30	30	30
Orange	Forsyth Rd	University Blvd	SR 426 / Aloma Ave	C3R	MC	30 to 40	No	High	30	35	30
Orange	Forsyth Rd	SR 50 / Colonial Dr	University Blvd	C3R	MC	30 to 40	No	High	30	35	30
Orange	Fort Christmas Rd	Christmas Rd	SR 50	C2	MC	35 to 45	No	Middle	40	45	40
Orange	Fort Christmas Rd	Orange/Seminole CL	Christmas Rd	C2	MC	35 to 45	No	Low	45	45	45
Orange	Gatlin Ave	SR 527 / Orange Ave	Summerlin Ave	C4	MC	25 to 35	No	High	25	25	25
Orange	Gotha Rd	Hempel Ave	Turnpike	C3R	MC	30 to 40	No	High	30	30	30
Orange	Gotha Rd	Turnpike	Wilkening Farms Rd	C3R	MC	30 to 40	No	High	30	35	30
Orange	Grandnational Dr	International Dr	Oak Ridge Rd	C3C	MC	30 to 40	No	High	30	35	30
Orange	Grant St E	Bumby Ave	Crystal Lake Dr	C4	MC	25 to 35	Yes	High	25	30	25
Orange	Grant St E	SR 436 / Semoran Blvd	SR 552 / Curry Ford Rd	C3R	MC	30 to 40	Yes	High	30	30	30
Orange	Hazeltine National Dr	SR 436 / Semoran Blvd	Goldenrod Rd	C3C	MC	30 to 40	No	High	30	35	30
Orange	Heintzelman Blvd	Jeff Fuqua Blvd	Bear Rd/ Cargo Rd	C3C	MA	30 to 40	No	Middle	35	45	35
Orange	Hiawassee Rd	Conroy Windermere Rd	Westpointe Blvd	C3R	MA	30 to 40	No	Middle	35	45	35
Orange	Highland Ave	SR 50 / Colonial Dr	SR 527 / Orange Ave	C4	MC	25 to 35	Yes	High	25	30	25
Orange	Holden Ave	US 17/92/441 / Orange Blossom Trl	SR 527 / Orange Ave	C4	MA	25 to 35	No	High	25	35	25
Orange	Indian Hill Rd	Powers Dr	Pine Hills Rd	C3R	MC	30 to 40	Yes	High	30	30	30
Orange	Innovation Way	SR 528	Alafaya Tr	C2	MC	35 to 45	No	Middle	40	45	40
Orange	International Dr	SR 435 / Kirkman Rd	Oak Ridge Rd	C3C	MA	30 to 40	Yes	High	30	30	30
Orange	J Lawson Blvd	Beacon Park Blvd	Boggy Creek Rd	C3R	MnC	30 to 40	No	High	30	35	30
Orange	Jeff Fuqua Blvd	Boggy Creek Rd	Heintzelman Blvd	C2	MC	35 to 45	No	Low	45	55	45
Orange	Jeff Fuqua Blvd	Heintzelman Blvd	Bear Rd/ Cargo Rd	C3C	OPA	30 to 40	No	High	30	35	30
Orange	John Young Pkwy	Hunters Creek Blvd	Town Center Blvd	C3R	OPA	30 to 40	Yes	Low	30	45	30
Orange	John Young Pkwy	Osceola/Orange CL	Hunters Creek Blvd	C3R	OPA	30 to 40	Yes	Middle	30	45	30
Orange	Judge Rd	Conway Rd	Hazeltine National Dr	C3R	MC	30 to 40	No	High	30	35	30
Orange	Kirby Smith Rd	Narcoossee Rd	N Shore Golf Club Blvd	C3R	MnC	30 to 40	No	Low	40	40	40
Orange	Kirby Smith Rd	Tyson Rd	N Shore Golf Club Blvd	C2	MC	35 to 45	No	Low	45	40	40
Orange	Lake Destiny Rd	Kennedy Blvd	SR 414 / Maitland Blvd	C3R	MC	30 to 40	No	High	30	30	30
Orange	Lake Destiny Rd	SR 414 / Maitland Blvd	Orange/Seminole CL	C3R	MA	30 to 40	No	High	30	30	30
Orange	Lake Margaret Dr	SR 15 / Conway Rd	SR 436 / Semoran Blvd	C4	MC	25 to 35	Yes	High	25	30	25
Orange	Lake Nona Blvd	Boggy Creek Rd	Tavistock Lakes Blvd	C3C	MnC	30 to 40	No	Middle	35	35	35
Orange	Lake Nona Blvd	Boggy Creek Rd	Medical City Dr	C2	MC	35 to 45	No	Low	45	35	35
Orange	Lake Picket Rd	SR 50 / Colonial Dr	Chuluota Rd	C3R	MC	30 to 40	No	High	30	45	30
Orange	Lake Picket Rd	Chuluota Rd	Fort Christmas Rd	C3R	MC	30 to 40	No	Low	40	45	40
Orange	Lake Underhill Rd	SR 15 / Conway Rd	SR 436 / Semoran Blvd	C4	MA	25 to 35	Yes	High	25	30	25
Orange	Lake Underhill Rd	SR 436 / Semoran Blvd	SR 551 / Goldenrod Rd	C3R	MA	30 to 40	Yes	High	30	35	30
Orange	Lakeville Rd	Clarcona-Ocoee Rd	Apopka Blvd	C3R	MC	30 to 40	No	Low	40	45	40
Orange	Landstar Blvd	Rhode Island Woods Cir	Fairway Woods Blvd	C3R	MC	30 to 40	Yes	High	30	45	30
Orange	LB McLeod Rd	SR 435 / Kirkman Rd	Bruton Blvd	C3C	MC	30 to 40	Yes	High	30	40	30
Orange	LB McLeod Rd	Bruton Blvd	John Young Pkwy	C3C	MC	30 to 40	Yes	High	30	40	30
Orange	LB McLeod Rd	John Young Pkwy	Rio Grande Ave	C3R	MC	30 to 40	Yes	High	30	40	30
Orange	Maguire Blvd	SR 526 / Robinson St	SR 50 / Colonial Dr	C4	MC	25 to 35	Yes	High	25	30	25
Orange	Maguire Blvd	SR 50 / Colonial Dr	Bennett Rd	C3C	MA	30 to 40	Yes	Middle	30	30	30
Orange	Maguire Rd	SR 50 / Colonial Dr	Story Rd	C3C	MA	30 to 40	No	High	30	35	30
Orange	Major Blvd	SR 435 / Kirkman Rd	Vineland Rd	C3R	MC	30 to 40	Yes	High	30	30	30
Orange	Marden Rd	Keene Rd	Ocoee-Apopka Rd	C3R	MC	30 to 40	No	Low	40	35	35
Orange	Marshall Farms Rd	SR 50 / Colonial Dr	Maguire Rd	C3C	MA	30 to 40	No	High	30	35	30
Orange	McCoy Rd	Judge Rd	Conway Rd	C3C	MC	30 to 40	Yes	High	30	35	30
Orange	McCoy Rd	Conway Rd	Shadowridge Dr	C3C	MC	30 to 40	No	Middle	35	35	35
Orange	Metrowest Blvd	SR 435 / Kirkman Rd	Barack Obama Pkwy	C3R	MC	30 to 40	No	High	30	30	30
Orange	Millenia Blvd	Oak Ridge Rd	Conroy Rd	C3C	MC	30 to 40	Yes	High	30	35	30
Orange	Monument Pkwy	SR 528	Innovation Way	C2	MC	35 to 45	No	Low	45	45	45

County	Roadway	From	To	Context Class	Functional Class	Speed Range	Transit	Crash Rate	Initial Target Speed (MPH)	Current Posted Speed (MPH)	Preliminary Target Speed Recommendation (MPH)
Orange	Mott Ave	US 441	Edgewater Dr	C3C	MC	30 to 40	No	High	30	30	30
Orange	N Garland Ave	SR 526 / Robinson St	SR 50 / Colonial Dr	C5	MC	25 to 30	Yes	High	25	30	25
Orange	N Garland Ave	SR 50 / Colonial Dr	SR 527 / Orange Ave	C4	MC	25 to 35	Yes	High	25	30	25
Orange	N Hastings Rd	SR 50 / Colonial Dr	SR 438 / Silver Star Rd	C3R	MnC	30 to 40	No	High	30	30	30
Orange	N Hiawassee Rd	SR 414	US 441	C3R	MA	30 to 40	No	High	30	45	30
Orange	N Hiawassee Rd	SR 438 / Silver Star Rd	Clarcona-Ocoee Rd	C3R	MA	30 to 40	No	High	30	45	30
Orange	N Hiawassee Rd	Beggs Rd	SR 414	C3R	MA	30 to 40	No	Middle	35	45	35
Orange	N Ivey Ln	Columbia St	Old Winter Garden Rd	C3R	MC	30 to 40	Yes	High	30	35	30
Orange	N John Young Pkwy	Columbia St	Orange Center Blvd.	C3C	OPA	30 to 40	Yes	High	30	35	30
Orange	N John Young Pkwy	Millenia Blvd	33rd St	C3C	OPA	30 to 40	Yes	High	30	45	30
Orange	N John Young Pkwy	SR 482 / Sand Lake Rd	Oak Ridge Rd	C3C	OPA	30 to 40	Yes	High	30	45	30
Orange	N John Young Pkwy	I-4	Columbia St	C3R	OPA	30 to 40	Yes	High	30	35	30
Orange	N John Young Pkwy	Americana Blvd	Millenia Blvd	C3R	OPA	30 to 40	Yes	High	30	45	30
Orange	N John Young Pkwy	Oak Ridge Rd	Americana Blvd	C3R	OPA	30 to 40	Yes	High	30	45	30
Orange	N Lake Orlando Pkwy/Noth Ln	Pine Hills Rd	SR 423 / John Young Pkwy	C3R	MC	30 to 40	Yes	High	30	25	25
Orange	N Magnolia Ave	Livingston St	SR 50 / Colonial Dr	C6	OPA	20 to 25	Yes	High	20	25	20
Orange	N Maitland Ave	US 17/92 / Orlando Ave	Orange/Seminole CL	C3R	MC	30 to 40	No	High	30	35	30
Orange	N Orange Ave	SR 526 / Robinson St	SR 50 / Colonial Dr	C6	OPA	20 to 25	Yes	High	20	25	20
Orange	N Parramore Ave	Robinson St	SR 50 / Colonial Dr	C3R	MC	30 to 40	Yes	High	30	25	25
Orange	N Shore Golf Club Blvd	Kirby Smith Rd	Moss Park Rd	C3R	MnC	30 to 40	No	Low	40	30	30
Orange	N Wymore Rd	SR 426 / Fairbanks Ave	SR 423 / Lee Rd	C3R	MC	30 to 40	No	High	30	35	30
Orange	Narcoossee Rd	Dowden Rd	SR 528	C3C	OPA	30 to 40	No	Middle	35	45	35
Orange	Narcoossee Rd	Moss Park Rd	Dowden Rd	C3C	OPA	30 to 40	No	High	30	45	30
Orange	Narcoossee Rd	Osceola/Orange CL/Boggy Creek Rd	Tavistock Lakes Blvd	C3R	OPA	30 to 40	No	High	30	45	30
Orange	North Ln	Powers Dr	Pine Hills Rd	C3R	MC	30 to 40	No	High	30	35	30
Orange	Oak Ridge Rd	Millenia Blvd	John Young Pkwy	C3R	MC	30 to 40	Yes	High	30	40	30
Orange	Oak Ridge Rd	International Dr	Millenia Blvd	C3R	MC	30 to 40	Yes	High	30	35	30
Orange	Old Cheney Hwy	SR 50 / Colonial Dr	SR 436 / Semoran Blvd	C3R	MnC	30 to 40	No	High	30	30	30
Orange	Old Cheney Hwy	SR 436 / Semoran Blvd	SR 50 / Colonial Dr	C3R	MnC	30 to 40	No	High	30	40	30
Orange	Old Winter Garden Rd	Powers Dr	SR 435 / Kirkman Rd	C3R	MA	30 to 40	Yes	High	30	40	30
Orange	Old Winter Garden Rd	SR 435 / Kirkman Rd	Pine Hills Rd	C3R	MC	30 to 40	Yes	High	30	45	30
Orange	Old Winter Garden Rd	Pine Hills Rd	Ivey Ln	C3R	MC	30 to 40	Yes	High	30	45	30
Orange	Old Winter Garden Rd	Maguire Rd	Bluford Ave	C3R	MA	30 to 40	No	High	30	35	30
Orange	Old Winter Garden Rd.	Edgewood Ranch Rd	Hiawassee Rd	C3R	MA	30 to 40	Yes	High	30	45	30
Orange	Ondich Rd	Round Lake Rd	Plymouth Sorrento Rd	C2	MC	35 to 45	No	Middle	40	30	30
Orange	Orange Ave S	Zell Dr	Old Wetherbee Rd	C3C	MA	30 to 40	Yes	High	30	45	30
Orange	Orange Ave S	Old Wetherbee Rd	Tradeport Dr	C3C	MA	30 to 40	Yes	High	30	45	30
Orange	Orange Ave S	4th St	Landstreet Rd	C3C	MA	30 to 40	Yes	High	30	45	30
Orange	Orange Ave S	Landstreet Rd	SR 482 / McCoy Rd	C3C	MA	30 to 40	Yes	High	30	45	30
Orange	Orange Ave S	Town Center Blvd	Fairway Woods Blvd	C3C	MC	30 to 40	No	High	30	45	30
Orange	Orange Ave S	Orange/Osceola CL	Town Center Blvd	C3R	MnC	30 to 40	No	High	30	45	30
Orange	Orlando Central Pkwy	Rio Grande Ave	US 17/92/441 / Orange Blossom Trl	C3R	MC	30 to 40	No	High	30	35	30
Orange	Osceola Pkwy	Sherberth Rd	World Dr	C3C	MA	30 to 40	No	Low	40	45	40
Orange	Park Ave	Orange St	Votaw Rd	C4	MC	25 to 35	Yes	High	25	35	25
Orange	Park Ave	US 441	Orange St	C4	MC	25 to 35	Yes	High	25	35	25
Orange	Park Ave	SR 50 / Colonial Dr	Story Rd	C3R	MC	30 to 40	No	High	30	35	30
Orange	Pine Hills Rd	Clarcona-Ocoee Rd	Beggs Rd	C3R	MA	30 to 40	No	High	30	45	30
Orange	Pine Hills Rd	Indian Hills Rd	Clarcona-Ocoee Rd	C3R	MA	30 to 40	Yes	High	30	45	30
Orange	Pine Hills Rd	SR 50 / Colonial Dr	SR 438 / Silver Star Rd	C3R	MnC	30 to 40	Yes	High	30	40	30
Orange	Plymouth Sorrento Rd	Old Dixie Hwy	Yothers Rd	C3R	MC	30 to 40	No	High	30	45	30
Orange	Plymouth Sorrento Rd	Ponkan Rd	Kelly Park Rd	C2	MC	35 to 45	No	Low	45	55	45
Orange	Plymouth Sorrento Rd	Kelly Park Rd	Orange/Lake CL	C3R	MC	30 to 40	No	High	30	35	30
Orange	Powers Dr N	Old Winter Garden Rd	SR 50 / Colonial Dr	C4	MC	25 to 35	Yes	High	25	35	25
Orange	Powers Dr N	SR 50 / Colonial Dr	Balboa Dr	C4	MC	25 to 35	Yes	High	25	35	25
Orange	Powers Dr N	Balboa Dr	SR 438 / Silver Star Rd	C3R	MC	30 to 40	Yes	High	30	30	30
Orange	President Barack Obama Pkwy	Conroy Rd	Metrowest Blvd	C3R	MC	30 to 40	No	High	30	35	30
Orange	Presidents Dr	SR 482 / Sand Lake Rd	John Young Pkwy	C3R	MC	30 to 40	No	High	30	30	30
Orange	Raleigh St	Hiawassee Rd	SR 435 / Kirkman Rd	C3R	MA	30 to 40	No	High	30	35	30
Orange	Rhode Island Woods Cir	Landstar Blvd	Wyndham Lakes Blvd	C3R	MC	30 to 40	Yes	High	30	30	30
Orange	Rhode Island Woods Cir	Landstar Blvd	Wyndham Lakes Blvd	C3R	MC	30 to 40	Yes	High	30	30	30
Orange	Rock Springs Rd	Welch Rd	Ponkan Rd	C3R	MC	30 to 40	No	Middle	35	45	35
Orange	Round Lake Rd	Kelly Park Rd	Orange/Lake CL	C2	MC	35 to 45	No	High	35	55	35
Orange	Rouse Rd	SR 50 / Colonial Dr	University Blvd	C3C	MC	30 to 40	No	High	30	45	30
Orange	S Crystal Lake Dr	Curry Ford Rd	SR 15 / Anderson St	C4	MC	25 to 35	No	High	25	25	25
Orange	S Goldenrod Rd	SR 528	Lee Vista Blvd	C3C	MA	30 to 40	No	High	30	45	30
Orange	Sadler Rd	Orange/Lake CL	US 441	C2	MC	35 to 45	No	Low	45	45	45
Orange	Sadler Rd	US 441	Round Lake Rd	C2	MC	35 to 45	No	Low	45	45	45
Orange	Schoolhouse Pond Rd	New Independence Pkwy	Camp Dubois Cres	C3R	MnC	30 to 40	No	Low	40	25	25
Orange	Shader Rd	SR 423 / John Young Pkwy	US 441 / Orange Blossom Tr	C4	MC	25 to 35	Yes	High	25	30	25

County	Roadway	From	To	Context Class	Functional Class	Speed Range	Transit	Crash Rate	Initial Target Speed (MPH)	Current Posted Speed (MPH)	Preliminary Target Speed Recommendation (MPH)
Orange	Story Rd	9th St	Maguire Rd	C3C	MC	30 to 40	No	High	30	35	30
Orange	Story Rd	Maguire Rd	Bluford Ave	C3C	MC	30 to 40	No	High	30	30	30
Orange	Tavistock Lakes Blvd	Lake Nona Blvd	Narcoossee Rd	C3R	MnC	30 to 40	No	High	30	25	25
Orange	Taylor Creek Rd	SR 520	SR 50	C1	MC	35 to 45	No	Low	45	35	35
Orange	Taylor St./W McKay St	SR 438 / Ocoee-Apopka Rd	Bluford Ave	C3R	MA	30 to 40	No	High	30	25	25
Orange	Town Center Blvd	John Young Pkwy	US 17/92/441 / Orange Blossom Trl	C3R	MC	30 to 40	Yes	High	30	40	30
Orange	Town Center Blvd	Balcombe Rd	Orange Ave	C3R	MC	30 to 40	Yes	High	30	40	30
Orange	Tradeport Dr	Orange Ave	Boggy Creek Rd	C3R	MC	30 to 40	No	High	30	40	30
Orange	Tradeport Dr	Boggy Creek Rd	8th St	C3R	MC	30 to 40	No	High	30	40	30
Orange	Tradeport Dr	Binnacle Way	Bear Rd/ Cargo Rd	C3R	MC	30 to 40	No	High	30	40	30
Orange	Tradeport Dr	Bear Rd/ Cargo Rd	Jetport Dr	C3C	MC	30 to 40	No	High	30	35	30
Orange	Tyson Rd	Narcoossee Rd	Kirby Smith Rd	C3R	MnC	30 to 40	No	Low	40	30	30
Orange	University Blvd	Rouse Rd	SR 434 / Alafaya Tr	C3C	MA	30 to 40	Yes	High	30	45	30
Orange	Valencia College Ln	William C Coleman Dr	Econlockhatchee Tr	C3R	MC	30 to 40	Yes	Middle	30	45	30
Orange	Vineland Rd	SR 435 / Kirkman Rd	Conroy Rd	C3R	MC	30 to 40	No	High	30	45	30
Orange	W Amelia St	Westmoreland Dr	Hughey Ave	C3R	MC	30 to 40	Yes	High	30	25	25
Orange	W Anderson St	US 17/92/441 / Orange Blossom Trl	Westmoreland Dr	C4	MC	25 to 35	Yes	High	25	25	25
Orange	W Central Blvd	Tampa Ave	Rio Grande Ave	C4	MC	25 to 35	Yes	High	25	25	25
Orange	W Central Blvd	Rio Grande Ave	US 17/92/441 / Orange Blossom Trl	C4	MC	25 to 35	Yes	High	25	25	25
Orange	W Kaley St	US 17/92/441 / Orange Blossom Trl	Westmoreland Dr	C4	MC	25 to 35	No	High	25	30	25
Orange	W Kaley St	Westmoreland Dr	I-4	C4	MC	25 to 35	No	High	25	30	25
Orange	W Kaley St	Divison Ave	SR 527 / Orange Ave	C4	MA	25 to 35	No	High	25	30	25
Orange	W Keene Rd	Marden Rd	Apopka Vineland Rd	C2	MC	35 to 45	No	Low	45	45	45
Orange	W Livingston St	US 17/92/441 / Orange Blossom Trl	Westmoreland Dr	C3R	MC	30 to 40	Yes	High	30	30	30
Orange	W Princeton St	Edgewater Dr	I-4	C4	MA	25 to 35	Yes	High	25	30	25
Orange	W Princeton St	I-4	SR 527 / Orange Ave	C4	MA	25 to 35	Yes	High	25	30	25
Orange	W Princeton St	SR 527 / Orange Ave	US 17/92 / Mills Ave	C4	MA	25 to 35	Yes	High	25	30	25
Orange	W Robinson St	Westmoreland Dr	Hughey Ave	C4	MC	25 to 35	Yes	High	25	25	25
Orange	W Wetherbee Rd	Balcombe Rd	Orange Ave	C3R	MC	30 to 40	No	High	30	45	30
Orange	West Rd	Ocoee-Apopka Rd	SR 429	C3R	MC	30 to 40	No	High	30	45	30
Orange	Westmoreland Dr	Kaley Ave	Gore St	C4	MC	25 to 35	No	High	25	25	25
Orange	Westmoreland Dr	Michgan St	Kaley Ave	C4	MC	25 to 35	No	High	25	25	25
Orange	Westover Roberts Rd	Hempel Ave	Apopka Vineland Rd	C3R	MC	30 to 40	No	High	30	35	30
Orange	Wilkening Farm Rd	Apopka Vineland Rd	Gotha Rd	C3R	MC	30 to 40	No	High	30	35	30
Orange	Wilkening Farm Rd	Gotha Rd	Apopka Vineland Rd	C3R	MC	30 to 40	No	Low	40	35	35
Orange	Winter Garden Vineland Rd	CR 535	Lake Butler Rd	C3R	MA	30 to 40	No	High	30	45	30
Orange	Winter Garden Vineland Rd	Silverlake Park Dr	Buena Vista Dr	C3R	MA	30 to 40	No	High	30	45	30
Orange	Woodbury Rd./Golfway Blvd	Alafaya Tr	Lake Underhill Rd	C3R	MC	30 to 40	No	High	30	30	30
Seminole	Church Ave	Milwee St	Ronald Reagan Blvd	C4	MnC	25 to 35	No	High	25	20	20
Seminole	E Airport Blvd	US 17/92	Sanford Ave	C3R	MA	30 to 40	No	High	30	35	30
Seminole	Howell Branch Rd	SR 436 / Semoran Blvd	Dodd Rd	C3R	MA	30 to 40	No	Low	40	40	40
Seminole	Maitland Ave	Orange/Seminole CL	SR 436	C4	MA	25 to 35	No	Low	35	40	35
Seminole	Martin Luther King Jr. Blvd	Airport Blvd	St Johns Pkwy	C3C	MA	30 to 40	No	Low	40	45	40
Seminole	Old Lake Mary Rd	Airport Blvd	HE Thomas Jr Pkwy	C3R	MC	30 to 40	No	High	30	35	30
Seminole	Orange Blvd	Oregon St	US 17/92 / Monroe Rd	C3R	MC	30 to 40	No	High	30	35	30
Seminole	S Milwee St/Church Ave.	W. Florida Ave.	SR 434	C4	MnC	25 to 35	No	High	25	20	20
Seminole	S Pearl Lake Cswy	Bunnell Rd	SR 436	C3R	MnC	30 to 40	Yes	Middle	30	30	30
Seminole	Sanford Ave	Pine Way	Lake Mary Blvd	C3R	MC	30 to 40	No	Low	40	25	25
Seminole	Sanford Ave Lake Mary Blvd-Pine Way	Lake Jesup Park	Pine Way	C3R	MnC	30 to 40	No	High	30	35	30
Seminole	Sipes Ave.	SR 46 / E 25th St	Celery Ave	C3R	MC	30 to 40	No	High	30	25	25
Seminole	W Church Ave	Rangeline Rd	W. Florida Ave.	C3R	MnC	30 to 40	No	High	30	25	25
Seminole	Wekiva Springs Rd	Hunt Club Blvd	SR 434	C3R	MA	30 to 40	No	Low	40	40	40

APPENDIX F: WORKING GROUP MEETING PRESENTATIONS

Working Group Meeting #1 Presentation

Speed Management Network Screening

Vulnerable Users Working Group Meeting #1

April 19, 2022

Presentation Agenda

- Purpose of the Project
- Speed Management Network Screening
- Context Classification
- Project Schedule
- Next Steps

Purpose of the Project

- Classify roadways within the context of adjacent land use
- Identify corridors of concern related to speeding
- Provide speed limit reduction recommendations
- Improve safety for all users of the roadway network

239,035 Total Crashes

2017-2021

	2017-2019	2020	2021
Crashes/Year	52,531	37,708	43,733
Serious Injury (SI)	1,237	986	1,136
Fatal	206	199	232
SI Ped	101	91	118
SI Bike	51	46	39
Fatal Ped	66	54	73
Fatal Bike	10	7	13

Speed Management Network Screening

Project Tasks

Utilize	Crash, Speed, and Roadway Geometric Data
Perform	Preliminary Context Classification Review
Conduct	Crash, Speed, Geometric, and Context Class Comparison Analysis
Identify	Critical Speed Management Network
Determine	Suggested Speed Limit Revisions

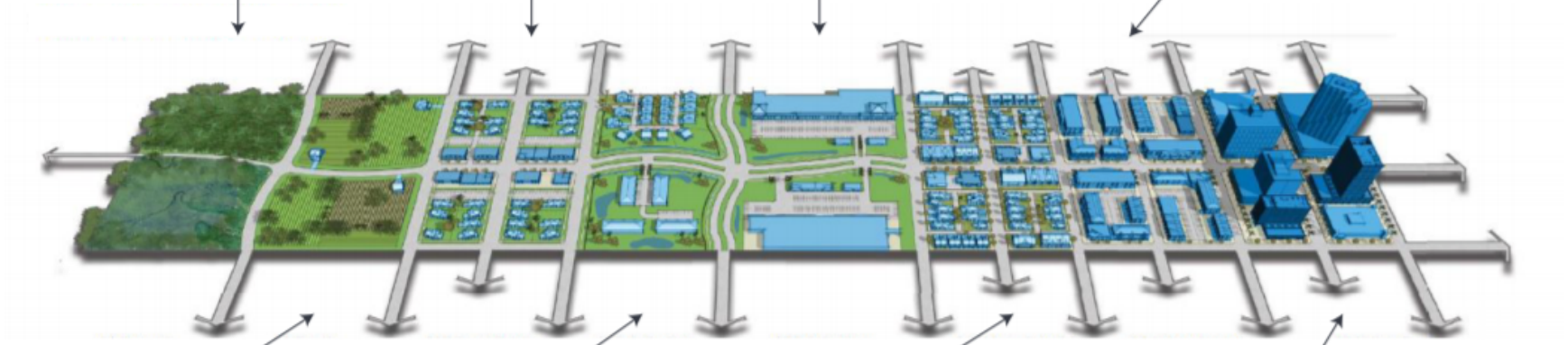
Context Classification

C1-Natural
Lands preserved in a natural or wilderness condition, including lands unsuitable for settlement due to natural conditions.

C2T-Rural Town
Small concentrations of developed areas immediately surrounded by rural and natural areas: includes many historic towns.

C3C - Suburban Commercial
Mostly non-residential uses with large building footprints and large parking lots within large blocks and a disconnected or sparse roadway network.

C5 - Urban Center
Mix of uses set within small blocks with a well-connected roadway network. Typically concentrated around a few blocks and identified as part of a civic or economic center of a community, town, or city.



C2-Rural
Sparsely settled lands; may include agricultural land, grassland, woodland, and wetlands.

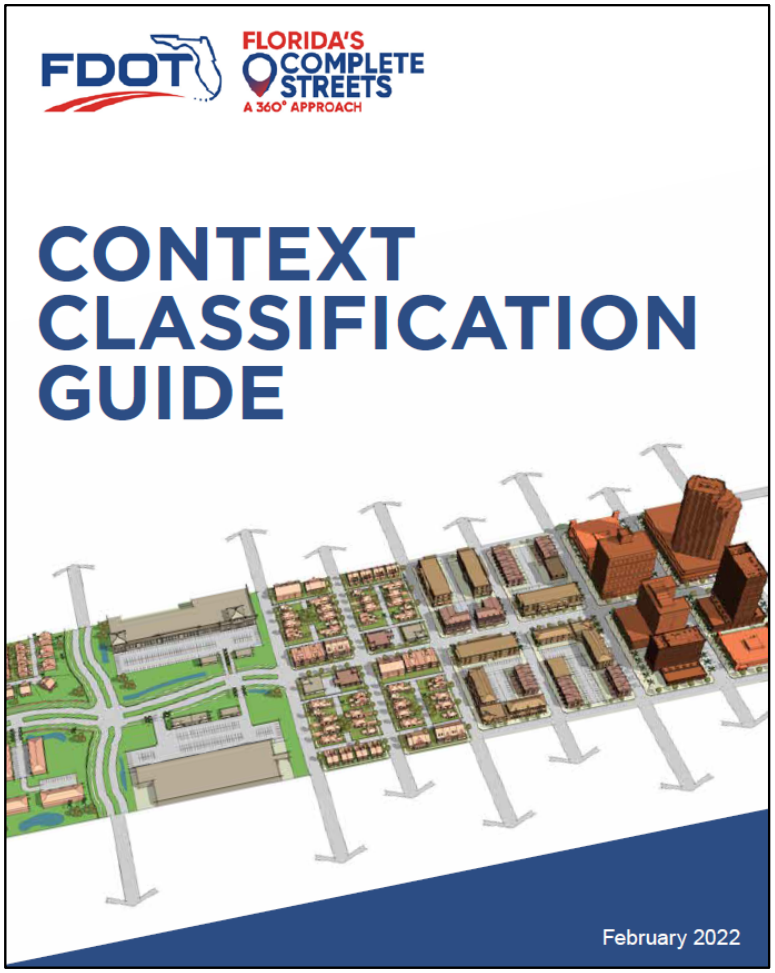
C3R - Suburban Residential
Mostly residential uses within large blocks and a disconnected or sparse roadway network.

C4 - Urban General
Mix of uses set within small blocks with a well-connected roadway network. May extend long distances. The roadway network usually connects to residential neighborhoods immediately along the corridor or behind the uses fronting the roadway.

C6 - Urban Core
Areas with the highest densities and building heights, and within FDOT classified Large Urbanized Areas (population >1,000,000). Many are regional centers and destinations. Buildings have mixed uses, are built up to the roadway, and are within a well-connected roadway network.

Context Classification

- Performing context classification review for functionally classified non-State roadways
- Using preliminary context classification developed by FDOT for State roadways

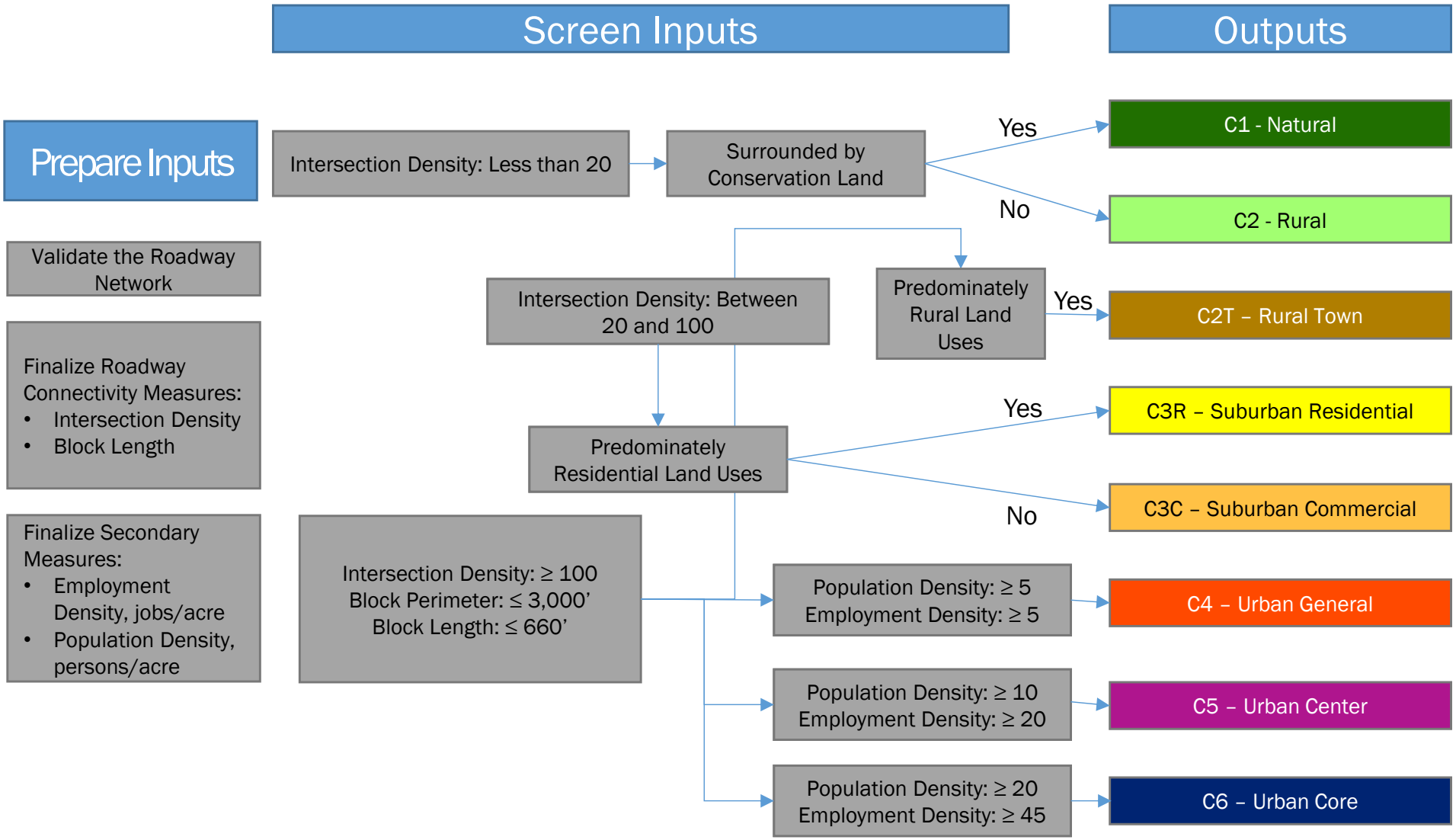


Context Classification

Analysis Utilized Following Metrics to Determine Context Class

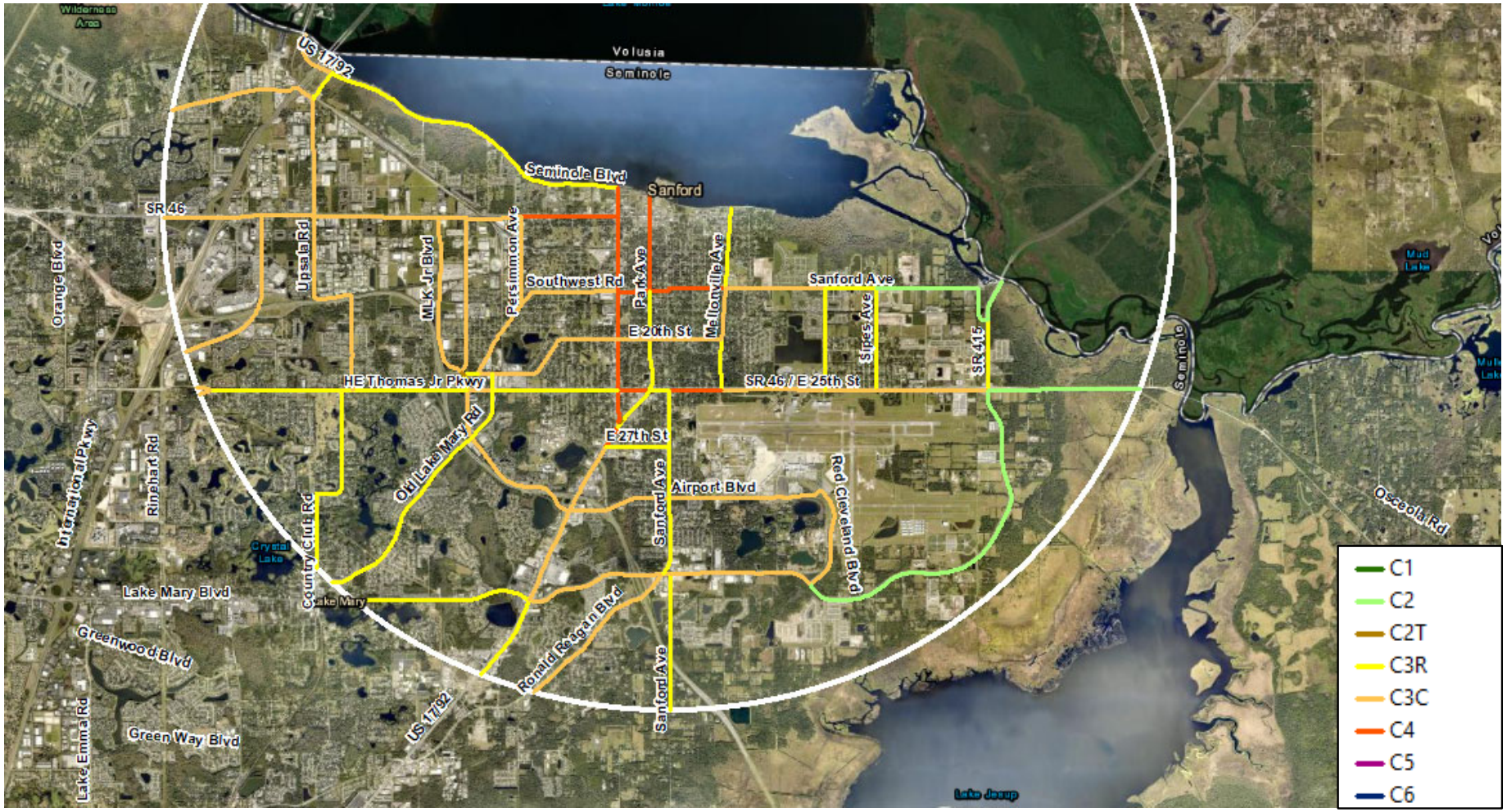
- Intersection Density
- Block Length
- Employment / Population Density
- Existing Land Use

Context Classification



Context Classification

Draft Context Classifications – Sanford Area



Context Classification

How are we incorporating future land use into the context classification review?

- Crosscheck FDOT D5 existing vs future CC on SHS
- Review undeveloped areas with known large planned developments
- Differences between existing and future CC generally observed in C2 Rural going to C2T Rural Town or C3 Suburban

Context Classification

How are Title VI areas being accounted for in the analysis?

- Environmental Justice (EJ) areas will be screened as part of speed data collection
- Critical Speed Management Network will be reviewed in relation to Title VI areas

Project Schedule

Speed Management Network Screening

Tasks		2022								
		Feb	March	April	May	June	July	Aug	Sept	Oct
1	Data Collection									
2	Speed & Crash Data Comparisons									
3	Identify Critical Speed Management Network									
4	Determine Speed Limit Revisions									
5	Summary Report									
6	Project Meetings			WG			WG			WG

We Are Here

WG = Working Group

Next Steps

- Context Classification review for non-State Roadways
- Begin Speed Management Network Screening
  - Crash, Speed, Geometric, and Context Class Comparison Analysis
- Identify Critical Speed Management Network
- Next Presentation: July 19th
  - Working Group providing input on draft Critical Speed Management Network

Thank You

MetroPlanOrlando.com | (407) 481-5672

250 S. Orange Ave., Suite 200, Orlando, FL 32801

Working Group Meeting #2 Presentation

Speed Management Network Screening

Vulnerable Users Working Group Meeting #2

July 19, 2022

Presentation Agenda

- Project Overview
- Wejo Data
- Speed Analysis
- Safety Analysis
- Critical Speed Management Segments
- Project Schedule & Next Steps

Project Overview

- Classify roadways within the context of adjacent land use
- Identify segments/corridors of concern related to speeding
- Provide target speed recommendations
- Improve safety for all users of the roadway network

239,035 Total Crashes

2017-2021

	2017-2019	2020	2021
Crashes/Year	52,531	37,708	43,733
Serious Injury (SI)	1,237	986	1,136
Fatal	206	199	232
SI Ped	101	91	118
SI Bike	51	46	39
Fatal Ped	66	54	73
Fatal Bike	10	7	13

Project Overview

Project Tasks

✓ Utilize	Crash, Speed, and Roadway Geometric Data
✓ Perform	Preliminary Context Classification Review
✓ Conduct	Crash, Speed, Geometric, and Context Class Comparison Analysis
Identify	Critical Speed Management Segments/Corridors
Determine	Target Speed Recommendations

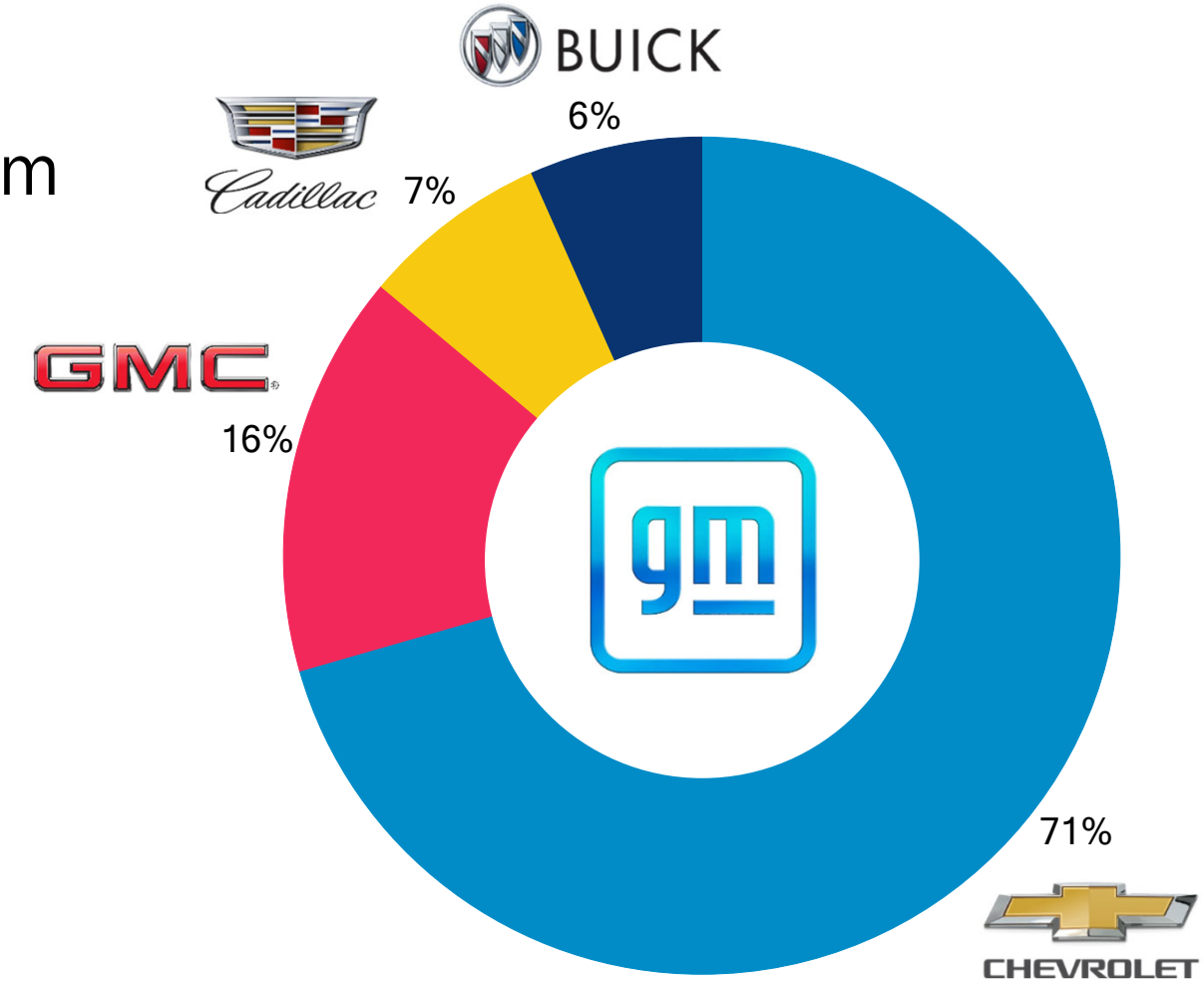
Wejo Data


metroplan orlando
A REGIONAL TRANSPORTATION PARTNERSHIP

Wejo Data Overview

- Wejo data sourced from General Motors (GM) vehicles 2015 and newer

- Large majority of vehicles branded as Chevrolet (~70%) and GMC (~15%)



Wejo Dataset

Vehicle Movements

- Data Point ID
- Journey ID
- Captured Date and Time
- Latitude
- Longitude
- Speed
- Heading
- Ignition Status
- Zip Code
- Squish VIN

Driver Events

- Event Type
  - Journey
  - Acceleration
  - Speed Threshold
  - Seatbelt
- Journey Event Change Type
- Seatbelt Change Type
- Acceleration Change Type
- Speed Threshold Event Type

Opportunities and Limitations

Opportunities

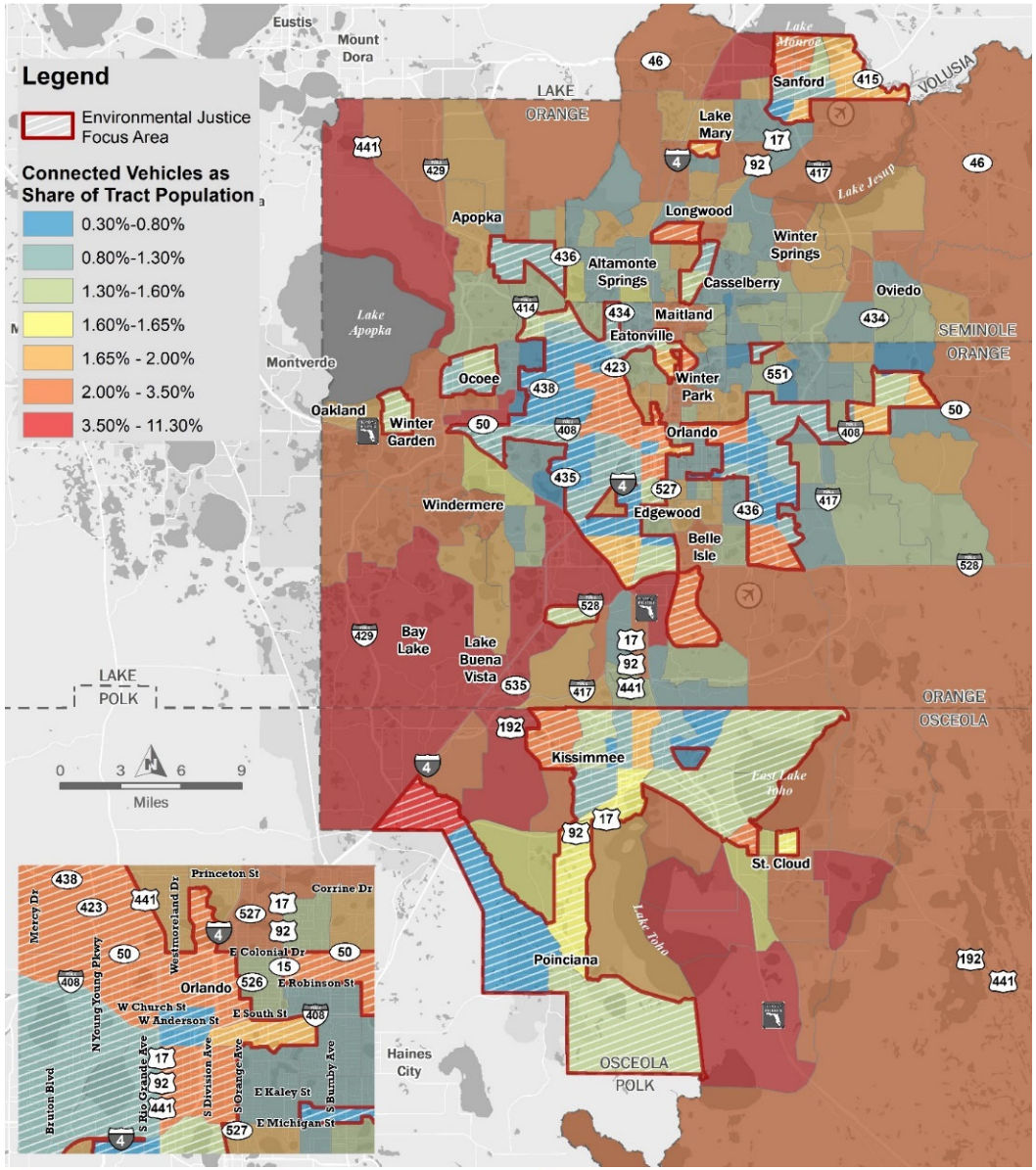
- Data available for all roads in MetroPlan Orlando region
- Archived data available monthly within days of month end
- Data resolution allows for operational-level analyses
  - Suitable for signal retiming projects and this Speed Management Network Screening effort

Limitations

- Small data set (~3% of total fleet)
- Potential equity issues, socioeconomic gaps in data
- Events dataset based on fixed thresholds, not always intuitive (e.g., speeding is 80 mph)

CV Share in EJ Focus Areas

- The CV share lowest in:
  - Pine Hills
  - East Kissimmee
  - South Semoran
  - Poinciana
- The CV share highest in:
  - Bay Lake
  - Lake Buena Vista
  - Sand Lake
  - Lake Monroe



Wejo Analysis

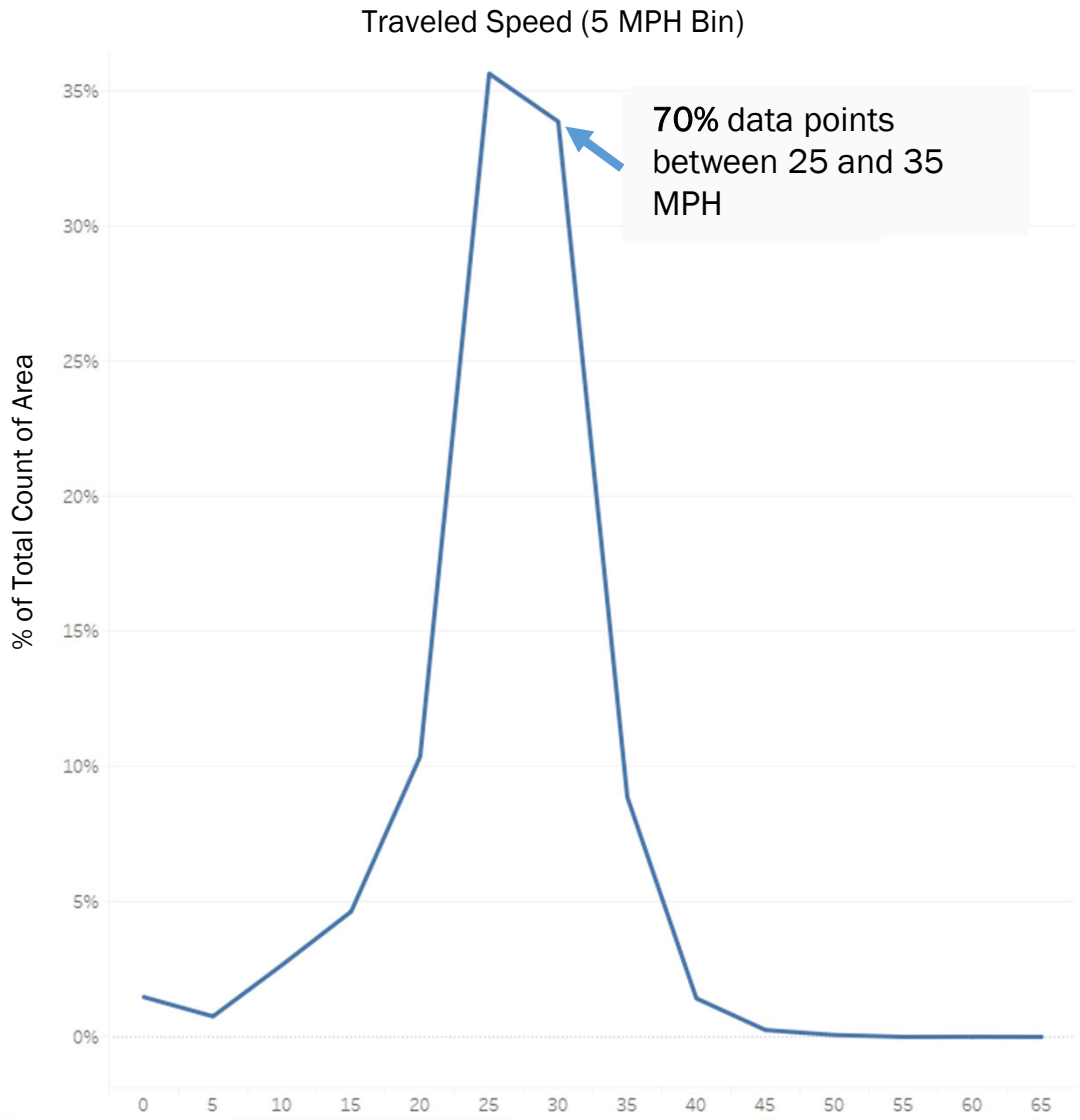
- Average (median) travel speeds on arterial midblock segments by direction
  - Also computed 85th and 95th percentile speeds
  - Added comparisons to the speed limit (from FDOT and LOTIS)
- Only captured off-peak hours to limit the effect of congestion on travel speeds
  - 4-6 AM and 8-10 PM
- Used four months of data:
  - Nov 2020 & Jan, Apr, May 2021

Example Speeding Application

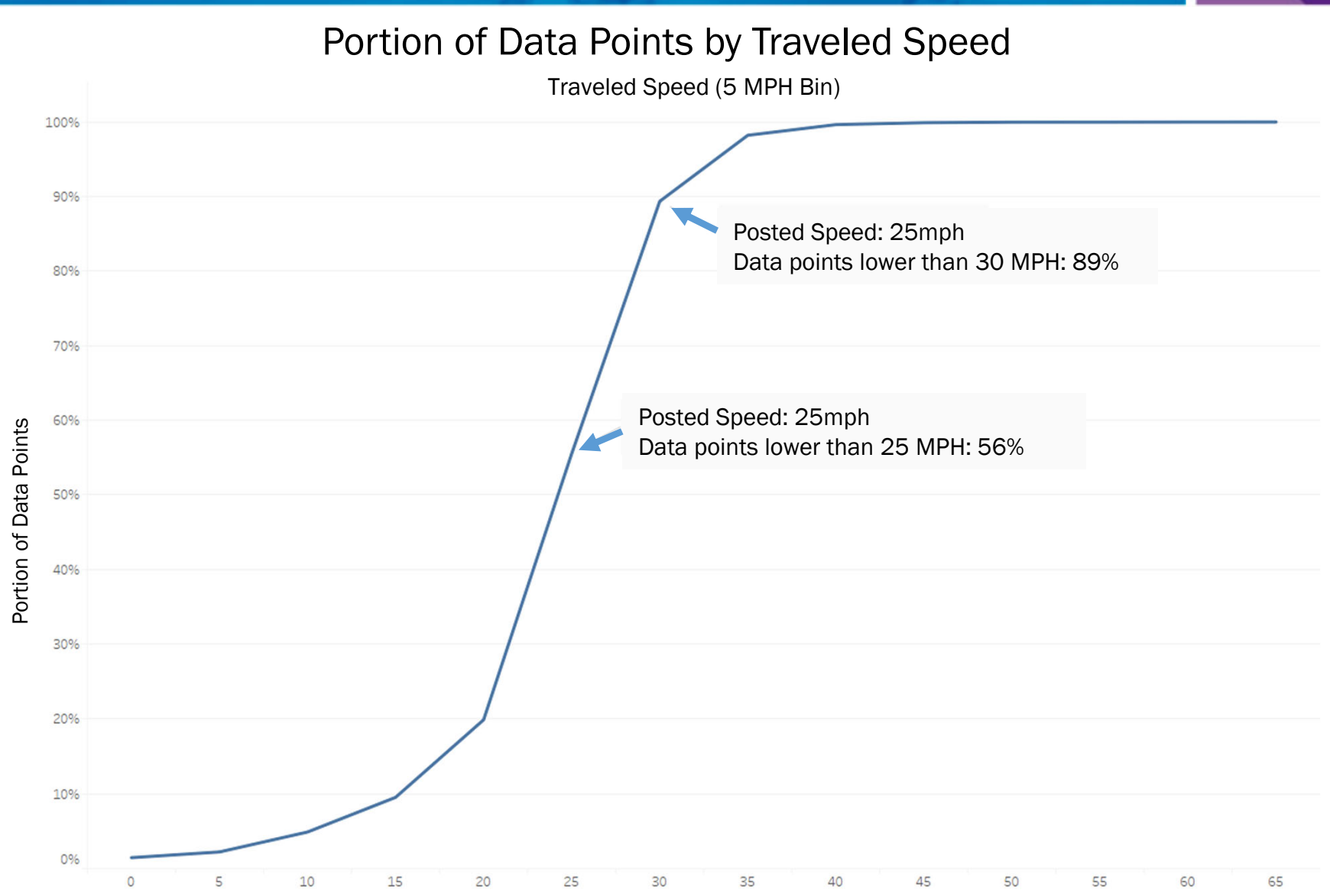
Operating Speed Examples

Operating Speed Example: Crystal Lake Dr.

Portion of Data Points by Traveled Speed



Operating Speed Example: Crystal Lake Dr.



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Speed Analysis

Speed Analysis

- Reviewed Posted Speeds vs Context Class Speed Ranges
- Analysis Performed using 50th, 85th, and 95th Percentile Speeds
  - 50th and 85th percentile speeds utilized when recommending target speeds
  - 95th percentile speeds identify higher-end speeding segments

Speed Analysis

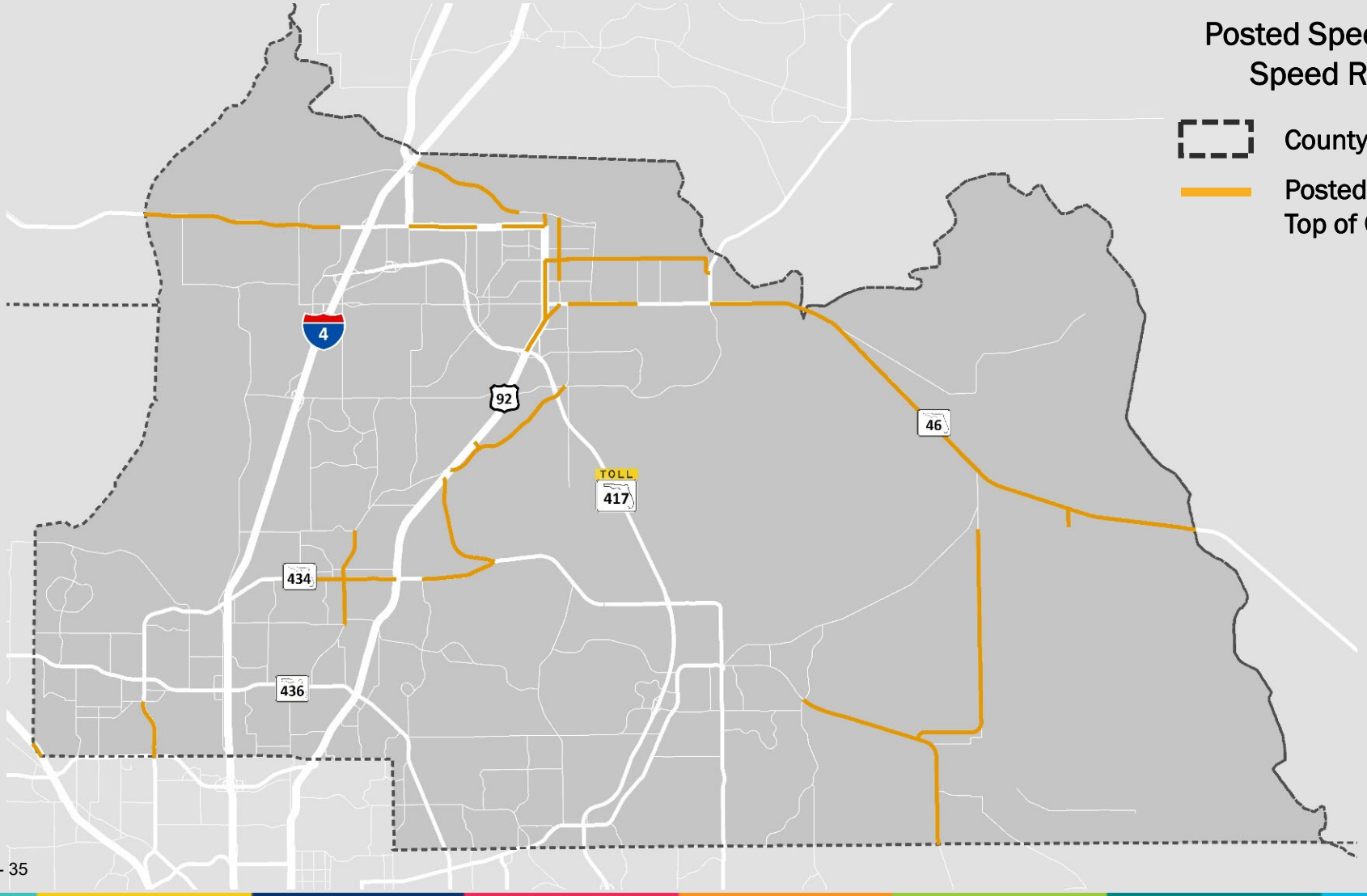
Design Speed Ranges per Context Classification

Arterials and Collectors			
Context Classification		Allowable Range (mph)	SIS Minimum (mph)
C1	Natural	55-70	65
C2	Rural	55-70	65
C2T	Rural Town	25-45	40
C3	Suburban	35-55	50
C4	Urban General	25-45	45
C5	Urban Center	25-35	35
C6	Urban Core	25-30	30

Source: 2022 FDM Table 201.5.1

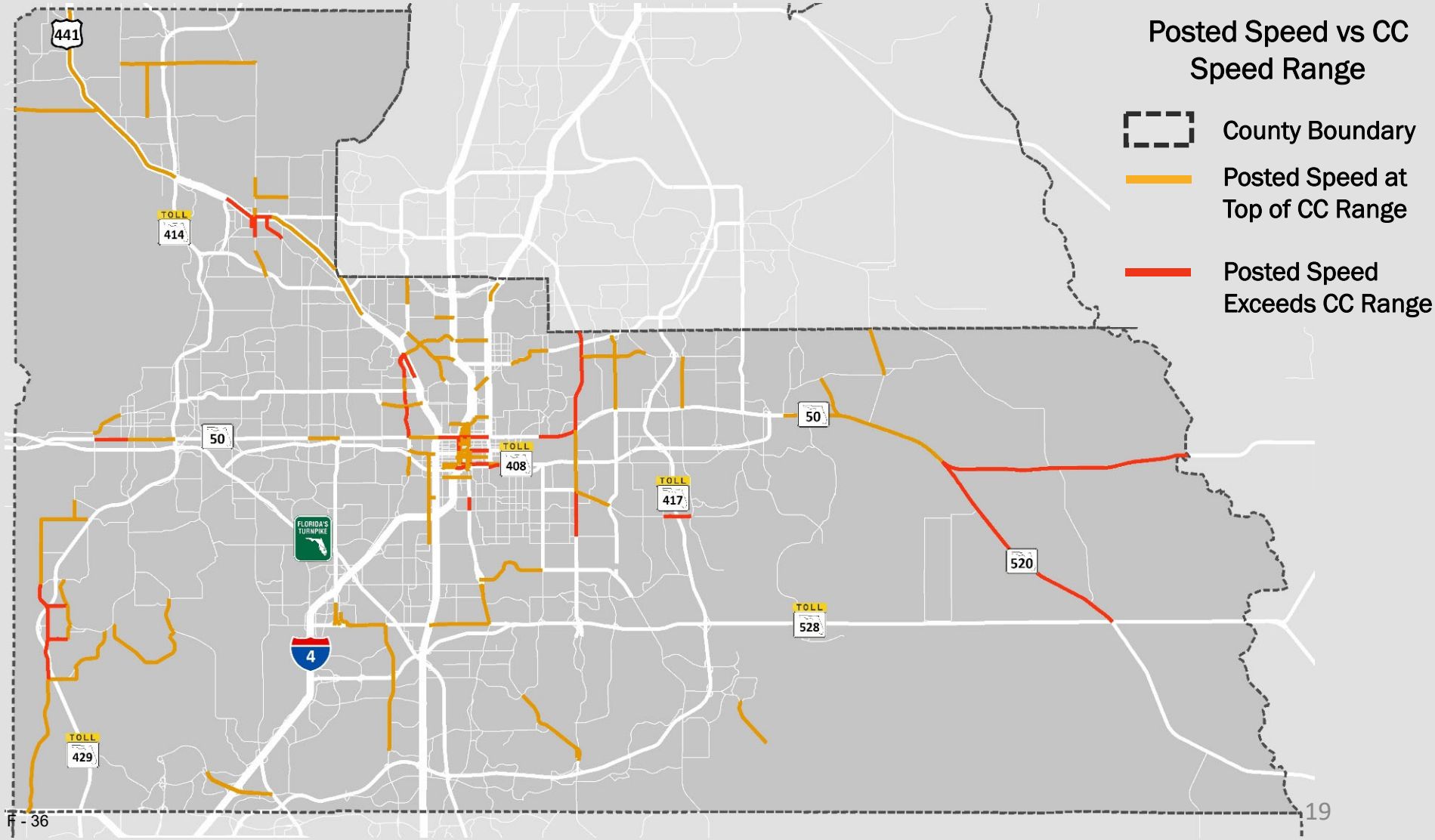
Posted Speed vs Context Class

Seminole County



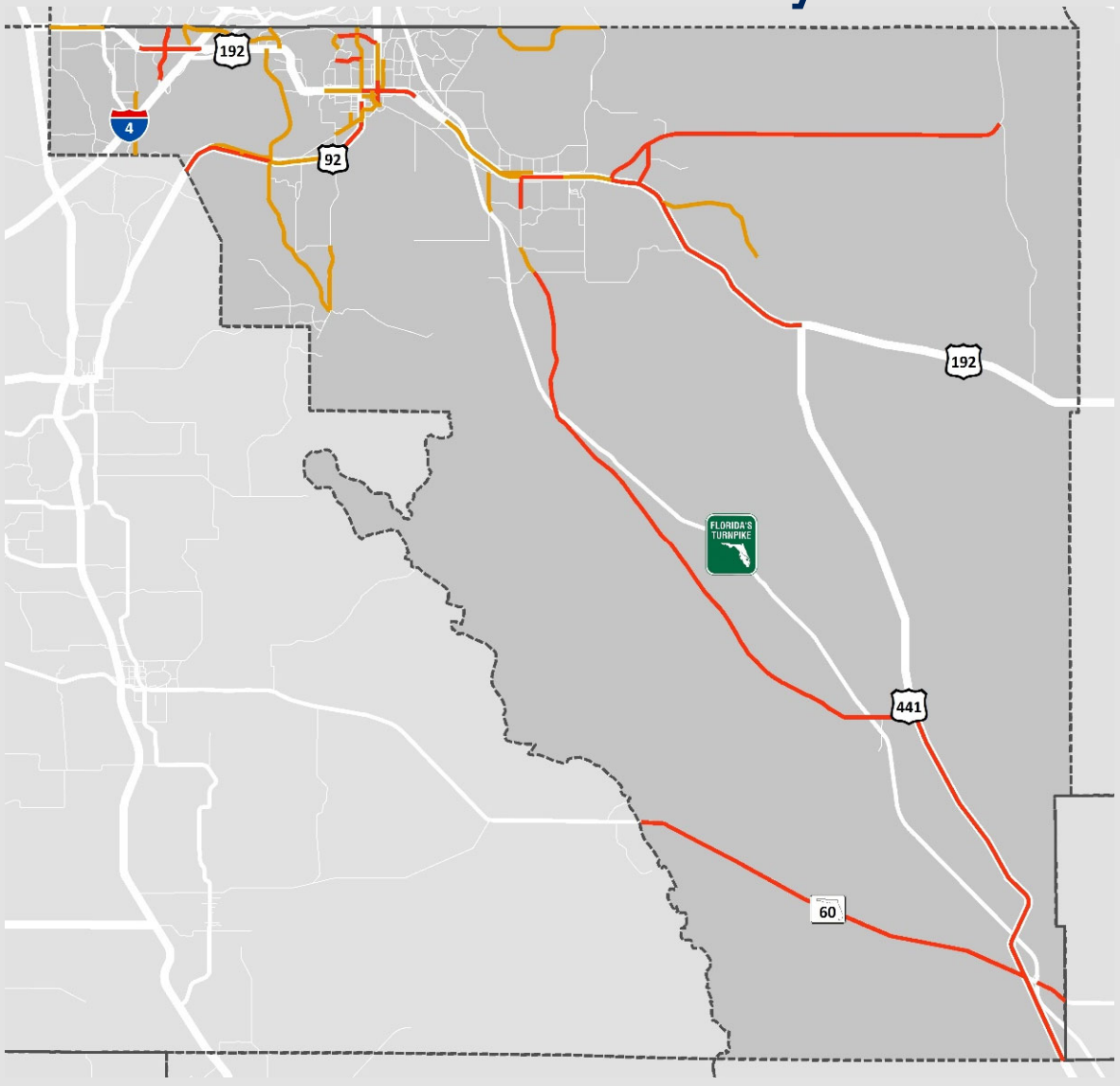
Posted Speed vs Context Class

Orange County



Posted Speed vs Context Class

Osceola County



Posted Speed vs CC Speed Range

- County Boundary
- Posted Speed at Top of CC Range
- Posted Speed Exceeds CC Range

Methodology to Identify Critical Speed Management Segments

1. Identified segments where 85th percentile speeds were 10+ MPH over the posted speed
2. Identified segments that also had a “very high” crash rate OR “very high” EPDO score
3. Reviewed segments where 50th and 95th percentile speeds were 20+ MPH over posted speed
4. Cross referenced Steps 1 and 2 to identify initial segments
5. Added segments from Step 3 to the initial segments from Step 4

Methodology to Identify Critical Speed Management Segments

1. Identified segments where 85th percentile speeds were 10+ MPH over the posted speed
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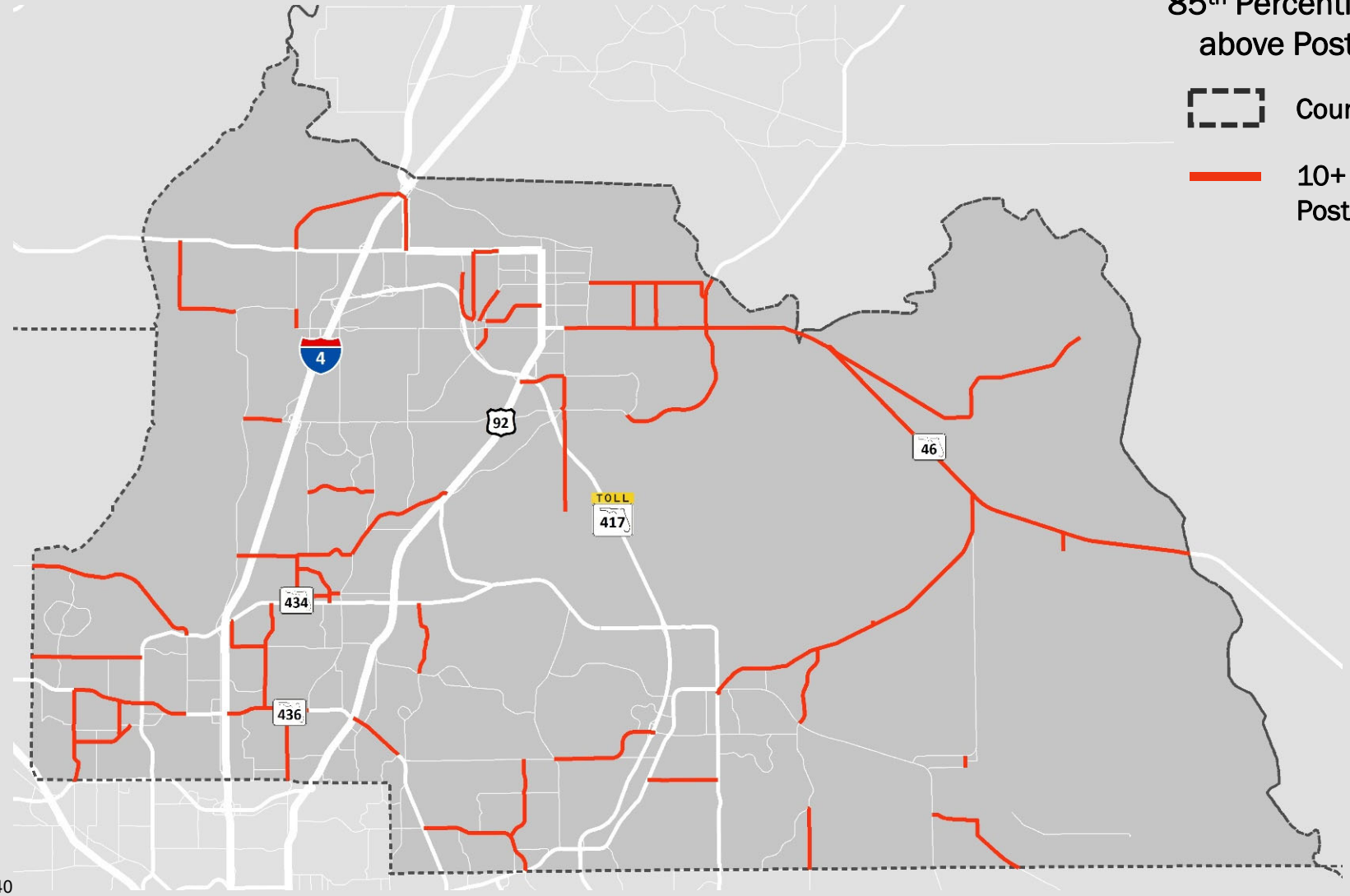
85th Percentile 10+ MPH Above Post Speed

Seminole County



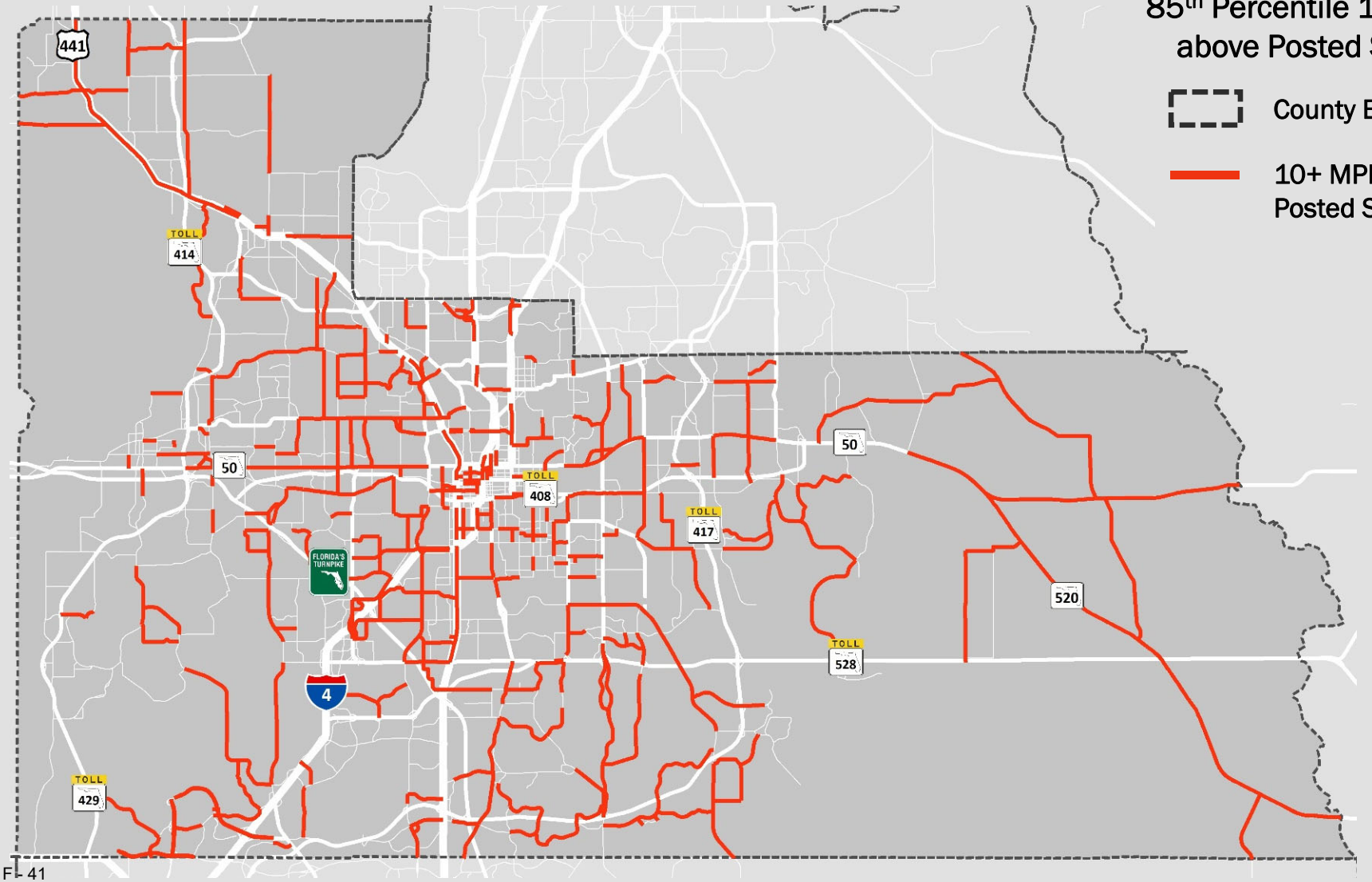
85th Percentile 10+ MPH above Posted Speed

County Boundary

10+ MPH above Posted Speed

85th Percentile 10+ MPH Above Post Speed

Orange County



85th Percentile 10+ MPH above Posted Speed

County Boundary

10+ MPH above Posted Speed

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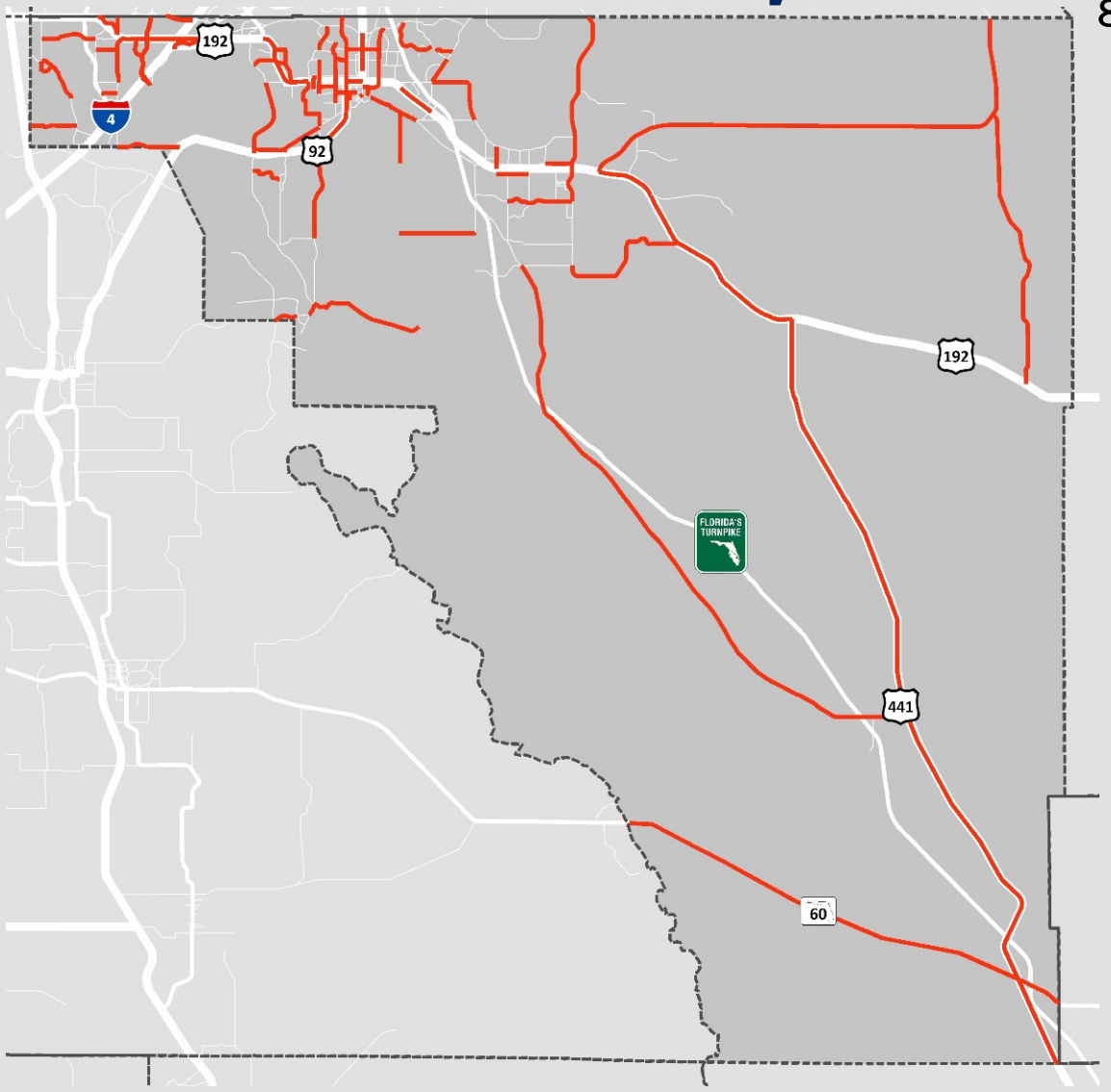
85th Percentile 10+ MPH Above Post Speed

Osceola County



85th Percentile 10+ MPH above Posted Speed

County Boundary

10+ MPH above Posted Speed

Safety Analysis

Methodology to Identify Critical Speed Management Segments

1. Identified segments where 85th percentile speeds were 10+ MPH over the posted speed
2. Identified segments that also had a "very high" crash rate OR "very high" EPDO score
3. Reviewed segments where 50th and 95th percentile speeds were 20+ MPH over posted speed
4. Cross referenced Steps 1 and 2 to identify initial segments
5. Added segments from Step 3 to the initial segments from Step 4

Crash Rate Analysis

- Assigned Total Crashes to Roadway Segments
- Applied Crash Rate Formula
- Mapped Results Using GIS "Quartiles"
  - Crash Rates reviewed for each County individually to avoid under/over representation

Crash Rate Formula

$$\frac{\text{Total Crashes} \times 100{,}000{,}000}{\text{AADT} \times 365 \times \text{Years of Crash Data} \times \text{Road Segment Length}}$$

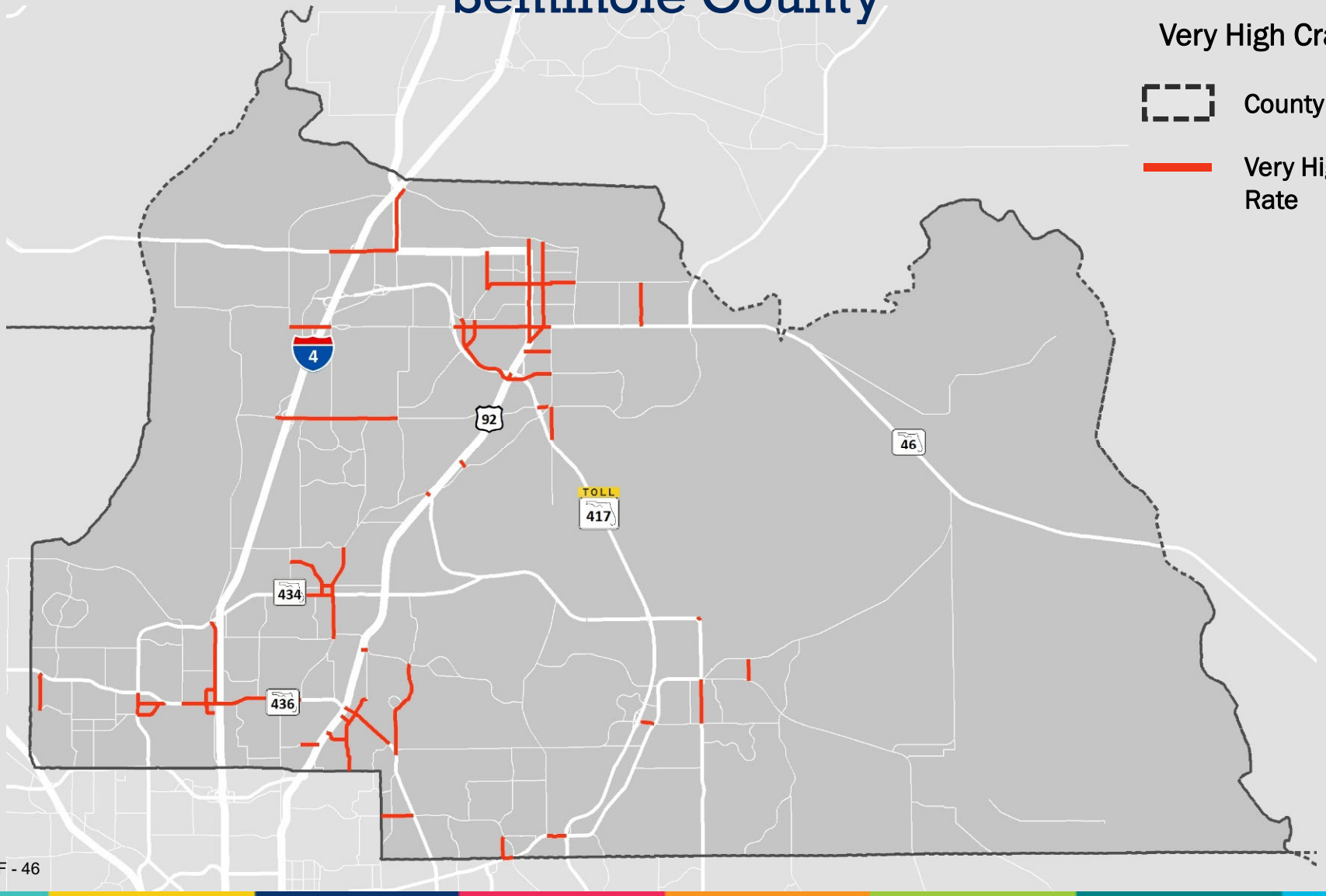
Example: Airport Blvd Overpass at SR 417

$$\frac{91 \times 100{,}000{,}000}{4{,}900 \times 365 \times 5 \times 1.01}$$

= 1,007 Crash Rate

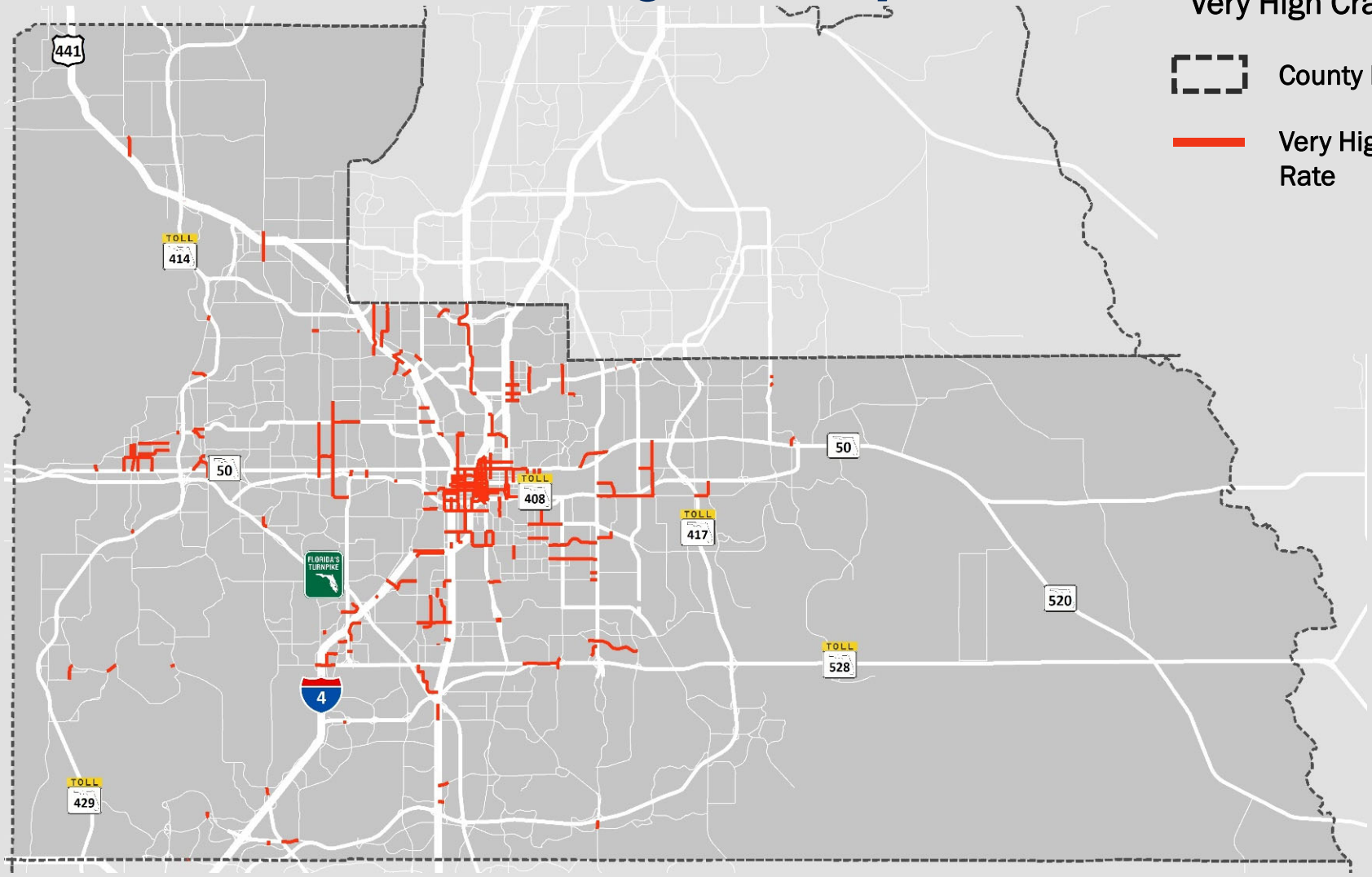
Crash Rate Analysis

Seminole County



Crash Rate Analysis

Orange County



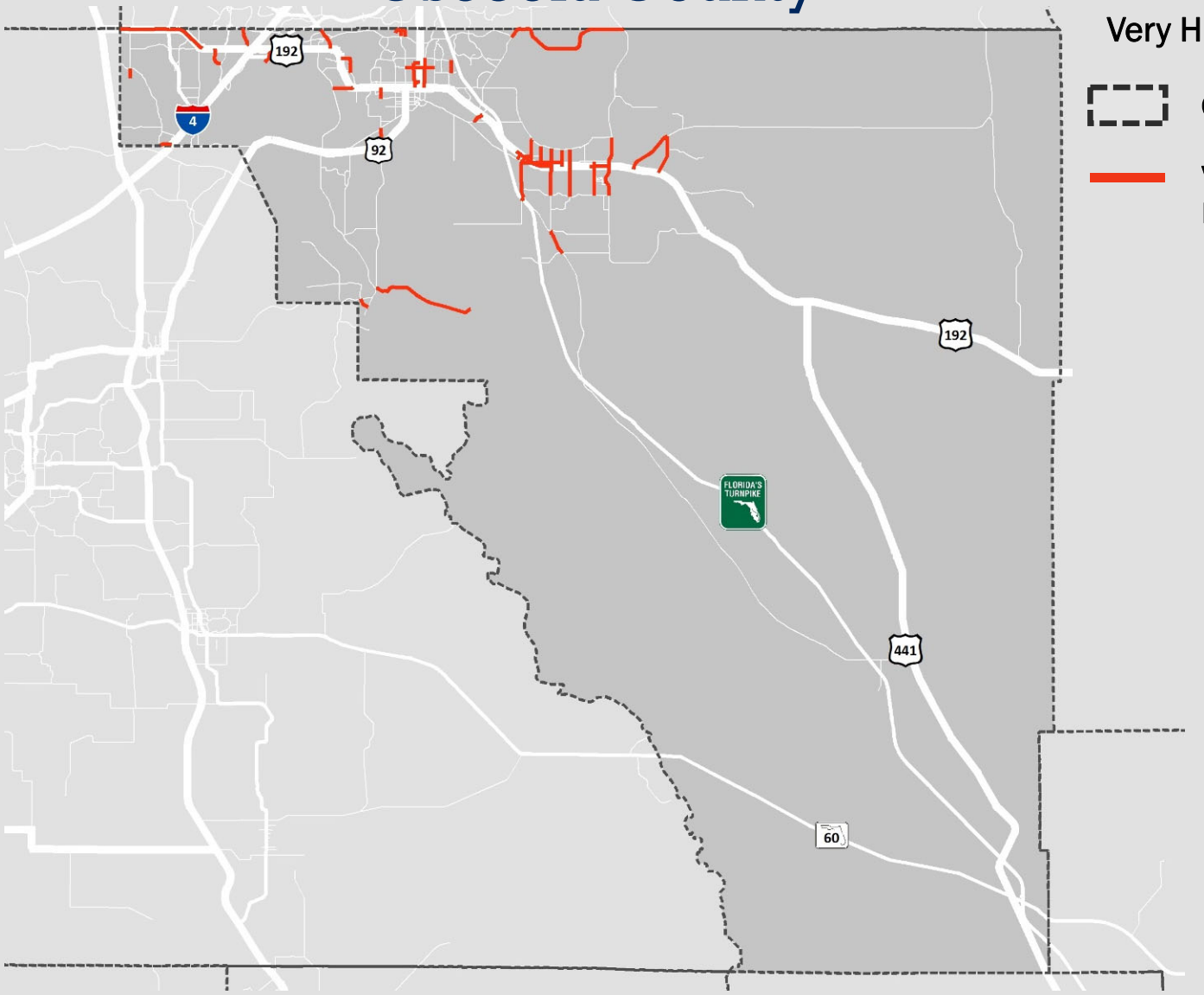
Very High Crash Rate

County Boundary

Very High Crash Rate

Crash Rate Analysis

Osceola County



Very High Crash Rate

County Boundary

Very High Crash Rate

Equivalent Property Damage Only (EPDO) Score

- Method from Highway Safety Manual (HSM)
  - Applies a cost per crash severity level
  - Divide cost of crash severity by PDO cost to create weighted factor

Weighting Factors for Crash Severity Score

Severity	Crash Cost	Ratio	Weighting Factor
Fatal	$10,890,000	$10,890,000 / $7,700	1,414
Incapacitating Injury	$888,030	$888,030 / $7,700	115
Non-Incapacitating Injury	$180,180	$180,180 / $7,700	23
Possible Injury	$103,950	$103,950 / $7,700	14
PDO	$7,700	$7,700 / $7,700	1

Source: 2022 FDOT Design Manual Table 122.6.2

Equivalent Property Damage Only (EPDO) Score

- Multiplied weighted factor by total crashes
- Mapped Results Using GIS "Quartiles"
  - Crash Rates reviewed for each County individually to avoid under/over representation

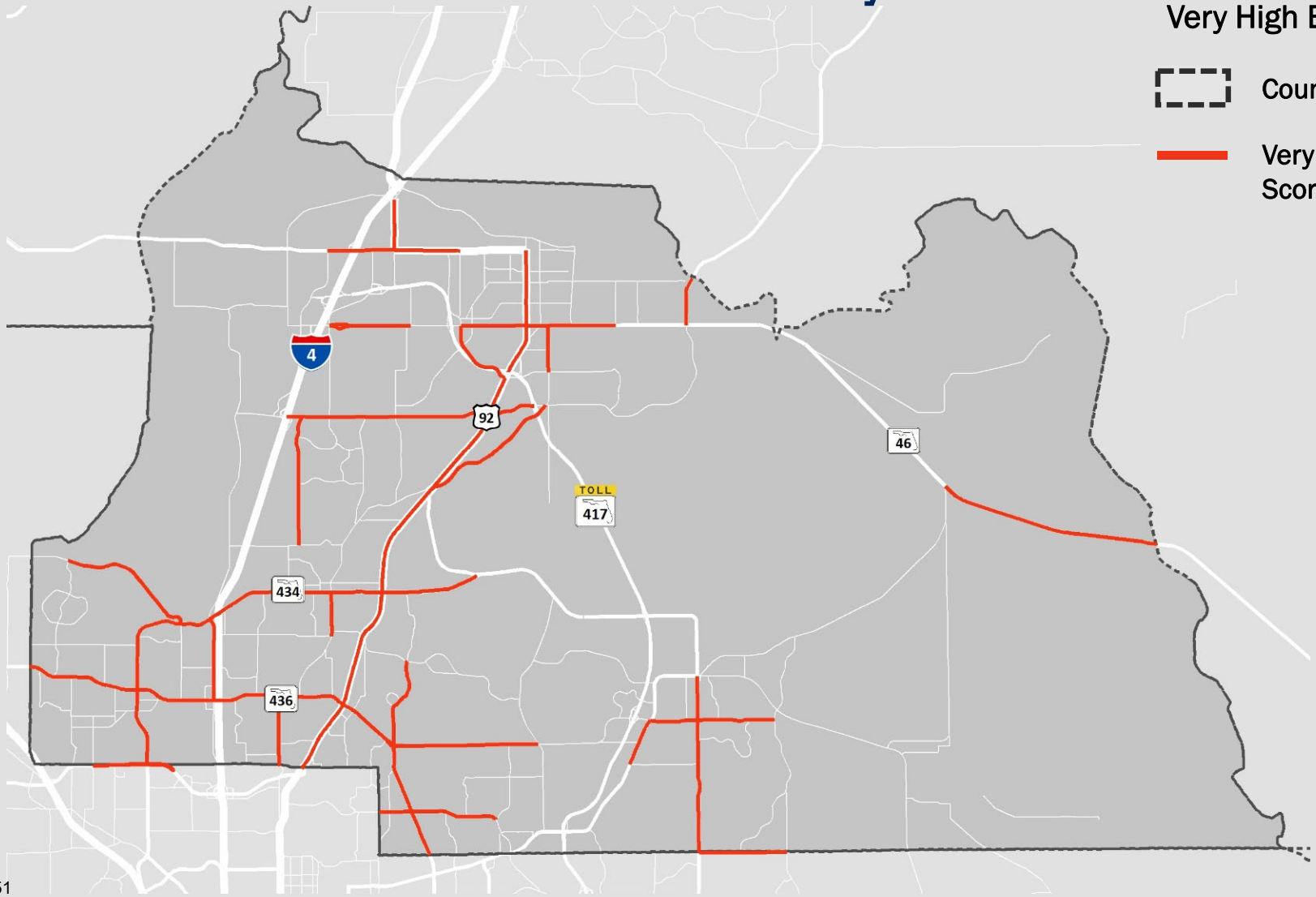
Example: Airport Blvd Overpass at SR 417

(0 Fatal x 1,414) + (0 Inj. A x 115) + (12 Inj. B x 23) + (12 Inj. C x 14) + (67 PDO x 1)

= 511 EPDO Score

Equivalent Property Damage Only (EPDO) Score

Seminole County



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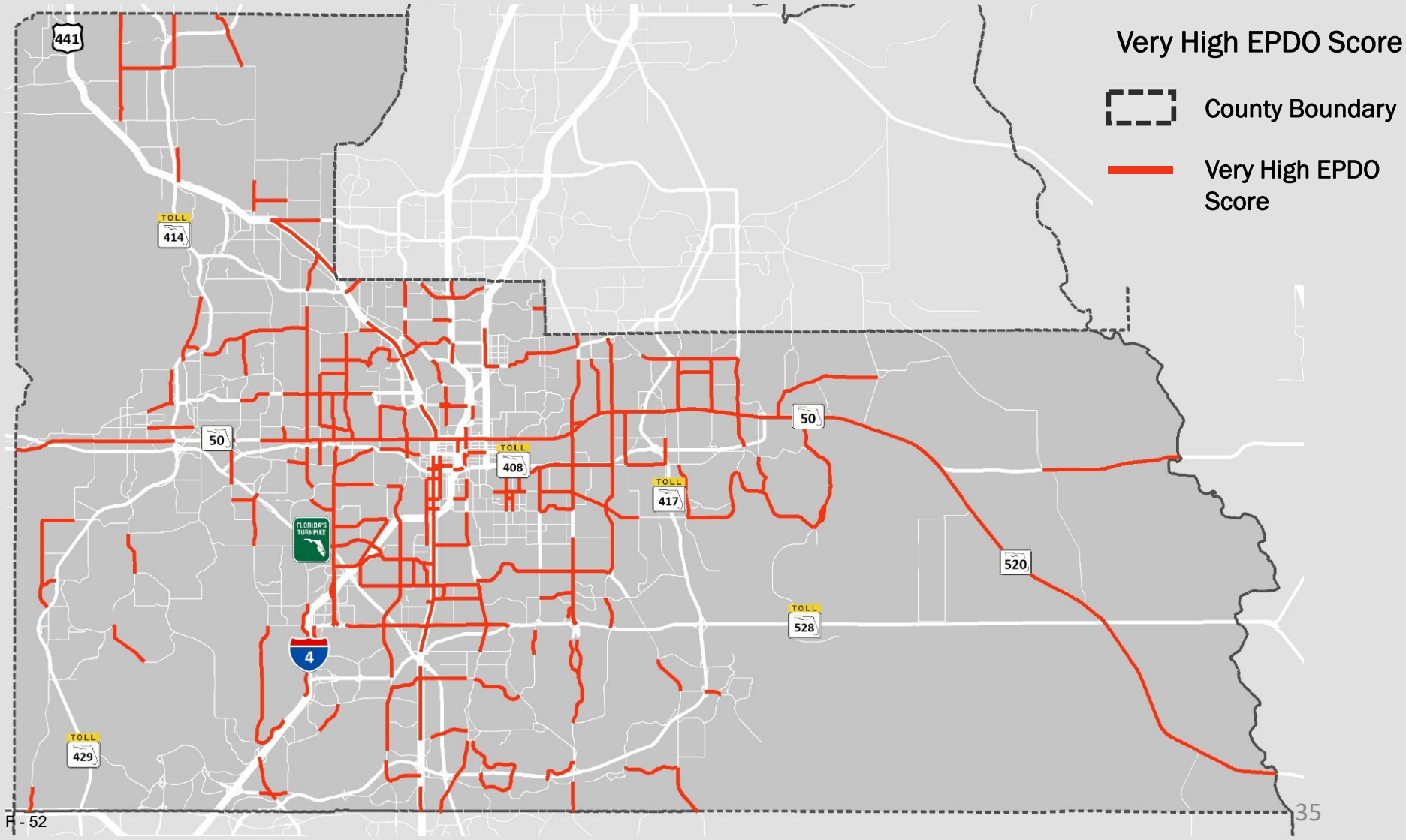
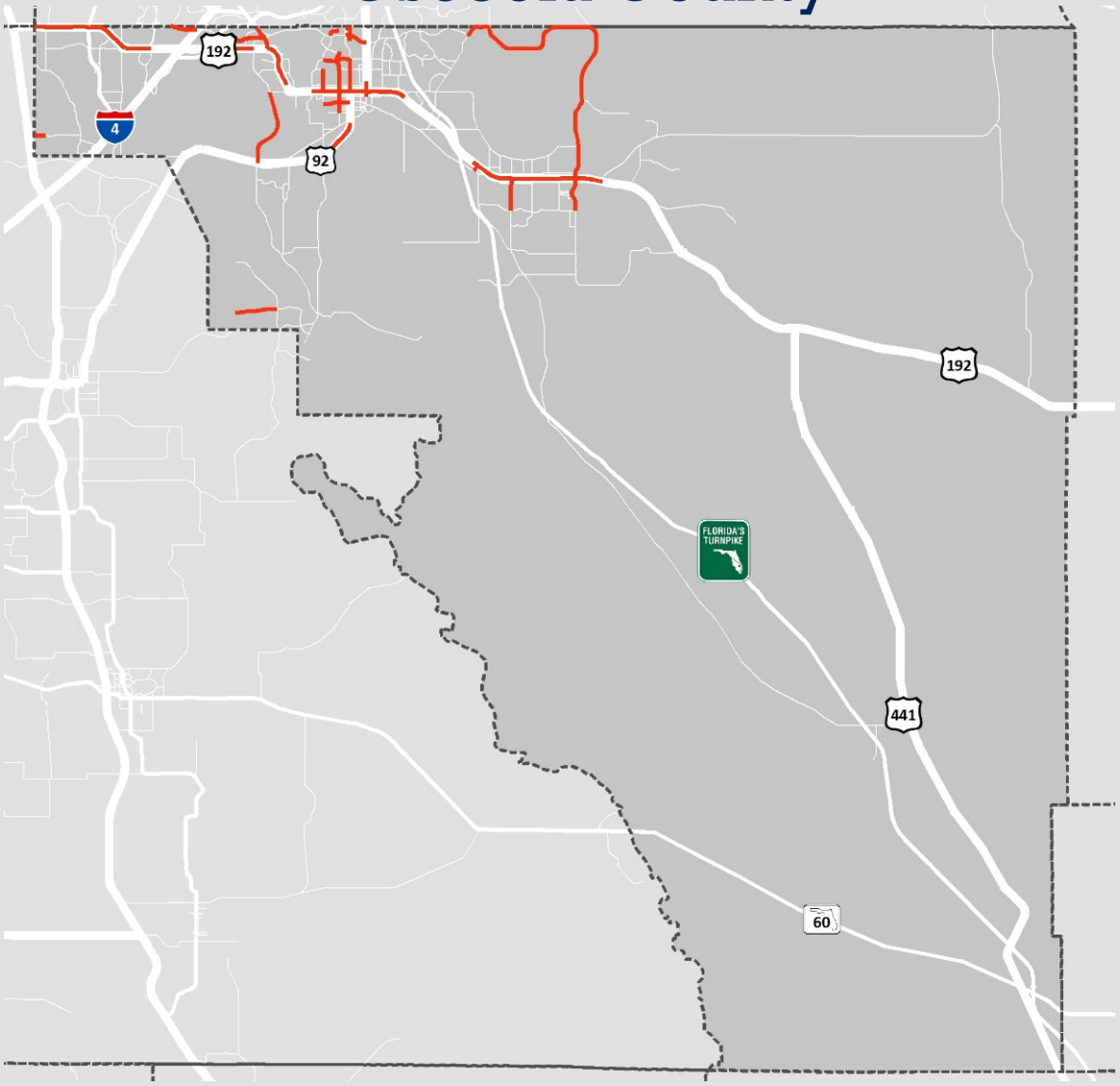
Equivalent Property Damage Only (EPDO) Score

Orange County



Equivalent Property Damage Only (EPDO) Score

Osceola County



Very High EPDO Score

County Boundary

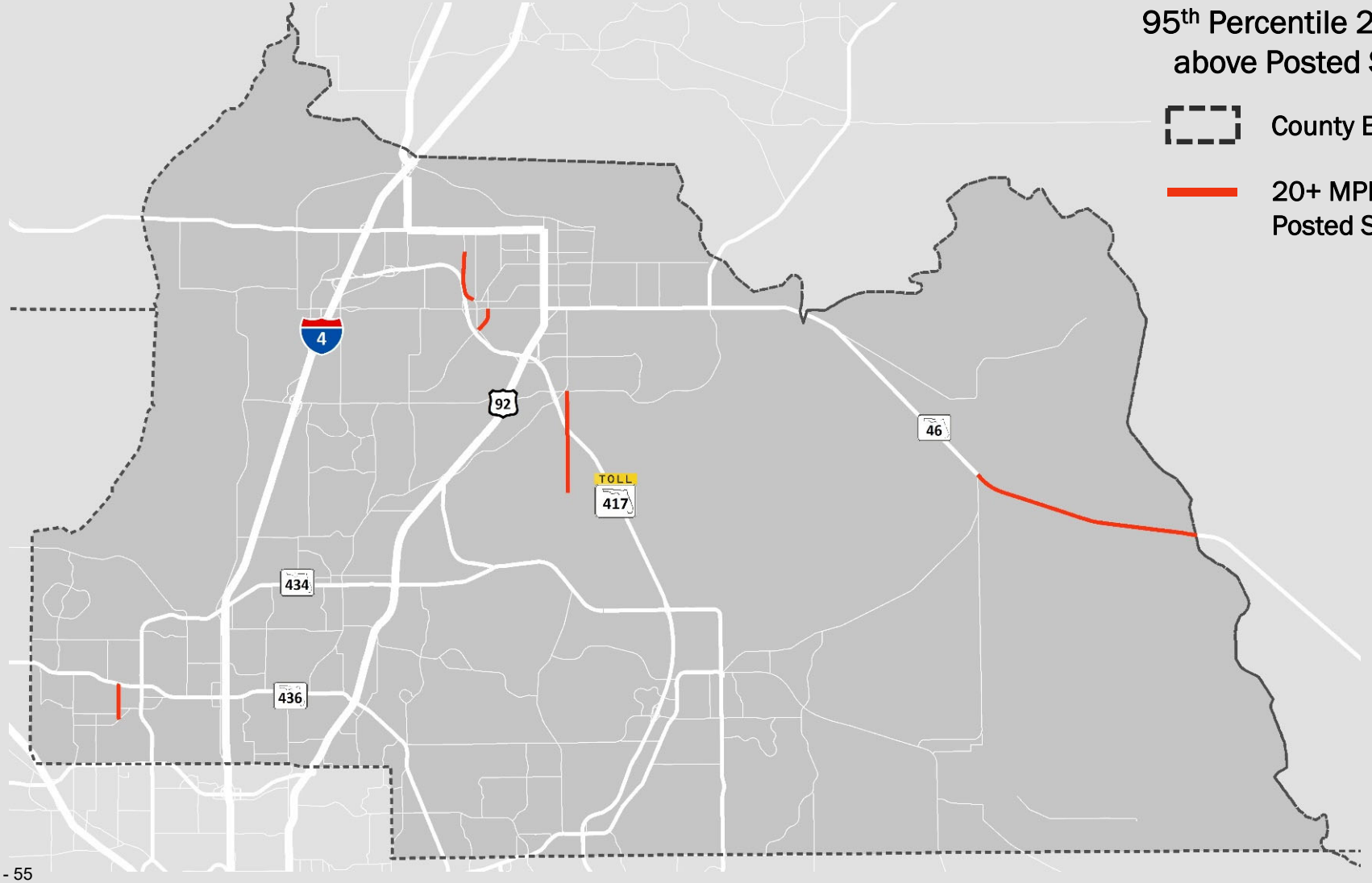
Very High EPDO Score

Methodology to Identify Critical Speed Management Segments

1. Identified segments where 85th percentile speeds were 10+ MPH over the posted speed
2. Identified segments that also had a “very high” crash rate OR “very high” EPDO score
3. Reviewed segments where 50th and 95th percentile speeds were 20+ MPH over posted speed
4. Cross referenced Steps 1 and 2 to identify initial segments
5. Added segments from Step 3 to the initial segments from Step 4

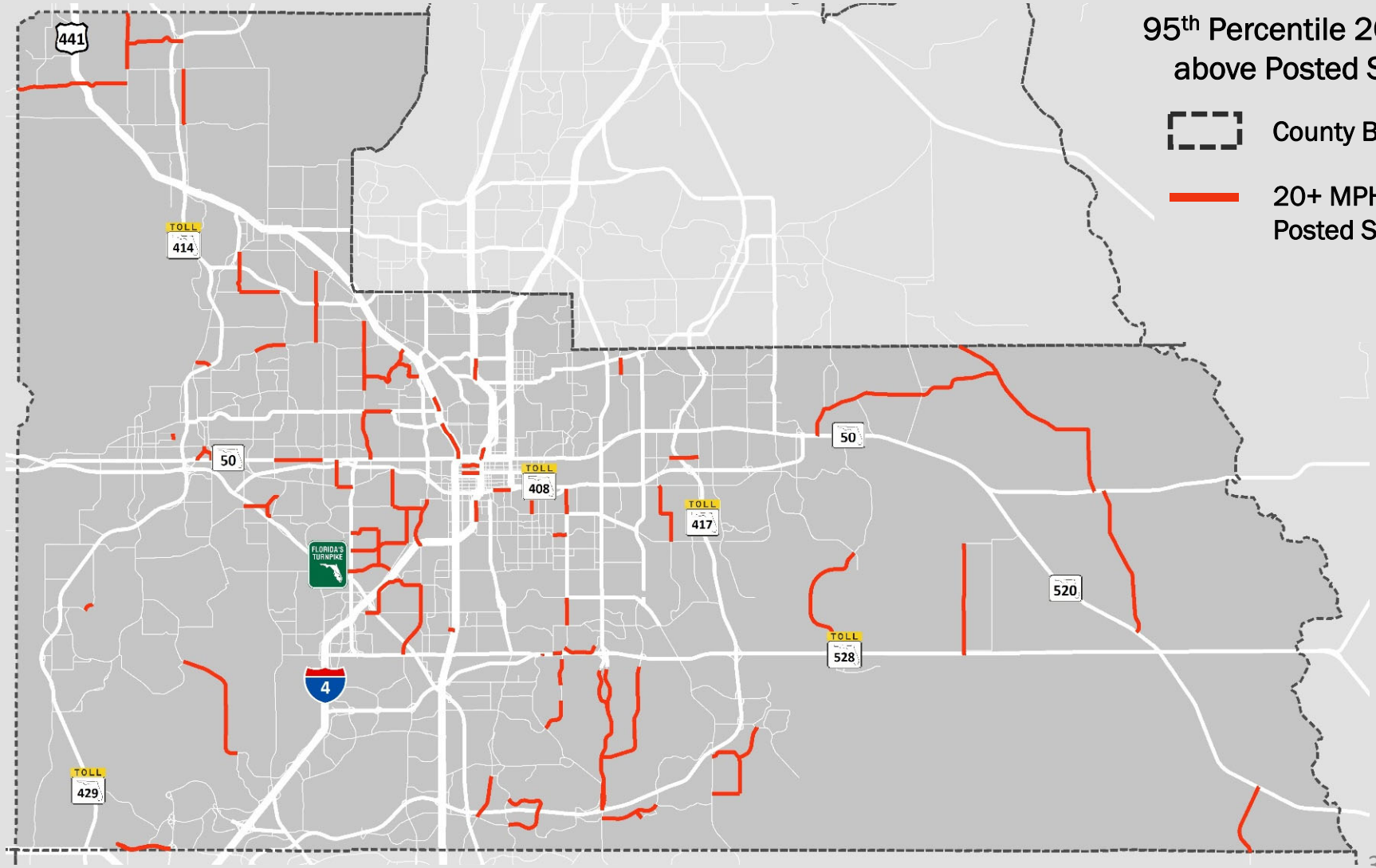
95th Percentile 20+ MPH Above Posted Speed

Seminole County



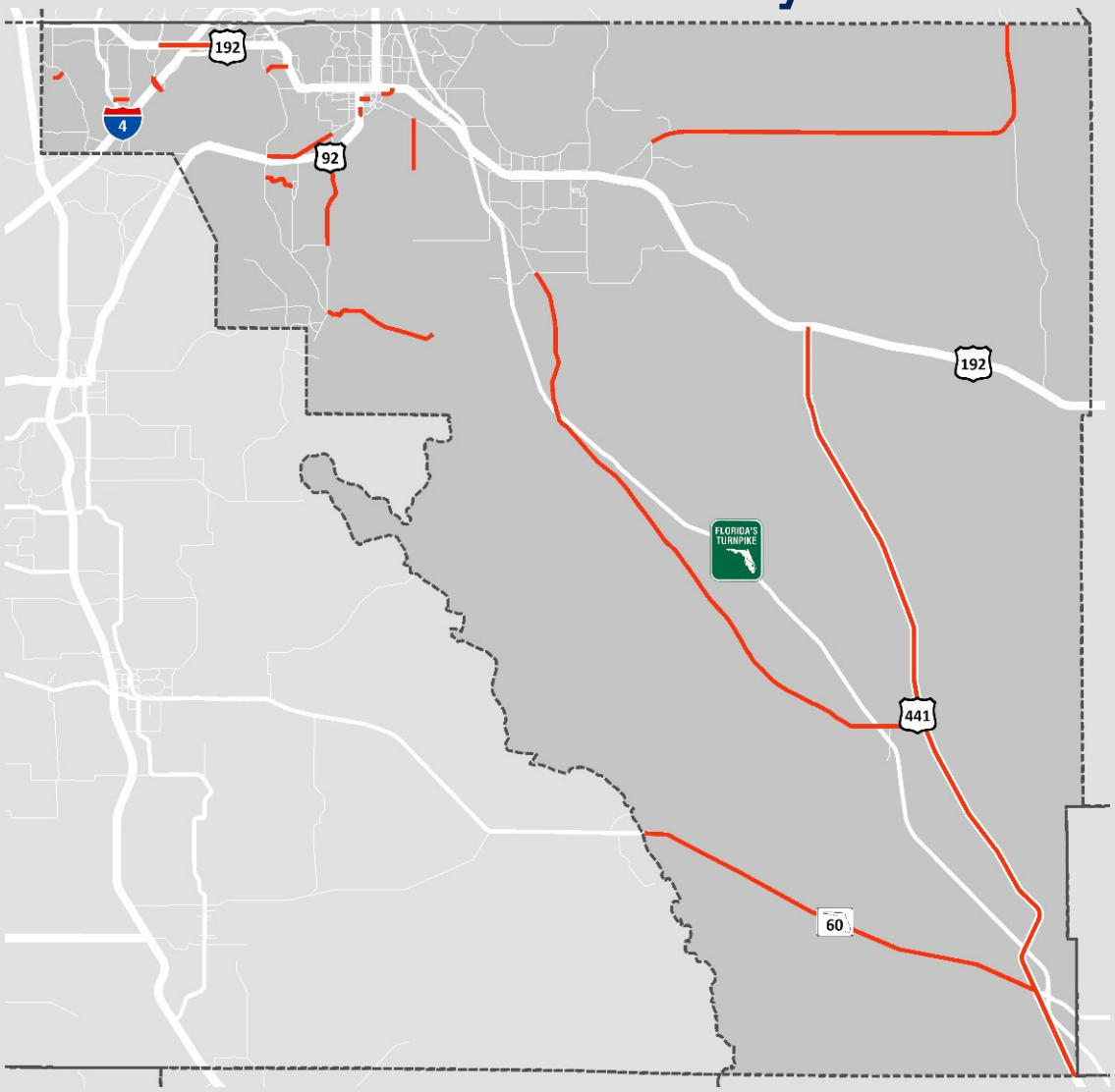
95th Percentile 20+ MPH Above Posted Speed

Orange County



95th Percentile 20+ MPH Above Posted Speed

Osceola County



95th Percentile 20+ MPH above Posted Speed

County Boundary

20+ MPH above Posted Speed

Critical Speed Management Segments

Methodology to Identify Critical Speed Management Segments

1. Identified segments where 85th percentile speeds were 10+ MPH over the posted speed
2. Identified segments that also had a “very high” crash rate OR “very high” EPDO score
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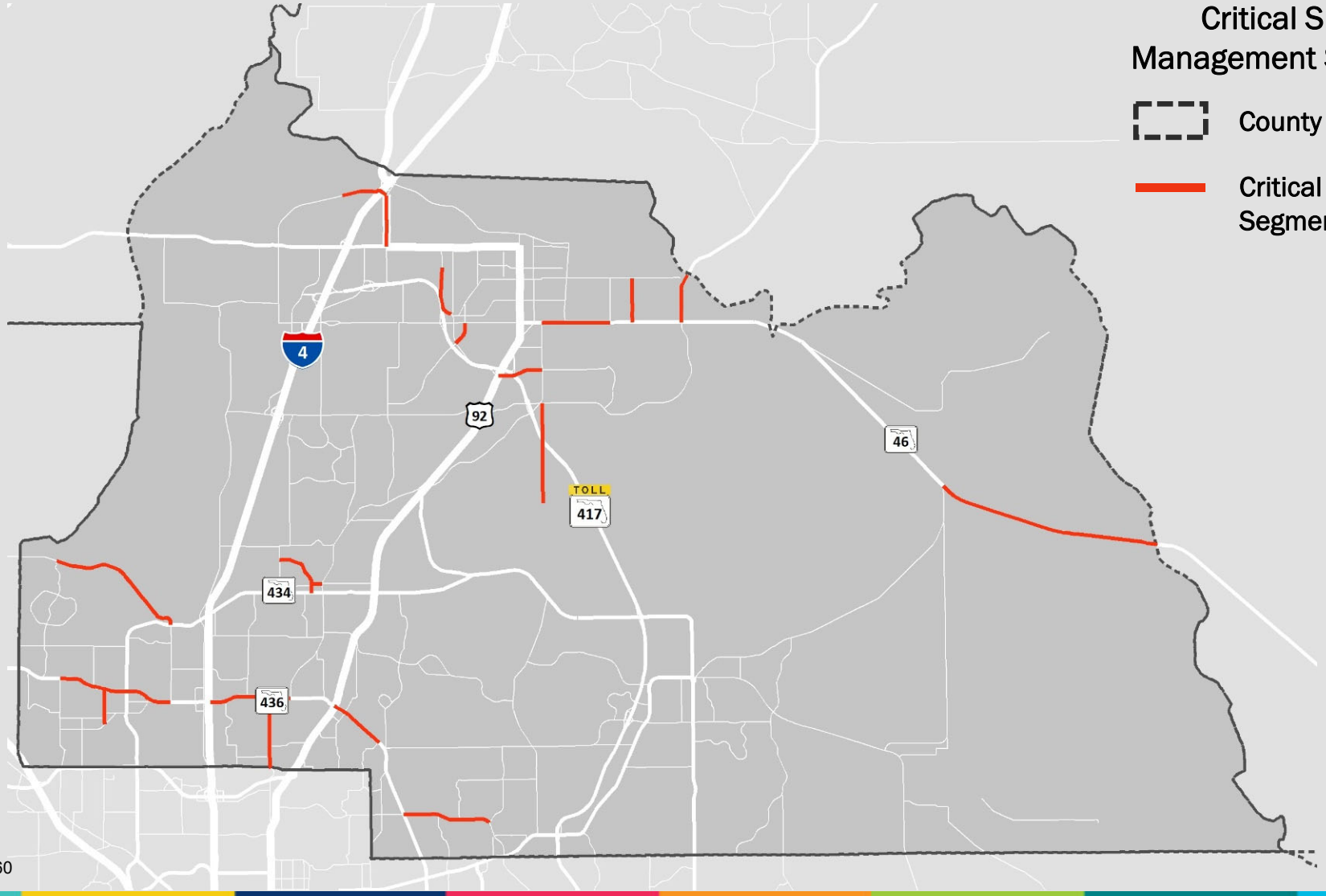
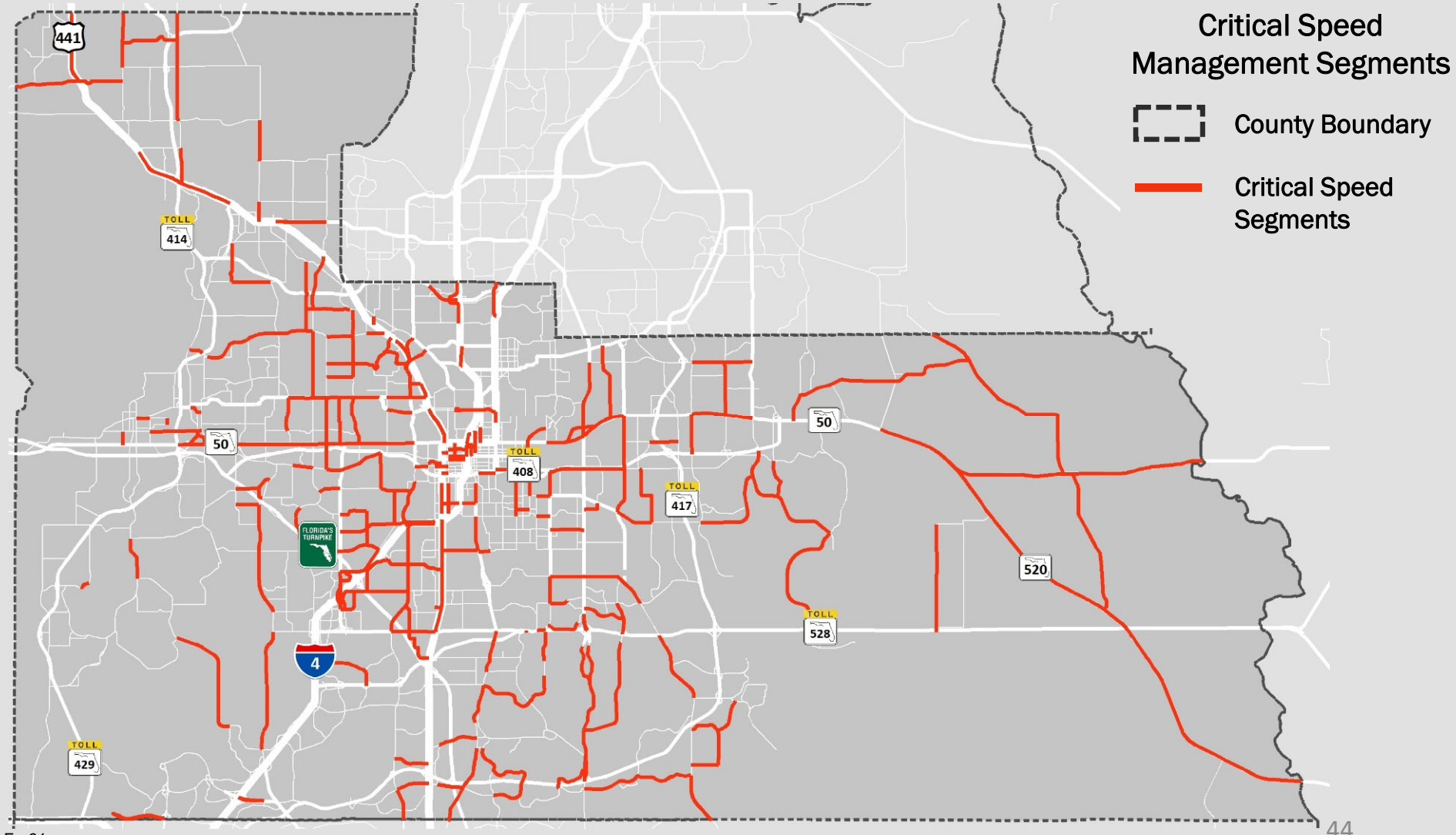
Critical Speed Management Segments

Seminole County



Critical Speed Management Segments

Orange County



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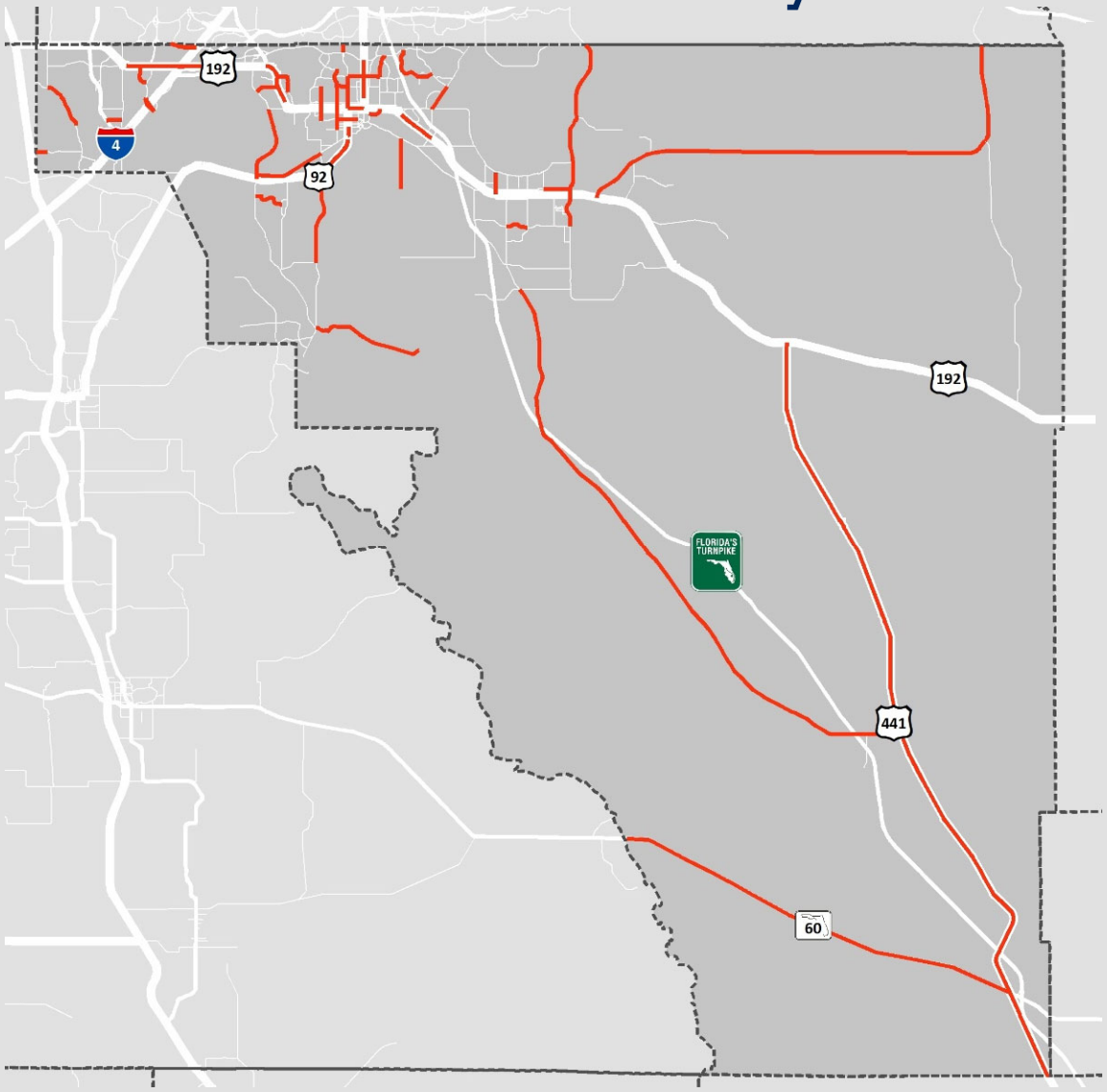
Critical Speed Management Segments

Osceola County



Critical Speed Management Segments

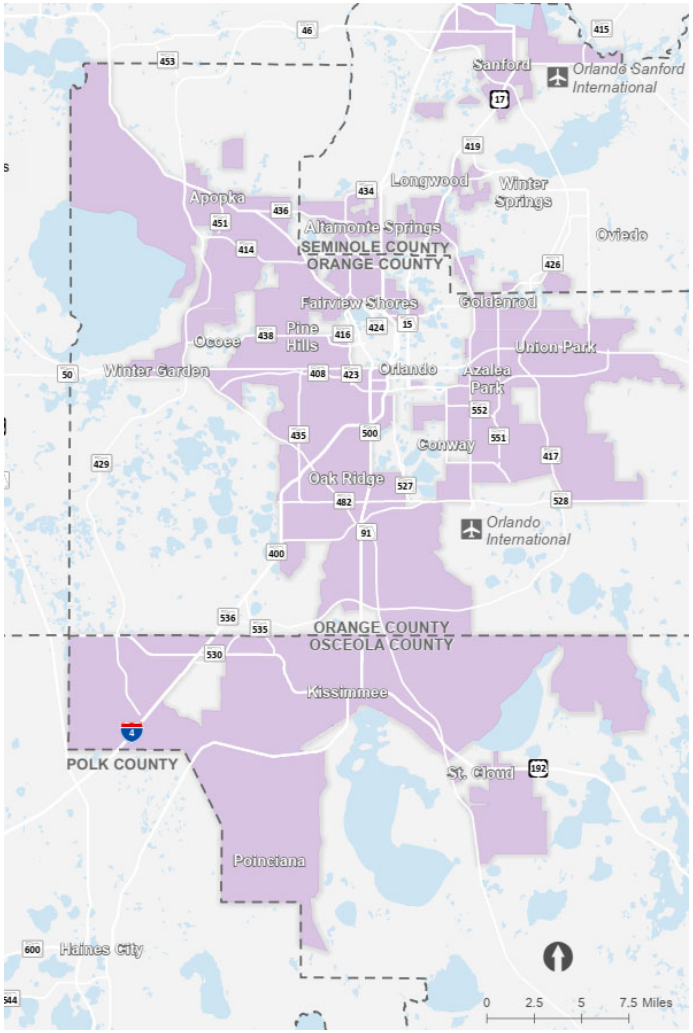
County Boundary

Critical Speed Segments

Critical Speed Management Segments in Equity Areas

Critical Speed Management Segments in Equity Areas

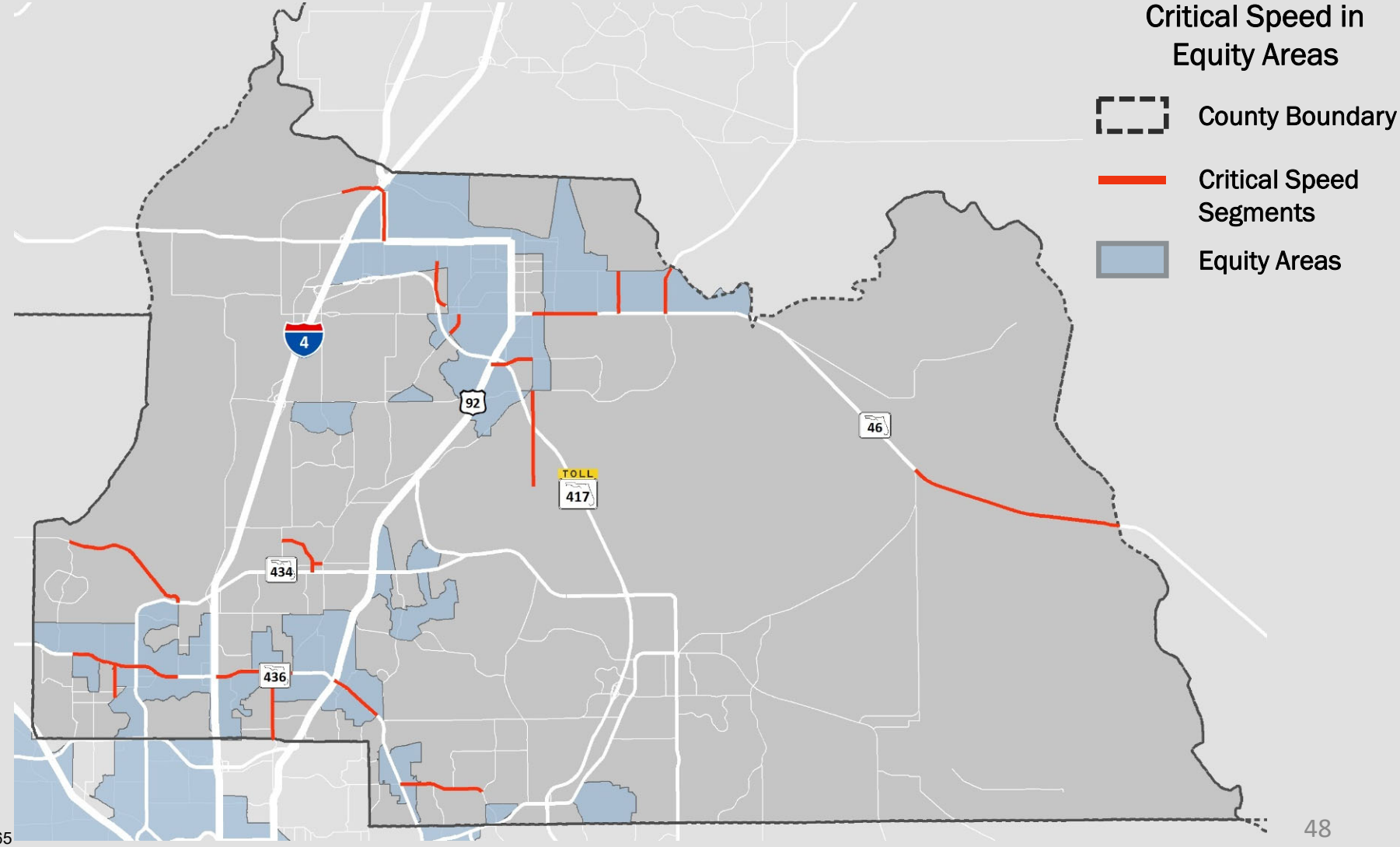
- Equity Analysis Areas recently developed by MetroPlan Orlando to better understand the transportation experience of:
  - Racial minorities, defined as people other than White Non-Hispanic
  - Low-income populations, defined as those residing in areas where the average income is below the ALICE threshold
  - Residents of historically disadvantaged communities (HDC)



Source: MetroPlan Orlando (2022)

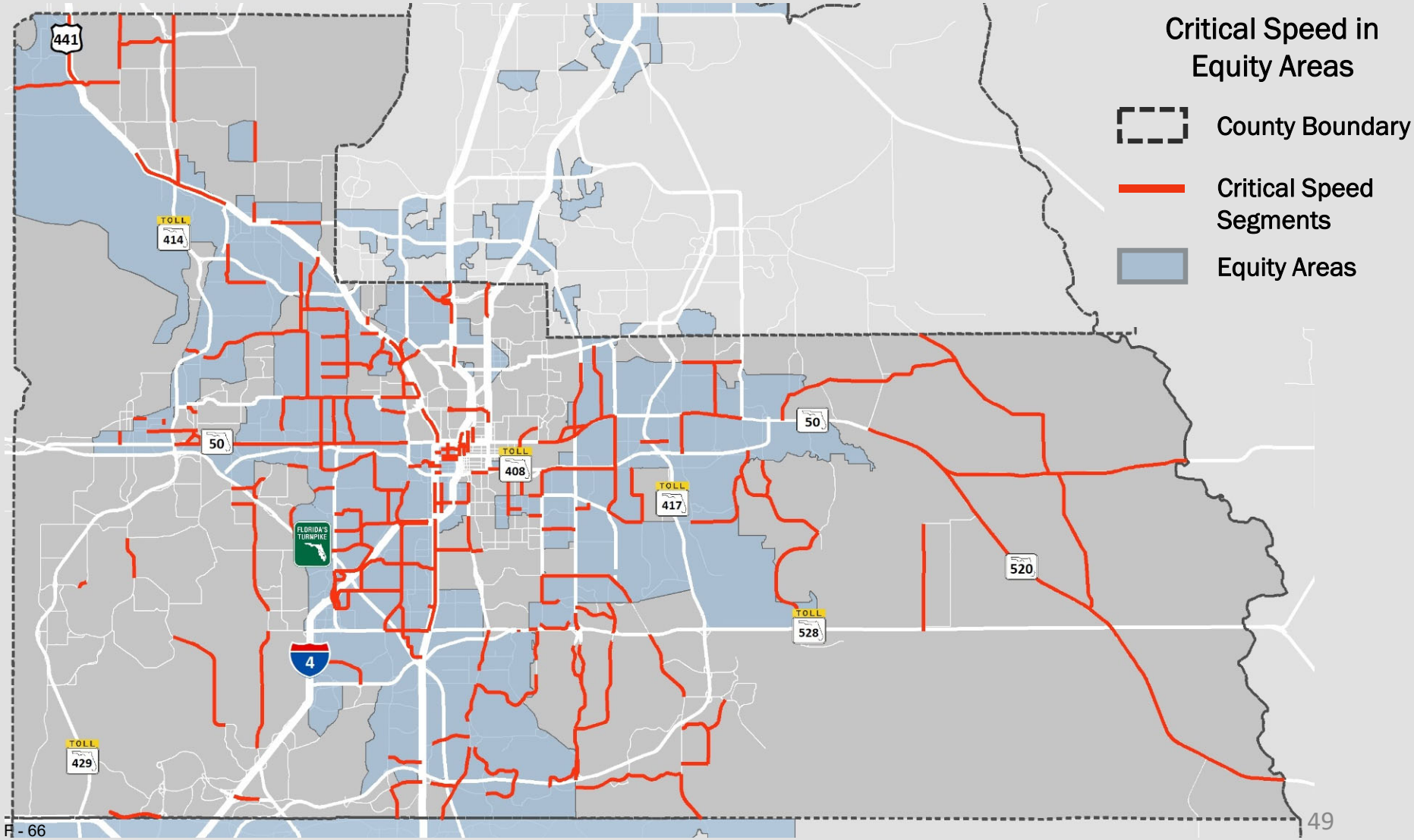
Critical Speed Management Segments in Equity Areas

Seminole County



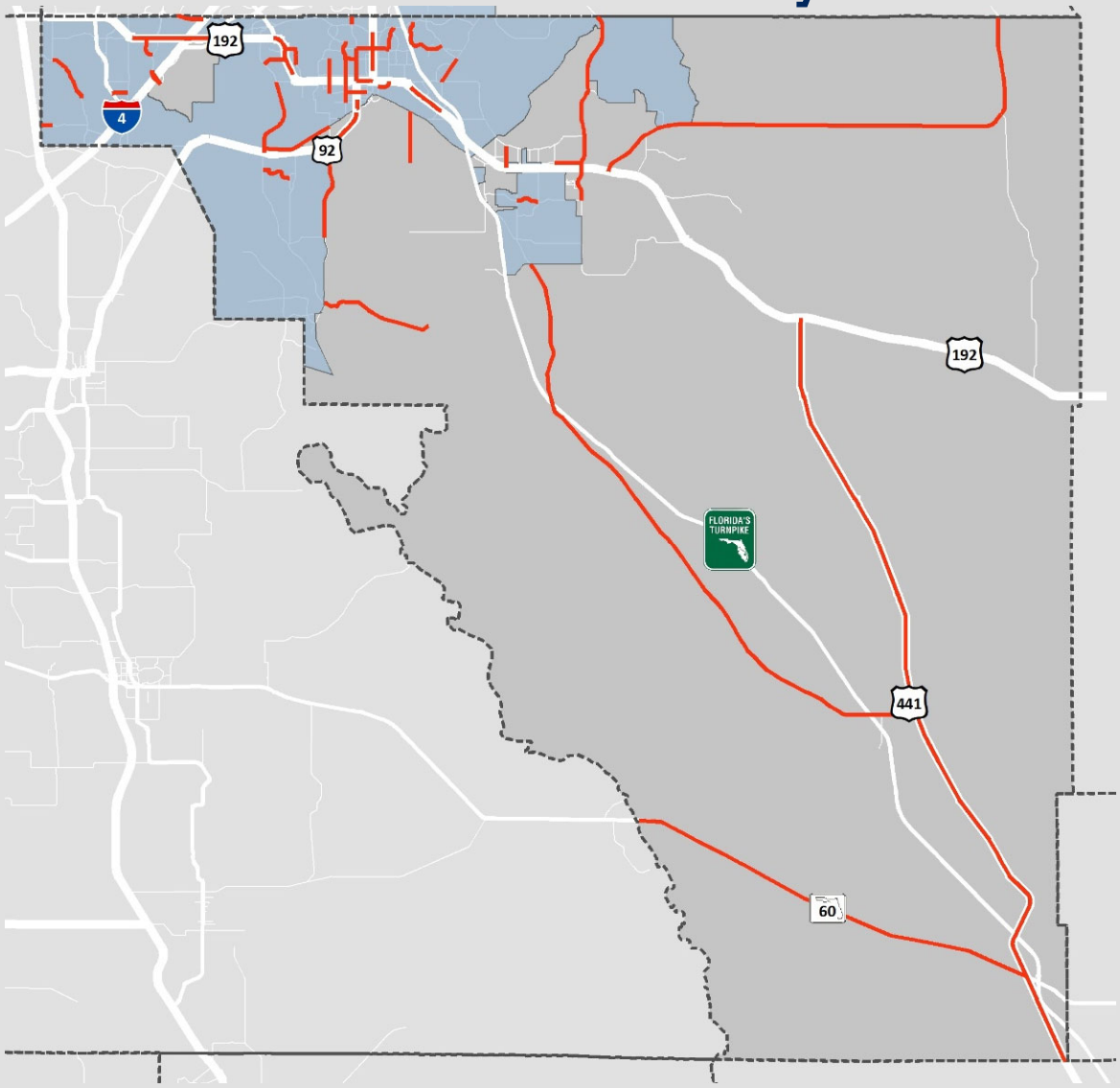
Critical Speed Management Segments in Equity Areas

Orange County



Critical Speed Management Segments in Equity Areas

Osceola County



Critical Speed in Equity Areas

- County Boundary
- Critical Speed Segments
- Equity Areas

Critical Speed Management Segments in Equity Areas

Counties	Critical Speed Network Segments	Segments Intersecting Equity Areas	Segments Not Intersecting Equity Areas
Seminole	22	18 (82%)	4
Orange	261	216 (83%)	45
Osceola	54	46 (85%)	8
Grand Total	337	280 (83%)	57

Project Schedule and Next Steps

Project Schedule

Speed Management Network Screening

Tasks		2022								
		Feb	March	April	May	June	July	Aug	Sept	Oct
1	Data Collection									
2	Speed & Crash Data Comparisons									
3	Identify Critical Speed Management Network									
4	Target Speed Recommendations									
5	Summary Report									
6	Project Meetings			WG			WG			WG

We Are Here

WG = Working Group

Next Steps

- Working Group to provide feedback on Critical Speed Management Segments
  - E-mail any comments to tlaurent@metroplanorlando.org by 7/26/22
- Target speed analysis and recommendations
- Next Working Group Meeting – October 18th

Thank You

MetroPlanOrlando.com | (407) 481-5672

250 S. Orange Ave., Suite 200, Orlando, FL 32801

Working Group Meeting #3 Presentation

Speed Management Network Screening

Vulnerable Users Working Group Meeting #3

October 18, 2022

Presentation Agenda

- Project Overview
- Review Preliminary Context Classifications
- Review Critical Speed Management Network
- Target Speed Methodology & Analysis
- Project Schedule & Next Steps

Project Overview

Working Group Meetings Recap

- Meeting #1 – April 19, 2022
  - Introduction to Project
  - Refresher of FDOT's Context Classification Methodology
  - Presentation of Preliminary Context Classification assigned to Non-State Roadways
- Meeting #2 – July 19, 2022
  - Overview of Wejo Speed Data & Crash Data
  - Review of how Crash Rates and EPDO Scores are calculated
  - Presentation of Critical Speed Management Network

Project Overview

- Classify roadways within the context of adjacent land use
- Identify segments/corridors of concern related to speeding
- Provide target speed recommendations
- Improve safety for all users of the roadway network

239,035 Total Crashes

2017-2021

	2017-2019	2020	2021
Crashes/Year	52,531	37,708	43,733
Serious Injury (SI)	1,237	986	1,136
Fatal	206	199	232
SI Ped	101	91	118
SI Bike	51	46	39
Fatal Ped	66	54	73
Fatal Bike	10	7	13

Project Overview

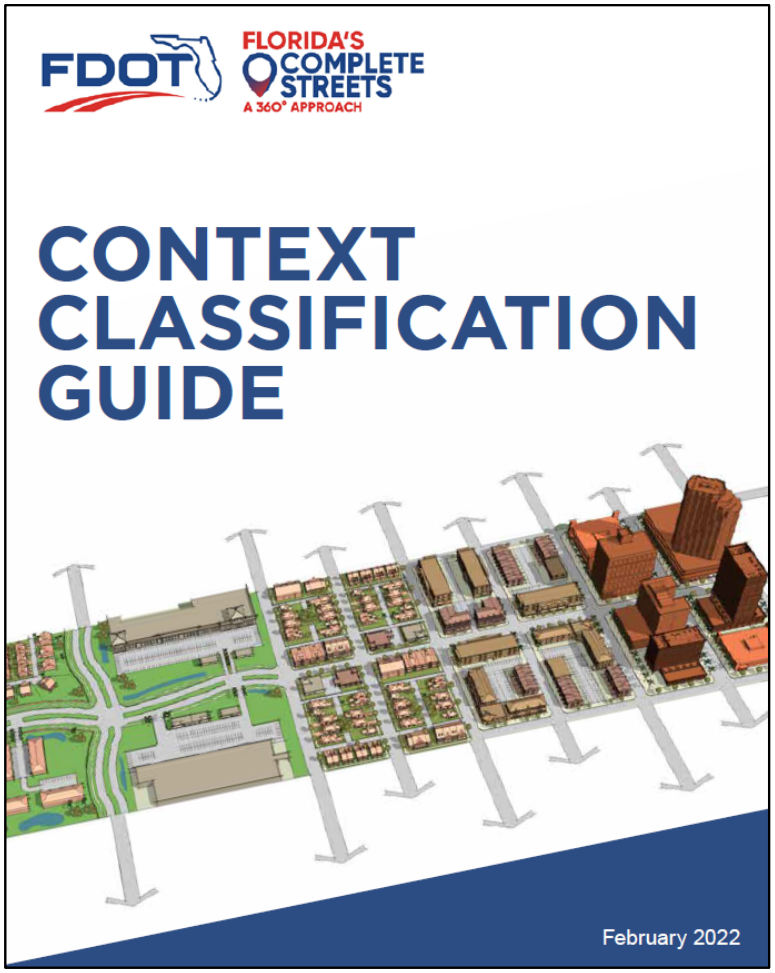
Project Tasks

✓ Utilize	Crash, Speed, and Roadway Geometric Data
✓ Perform	Preliminary Context Classification Review
✓ Conduct	Crash, Speed, Geometric, and Context Class Comparison Analysis
✓ Identify	Critical Speed Management Segments/Corridors
✓ Determine	Target Speed Recommendations

Review Preliminary Context Classification

Preliminary Context Classifications

- Performing context classification review for functionally classified non-State roadways
- Using preliminary context classification developed by FDOT for State roadways
- Should be used as starting point during corridor-specific projects



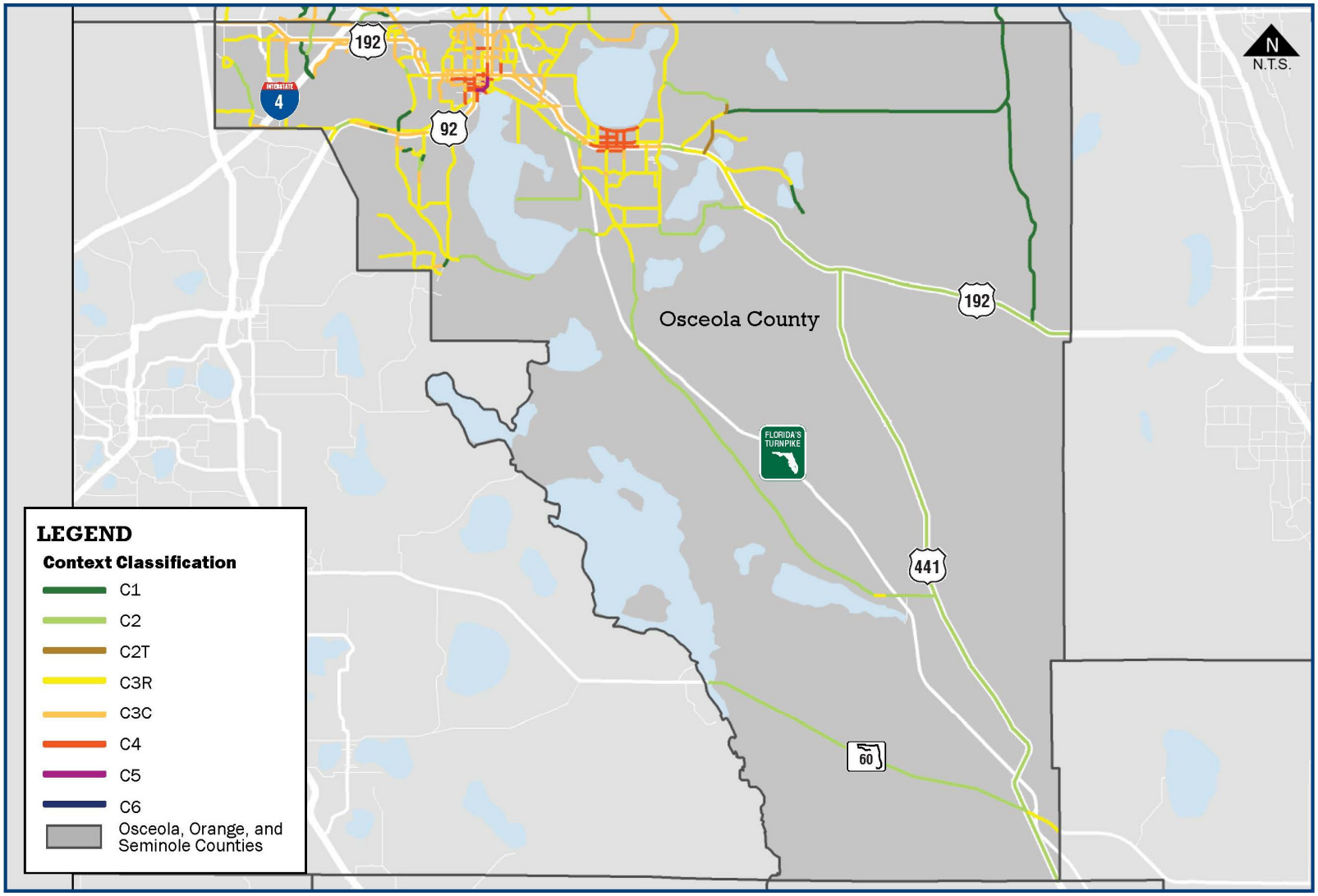
Preliminary Context Classifications

Analysis Utilized Following Metrics to Determine Context Class

- Intersection Density
- Block Length
- Employment / Population Density
- Existing/Future Land Use

Preliminary Context Classifications

Osceola County



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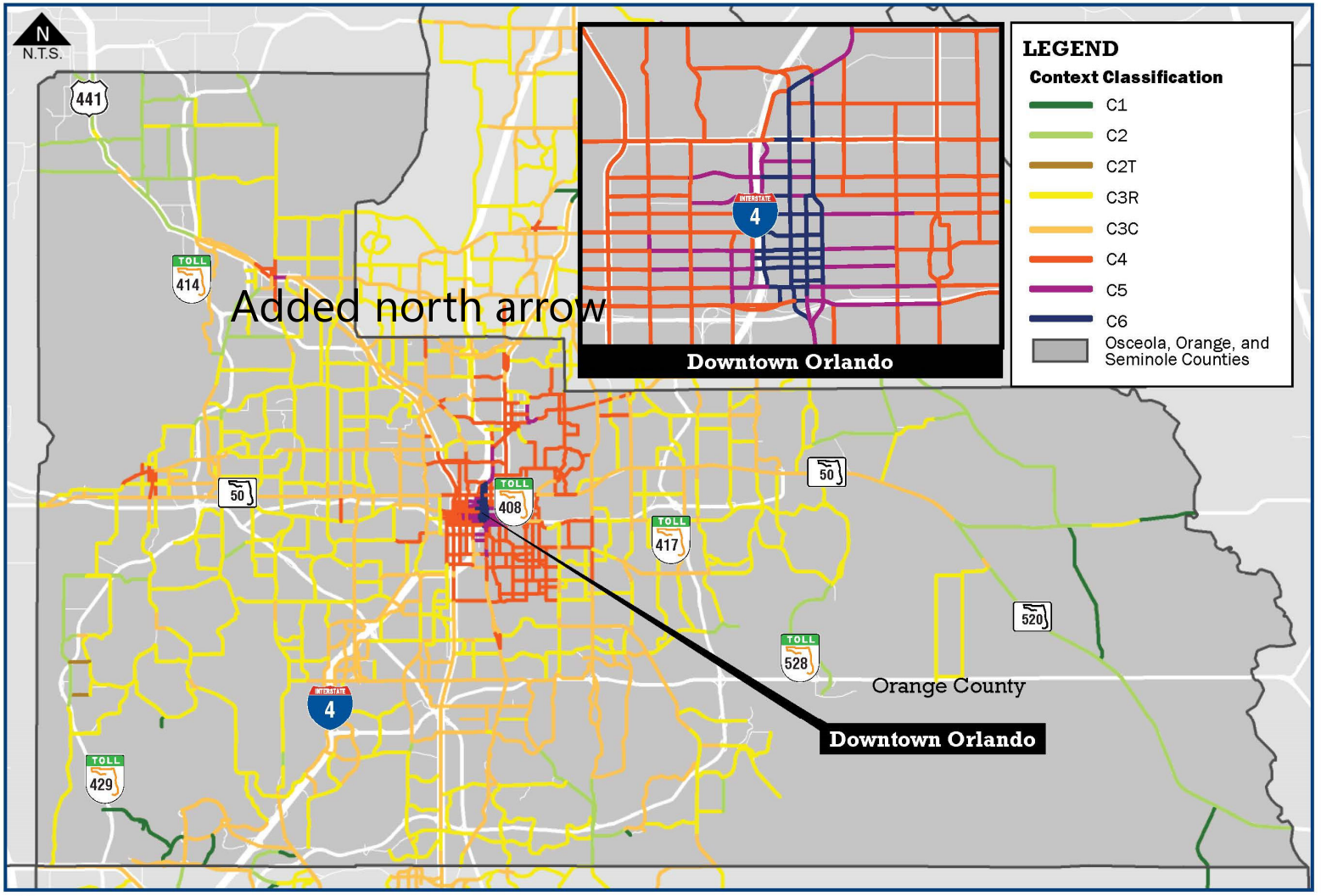
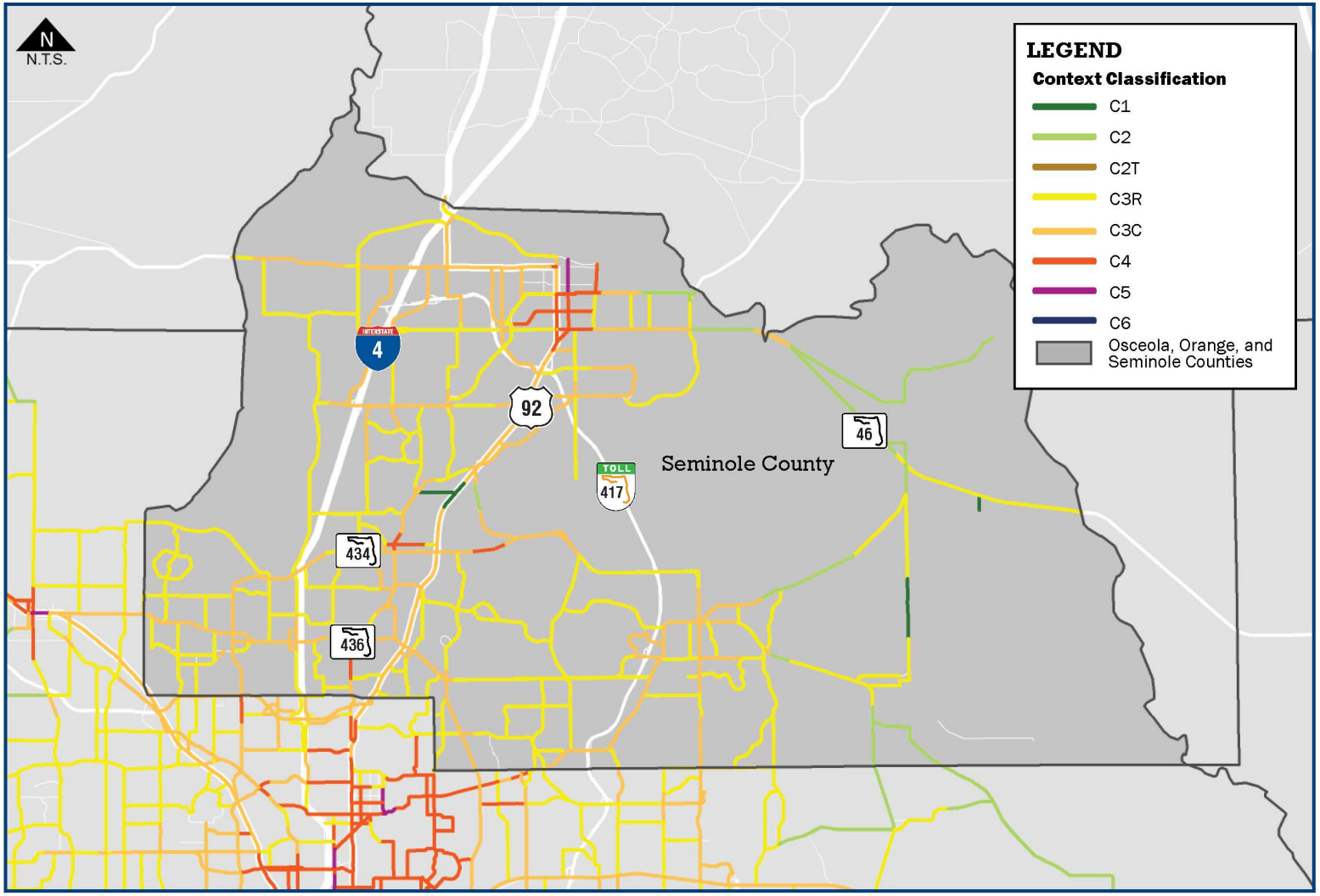
Preliminary Context Classifications

Orange County



Preliminary Context Classifications

Seminole County



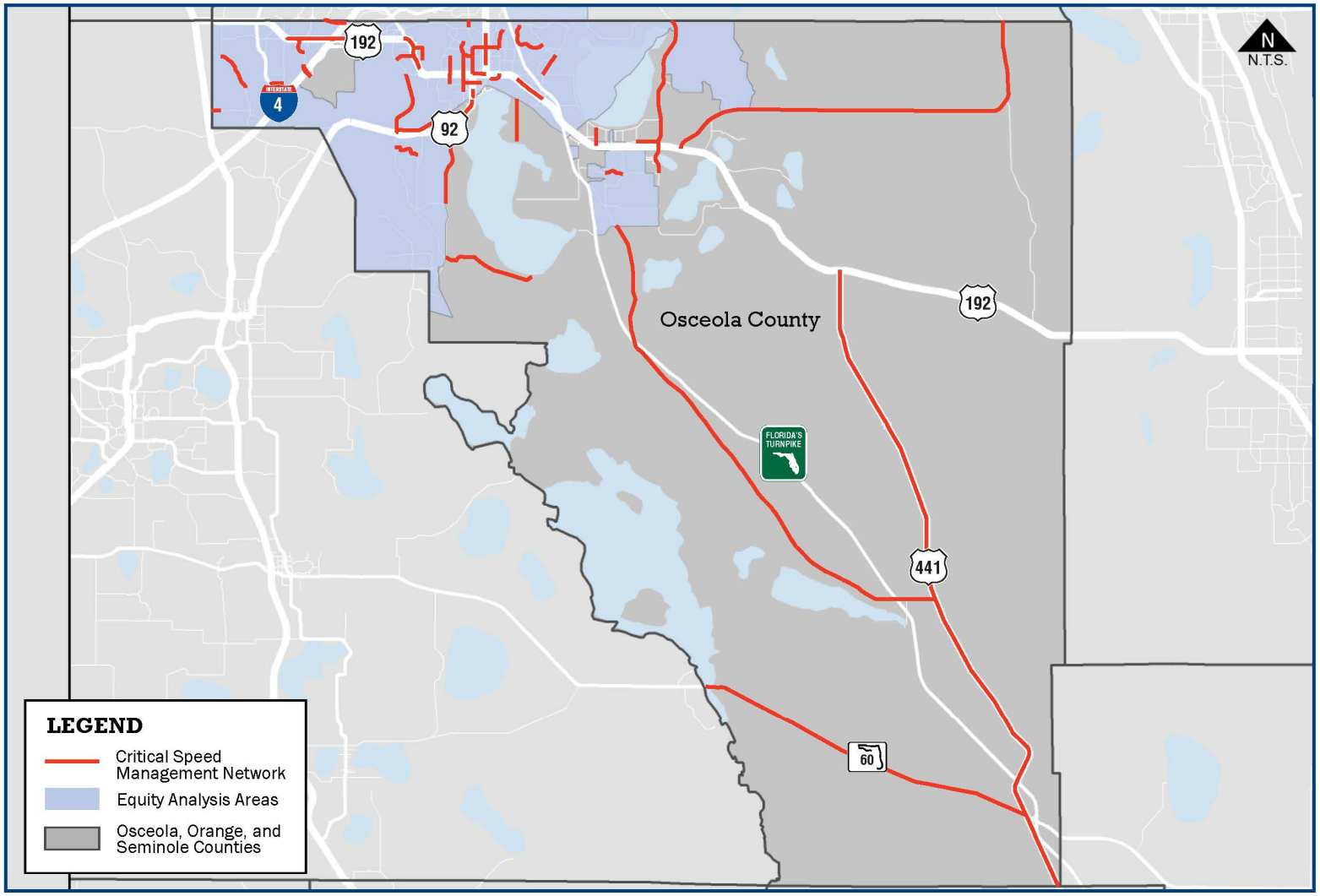
Review Critical Speed Management Network

Methodology to Identify Critical Speed Management Segments

1. Identified segments where 85th percentile speeds were 10+ MPH over the posted speed
2. Identified segments that also had a “very high” crash rate OR “very high” EPDO score
3. Cross referenced Steps 1 and 2 to identify initial segments
4. Reviewed segments where 50th and 95th percentile speeds were 20+ MPH over posted speed
5. Added segments from Step 4 to the initial segments from Step 3

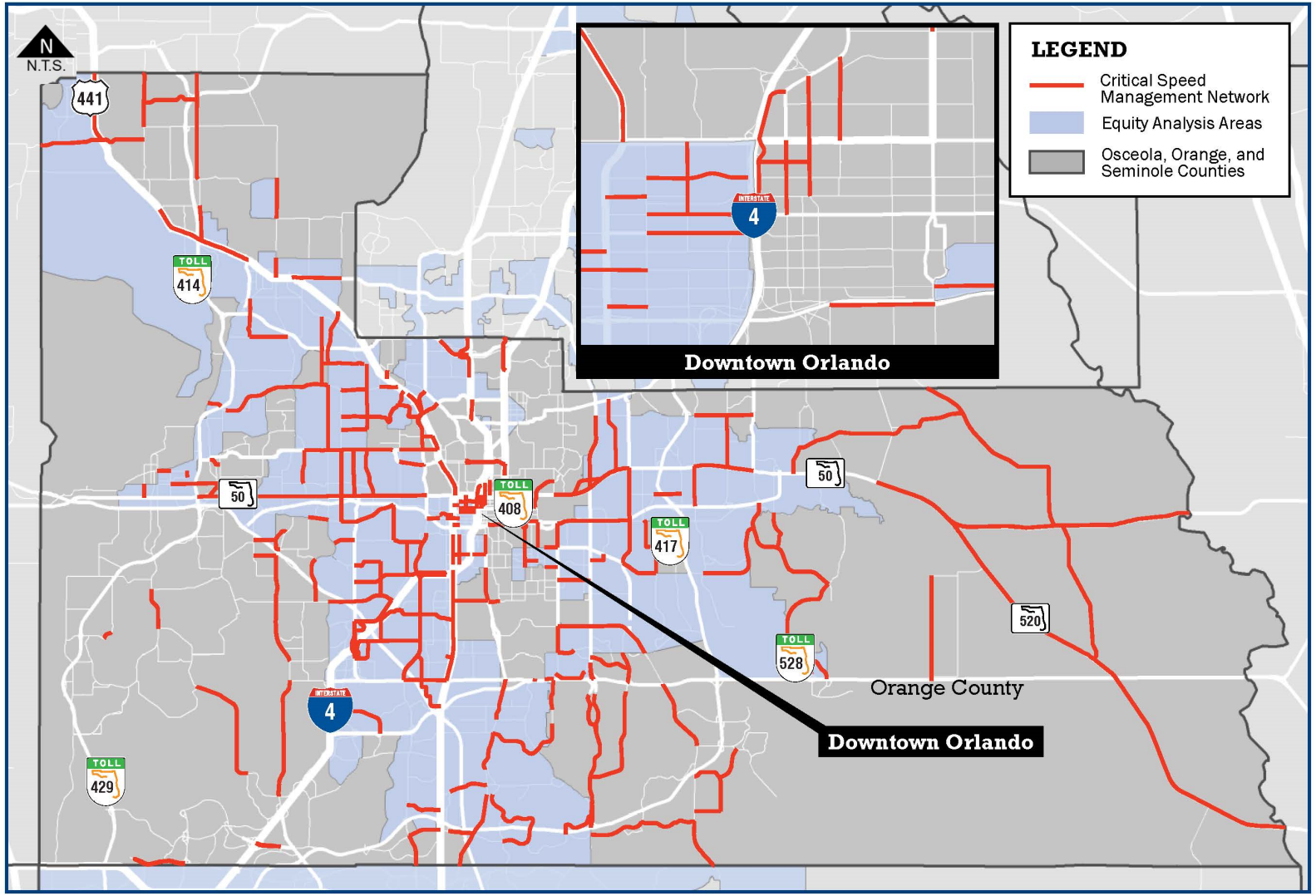
Critical Speed Management Network

Osceola County



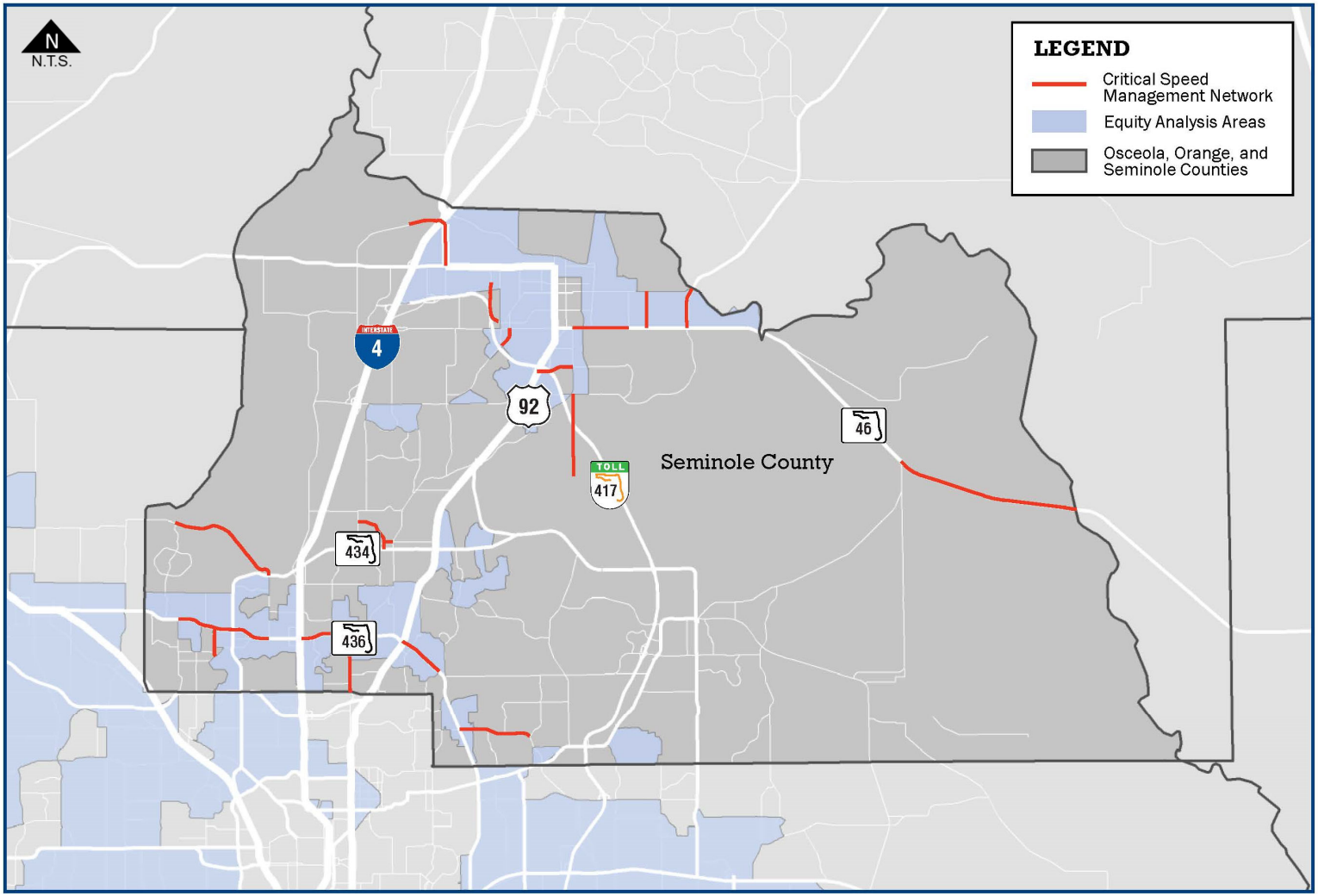
Critical Speed Management Network

Orange County



Critical Speed Management Network

Seminole County



Target Speed Methodology

Various "Speed" Definitions

Operating Speed

Measured speed at which vehicles are currently traveling.

Design Speed

A selected speed used to determine the various geometric design features of the roadway.

Posted Speed

Legal allowable speed typically based on the 85th percentile operating speed.

Target Speed

The highest speed at which vehicles should operate in a specific context considering:

- Multi-modal activity generated by adjacent land uses
- Mobility for motor vehicles
- Creating a supportive environment for pedestrians, bicyclists, and public transit users

Target Speed Methodology – Research

- Iterative process
  - Previous process recommended target speeds 10 – 15 mph higher than current posted speed on some roadways
  - FDOT ranges are high for non-state roadways

TABLE 7 FDOT DESIGN SPEEDS AND CONTEXT CLASSIFICATIONS

ARTERIALS AND COLLECTORS

Context Classification	Allowable Design Speed Range (mph)	SIS Minimum (mph)
C1 Natural	55-70	65
C2 Rural	55-70	65
C2T Rural Town	25-45	40
C3 Suburban	35-55	50
C4 Urban General	30-45	45
C5 Urban Center	25-35	35
C6 Urban Core	25-30	30

Target Speed Methodology – Research

- "Twenty is Plenty" – setting posted speed limits of 20 mph in downtown/residential environs
  - Various Municipalities in Oregon
  - City of Madison, WI
  - City of Denver, CO
  - Hundreds have adopted internationally

Target Speed Methodology – Research

- Review of other agencies' target speed ranges
  - Oregon Department of Transportation (ODOT)

Urban Context	Target Speed (MPH)
Traditional Downtown/CBD	20-25
Urban Mix	25-30
Commercial Corridor	30-35
Residential Arterial	30-35
Suburban Fringe*	35-40
Rural Community	25-35

***The "fringe" context is typically adjacent to rural areas of urban development, but often is in the process of developing. For projects in the "fringe" context zone, practitioners should consider likely future development and consider applying designs for "residential arterial,""commercial corridor," or "urban mix" contexts if this type of development is likely to occur.**

Target Speed Methodology – Research

- Review of other agencies' target speed ranges
  - City of Tampa draft ranges

	C1/C2 Natural/ Rural	C3R Suburban Residential	C3C Suburban Commercial	C4 Urban General	C5 Urban Center	C6 Urban Core
Context Examples	**Lettuce Lake Park**	**Tampa Palms**	**Yuengling/ Moffit**	**East Tampa/ Bay to Bay**	**Hyde Park Village**	**Water Street**
Arterial	35 to 55	30 to 40	30 to 35	25 to 35	25 to 30	20 to 25
Collector	30 to 45	30 to 35	30 to 35	25 to 30	25 to 30	20 to 25
Local	20-25	20-25	20-25	20-25	20-25	20-25

Target Speed Methodology – Research

- Proposed target speed ranges for non-state roadways

		C1/C2	C3R/C3C	C4	C2T/C5	C6
FDOT Ranges	All Functional Classes	55 to 70	35 to 55	30 to 45	25 to 45 (C2T) 25 to 35 (C5)	25 to 30
Proposed Off-System Ranges	Arterial/ Collector	35 to 55*	30 to 40	25 to 35	25 to 30	20 to 25
	Local	25 to 35	25 to 35	20 to 25	20 to 25	20 to 25

*Maximum target speed for C1/C2 collector is 45 mph

Target Speed Methodology – Research

Step 1

Determine Target Speed Range based on Context Classification and Functional Classification

Step 2

	C1/C2	C3R/C3C	C4	C2T/C5	C6
Arterial / Collector	35 to 55*	30 to 40	25 to 35	25 to 30	20 to 25
Local	25 to 35	25 to 35	20 to 25	20 to 25	20 to 25

*Maximum target speed for C1/C2 collector is 45 mph

Steps 3 and 4

Transit Present → Yes → Lower End

No

Crash Rate/EPDO → Low → Higher End

Crash Rate/EPDO → High → Lower End

Middle → Middle End

If the current posted speed is lower than proposed target speed, default to current posted speed. Round down to the nearest 5 mph for the middle end of the allowable target speed range.

Target Speed Methodology – Research

Steps 1 and 2

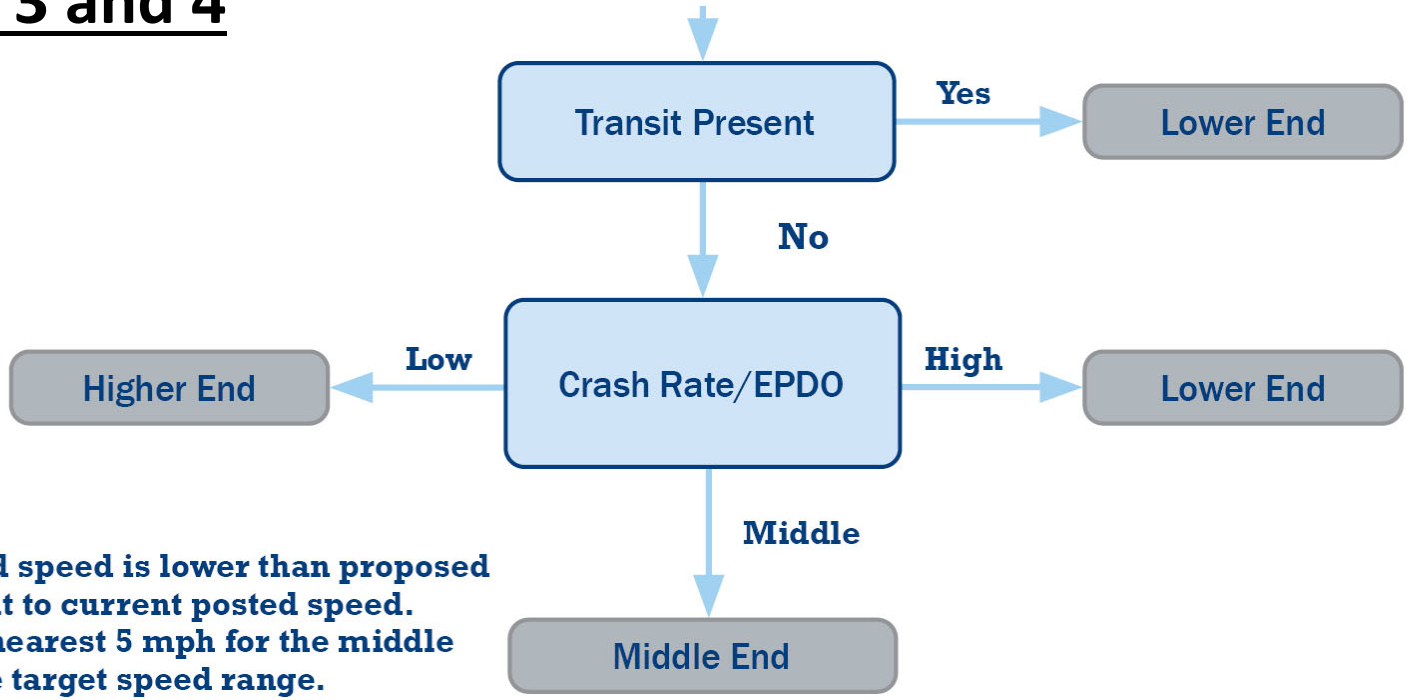
Determine Target Speed Range based on Context Classification and Functional Classification

	C1/C2	C3R/C3C	C4	C2T/C5	C6
Arterial / Collector	35 to 55*	30 to 40	25 to 35	25 to 30	20 to 25
Local	25 to 30	25 to 35	20 to 25	20 to 25	20 to 25

***Maximum target speed for C1/C2 collector is 45 mph**

Target Speed Methodology – Research

Steps 3 and 4



If the current posted speed is lower than proposed target speed, default to current posted speed. Round down to the nearest 5 mph for the middle end of the allowable target speed range.

Target Speed Analysis

Target Speed Review Process

- Reviewed Non-State Segments in Critical Network
  - 259 roadway segments
  - 434 miles of roadway

- Coordinating with FDOT on SHS Segments in Critical Network
  - 80 roadway segments
  - 183 miles of roadway

Target Speed Review Process

- Identified Target Speed Ranges for Segments in Critical Network
- Recommended Preliminary Target Speeds for Segments in Critical Network
- If Preliminary Target Speed > Existing Posted Speed, Existing Posted Speed was Maintained
- <u>Should be used as starting point during corridor-specific projects</u>

Target Speed Analysis

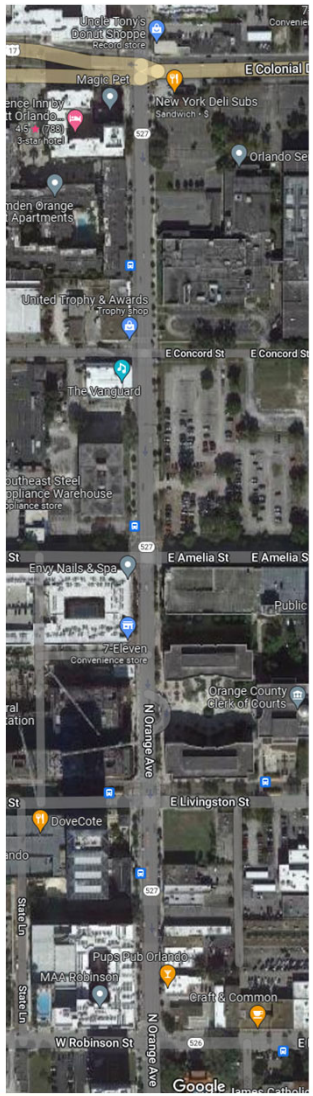
Target Speed Review Example: MLK Jr. Blvd. (40 MPH Posted Speed)

Context Class	Functional Class	Speed Range	Transit	Crash Rate/ EPDO	Target Speed
C4	Major Collector	25-35	No	High	25

Target Speed Analysis

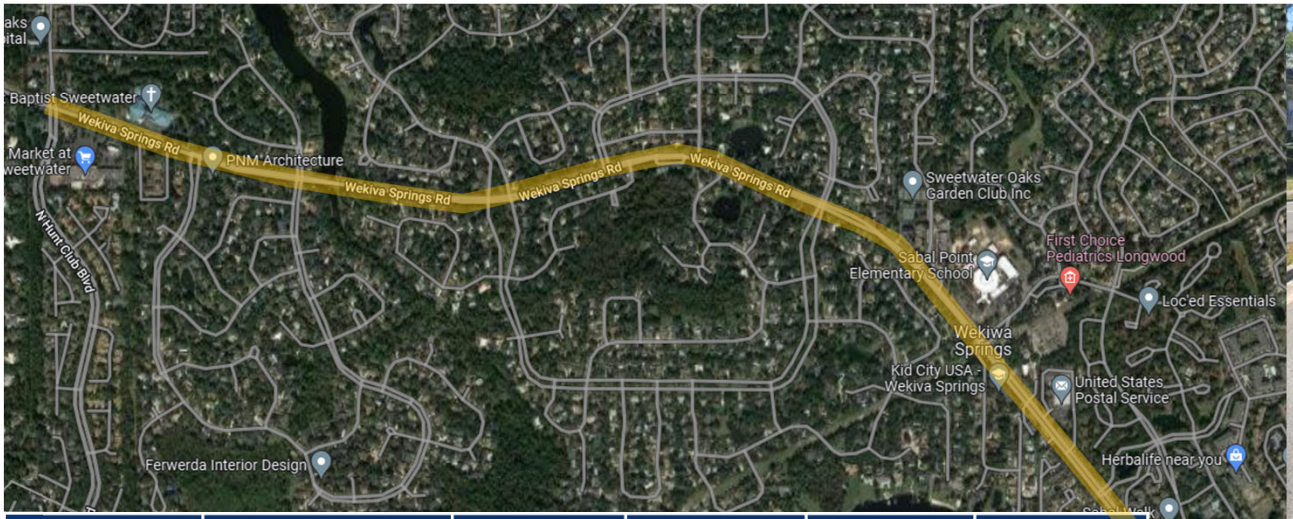
Target Speed Review Example: Orange Ave. (25 MPH Posted Speed)

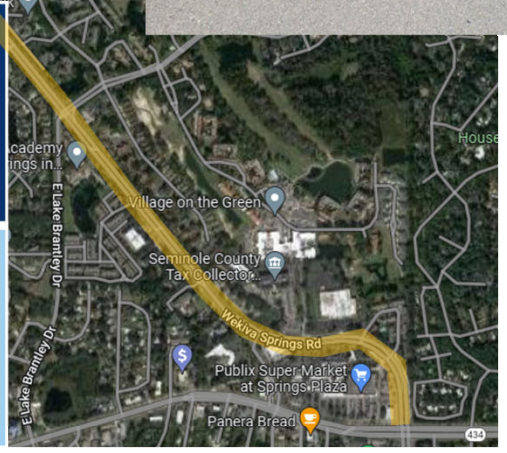
Context Class	Functional Class	Speed Range	Transit	Crash Rate/EPDO	Target Speed
C6	Other Principal Arterial	20-25	Yes	High	20



Target Speed Analysis

Target Speed Review Example: Wekiva Springs Rd. (40 MPH Posted Speed)

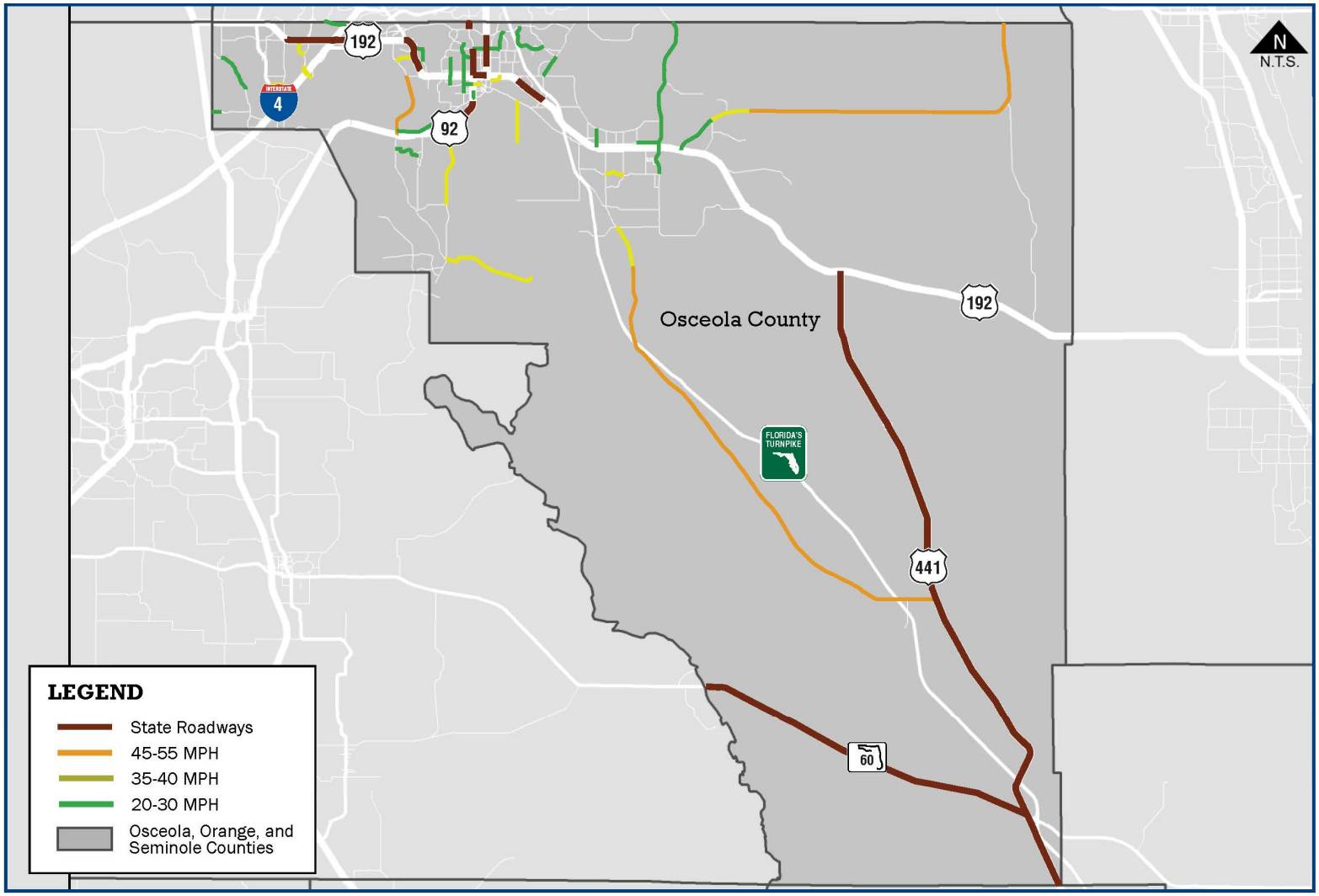




Context Class	Functional Class	Speed Range	Transit	Crash Rate/ EPDO	Target Speed
C3R	Minor Arterial	30-40	No	Low	40

Preliminary Target Speed Analysis Results

Osceola County



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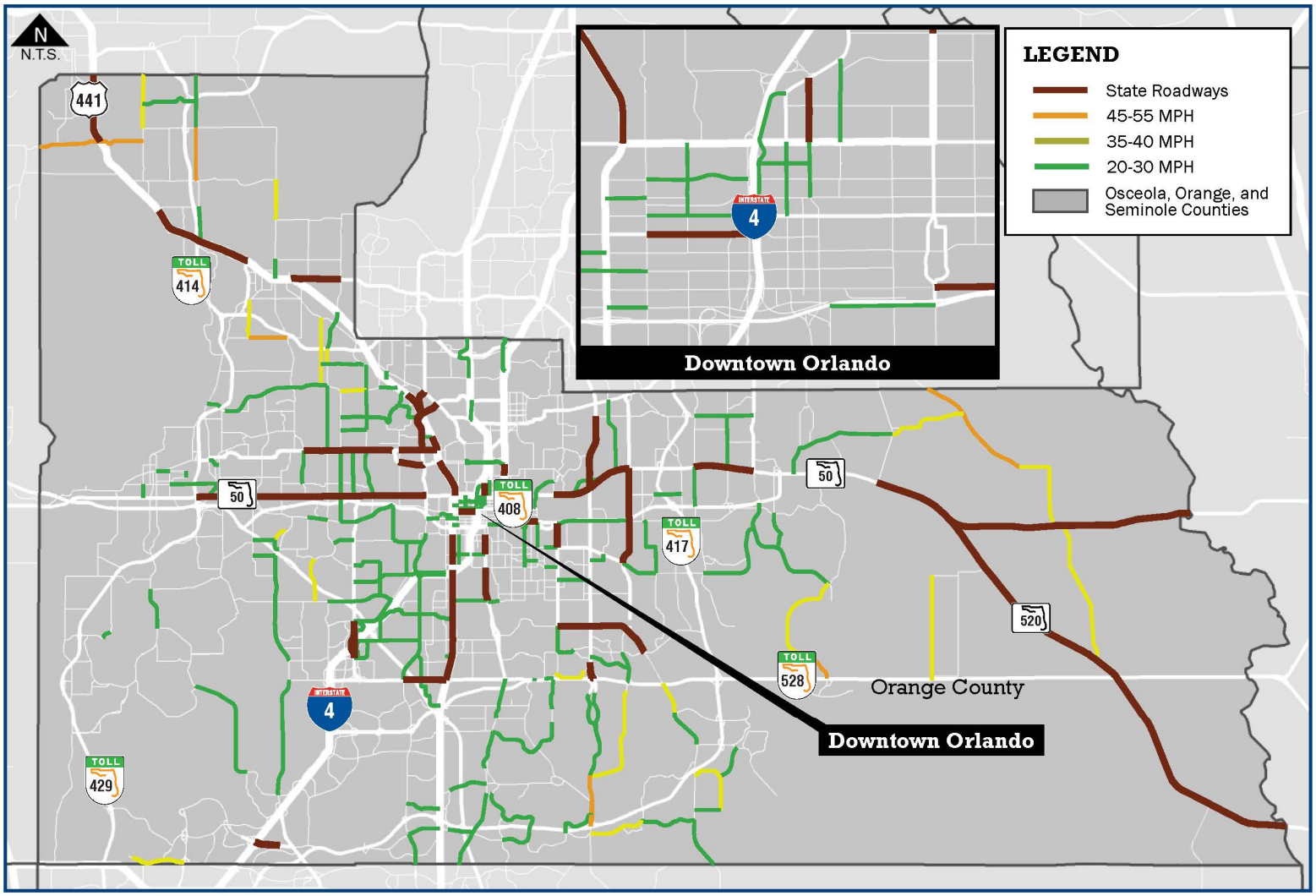
Preliminary Target Speed Analysis Results

Orange County



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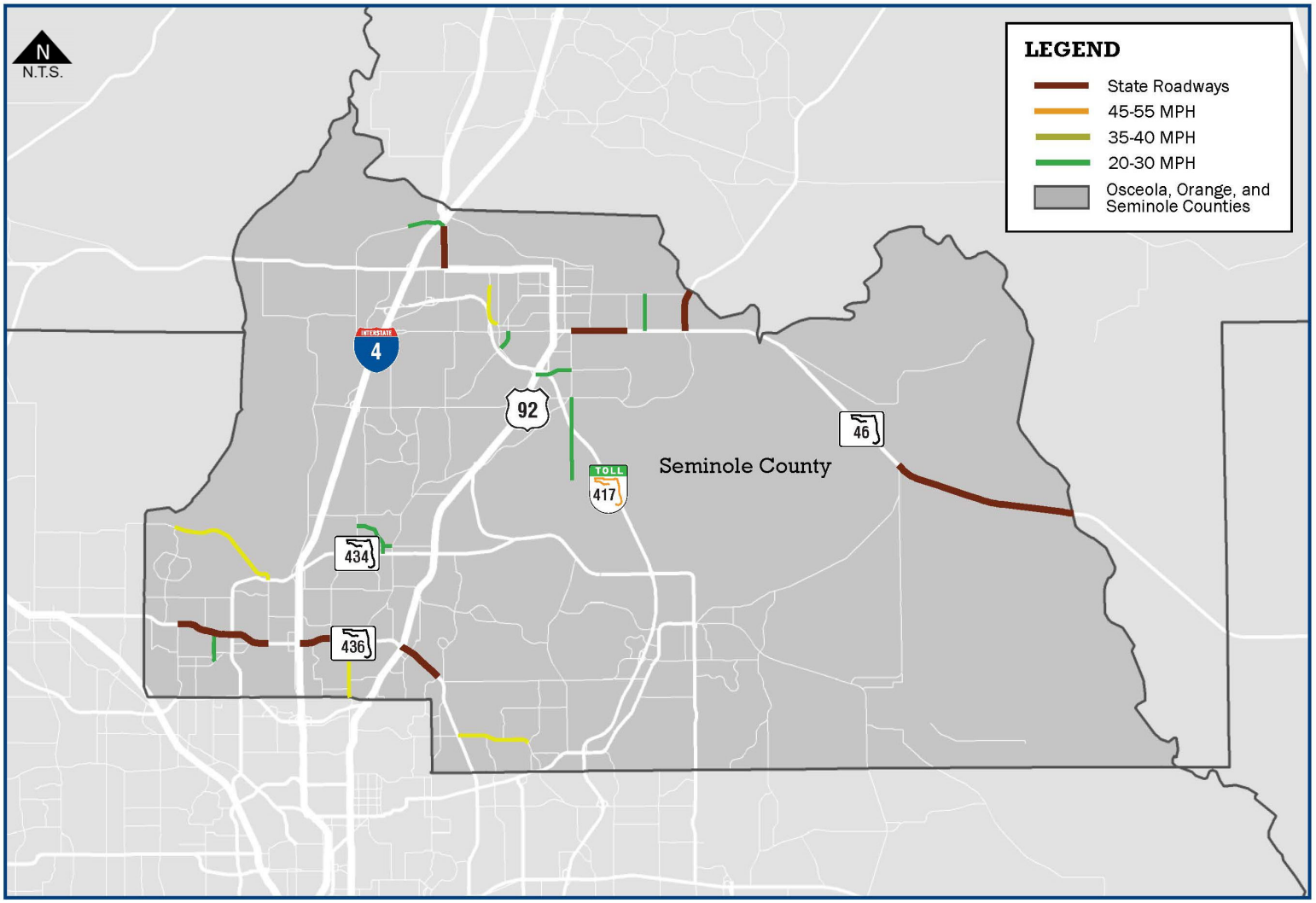
Preliminary Target Speed Analysis Results

Seminole County



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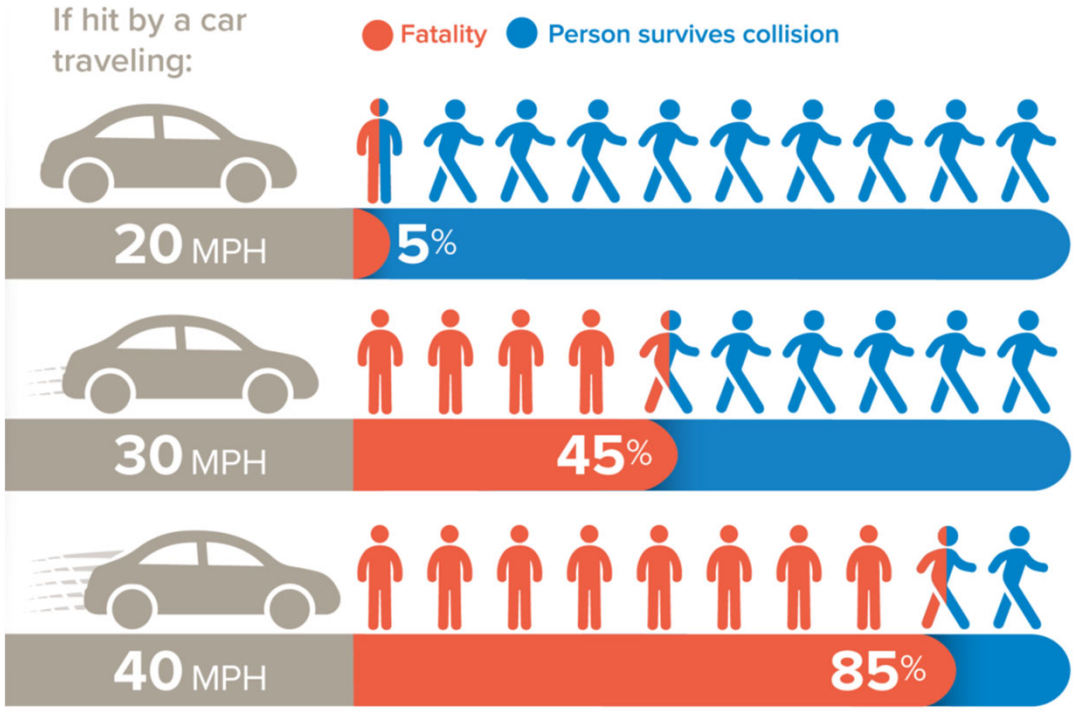
Preliminary Target Speed Analysis Summary

Preliminary Target Speed Results	Osceola Co. Segments	Orange Co. Segments	Seminole Co. Segments	Segments Total
Recommend Target Speed Below Posted Speed	26 (59%)	144 (72%)	6 (43%)	176 (68%)
Recommend Target Speed Same as Posted Speed	18 (41%)	57 (28%)	8 (57%)	83 (32%)

Preliminary Target Speed Wrap Up

- <u>Should be used as starting point during corridor-specific projects</u>
- Multiple projects may be needed to achieve a target speed
- Achieving target speed should be the goal, but any reduction in vehicle operating speeds is step in right direction



National Traffic Safety Board (2017) Reducing Speeding-Related Crashes Involving Passenger Vehicles. Available from: https://www.ntsb.gov/safety/safety-studies/Documents/SS1701.pdf

Project Schedule and Next Steps

Project Schedule

Speed Management Network Screening

	Tasks	2022										
		Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1	Data Collection											
2	Speed & Crash Data Comparisons											
3	Identify Critical Speed Management Network											
4	Target Speed Recommendations											
5	Summary Report											
6	Project Meetings			WG			WG			WG		

We Are Here

WG = Working Group

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Next Steps

- Working Group to provide feedback on Preliminary Target Speeds
  - E-mail any comments to tlaurent@metroplanorlando.org by 11/4/22

- Final SMNS Report by mid December

Thank You

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