



CITY OF OCALA

SPEED MANAGEMENT/ TRAFFIC CALMING PLAN

“Shaping Ocala’s Safer Streets Future”



PREPARED BY



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- Appendix D – ITE/e-Primer Traffic Calming Fact Sheets
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List of Acronyms

- C3C – Suburban Commercial
- C3R – Suburban Residential
- C5 – Urban Center
- CFSSP – Central Florida Safety Strategic Plan
- FDM – Florida Design Manual
- FDOT – Florida Department of Transportation
- FHP – Florida Highway Patrol
- FHWA – Federal Highway Administration
- HIN – High Injury Network
- KSI – Killed/Serious Injury
- LRSP – Local Road Safety Plan
- MUTCD – Manual on Uniform Traffic Control Devices
- MUTS – Manual of Uniform Traffic Studies
- NACTO – National Association of City Transportation Officials
- NHTSA – National Highway Traffic Safety Administration
- OPD – Ocala Police Department
- SHSP – Strategic Highway Safety Plan
- SMTCP – Speed Management/Traffic Calming Plan
- SS4A – Safe Streets and Roads for All
- TPO – Transportation Planning Organization

1. Plan Overview

The City of Ocala has developed a Speed Management/Traffic Calming Plan ("SMTCP" or the "Plan") to provide guidance in promoting safer speeds throughout the City.

The City of Ocala was awarded a Fiscal Year 2023 Safe Streets and Roads for All (SS4A) grant to perform supplemental planning studies to support and enhance the adopted Ocala Marion Transportation Planning Organization (TPO)'s Commitment to Zero Safety Action Plan. The supplemental planning studies include the development of a Local Road Safety Plan (LRSP) and a Speed Management/Traffic Calming Plan focusing on city-maintained roadways.

This Plan describes the process and analysis performed, including the problem identification, the determination of priority roadway segments, and the recommendation of applicable countermeasures with the goal of eliminating fatal and serious injuries within Ocala's transportation system.

1.1 Plan Purpose

This SMTCP characterizes the City of Ocala's speed-related safety problems and speed management issues, identifies appropriate engineering, enforcement, and educational countermeasures and strategies, and outlines the actions the City of Ocala can take to implement these strategies to reduce speeding and speeding-related fatal and injury crashes. This Plan will facilitate coordination and cooperation among various agency stakeholders including road planners, designers and managers, enforcement officials, public health practitioners, and policymakers to implement a sustainable speed management program, and to target the most cost-effective and feasible countermeasures where they will have the greatest safety benefits.

The remainder of this chapter outlines the safety goals of the Plan, the need for the Plan, broadly describes the speed management approaches, defines the terms used, and provides an overview of the problems and the action items for implementing Plan strategies.

1.2 Safety Goals of the Plan

On November 29, 2022, the Ocala Marion TPO adopted their Commitment to Zero Safety Action Plan, with a goal of eliminating fatal and serious injury crashes by 2045. A Commitment to Zero Pledge was signed by the Ocala Marion TPO Board, which included the Mayor of the City of Ocala and City Commissioners, demonstrating a high level of commitment to this mission.

Outlined in the City's LRSP, the City of Ocala aims to achieve the same goal of zero fatal and serious injury crashes by 2045 within the City's transportation system. Additionally, the City's LRSP includes speeding and aggressive driving as an emphasis area and outlines applicable goals and evaluation metrics.

The safety goals of this Speed Management/Traffic Calming Plan are as follows:

Goal #1: Deploy enforcement efforts to reduce unsafe driving behaviors

Goal #2: Implement speed management techniques and infrastructure improvements to encourage lower speeds

Goal #3: Participate in speeding and aggressive driving safety campaigns and outreach

1.3 Coordination with Strategic Plan or Other Comprehensive Safety Goals

This SMTCP aligns with the National Roadway Safety Strategy, incorporating the Safe System Approach as the method to address roadway safety. Achieving the goals set forth in this Plan will contribute to and aligns with strategic safety planning at the state and district level and builds upon the previous planning efforts of the Ocala Marion TPO's Commitment to Zero Action Plan.

In addition, this SMTCP is a "sister" plan to the City of Ocala's LRSP, the other supplemental planning study prepared under the SS4A grant awarded to the City of Ocala. This SMTCP aims to support the vision outlined in the LRSP for a vibrant, walkable downtown area and safe routes for students walking, biking and riding the bus to school. This vision includes

a transportation system where every trip is safe, accessible, and free from fatalities and serious injuries as a result from transportation-related crashes.

1.3.1 The Safe System Approach

The Safe System Approach represents a shift from the conventional safety approach by focusing on both human mistakes and human vulnerabilities to design a transportation system where fatal and serious injury crashes can be eliminated.

Adopted by the U.S. Department of Transportation, the Safe System Approach is comprised of six principles and five elements that act as a guiding paradigm to address roadway safety. Displayed in **Figure 1-1**, the six principles (outer ring) are the fundamental beliefs of which the approach is built on, with the five elements (inner ring) representing the conduits for which the approach can be implemented.



Figure 1-1: The Safe System Approach (Source: USDOT)

Aligning this Plan with the holistic view of the Safe System Approach helps to strengthen this Plan's goals while providing best practices in developing and applying strategies to reduce fatal and serious injuries on the City's roadways. The Safe System Approach, specifically within the Safer Speeds element, was infused in

this report at every step through the identification of stakeholders, the use of holistic safety data, and the recommendation of proven safety solutions. Solutions and strategies are recommended with a focus on redundancy by reducing risk on all parts of the transportation system, a key aspect in following the Safe System Approach.

1.3.2 The 2021 Florida Strategic Highway Safety Plan (Florida SHSP)

The Florida SHSP published by the Florida Department of Transportation (FDOT) provides a framework for eliminating transportation-related fatal and serious injuries occurring on public roadways in Florida. It acts as a multi-year plan establishing recommended strategies and identifying emphasis areas to guide safety improvements within the state. This plan identifies speeding and aggressive driving as an emphasis area, which is a factor in crashes causing a total of 2,020 fatalities and 6,611 injuries in the state of Florida from 2015 to 2019. The 2021 Florida SHSP also details focused strategies to promote safer speeds. These include engineering and non-engineering measures, such as road modifications, speed enforcement, and educational strategies. FDOT is currently in the process of updating the 2021 Florida SHSP to the 2026 Florida SHSP.

1.3.3 The Central Florida Safety Strategic Plan (CFSSP)

The CFSSP, published in May 2024 by FDOT District Five, is “a bold framework on how state and local communities will work together across Central Florida to address safety challenges on our roads”. The City of Ocala is located within the geographic boundary of FDOT District Five. Two “Think Beyond Infrastructure” Action Steps are specifically focused on speed in the CFSSP.

1.4 Public Engagement Efforts

To ensure that public input was utilized to help guide the development of the SMTCP, two stakeholder meetings and two public meetings were held to distribute information and receive input regarding the City of Ocala’s Safe Streets for All Planning Studies. Additionally, an interactive survey and comment map were produced to garner input from the public and gather locations where citizens felt safety concerns were present.

The stakeholder meetings were attended by the Stakeholder Advisory Group, comprised of representatives from organizations such as the Florida Department of Transportation District 5, Ocala Marion County TPO, Marion County Public Schools, Ocala Chamber of Commerce and Economic Development organizations, hospitals, senior centers, social service providers, and walking and biking advocacy groups. These meetings were held to gather feedback on relevant action items and strategies. The community meetings were open to the public and served to inform citizens of on-going progress and to collect input on safety concerns present within the City of Ocala.

Public outreach efforts, results of the survey, and comments received from the interactive comment map and written comments forms are detailed in the Public and Stakeholder Engagement Memorandum included as an appendix to the Local Road Safety Plan.

1.5 Need for the Plan

At the heart of this plan is one central idea: speed kills. As vehicle speed increases, so does the likelihood of a crash and the severity of resulting injuries.

Higher speeds result in less time to react, and more braking distance is required to come to a stop to avoid a crash. Additionally, peripheral vision is affected by higher speeds, with the cone of vision narrowing as motorist speed increases. This negatively affects driver awareness of pedestrians and bicyclists as well as other environmental factors. An illustration of this effect can be found in **Figure 1-2**.

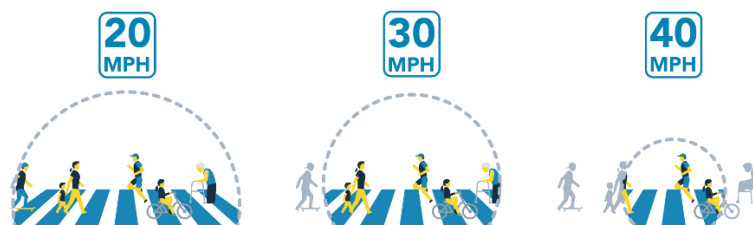


Figure 1-2: Cone of vision, Source: NACTO Urban Street Design Guide (2013)

Vulnerable road users, such as pedestrians and bicyclists, are especially negatively impacted by a greater differential between their speed and motorist speed. Greater speed

results in greater kinetic energy being applied to the human body in the event of a crash. This often leads to severe injury or death, particularly with crashes involving vulnerable road users. Pedestrian fatality and serious injury risk increases exponentially with the speed of a vehicle, as demonstrated in **Figure 2**.



Figure 1-3: Vehicle Speed Comparison to Source: AAA Foundation, Tefft, B.C (2011)

1.5.1 KSI Crashes

Over the last five years (2020-2024), the City of Ocala has recorded 42 speeding-related crashes that resulted in non-incapacitating, incapacitating, and fatal injuries on city-maintained roadways. This includes 8 fatal crashes and 34 injury crashes.

Speeding was a factor in 8.2% of all Killed/Serious Injury (KSI) crashes within the City of Ocala. This marks in overrepresentation of speeding-related crashes within the City compared to the Ocala Marion TPO regional area with 6.5% of KSI crashes. However, it is not overrepresented when compared to statewide averages. The comparison of speed related crash data to regional and statewide trends is included in **Table 1-1**.

The crash data analysis is further discussed within the problem identification process and includes the identification of crash characteristics that may contribute

to unsafe speeding, such as roadway types, roadway geometry, driver behavior, and environmental conditions.

Table 1-1: Speeding-related Crash Comparison to Regional and Statewide KSI Crash Averages (2020-2024)

Speeding and Aggressive Driving Crashes	Ocala	Ocala Marion TPO		Statewide	
	% of KSI Crashes	% of KSI Crashes	Percent Difference	% of KSI Crashes	Percent Difference
	8.2%	6.5%	+1.7%	9.1%	-0.9%

1.5.2 Prevalence of Speeding

The prevalence of speeding within the City of Ocala is evident by the number of speeding tickets issued by the Ocala Police Department (OPD). For the first nine months of 2025, over 5,000 speeding tickets had been issued. There were 500 traffic stops for speeding during the Southern Slow Down Campaign alone (July 14, 2025 – July 19, 2025), and there were over 1,000 traffic stops during FDOT speeding campaigns throughout the year.

1.5.3 Other Issues and Challenges

Additional challenges relating to the credibility and enforceability of speed limits were examined for consideration in the problem identification process, such as those associated with current practices and policies.

The following issues and challenges were identified and are further discussed in their corresponding sections:

- Speed limit setting
- Posted Speed correlation to Design Speed

1.6 Plan Approach

The City of Ocala’s SMTCP builds upon two existing plans from safety partners: the Ocala Marion TPO’s Commitment to Zero Action Plan, and the FDOT Central Florida Safety

Strategic Plan. Additionally, it builds upon the SE Ocala Neighborhood Traffic Calming Study previously produced for the City of Ocala.

The Ocala Marion TPO's Commitment to Zero Action Plan, adopted by the TPO board in November 2022, is a call to action to eliminate traffic fatalities and serious injuries on the roadways of Ocala/Marion County. This plan includes agreed upon actions and strategies and is based on the four cornerstones of Education and Awareness, Public and Partner Engagement, Safety Analysis, and Action Planning. The Ocala City Council President served as the TPO Board Chair and City Councilmembers served on the TPO Board during the development and adoption of the plan.

The FDOT Central Florida Safety Strategic Plan (CFSSP), dated May 2024, is a bold framework on how state and local communities will work together across Central Florida to address safety challenges on our roads. The document emphasizes collaboration, teamwork, and partnerships to "achieve zero serious injuries and fatalities together". The City of Ocala provides representation on the CFSSP Steering Committee and is actively involved in committee discussions related to action steps and direction to focus groups.

The SE Ocala Neighborhood Traffic Calming Study, further discussed in Section 1.4.3, was completed in 2024, and was performed for a southeast portion of the City. The study was conducted to evaluate roadways within the study area for potential safety improvements to encourage safer speeds and improve multi-modal travel. Recommended traffic calming countermeasures and a prioritization method were developed for the implementation of speed management projects, which will be built upon in this SMTCP.

This Plan builds upon the above-mentioned existing plans and study and incorporates the following types of approaches to help meet the safety goals and sustain the program:

- Develop proactive and coordinated approaches to speed limit setting, roadway planning, roadway design, and other speed management measures to reduce speeding and lower the risk of serious harm on improved or new roads.
- Use a systematic approach to identify and target treatments to locations with speed or safety issues.
- Use comprehensive and coordinated enforcement, educational, and engineering countermeasures to improve motorist compliance with speed limits.
- Seek the support of multiple stakeholders and the public for effective speed management and crash reduction strategies.

These approaches and associated strategies and countermeasures are described in greater detail in later sections.

1.7 Plan Summary

Speed limit review, engineering, and design strategies, enforcement and educational measures will be implemented through this Plan. There are three approaches to the implementation of strategies and countermeasures: Proactive, Comprehensive, and Systematic.

A brief description of the approaches follows:

- A **proactive approach** aims to foster creation of self-enforcing roadway designs appropriate to the land use and user needs (functions of the road) to reduce future speeding and injury risk. The approach aims to develop collaborative and consistent policies, procedures, and safety guidance in speed-limit setting and design for new projects and roadway improvements.
- The overarching objectives of **comprehensive strategies** are to: seek community support for the program, coordinate various stakeholders and engage the community in setting and enforcing appropriate limits; and to complement and enhance the effectiveness of design and engineering measures with locally tailored communications and educational measures.
- A **systematic approach** is used to identify and coordinate treatment of existing speeding and safety problems with cost-effective countermeasures (engineering and enforcement-related measures), and to integrate this approach with other safety plans and safety focus areas. For implementing the systematic approach, the Plan uses problem screening (based on prior crashes) and follow-up diagnosis to identify and prioritize the speeding-related problems to treat.

The main road types to be treated through the Systematic approach within the current five-year period are:

- Urban Two-lane Undivided Roadways
- Urban Four-lane Divided Roadways
- Horizontal curves

Other speed-related problems to address include:

- Crashes by teenage drivers
- Nighttime crashes

Although not specifically reflected as an issue in crash screening, the following site-specific problems should be addressed:

- School zones

1.8 Evaluation and Performance Measures

The primary measures of program effectiveness are:

- Reduction in speeding related fatalities and serious injuries to zero by 2045
- Number of actions that are completed
- Number of high-priority segments where identified strategies are implemented
- Reduction in 85th percentile speeds to target speeds where identified strategies are implemented on high-priority segments
- Reduction in operating speed distributions (average speed, 85th percentile speed, percentage of speeders 5-mph or more above the posted speed)

1.9 Sustaining and Updating the Plan

As the City of Ocala continues to prioritize the Action Items and particular strategies, consider the following:

- The implementation timeline for this initial SMTCP is five years but can be changed as needed. Depending on the action items advanced and available funding, some strategies may require a longer timeframe to fully develop and implement, or may be ongoing strategies and actions to maintain beyond the five-year period.
- The SMTCP is a Living Document and may be updated and revised as actions or strategies are refined and revised.
- Evaluation of the SMTCP using relevant performance measures is part of the implementation. Implementation and safety progress should be monitored with appropriate measures throughout the implementation period. The SMTCP should be fully evaluated near the end of the implementation period to identify SMTCP implementation progress and whether safety goals were met.

- To sustain and build the program, the SMTCP should be updated near the end of the initial plan period. The update will incorporate input from the SMTCP evaluation, include updated problem identification, and incorporate any new proven countermeasures.

2. Speeding-related Safety Issues

Speeding is a major factor in fatal and serious injury crashes. Speeding increases the likelihood of a crash due to the limits it places on reaction time and the increased distance a vehicle requires to stop. Higher speeds make it more difficult for drivers to maneuver through curves and avoid obstacles or unexpected actions of other drivers. The speed at which a vehicle impact occurs also directly impacts crash severity through the increased energy transferred to a human body. Pedestrians, bicyclists, and motorcyclists are especially vulnerable to higher speeds and are much more likely to be killed or seriously injured when hit by a speeding vehicle.

In the City of Ocala, speeding and aggressive driving crashes are overrepresented when compared to regional (Ocala Marion TPO). Speeding and aggressive driving accounts for 8.2% of all fatal and serious injury crashes in Ocala and was selected as an emphasis area in the City of Ocala's Local Road Safety Plan. In addition, pedestrians were the top crash type for fatalities within the City of Ocala, comprising 23.1% of all fatalities.

As part of the City's SMTCP, multiple data sources and analysis methods were utilized to obtain an accurate representation of speeding-related issues within the City. This section outlines the problem identification process, including the determination of high priority corridors, system-wide issues, and other safety targets.

2.1 High-Priority Segment Identification

This SMTCP identified high-priority segments for speed management by examining multiple data sources to determine where speed management strategies may provide the greatest safety benefit. This includes a data-driven approach to examine roadway segments and rank them through evaluation criteria. Identified high-priority speed management segments were further analyzed for the presence of speeding through spot speed studies, discussed in **Section 2.2**.

2.1.1 Reviewed Data Types

The following types of data were analyzed to identify high-priority segments for speed management:

Speeding-Related Crash Data: Signal Four Analytics is a web-based, interactive geospatial crash mapping and analysis tool that maps statewide historical crash and citation data. For the purposes of the Plan, speeding-related fatal and injury crashes from the Signal Four database were considered for the five years of 2020-2024. Of these crashes, only those that occurred on city-maintained roadways were considered for the identification of high priority segments. This methodology is aligned with the High Injury Network (HIN) identification process outlined in the LRSP and embodies the Safe System Approach by focusing on high severity crashes as unacceptable and preventable. Additionally, crashes on roadways already considered as part of the SE Ocala Neighborhood Traffic Calming Study were excluded from the analysis. **Figure 2-1** displays the locations of the speed-related fatal, incapacitating, and non-incapacitating injury crashes included as part of the analysis.

85th Percentile Speeds: Urban SDK is a geospatial traffic flow program that utilizes aggregated GPS information obtained from in-vehicle infotainment centers to track speeds of vehicles. Currently, the City of Ocala holds a program license for planning purposes. This program was utilized to gather high-level speed data for city-maintained roadways. While not as accurate as field measured speed data, this program offers a wide breadth of information and is useful for preliminary analysis to determine where to focus efforts related to speed management.

The 85th percentile speed is the speed at or below which 85 percent of drivers travel on a road during free-flow conditions. For the determination of high priority speed management segments, local roads with an 85th percentile speed 5 MPH or more above the posted speed limit, and arterial roadways with an 85th percentile speed either 5 MPH or more, or 10 MPH or more, above the posted speed limit were identified. **Figure 2-2** displays the 85th percentile speed differentials from Urban SDK.

Citizen-reported speeding concerns: The City of Ocala maintains records of the locations of citizen reports of speeding and requests for speed management solutions. These locations are displayed in **Figure 2-3** and were considered in the analysis to determine high priority segments for speed management.

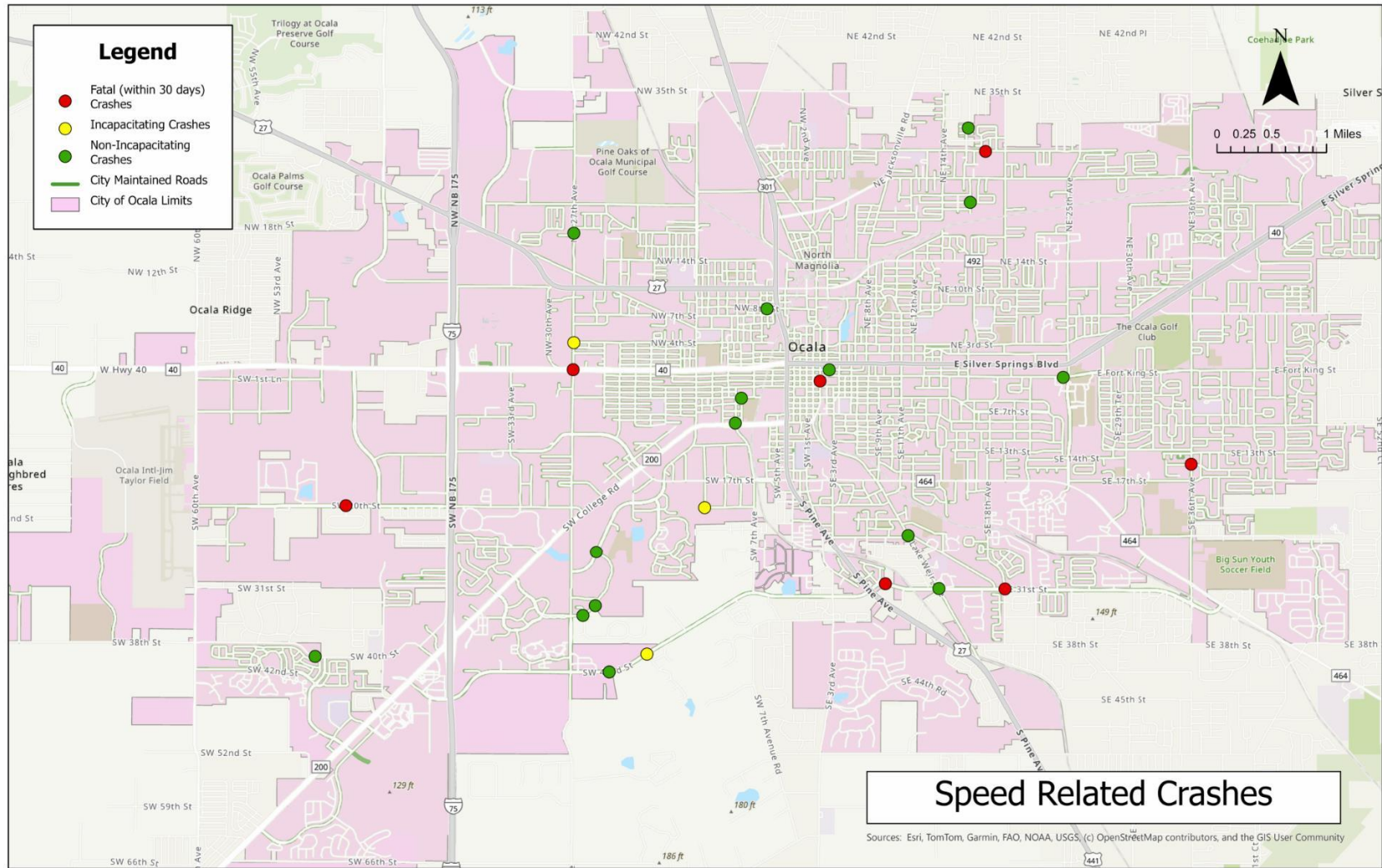


Figure 2-1: Speed-Related Fatal and Injury Crashes

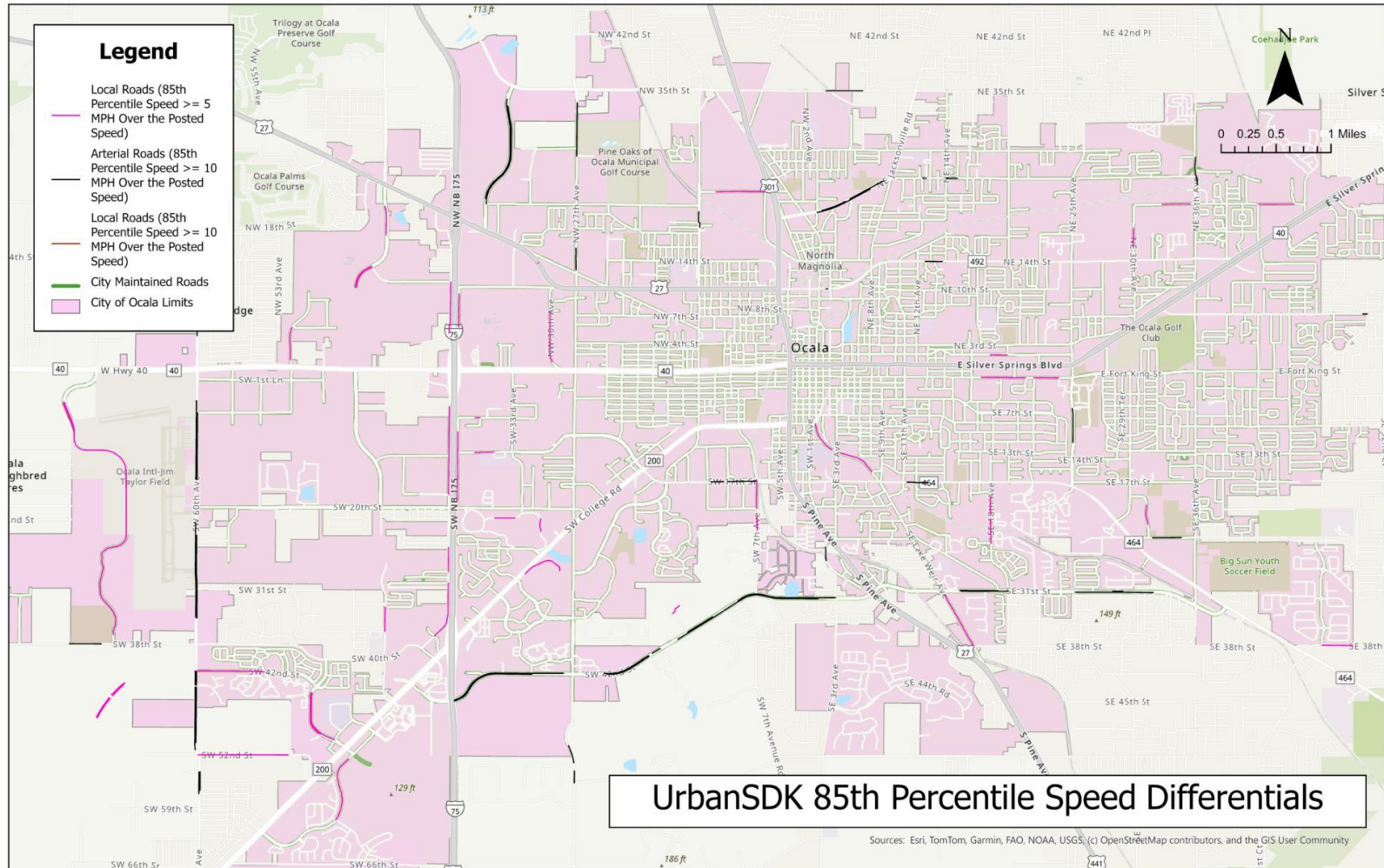


Figure 2-2: 85th Percentile Speed Differentials

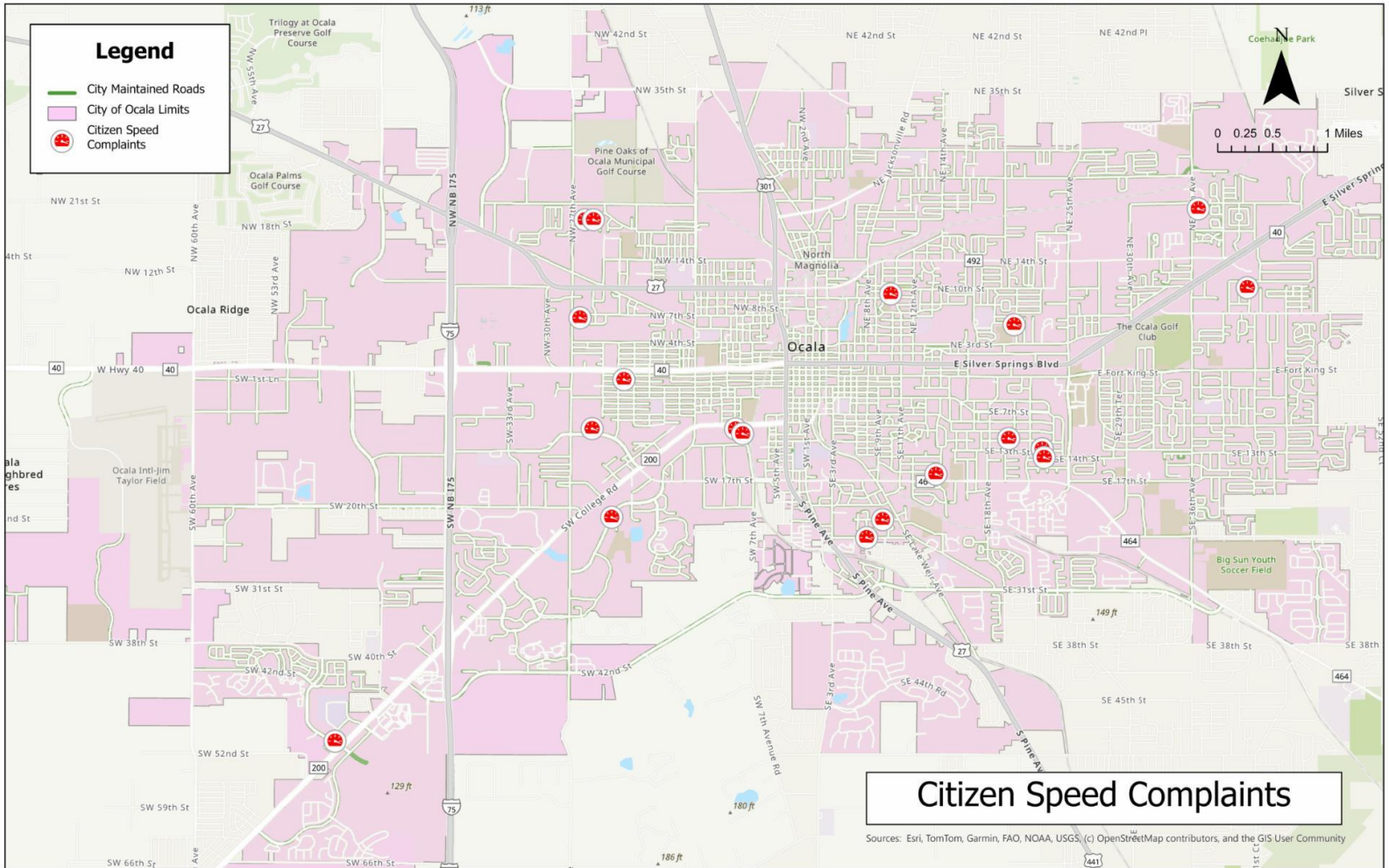


Figure 2-3: Locations of Citizen-Reported Speeding

High Injury Network (HIN): As part of the City’s LRSP, twelve segments totaling 20.6 centerline-miles of roadway were identified as part of the City’s HIN. The HIN consists of roadways with a disproportionately high incidence of KSI crashes. Segments identified through other data sources for consideration as a high-priority speed management segment were given extra weighting if also located within the HIN. The HIN is included in **Figure 2-4**.

Locations of Schools: The City of Ocala places special emphasis on ensuring the safety of students traveling to and from school and school-related activities. Segments identified through other data sources for consideration as a high-priority speed management segment were given extra weighting if located within a mile of a school. The locations of schools in the City of Ocala are shown in **Figure 2-5**.

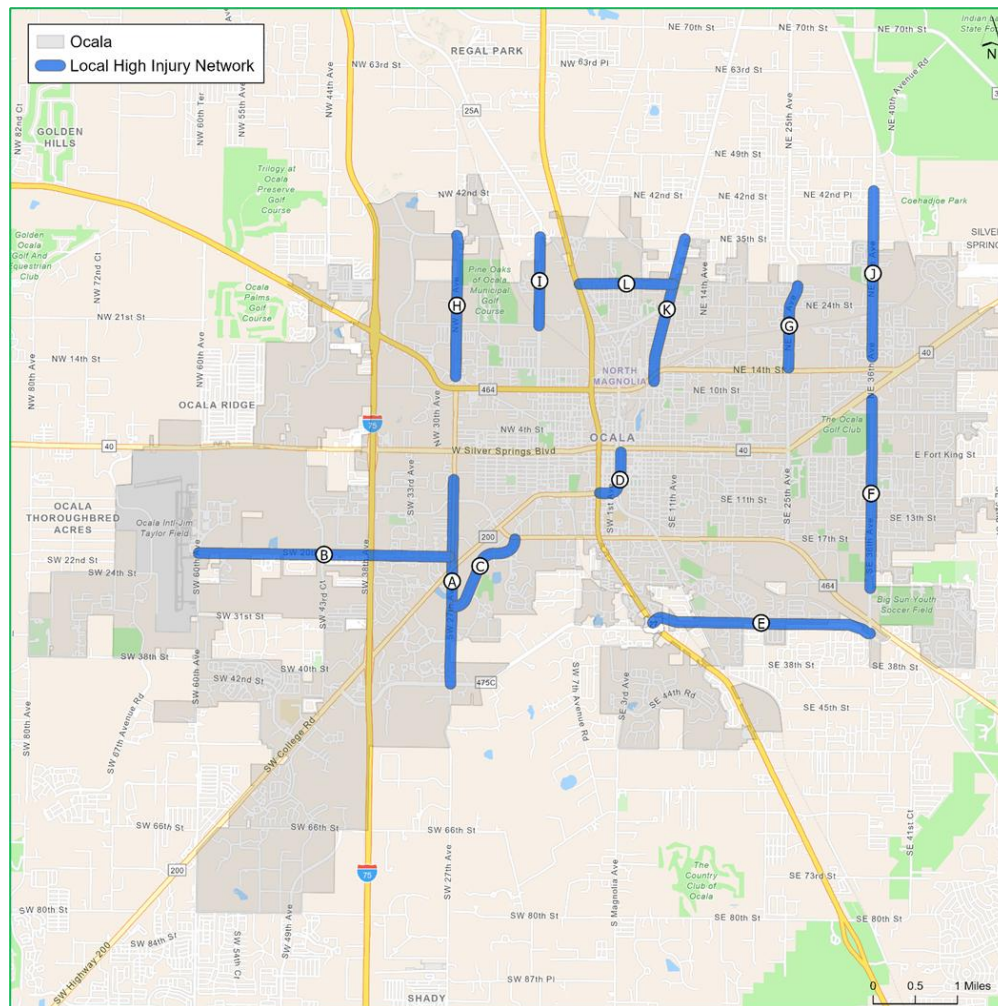


Figure 2-4: High Injury Network

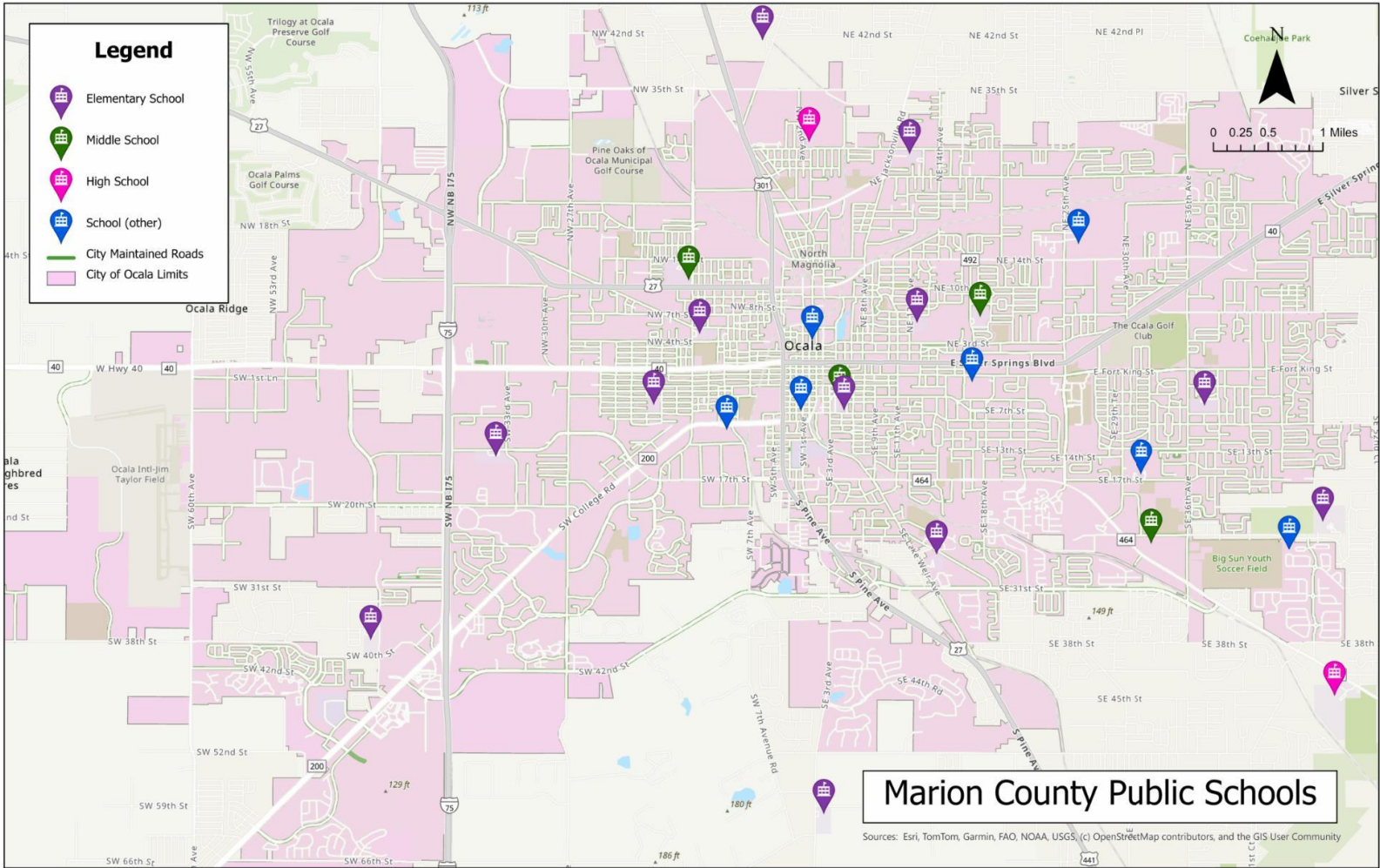


Figure 2-5: Location of Schools

Within Downtown Ocala: The City of Ocala desires that its Downtown area, with high levels of multimodal activity, have a high degree of safety and comfort for those walking and biking. Segments identified through other data sources for consideration as a high-priority speed management segment were given extra weighting if located within the Downtown area. The location of the City of Ocala's Downtown is shown in **Figure 2-6**.

Locations of Existing Speed Humps: To ensure that roadways without any speed management devices were given higher priority over roadways with existing devices, segments with speed humps already present were excluded from consideration as a high-priority segment for speed management. A map of speed hump locations is included as **Figure 2-7**.

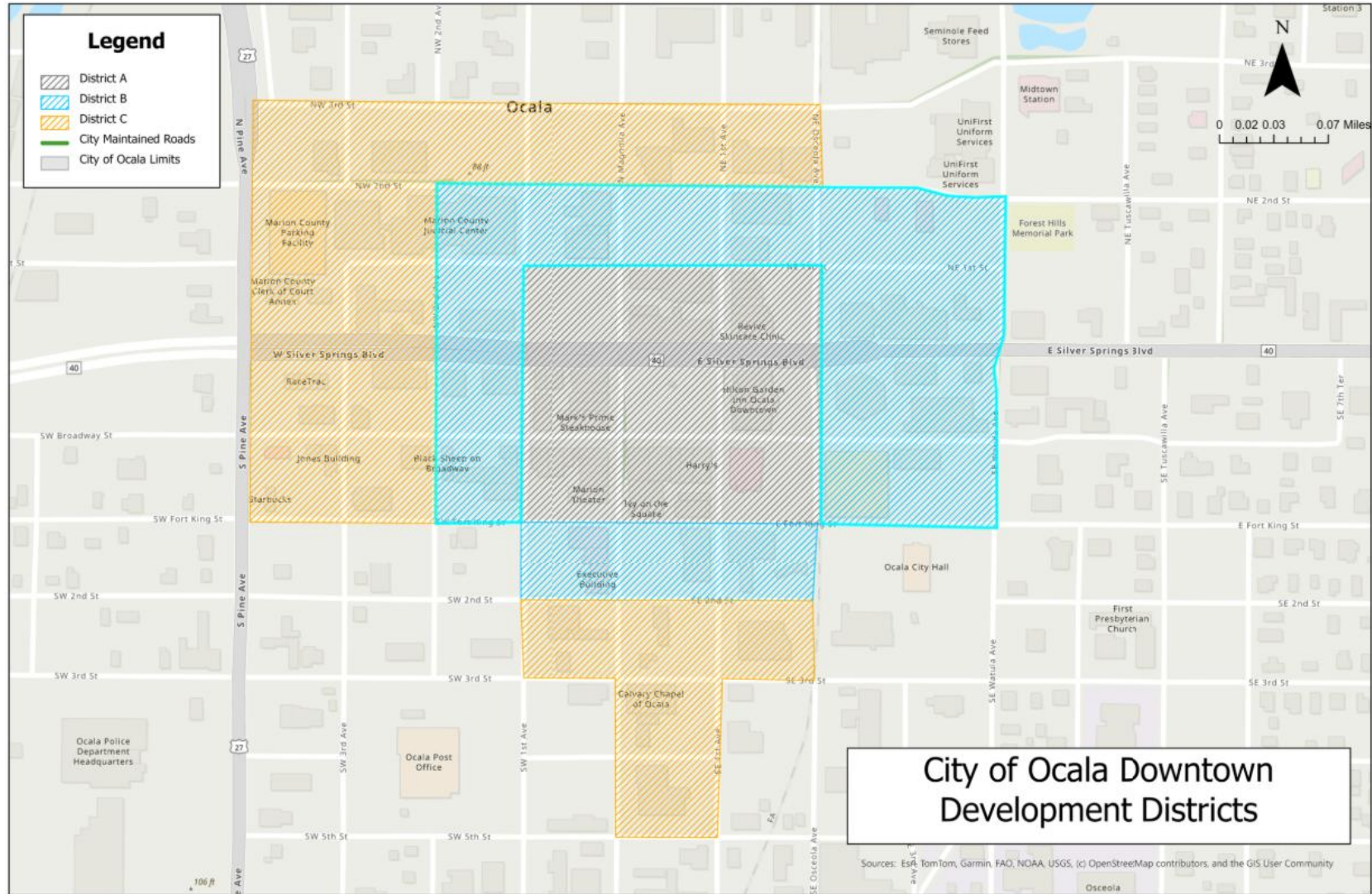


Figure 2-6: Downtown Ocala Map

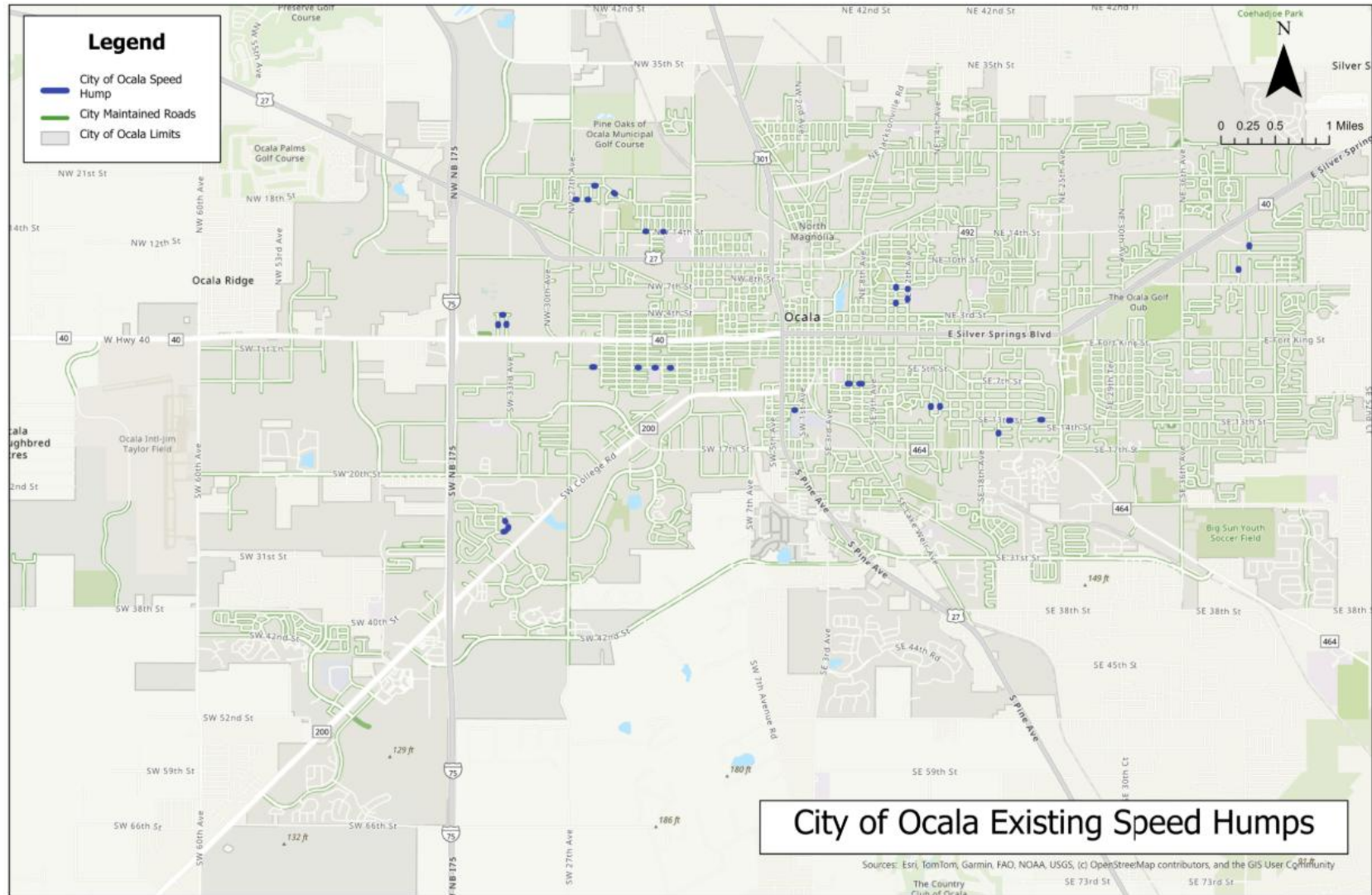


Figure 2-7: Location of Existing Speed Humps

2.1.2 High-Priority Speed Management Segments Evaluation Criteria

A list of high-priority segments was developed to focus speed management efforts on a collection of segments with existing indications of speeding or risk factors where speeding may result in dangerous conditions for vulnerable road users.

The data types outlined in **Section 2.1.1** were utilized in the determination of high-priority segments. All City-maintained roadways were evaluated during this process and ranked by the number of evaluation criteria satisfied. Additionally, extra weight was placed on specific criteria of interest, such as those that are typically associated with the presence of vulnerable road users.

Table 2-1 outlines the evaluation criteria and their respective weights used in the ranking process.

Table 2-1: High-Priority Segment Evaluation Criteria

Evaluation Criteria	Ranking Weight
Presence of speed-related injury crashes	1
The 85% speed is \geq 5 mph over the posted speed limit on a local road	1
The 85% speed is \geq 10 mph over the posted speed limit on a local road	1
The 85% speed is \geq 10 mph over the posted speed limit on an arterial road	1
Presence of citizen-reported speed concern	1
Located within the High Injury Network	2
Located within 1 mile of a school	2
Located within the Downtown limits	2

2.1.3 Identified High-Priority Segments for Speed Management

A total of 15 high-priority segments were identified as part of the SMTCP for the focus of speed management efforts. These segments were identified through the data sources and evaluation process described in **Section 2.1.1** and **Section 2.1.2**.

These high-priority segments serve as locations for further speed analysis and the deployment of speed management strategies to provide targeted solutions for the greatest safety benefit. Further analysis of the high-priority segments was

performed through spot speed studies to evaluate the severity of speeding. The spot speed studies are discussed in **Section 2.2**.

Table 2-2 and Figure 2-8 depict the identified high-priority segments for speed management.

Table 2-2: High-Priority Speed Management Segments

Segment Rank	Street Name	From	To	Functional Classification (local/arterial)	Number of Lanes	Posted Speed
1	SE 1st Ave	SE 2nd St	SR 40	Local	1	25
2	SE 31st St	Lake Weir Ave	SE 19th Ave	Arterial	4	45
3	SW 48th Ave	SW 49th Pl	SW 42nd St	Local	4	30
4	NW 27th Ave	NW 3rd St	NW 17th St	Arterial	4	35
5	SW 7th Rd	SR 200	SW 12th St	Local	2	35
6	SW 13th St	SW 37th Ave	College Park Elementary Bus	Local	2	35
7	SW 43rd Ct	SW 40th St	SW 33rd St	Local	2	30
8	SW 19th Ave Rd/ Easy St	SW 24th Ave	SW 22nd Ln	Local	4	40
9	SE 36th Ave	SE 15th St	SE 3rd St	Local	4	40
10	NW 28th St	SW 2nd Ave	NE 4th Ct	Local	2	30
11	NE 25th Ave	NE 16th St	NE 18th Pl	Local	2	40
12	SE 24th St	SE 32nd Ave	SE 36th St	Arterial	2	35
13	Broadway St	SE 1st Ave	E Watula Ave	Local	2	25
14	SW 20th St	SW 54th Ct	SW 47th Ave	Local	4	45
15	SW 42nd St	SW 24th Terrace Rd	SW 20th Ave	Arterial	4	40

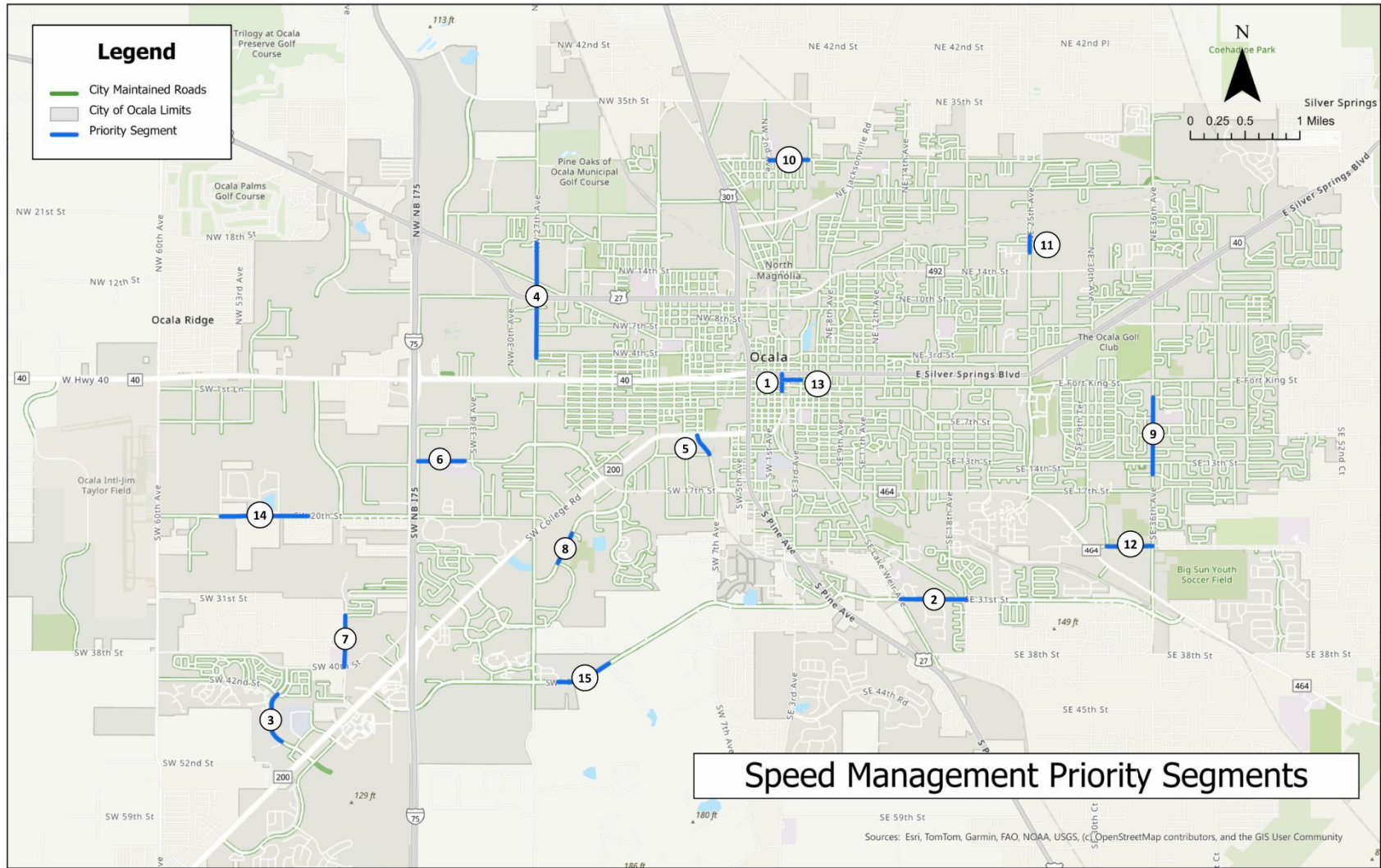


Figure 2-8: High-Priority Speed Management Segments Map

2.2 High-Priority Segment Spot Speed Studies

Spot speed studies were conducted for each of the 15 high-priority speed management segments to determine the magnitude of speeding. Speed data collection for eight four-lane priority segments and two two-lane priority segments was conducted by Ardurra Group, Inc. The City of Ocala provided speed data for four two-lane priority segments and one one-way segment.

Vehicle speed spot studies were performed in accordance with the FDOT Manual of Uniform Traffic Studies (MUTS). Speed data for the eight four-lane priority segments and two two-lane priority segments were collected during free-flow conditions, outside of peak hours, and through the use of a speed radar unit.

Speed data for four two-lane priority segments and one one-way segment was collected by the City of Ocala using a MH Corbin Traffic Analyzer; speed data was continuously collected for a period of 48 hours. Spot speed studies were performed for each of these five segments by examining speed data outside of peak periods and performing the analysis using the MUTS Vehicle Spot Speed Study Form.

The results of the spot speed studies are included in **Table 2-3** below. The vehicle speed spot study analysis forms for each high-priority segment are included in **Appendix A**.

Table 2-3: Spot Speed Study Location Summary

Segment Number	Street Name	Street From	Street To	Posted Speed Limit	85th Percentile Speed	50th Percentile Speed	10 MPH Pace
1	SE 1st Ave	SE 2nd St	SR 40	25	23	17	16-25
2	SE 31st St	Lake Weir Ave	SE 19th Ave	45	47	45	38-48
3	SW 48th Ave	SW 49th Pl	SW 42nd St	30	45	41	34-44
4	NW 27th Ave	NW 3rd St	NW 17th St	35	49	45	40-50
5	SW 7th Rd	SR 200	SW 12th St	35	39	33	28-38
6	SW 13th St	SW 37th Ave	College Park School	35	47	37	36-45
7	SW 43rd Ct	SW 40th St	SW 33rd St	30	49	43	40-50
8	SW 19th Ave Rd/ Easy St	SW 24th Ave	SW 22nd Ln	40	47	41	36-46
9	SE 36th Ave	SE 15th St	SE 3rd St	40	51	47	42-52
10	NW 28th St	NW 2nd Ave	NE 4th Ct	30	37	33	32-41
11	SE 25th Ave	NE 16th St	NE 18th Pl	40	47	43	36-45
12	SE 24th St	SE 32nd Ave	SE 36th St	35	45	41	38-48
13	SE Broadway St	SE 1st Ave	SE Watula Ave	25	23	17	12-22
14	SW 20th St	SW 54th Ct	SW 47th Ave	45	53	49	44-54
15	SW 42nd St	SW 24th Terrace Rd	SW 20th Ave	40	55	51	46-56

Of the identified 15 high priority segments, spot speeds studies indicated that the 85th percentile speed exceeded the posted speed for 13 of the 15 segments. Eleven sites indicated an 85th percentile speed of 5 mph greater than the posted speed, and of those, seven sites had an 85th percentile speed of 10 mph or greater.

The spot speed studies did not indicate an 85th percentile speed higher than the posted speed at two sites. Spot speed studies only reflect the travel conditions at a specific point of time and at a specific location within the segment. While speeding was not observed during the analysis, a spot speed study only captures a small picture and speeding may still be prevalent along the segment, with Urban SDK data demonstrating a high-level corridor need for speed management.

The high priority segments were examined in greater detail to determine potential contributing factors to speeding and opportunities for improvement. Targeted speed management strategies determined for each segment are outlined in **Section 3.0**.

2.3 City-Wide Problem Identification Process

In addition to the identification of high priority segments, speed management concerns were evaluated system-wide with the purpose of identifying systemic issues and factors contributing to unsafe speeds. This section describes the system-wide analysis as part of this action plan.

2.3.1 Crashes and Injuries

Crash data from the years 2020-2024 were analyzed as part of the problem identification processes. To obtain an accurate representation of the most significant speeding-related issues in Ocala, the crash analysis focused on crashes within the City limits that satisfied the following criteria:

- Indicated as speeding-related within the crash report
- Occurred on City maintained roadways
- Resulted in a fatality or injury

A total of 42 speeding-related crashes within the City were considered for the analysis, with 8 fatal crashes and 34 injury crashes. Each crash was examined to identify trends in roadway and environmental conditions that may contribute to

unsafe speeding. These include characteristics such as location, roadway types, and the presence of a horizontal curve, as well as behavioral and environmental conditions such as alcohol-use and wet roadway surfaces.

The results of the crash analysis are summarized in **Table 2-4**.

Table 2-4: Crash Characteristics Associated with Speeding-related Injury Crashes

Crash Characteristic	Number of Speeding-Related Injury Crashes				% of Fatal/Injury Crashes
	Fatal Crashes	Incapacitating Injury Crashes	Non-incapacitating Injury Crashes	Total	
Two-lane, Undivided	3	3	17	23	55%
Three-lane with TWLTL	0	0	1	1	2%
Two-lane, Divided	0	0	2	2	5%
Two-lane, One-way	1	0	0	1	2%
Four-lane, Divided	3	0	8	11	26%
Five-lane with TWLTL	1	0	3	4	10%
Crash at Curve	2	1	11	14	33%
Intersection Related	4	1	4	9	21%
Road Departure Related	4	1	20	25	60%
Night condition	2	1	12	15	36%
Wet road surface condition	1	1	17	19	45%
Alcohol-involved	4	1	1	6	14%
Teen Driver-involved	1	0	8	9	21%

In terms of common roadway characteristics, the roadway type with the greatest number of speed-related injury crashes (55%) was two-lane undivided roadways, followed by four-lane divided roadways.

Additionally, 33% of all speed-related injury crashes occurred at horizontal curves within segments, and 21% occurred at intersections.

Figure 2-9 includes speed-related fatal and injury crashes were distributed by hour of the day.

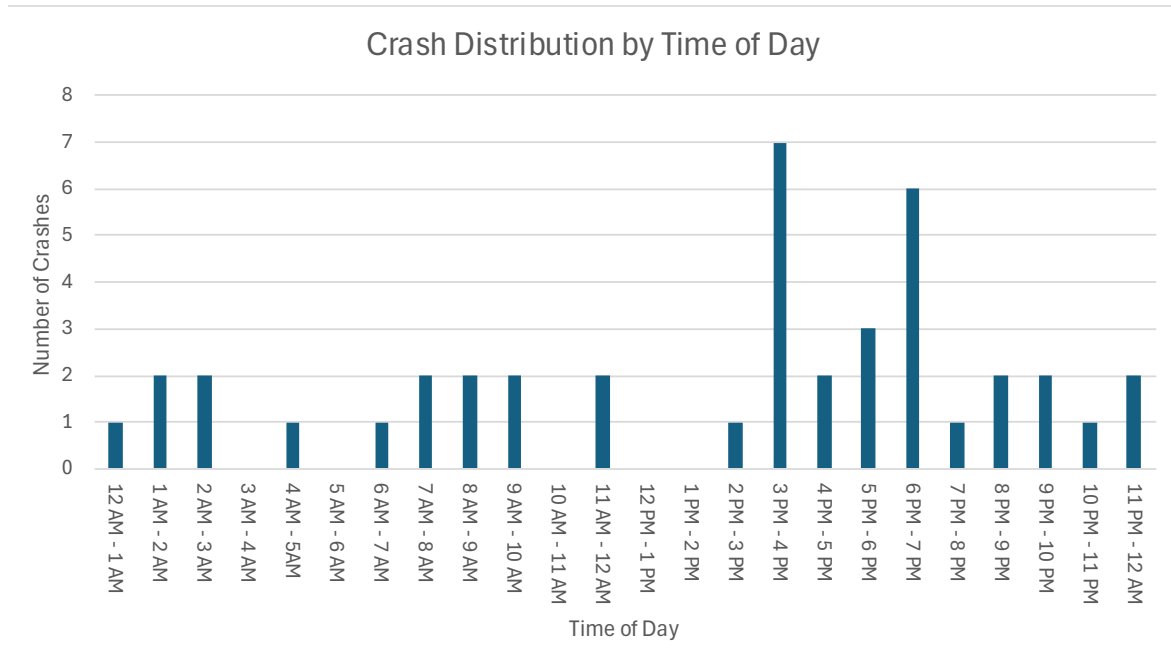


Figure 2-9 : Speeding Related Fatal and Injury Crash Distribution by Time of Day

These results were used to inform the identification of contributing factors for the focus of targeted countermeasures. The results of the crash analysis were used in conjunction with previous studies, input from city departments, and community feedback as discussed in **Section 2.1.3**

2.3.2 Prevalence of Speeding

The prevalence of speeding within the City of Ocala is evident by the number of speeding tickets issued by the OPD. For the first nine months of 2025 over 5,000 speeding tickets had been issued. There were 500 traffic stops for speeding during the Southern Slow Down Campaign (July 14, 2025 – July 19, 2025) alone, and there were over 1,000 traffic stops during FDOT speeding campaigns throughout the year.

Additional information and input outside of crash data was obtained to understand the general perception and prevalence of speeding with the City of Ocala. This included input from the City Engineering Division and OPD regarding their experience with speeding, as well as a review of previously completed traffic

studies. Input received from the community outreach effort as part of the SS4A planning studies was also taken into consideration.

Input received from the Ocala Police Department:

A meeting was held with both the City of Ocala Engineering Division and the OPD on October 1, 2025, at the beginning of the plan development process to receive input on problem locations and behavioral issues occurring within the City.

Speeding concerns the department addresses are received primarily from citizens. In the OPD's perception, the majority of speeding occurs on state roadways, with local roadways not experiencing as much speeding by comparison. The OPD investigates speeding on local roadways primarily when a citizen complaint is received.

Additionally, drivers tend to be receptive toward the educational material provided at traffic stops for speeding and aggressive driving, especially when educational materials are provided in lieu of a ticket.

Hot-spot mapping is performed for traffic stops. However, the current process of hot-spot mapping does not allow for the breakdown or sorting of speed-related traffic stops.

The OPD does not note any roadways they consider as having an inappropriate speed limit.

Input received from the community outreach effort:

As part of the SS4A Planning Studies, an interactive survey and comment map were produced to gather input from the community. As part of the interactive survey, citizens were asked to select the top five factors they believed contributed the most to fatal and serious injuries from a given list of fourteen different factors. The results of this survey indicated speeding as being perceived by the community as a prevalent issue, with 43% of the respondents selecting the factor of 'motorist driving too fast' among their top five contributing factors.

Additionally, comments left in the write-in portion of the survey indicated speeding as a concern, with citizens requesting enforcement and traffic calming measures. The results of the survey and comment map are included as an appendix to the LRSP.

Review of SE Ocala Neighborhood Traffic Calming Study

The SE Ocala Neighborhood Traffic Calming Study, as discussed in **Section 1** was completed for a southeast portion of the City in 2024. This traffic calming study included the collection of traffic volume and speed data for 37 separate locations on eight roadways within the study area.

Of the 37 locations where speed data collection was performed, 23 locations indicated 85th percentile speeds measuring at least 4 mph higher than the posted speed. Five locations indicated an 85th percentile speed greater than 8 mph over the post speed limit. Of the five locations with significant speeding, four of them were a local, two-lane undivided roadway, and one was a five-lane roadway with a center two-way left turn lane.

2.3.3 Other Issues Identified

This section describes other identified issues that may affect the credibility and enforceability of speed limits, as well as issues relating to the implementation of the design, safe operation, and maintenance of roadways to reduce unsafe speeds.

The following describes the additional identified issues considered as part of the systemwide problem identification process:

Speed Limit Setting:

Section 66-32(C)(12) of the City of Ocala Code of Ordinances grants the City's traffic engineer the authority to "determine and designate, based on an engineering study and criteria established by the state department of transportation, maximum or minimum speed limits different from 30 miles per hour upon any of the streets or parts of streets described by ordinance, and install and maintain signs giving notice thereof..."

Section 66-103 of the Code of Ordinances established a schedule of speed limits on specific streets. This schedule can be found in **Appendix B**.

The current practice for setting speed limits in the City of Ocala is based on the 85th percentile speed, per guidance in the 2009 Edition of the Manual of Uniform Traffic Control Devices (MUTCD), as well as the current FDOT Speed Zoning Manual. This existing approach does not take into consideration other factors such as land use, and pedestrian and bicyclists' needs.

However, the most recent edition of the MUTCD (11th Edition), which was recently adopted by FDOT in October 2025, provides updated guidance related to setting speed limits beyond the traditional 85th percentile speed approach. This guidance provides engineers with greater flexibility in determining appropriate speed limits

“Speed zones (other than statutory speed limits) shall only be established on the basis of an engineering study that has been performed in accordance with traffic engineering practices. The engineering study shall consider the roadway context.” MUTCD Section 2B21, paragraph 6

and includes guidance on setting speed limits based on a context-sensitive approach.

MUTCD 11th Edition states that a range of factors can influence the speed limit determined in the engineering study, such as land use context, pedestrian and bicycle activity, crash history, intersection spacing, driveway history, roadway geometry, roadside conditions, roadway functional classification, traffic volume, and observed speeds. This practice outlined in the latest edition of the MUTCD has not yet been implemented as part of the City's speed limit setting process.

The FDOT Speed Zoning Manual is currently being updated to conform to this newest MUTCD speed limit setting guidance. At the time of writing, there was no timeframe provided by the Central Office for when this might be completed, since

any revisions must go through the state legislative rule making change review process.

The National Association of City Transportation Officials (NACTO) has published a 2024 City Limits Quick Guide following guidance established by the MUTCD 11th Edition and includes guidance for conducting a “safe speed study” in urban areas. The NACTO City Limits Quick Guide is included in **Appendix C**.

This SMTCP aims to develop context-sensitive strategies to manage speeds within the City of Ocala by considering updated approaches and encouraging safer speeds through speed limit setting and modifications to the roadway and environment.

Posted Speed Correlation to Design Speeds:

The design speed of a roadway dictates the design of geometric roadway features. The design speed is distinct from the concepts of posted speed limits and target speeds. The posted speed is the legal limit of vehicular travel speeds; the target speed of a roadway is considered the highest speed at which a vehicle should travel considering the surrounding context of the roadway.

As a general practice, the City of Ocala typically sets the posted speed limit at 5 mph below the design speed. The FDOT Florida Design Manual (FDM) Section 202 provides guidance on the selection of design speeds. Ideally, for low-speed roadways (45 mph or less), the target speed, posted speed, and design speed should all be same.

Posted speed limits are only a small factor in a driver’s determination of driving speed, with higher speeds often encouraged by design cues, proving detrimental to speed management if the design speed of the roadway is a higher speed than the posted limit.

2.4 Systemwide Issues

Based on the systemwide analysis, the following roadway types, contributing factors, and additional design, implementation, and policy concerns were identified to be addressed by the SMTCP:

- Speed-related crashes on urban, two-lane undivided roadways
- Speed-related crashes on urban, four-lane divided roadways
- Speed-related crashes on horizontal curves
- Speed-related crashes by teenage drivers
- Nighttime speed-related crashes
- Posted and Design Speed setting
- Data collection issues
- Outreach and transparency with enforcement efforts and speed data collection
- Community perception of speeding as an issue within the City
- Driver compliance with speed limits on local roadways

3. Action Items, Strategies and Countermeasures

This chapter summarizes the current efforts toward reducing speeds, and describes action items that may be used to address identified problems, select and implement strategies and countermeasures, and to systematically assess and treat roadways. Strategies and countermeasures include systemwide applications and approaches based on the analysis performed in **Section 2**, as well as the application of specific countermeasures on high priority segments based on roadway types.

3.1 Current Speed Management Efforts

Existing efforts were reviewed to better align the SMTCP with and support on-going efforts. Additionally, existing efforts were reviewed to determine opportunities for improvement in speed management within the City. The following subsections summarize the current efforts at the state, district, and local level.

3.1.1 Efforts at the State Level

Super Speeder Law: Adopted on July 1st, 2025, Florida's Super Speeder law addresses the rising issue of speeding within the state and outlines strict consequences for drivers who reach speeds 50 miles per hour or more over the posted speed limit or those who exceed a speed of 100 miles per hour. These consequences include but are not limited to fines, potential jail time, and a mandatory court appearance.

Speed Cameras in School Zones: House Bill 657 was approved by the governor in 2023 and allows for county or municipalities to enforce speed limits in school zones through a speed detection system, such as a speed camera. Multiple counties and cities such as Hillsborough County and the City of Eustis have recently implemented speed camera programs for school zones. These jurisdictions have experienced success with lower speeds and greater speed limit compliance.

FDOT's Target Zero Initiative: As part of the Target Zero Initiative, a campaign was launched with a focus on educating drivers about the risk associated with speeding and encouraging safer driving behaviors. This includes resources such as guides on how to enable do-not-disturb auto replies on smartphones while driving, custom music playlists, and shareable images to post on social media.

FDOT's Speeding and Aggressive Driving Efforts: FDOT has created graphics for social media as well as tip cards that serve as educational materials warning drivers of the dangers of speeding and aggressive driving. These resources are available for use by counties and municipalities and may be particularly useful during traffic stops by police departments.

FDOT's Florida SHSP: Speeding and aggressive driving is included as an emphasis area in the 2021 Florida SHSP. This plan was summarized in Section 1.3.2 above.

3.1.2 Efforts at the District Level

FDOT District Five's CFSSP: As described in Section 1.3.3 above, this plan supports Florida's SHSP efforts in reducing fatal and serious injuries and serves as an action-oriented plan to build upon the Vision Zero efforts already being done by local agency partners. Action Steps were developed as part of the CFSSP, including tasks centered around improving speed data collection and speed enforcement. A Steering Committee was formed to guide progress and provide input on the action items of the CFSSP. The City of Ocala is currently a participating member of the Steering Committee as a key stakeholder in the plan.

3.1.3 City of Ocala's Efforts

The City of Ocala has addressed speeding and the need for speed management through several methods. A meeting was held with both the City of Ocala Engineering Division and the OPD on October 1, 2025, at beginning of the plan development process, to determine current efforts already in place to promote safer speeds. Details of the current efforts and procedures supported by the City of Ocala's Engineering Division and the OPD follow.

Ocala Engineering Division Efforts:

- Speed Hump Program: The City of Ocala currently has a speed hump program with published Speed Hump Guidelines for the installation of speed humps for traffic calming. These guidelines outline the criteria for installation of speed humps and speed hump specifications.
- SE Ocala Neighborhood Traffic Calming Study: In 2024, the City of Ocala performed a traffic calming study for a southeast area of the city. The study

focused on the more heavily traveled roadways within the study area but was also developed with the goal that the recommended traffic calming measures and prioritization criteria may be used for other residential streets and neighborhoods in City. The purpose of this study was to evaluate roadways for potential safety improvements to promote lower speeds and improve multi-modal travel. The following roadways were evaluated as part of the traffic calming study:

- E Fort King Street
- SE 5th Street
- SE 8th Street
- SE 11th Avenue
- SE 18th Avenue
- SE 22nd Avenue

That study analyzed traffic volumes, speed data, and crash data to determine targeted traffic calming treatments to address specific issues for each evaluated roadway. The study also included a public involvement effort which involved community meetings to obtain feedback from City residents. From the public involvement effort, it was highlighted that residents were in favor of the addition of speed humps on specific roadways and requested speed study and traffic calming measures for other areas within the City.

- Use of Speed Trailers: The City's Engineering Division currently utilizes one speed trailer and indicates a need for a second trailer.

Ocala Police Department Enforcement Efforts:

- Investigative System: The City has implemented a citizen complaint system to allow residents to report speeding incidents. The OPD Traffic Unit has taken an active role in investigating the complaints and may coordinate with the Ocala Engineering Division related to environmental issues such as sight-line issues. Additionally, Ocala's Engineering Division may coordinate with the OPD regarding speed enforcement efforts and may target specific timeframes based on speed studies. A hot-spot map is available that

documents traffic stops performed by the OPD; however, this map includes all traffic stops without the ability to differentiate stops related to speeding.

- *Use of Speed Trailers:* The OPD utilizes speed trailers to collect speed data and sets them in speed-problematic areas before undertaking speed enforcement efforts.
- *Operation Southern Slow Down:* Operation Southern Slow Down is a week-long, annual speed enforcement and public safety campaign that primarily involves the states of Alabama, Florida, Georgia, South Carolina, and Tennessee. This campaign is performed as a partnership between state law enforcement and the National Highway Safety Administration (NHTSA). The OPD has participated in and performed approximately 500 traffic stops in 2025 as part of this safety campaign.
- *Distribution of Educational Materials at Traffic Stops:* When performing traffic stops, officers from the OPD often distribute educational flyers on speeding and aggressive driving, many times in lieu of tickets. These educational materials include flyers available from FDOT's ongoing Target Zero campaign and speeding and aggressive driving campaigns. Road users are often receptive to the educational materials provided during traffic stops.
- *Other speeding and aggressive driving campaigns:* OPD regularly publishes educational social media posts focused on speeding and driver safety. Additionally, the OPD regularly participates in safety campaigns promoted by the Marion County Sheriff's Office (MCSO) and the Florida Highway Patrol (FHP).
- *FDOT State Safety Office Subgrant Program:* The OPD was awarded an FDOT State Safety Office subgrant for speeding and aggressive driving enforcement. These grants are offered by FDOT and are awarded to eligible organizations, such as law enforcement agencies, to help fund efforts such as increasing enforcement, public education, and purchasing of equipment. Additionally, the OPD was recently awarded a one-year grant with a focus on pedestrian safety and crosswalk operations. This grant funds high-visibility crosswalk enforcement in coordination with Bike/Walk Central Florida's Best Foot Forward pedestrian safety program.

3.2 Systemwide Actions and Strategies

This SMTCP provides system-wide solutions and strategies to proactively improve speed management practices within the City of Ocala, including through the improvement of data collection, communication and outreach, speed limit setting, and the planning and design of roadways.

A key focus of the plan is to consider the current and future land use and mobility needs of the City, and to build support among the public to improve driver compliance with safer speeds. Enforcement and public outreach are key components of the plan necessary to supplement design and engineering countermeasures to achieve safer operating speeds as well as to build a safety culture through transparency, trust, and commitment.

Tables 3-1 to 3-4 describe strategies and action items that may be used to address city-wide speed management issues, with a focus on the issues identified during the problem identification analysis.

Table 3-1: Strategy 1 – Improve Data Collection and Sharing

Strategy 1 Data Collection
This strategy focuses on improving the collection and distribution of speed safety data to inform a data- driven approach to speed management within the City.
Action Items
<ul style="list-style-type: none"> • Enhance mapping of traffic stops to include the distinction of and the ability to filter for speed-related traffic stops. • Procure additional equipment for speed data collection, including speed trailers for both the Engineering Division and the OPD. • Investigate emerging technologies to aid in the collection of speed data and speed limit enforcement. • Develop a standard operating procedure to monitor and screen roadways for speeding concerns. • Continue to utilize Urban SDK speed data software to identify streets where speeding is occurring and to prioritize locations for action. • Review speed-related crash data using Signal Four Analytics on a monthly basis • Utilize data collection tools and methods to identify hot-spot areas for targeted enforcement • Perform before/after studies to evaluate the effectiveness of implemented speed management strategies • Continue collaboration between the Engineering Division and the OPD in the sharing of data related to speed studies and speed-related traffic enforcement.
Issues to be Addressed
<ul style="list-style-type: none"> • Inability to filter speed-related traffic stops in hot-spot mapping • Need for regular tracking of speed and speed-related crash data • Need for additional equipment for the Engineering Division to evaluate speeding concerns

Table 3-2: Strategy 2 – Expand Communication and Outreach

Strategy 2 Communication and Outreach
<p>This strategy focuses on supporting and reinforcing existing communication efforts in place between City departments, as well as focusing on community outreach to strengthen the safety culture through the lens of speed management.</p>
Action Items
<ul style="list-style-type: none"> • Continue to actively participate in local, state, and regional speed enforcement campaigns • Participate in speed management campaigns with a focus on pedestrian and school zone safety • Use OPD community engagement educational presentations or school outreach for points toward safety equipment through FDOT’s TEAMS program • Publicize and notify the community on active speeding enforcement campaigns and high-visibility enforcement at targeted locations • Publicly post information online related to current speed data collection and speed-related crashes and traffic stops • Create an online dashboard to provide updates on completed speed management projects • Engage local business and stakeholders to support speed management efforts • Leverage free existing speeding safety campaign resources from FDOT and NHTSA • Develop a speeding campaign schedule and create a dedicated team to disseminate related educational material • Promote National Teen Driver Safety Week in October through targeted social media, outreach, and education
Issues to be Addressed
<ul style="list-style-type: none"> • Transparency with enforcement efforts • Transparency with speed management efforts • Need for public awareness of dangers associated with speeding • High rate of teen drivers involved in speed-related crashes

Table 3-3: Strategy 3 – Improve Posted and Design Speed Setting

Strategy 3 Speed Limit and Design Speed Setting
This strategy focuses on improving the process for setting speed limits on City-owned roadways. This strategy also includes aligning the posted speed and design speed on new or redesigned roadways to improve speed management and driver compliance.
Action Items
<ul style="list-style-type: none"> • Follow updated guidance in speed limit setting to consider the context and land use of the roadway and pedestrian/bicyclist needs • Adjust speed limit setting policy for new or redesigned low-speed (45-mph or less) roadways to align the posted speed limit with a context sensitive design speed • Develop and adopt a process for assessing existing speed limits for context appropriateness • Conduct training on speed limit setting to decision-makers and/or practitioners
Issues to be Addressed
<ul style="list-style-type: none"> • Design speeds higher than posted speed limits, leading to issues in driver compliance and enforcement • Need for consideration of the surrounding context of a roadway when setting speed limits in accordance with more recent MUTCD flexibility

Table 3-4: Strategy 4 – Plan/Design for Speed Management

Strategy 4 Plan/Design for Speed Management
This strategy focuses on improving the planning and design process to support speed management efforts, including the review of plans, implementation of design countermeasures, and the maintenance of speed management devices.
Action Items
<ul style="list-style-type: none"> • Develop a plan review process that evaluates design compliance with the intended operating speed of the roadway, and identifies opportunities to implement speed management strategies and safety improvements • Set and review design, posted, and target speeds early in the design process for new or redesigned roadways • Prioritize speed management strategies and designs that will have long-lasting effects, such as roundabouts, fewer lanes, narrower lanes, and shifting alignments • Review policies, procedures and implementation for establishing, signing and enforcing school zones • Update placement of school speed zone pavement messages with roadway resurfacing
Issues to be Addressed
<ul style="list-style-type: none"> • Incompatible roadway design with intended operating speeds or existing land use • Need for improvement of self-enforcing roadway designs • Traffic control devices within reduced speed school zones not up to current FDOT Speed Zoning Manual standards

3.3 Actions, Strategies, and Countermeasures to Address High Priority Segments

In addition to system-wide strategies, strategies were developed as part of this SMTCP to provide appropriate speed management solutions for the identified high priority corridors and related roadway types. This process includes the evaluation of target speeds and applicable countermeasures for use not just on the identified segments, but for similar roadways with future speed management concerns to systemically identify and treat speeding-related problems.

3.3.1 Target Speeds on High Priority Segments

The identification of countermeasures and strategies for speed management relies heavily on the context classification of the roadway, and subsequently the identified target speed.

The target speed of a roadway is the highest desired operating speed based on the surrounding land use, multimodal activity, and vehicular demand of a roadway. In ideal conditions, the target speed should be the same as the posted speed and the design speed on local low-speed (45 mph or less) roadways.

While the City of Ocala does not have designated context classifications for its streets, the FDOT Context Classification Guide was used to assign context classifications for the purposes of this target speed evaluation. Per the FDOT Context Classification Guide, the determination of target speeds begins with the identification of the context classification of the roadway as well as current design and posted speeds. The FDOT FDM provides an allowable design range for each context classification, of which the target speed should start at the lowest end of the range and be increased only with justification.

Table 3-5 summarizes the recommended target speeds for the high priority segments.

Target speeds for the C3 context classifications should range from 35-45 mph per FDOT guidance. For Segments 7 and 10, the target speed is recommended to remain at the posted 30 mph due to the presence of schools. In most cases, it is recommended to maintain the posted speed as the target speed; however, there are a few exceptions.

Table 3-5: Recommended Target Speeds for High-Priority Segments

Segment Number	Street Name	Street From	Street To	Posted Speed Limit	85th Percentile Speed	50th Percentile Speed	10-MPH Pace	Assigned Context Classification	Recommended Target Speed
1	SE 1st Ave	SE 2nd St	SR 40	25	23	17	16-25	C5-Urban Center	25
2	SE 31st St	Lake Weir Ave	SE 19th Ave	45	47	45	38-48	C3R - Suburban Residential	40
3	SW 48th Ave	SW 49th Pl	SW 42nd St	30	45	41	34-44	C3R - Suburban Residential	35
4	NW 27th Ave	NW 3rd St	NW 17th St	35	49	45	40-50	C3C - Suburban Commercial	35
5	SW 7th Rd	SR 200	SW 12th St	35	39	33	28-38	C3C - Suburban Commercial	35
6	SW 13th St	SW 37th Ave	College Park School	35	47	37	36-45	C3R - Suburban Commercial	35
7	SW 43rd Ct	SW 40th St	SW 33rd St	30	49	43	40-50	C3R - Suburban Residential	30
8	SW 19th Ave Rd/ Easy	SW 24th Ave	SW 22nd Ln	40	47	41	36-46	C3C - Suburban Commercial	35
9	SE 36th Ave	SE 15th St	SE 3rd St	40	51	47	42-52	C3R - Suburban Residential	40
10	NW 28th St	NW 2nd Ave	NE 4th Ct	30	37	33	32-41	C3R - Suburban Residential	30
11	SE 25th Ave	NE 16th St	NE 18th Pl	40	47	43	36-45	C3R - Suburban Commercial	40
12	SE 24th St	SE 32nd Ave	SE 36th St	35	45	41	38-48	C3C - Suburban Commercial	35
13	SE Broadway St	SE 1st Ave	SE Watula Ave	25	23	17	12-22	C5-Urban Center	25
14	SW 20th St	SW 54th Ct	SW 47th Ave	45	53	49	44-54	C3R - Suburban Residential	45
15	SW 42nd St	SW 24th Terrace Rd	SW 20th Ave	40	55	51	46-56	C3R - Suburban Residential	40

- For Segment 2, the recommended target speed is 40 mph, below the current 45-mph posted speed, due to the presence of on-street bike lanes.
- For Segment 3, the initial recommended target speed is 35 mph, higher than the current 30-mph posted speed, due to the high 85th percentile speed and to bring the target speed within recommended ranges for the context classification. Achieving the 30-mph posted speed will likely require an incremental approach.
- For Segment 8, the target speed is 35 mph, below the current 40-mph posted speed, due to the presence of mid-block crosswalks.
- For Segment 9, the target speed matches the posted speed of 40 mph; however, the ordinance specifies a 35-mph posted speed for this segment. This discrepancy should be resolved.

3.3.2 Speed Management Strategies

Traditional Strategies - Speed management engineering countermeasures include design elements and adjustments to the geometry of the roadway that encourage safer driver speeds and improve the safety of multimodal transportation. Speed management strategies were compiled primarily from FDOT's FDM and the online [ITE / Federal Highway Administration \(FHWA\) Traffic Calming e-Primer](#) ("e-Primer"). FDM strategies are based on context classification and target speeds. Reference [FDM Section 202.3](#) for descriptions and graphic representations of the FDM strategies. Fact sheets for e-Primer strategies provide the appropriate applications and photos and/or graphic representations for each, and are included in **Appendix D**. These e-Primer fact sheets describe several of the FDM strategies as well.

Applicable strategies for each of the roadway types and target speed ranges are included in **Tables 3-6** through **Table 3-11**. The strategies included in each table are applicable for use in identifying options for implementation on similar roadways throughout the City. Within each table, those high-priority speed management segments that fit within the roadway type are listed, along with those strategies that are recommended for further evaluation and potential implementation.

Emerging Strategies - In addition to physical traffic calming devices, emerging strategies using traffic signal timing have been used in cities across the country.

The City of Portland, Oregon has included "Rest in Red" as a type of traffic signal operation to help target and interrupt dangerous driving behavior. It is implemented during late night or early morning hours when traffic volumes are lower. All approaches to the signal display red until a vehicle is detected, after which it turns green (assuming no cross-traffic is approaching) for vehicles approaching within the speed limit.

The City of Albuquerque is using "Rest in Red" technology differently than Portland on busy corridors with coordinated traffic signals. Traffic signals will turn from green to red when drivers are detected at approaching speeds higher than the posted speed. Signs are posted on the traffic signal stating "SIGNAL SET FOR XX MPH" encouraging drivers to maintain the posted speed limit.



These technologies can be implemented at relatively low cost at traffic signals already equipped with radar/video detection and advanced traffic controllers.

Similarly, Green Wave technology can be implemented without "Rest in Red" by synchronizing traffic signals so that drivers traveling at the posted speed can hit green lights successively. This signal operation discourages speeding, especially when combined with the "SIGNALS SET FOR XX MPH" sign.

**Table 3-6:
Roadway Type: 1-Lane One-Way, C5
Target Speed: 25 mph**

High-Priority Segment		Applicable Speed Management Strategies																					
		FDM Strategies														Additional ITE /			Other Strategies				
Segment	Limits	Roundabout	On-Street Parking	Chicane	Lane Narrowing	Horizontal Deflection	Street Trees	Short Blocks	Speed Tables	Raised Intersections	Type 1 Raised Crosswalk	Speed Feedback Signs	Bulb-outs	RRFBs	PHBs	Speed Pvmt Markings	Choker	Traffic Circle/Mini-Roundabout	Speed Hump/Speed Cushion	School Zone Upgrades	Rest in Red	Green Wave	
Segment 1: SE 1st Ave	SE 2nd St to SR 40		E					E			X		X			X							X
Segment 13: SE Broadway St	SE 1st Ave to SE Watula Ave		E	E			E	E					X			X		E					

Key:

X – Potential strategy for this segment

X – Recommended strategy for this segment if justified and/or feasible

E – Existing strategy for this segment

**Table 3-7:
Roadway Type: 2-lane Undivided, C3C/C3R
Target Speed: 30-35 mph**

High-Priority Segment		Applicable Speed Management Strategies																		
		FDM Strategies											Additional ITE / FHWA e-Primer Strategies				Other Strategies (Beacons/Signals)			
Segment	Limits	Roundabout	On-Street Parking	Chicane	Lane Narrowing	Horizontal Deflection	Street Trees	Speed Tables	Speed Feedback Signs	Bulb-outs	RRFBs	PHBs	Speed Pymt Markings	Choker	Median Island	Traffic Circle/Mini-Roundabout	Speed Hump/Speed Cushion	School Zone Upgrades	Rest in Red	Green Wave
Segment 5: SW 7th Rd	SR 200 to SW 12th St			X		X	X	X	X		X		X	X		X				
Segment 6: SW 13th St	SW 37th Ave to College Park School			X		X	E	X	X				X	X	E		X	X		
Segment 7: SW 43rd Ct	SW 40th St to SW 33rd St			X		X	E	X	X								X	X		
Segment 10: NW 28th St	NW 2nd Ave to NE 4th Ct	X				E		X			X							X		
Segment 12: SE 24th St	SE 32nd Ave to SE 36th St			X		X	X	X	X		X		X							

Key:

X – Potential strategy for this segment

X – Recommended strategy for this segment if justified and/or feasible

E – Existing strategy for this segment

**Table 3-8:
Roadway Type: 2-Lane Undivided, C3C/C3R
Target Speed: 40-45 mph**

High-Priority Segment		Applicable Speed Management Strategies														
		FDM Strategies									Additional ITE / FHWA e-Primer Strategies			Other Strategies (Beacons/Signals)		
Segment	Limits	Roundabout	Lane Narrowing	Horizontal Deflection	Street Trees	Speed Feedback Signs	Bulb-outs	RRFBs	PHBs	Speed Pvmnt Markings	Choker	Median Island	Traffic Circle/Mini-Roundabout	School Zone Upgrades	Rest in Red	Green Wave
Segment 11: SE 25th Ave	NE 16th St to NE 18th Pl	X		X		X				X		X				

Key:

X – Potential strategy for this segment

X – Recommended strategy for this segment if justified and/or feasible

E – Existing strategy for this segment

**Table 3-9:
Roadway Type: 4-Lane Divided, C3C/C3R
Target Speed: 30-35 mph**

High-Priority Segment		Applicable Speed Management Strategies																	
		FDM Strategies													ITE/e-Primer Strategies		Other Strategies (Beacons/Signals)		
Segment	Limits	Roundabout	On-Street Parking	Chicane	Lane Narrowing	Horizontal Deflection	Street Trees	Speed Tables	Speed Feedback Signs	Pedestrian Refuge Islands	Bulb-outs	RRFBs	PHBs	Speed Pvmnt Markings	Lane Elimination	Speed Hump/Speed Cushion	School Zone Upgrades	Rest in Red	Green Wave
Segment 3: SW 48th Ave	SW 49th Pl to SW 42nd St	E/X				X	E	X	X	E			X	X					
Segment 4: NW 27th Ave*	NW 3rd St to NW 17th St				X	X	X		X									X	
Segment 8: SW 19th Ave Rd/Easy St	SW24th Ave to SW 22nd Ln				X	X	E		X	E			X	X					

*Segment 4 is primarily a 5-lane roadway. Conversion to a 4-lane divided roadway or installation of median islands would be most effective strategies for speed reduction.

Key:

- X – Potential strategy for this segment
- X – Recommended strategy for this segment if justified and/or feasible
- E – Existing strategy for this segment

**Table 3-10:
Roadway Type: 4-Lane Divided, C3C/C3R
Target Speed: 40-45 mph**

High-Priority Segment			Applicable Speed Management Strategies												
			FDM Strategies										ITE/e-Primer Strategy	Other Strategies (Beacons/Signals)	
Segment	Limits	Target Speed	Roundabout	Lane Narrowing	Horizontal Deflection	Street Trees	Speed Feedback Signs	Pedestrian Refuge Islands	Bulb-outs	PHBs	Speed Pymt Markings	Lane Elimination	School Zone Upgrades	Rest in Red	Green Wave
Segment 2: SE 31st St	Lake Weir Ave to SE 19th Ave	40	X	X	X	E	X							X	
Segment 9: SE 36th Ave*	SE 15th St to SE 3rd St	40	X			X		X					X		
Segment 14: SW 20th St	SW 54th Ct to SW 47th Ave	45	X		X	X	X	X					**	X	
Segment 15: SW 42nd St	SW 24th Terrace Rd to SW 20th Ave	40	X	X	X	E	X							X	

*Segment 9 is a 5-lane roadway. Conversion to a 4-lane divided roadway or installation of median islands would be most effective strategies for speed reduction.

** Although not a designated school zone, school-related traffic control device upgrades are planned for Segment 14.

Key:

X – Potential strategy for this segment

X – Recommended strategy for this segment if justified and/or feasible

E – Existing strategy for this segment

**Table 3-11:
Roadway Type: Local Residential Neighborhood Streets
Target Speed: 20-25 mph**

Applicable Speed Management Strategies																
FDM Strategies												Additional ITE / FHWA e-Primer Strategies				Other Strategies
On-Street Parking	Chicane	Lane Narrowing	Street Trees	Speed Tables	Raised Intersections	Raised Crosswalks	Speed Feedback Signs	Ped Refuge Islands	Bulb-outs	RRFBs	Speed Pvmt Markings	Choker	Median Island	Traffic Circle/Mini-Roundabout	Speed Hump/Speed Cushion	School Zone Upgrades
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Key:

X – Applicable strategy

X – Commonly-used effective strategy

4. Traffic Calming

The USDOT Federal Highway Administration provides the following description of traffic calming:

“The primary purpose of traffic calming is to support the livability and vitality of residential and commercial areas through improvements in non-motorist safety, mobility, and comfort. These objectives are typically achieved by reducing vehicle speeds or volumes on a single street or a street network. Traffic calming measures consist of horizontal, vertical, lane narrowing, roadside, and other features that use self-enforcing physical or psycho-perception means to produce desired effects.”

4.1 Purpose of a Traffic Calming Policy

The appropriate application of traffic calming devices improves the quality of life for neighborhood residents and promotes safer conditions for people walking and biking, including school children walking to and from bus stops and schools. The purpose of the City of Ocala’s Traffic Calming Policy (“Policy”) is to provide an appropriate and consistent procedure for addressing traffic calming requests from residents and Homeowner’s Associations (HOAs).

The City of Ocala has developed a Policy that encourages the involvement of City residents in the process toward the development of a traffic calming plan on an eligible City street. The Policy also provides a process so that City resources toward traffic calming are used efficiently and are prioritized toward locations where the need is the greatest.

4.2 Eligibility

This Policy applies only to City-maintained streets that meet the following eligibility criteria:

1. The street must be classified as a local street or minor collector.
2. The street must have a daily traffic volume of 3,000 vehicles per day or less.
3. The street must not have a posted speed limit greater than 35 miles per hour (mph).
4. The speed study must confirm that speeding is occurring at least 5mph above the posted speed, as determined by the 85th percentile speed.
5. **In addition**, a minimum score must be achieved using the scoring criteria outlined in Section 4.3.4 to be eligible for traffic calming.

Streets maintained by the City of Ocala with confirmed speeding, as determined by the speed study, but that do not meet functional classification, traffic volume, or posted speed criteria may still be considered for speed management strategies; however, strategies considered would be appropriate to the roadway operating conditions and would not follow the process of this Policy.

Note: The City Engineer may modify specific technical eligibility requirements to meet site-specific conditions, provided that such modifications are based on sound engineering judgment, fulfill the intended purpose of the requirements, and do not adversely affect public safety.

4.3 The Traffic Calming Approval Process

4.3.1 How to Submit a Traffic Calming Request

The first step in the traffic calming process is to apply to the City Engineer. The application is available in **Appendix E** or can be accessed from the City of Ocala website.

The citizen submitting the application must agree to be the representative for the residents and/or business owners along the street of the request and be the point of contact for City staff through the process.

The application must indicate the street where traffic calming is requested and describe the limits by indicating cross streets. A description of the concern may be included in the application.

The application document includes a petition form that must be completed by residents and/or business owners requesting that a traffic calming study be initiated. The petition must include signatures representing 2/3 or more (67% or greater) of properties within the limits of the request for traffic calming. The signature of a renter in a residential neighborhood will be acceptable for the petition, although ultimate approval of the traffic calming plan must come from the property owner. Only one signature per property must be included on the petition.

The application also includes a verification statement that must be completed and signed by the applicant verifying that petition signatures are valid.

4.3.2 City Petition Verification and Confirmation of Study Eligibility

Once the application is submitted with the petition and verification form, City staff will verify the minimum percentage of signatures has been obtained and that no more than one signature per property is included toward the requirements. Staff will also confirm that the street meets the street type requirement as a local street or minor collector with a posted speed of 35 mph or less. Coordination with the City Fire Marshal is required to confirm that the street is not a primary emergency response or evacuation route.

Once confirmed, the City Engineer or Deputy City Engineer may approve the initiation of a traffic study. The City will notify the applicant by email of whether the application requirements have been satisfied and whether a traffic study will be initiated. Notification should include an indication of when the traffic study will begin and the expected timeline for completion.

Note: The City Engineer can initiate a traffic study without a petition if it is deemed in the best interest of public safety.

4.3.3 Traffic Study Components

Field Review

The traffic study will begin with a field review by City staff or its engineering consultants to observe traffic operating conditions and travel patterns, and to gather existing conditions information such as roadway width, presence of curb and gutter or paved shoulders, posted speed limit, and other existing traffic control devices or roadway conditions. This is a required component of a traffic calming study.

Crash Data

Crash reports for the study street will be collected for the most recent 5-year period available through the Signal Four Analytics database. Crash history may be summarized through collision summaries and collision diagrams. This is a required component of a traffic calming study.

Traffic Volume and Speed Data

Traffic volume and speed data will be collected for the study street and may be collected for adjacent streets if considered appropriate and/or cut-through traffic is a reported issue. A 24-hour traffic count will be collected to determine the average daily traffic volume. A speed study will be conducted to determine the 85th percentile speed, the 50th percentile speed, and the 10-mph pace. Traffic volume and speed data are required components of a traffic calming study.

Intersection Turning Movement Counts

Intersection turning movement counts may be collected to provide additional insight into the potential for implementing alternative methods of traffic control that may help to reduce cut-through traffic. Although intersection turning movement counts are not required for all traffic calming studies, 8-hour counts are typically collected to support justification or warrants for changes in traffic control. Counts should include not only vehicles, but pedestrians and bicyclists as well.

Origin/Destination Study

An origin/destination study may be an additional component of a traffic calming study, at the discretion of the City, if cut-through traffic has been reported.

4.3.4 Eligibility for Traffic Calming under the Policy

All traffic data collection will assist the City to determine eligibility for traffic calming under this Policy. To be eligible for traffic calming under this Policy, a minimum score of eight (8) points should be achieved using the following scoring criteria.

- Crash History
 - 1 point for each crash within the last 3 years (up to 5 points)
- 85th Percentile Speed (up to 10 points)
 - 0-4 mph greater than posted (ineligible)
 - 5-7 mph greater than posted (3 points)
 - 8-10 mph greater than posted (5 points)
 - More than 10 mph greater than posted (5 points plus one point for each mph over 10, up to 10 points.)

- Traffic Volume (up to 5 points)
 - Up to 400 vehicles per day (1 point)
 - 401 – 1000 vehicles per (2 points)
 - 1,001 – 2,000 vehicles per day (3 points)
 - 2,001 – 3,000 vehicles per day (5 points)

4.3.5 Alternatives for Consideration

If the street is determined to be ineligible for traffic calming under this Policy, City staff will advise if there are alternatives that may be considered.

Examples include increased police presence or speed enforcement from law enforcement, placement of speed trailers with speed feedback information to drivers, or education and awareness through HOA or neighborhood meetings and/or neighborhood flyers to spread the safety message.

If speeding is an issue on a street with a traffic volume greater than 3,000 vehicles per day, other speed management strategies outside this Policy may be more appropriate.

4.3.6 Development of a Formal Traffic Calming Plan

The field review and traffic data collected as part of the traffic calming study assist the City in identifying causes or conditions contributing to the reported speeding issue, and the traffic calming strategies that may be most effective.

There are several traffic calming devices and strategies that may be considered for implementation on low-speed local roadways and minor collectors where speeding has been confirmed.

These include the following devices:

- Chicane
- Choker
- Lane Narrowing or Lane Elimination
- Median Island
- Raised Pedestrian Crosswalk
- Traffic Circle/Mini-Roundabout
- Speed Hump/Speed Table/Speed Cushion

Descriptions of each of these devices, as well as their applicability and effectiveness, are included in **Appendix D**.

It is important to note that, per the *Manual on Uniform Traffic Control Devices* (MUTCD 11th Edition, Section 2B.06), the installation of stop signs is not to be used for speed control. Rather, stop signs are used to assign right-of-way. In fact, a study conducted by Beaubien (1989) found that inappropriate use of stop signs leads to an increase in speeding between stop signs to make up for time “lost” at stop signs.

The City Engineer, or designee, will determine the impact area boundary of the proposed draft traffic calming plan, which may extend beyond the studied segment.

4.3.7 Public Meeting

A public meeting should be conducted for those studies where traffic calming is being considered on an areawide basis. Traffic calming studies for individual streets in a neighborhood do not require a public meeting. Once a draft traffic calming plan has been prepared for an areawide traffic calming study, the City will schedule a public meeting and notify all property owners within the impact area by mail. At this meeting, City staff will present the results of the traffic study, the recommended traffic calming devices and their locations for placement and explain why the devices were selected. Staff will hear comments from the residents and discuss any concerns about the plan. Reasonable adjustments to the plan may be considered, if feasible.

4.3.8 Ballot Voting

Once the traffic calming plan has been finalized, City staff will prepare a document outlining the traffic calming plan, providing a map of proposed traffic calming devices, and explaining the voting procedures. All property owners within the plan impact area will receive this document by mail, including a postage paid return ballot.

The property owner shall have 30 calendar days to return the ballot by mail or in person to the Office of the City Engineer.

Ballot Tabulation Procedures

- Each property owner is entitled to one vote. Only property owners may vote; renters or tenants will not be allowed to vote. Owners of multi-family residential properties are entitled to only one vote.
- A minimum of 50% of all City-mailed ballots must be returned and completed per the ballot instructions.
- A minimum of 50% plus one (1) of the returned ballots, a majority vote, must be in favor of the proposed final traffic calming plan for the plan to proceed.

4.3.9 City Engineer Approval of the Traffic Calming Plan

If the required “in-favor” votes are not received, the applicant may request that alternatives be considered, in accordance with **Section 4.3.5** of this Plan.

If the ballot passes with the required “in-favor” votes, staff shall prepare a request for approval to the City Engineer with the appropriate recommendation for the traffic calming plan. The request should include the estimated cost for implementation of the plan, as well as the identified funding source.

4.4 Traffic Calming Project Prioritization for Design and Implementation

Once approved by the City Engineer, the project will be scored for prioritization of traffic calming projects for design and implementation funding.

The following prioritization scoring procedures will be followed. Points will be assigned to various criteria, with a maximum of 50 available points.

4.4.1 Project Prioritization Scoring Categories

Additional points may be added to the base score achieved during the determination of eligibility following the criteria outlined in **Section 3.4**.

- Crash History
 - 1 point for each additional crash over 5 crashes within the last 3 years (up to 5 points)

- Proximity to schools, parks, or other pedestrian generators (up to 10 points)
 - 0-10 points based on the presence of pedestrian generators on or near the street.
- Presence of multi-modal features such as sidewalk, bike lanes, shared use paths, marked crosswalks, or transit stops (up to 5 points)
- Neighborhood Support (up to 5 points)
 - 1 point per 20% of properties within the impact area boundary that supported the traffic calming plan by voting “in favor” through returned ballots.
- Pending Road Construction or other improvement projects where traffic calming has the potential to be incorporated (up to 5 points)

4.4.2 Design and Implementation

Upon an approved and prioritized project rising in the ranking to become funded for design and implementation, City staff shall provide the traffic calming plan for the project and formulate a design/construction/inspection plan in accordance with City procedures.

4.4.3 Post Implementation Evaluation

After at least a year following implementation of the traffic calming plan, City staff should conduct an evaluation of the effectiveness of the plan toward achieving the desired reduction in traffic speeds and/or traffic volumes/cut-through traffic. This evaluation should include additional traffic data collection such as traffic counts and a speed study to confirm plan effectiveness.

The City Engineer or Deputy City Engineer will use the results of the additional data collection and feedback from residents and property owners to determine whether adjustments to the traffic calming plan should be considered, up to and including removal of traffic calming devices.

Note: This Policy shall not be interpreted to prevent the City Engineer from implementing measures to improve traffic safety or mitigate traffic operational issues within and around residential neighborhoods.

5.0 Multi-year Implementation Plan

Because of the inherent relationship between speed and severe crashes and fatalities, speed management should be a central tenet of a road safety program that aims to reduce fatalities and injuries. Commitment to sustain a cooperative approach to speed management that balances safety and mobility goals, to SMTCP implementation, and to consider varied points of view by all partners is essential to success. Input from stakeholders may also be essential to communicate the need for speed management, to build support, and to implement strategies deemed appropriate. The following sections outline more details for implementing, evaluating and updating the SMTCP.

5.1 Implementation and Evaluation

The City of Ocala will set annual goals for implementation of projects and completion of SMTCP action items, with evaluations using performance measures and reporting of progress toward implementation over a five-year period. Depending on the action items advanced and available funding, some strategies may require a longer timeframe to fully develop and implement, and some may be ongoing strategies and actions to maintain beyond the five-year period.

The primary measures of program effectiveness are:

- Reduction in speeding related fatalities and serious injuries to zero by 2045
- Number of action items completed
- Number of high-priority segments where identified strategies are implemented
- Reduction in 85th percentile speeds to target speeds for high-priority segments where identified strategies are implemented
- Reductions in operating speed distributions (average speed, 85th percentile speed, percentage of speeders 5 mph or more above limit).

The SMTCP will be evaluated with respect to changes in crashes, especially more severe crashes, and speeding-related crashes compared with trends prior to the SMTCP.

On-going tracking of actions and countermeasures implementation will be used to help document program efforts and provide support for findings related to the program. Near the end of the implementation period, an assessment will be performed to determine whether safety goals of the overall SMTCP were met. Results of the assessment will be communicated to elected officials, stakeholders, and the public through the City of Ocala's

project website. Results will be used toward the development of targets for an updated SMTCP.

5.2 Action Plan Update

The SMTCP will be a Living Document, with additional implementation actions, schedules, and other updates incorporated as needed during the five-year plan period.

Near the end of five years, following the plan evaluation, the SMTCP should be updated incorporating lessons learned from the evaluation and implementation experiences, as well as from an updated problem assessment, and incorporate any new proven speed management strategies and countermeasures.



Appendix A

Spot Speed Study Analysis Forms

State of Florida Department of Transportation
VEHICLE SPOT SPEED STUDY

General Information				Site Information			
Analyst/Observer:		N/A		Location:		SE 1st Ave from SE 2nd St to SR 40	
Agency or Company:		City of Ocala		City:	Ocala	County:	Marion
Date Performed:		Thursday, October 16, 2025		Roadway ID:		N/A	
Time Period From:		10:00 AM	To:	11:00 AM	Milepost:		N/A
Weather/Road Condition:		Overcast, Dry		Posted Speed (mph):		25	
Remarks:				Speed Study Location 1, performed with device			

Vehicles traveling		North bound				Speed (mph)	South bound				Both Directions		
		20	15	10	5		5	10	15	20			
Cum Total	Total										Total	Cum Total	
						≥ 80					0		250
						78 - 79.9					0		250
						76 - 77.9					0		250
						74 - 75.9					0		250
						72 - 73.9					0		250
						70 - 71.9					0		250
						68 - 69.9					0		250
						66 - 67.9					0		250
						64 - 65.9					0		250
						62 - 63.9					0		250
						60 - 61.9					0		250
						58 - 59.9					0		250
						56 - 57.9					0		250
						54 - 55.9					0		250
						52 - 53.9					0		250
						50 - 51.9					0		250
						48 - 49.9					0		250
						46 - 47.9					0		250
						44 - 45.9					0		250
						42 - 43.9					0		250
						40 - 41.9					0		250
						38 - 39.9					0		250
						36 - 37.9					0		250
						34 - 35.9					0		250
						32 - 33.9					0		250
						30 - 31.9					0		250
						28 - 29.9					0		250
						26 - 27.9	4				0	4	250
						24 - 25.9					0		246
						22 - 23.9	#				0	57	246
						20 - 21.9					0		189
						18 - 19.9					0		189
						16 - 17.9	#				0	145	189
						14 - 15.9					0		44
						12 - 13.9	#				0	41	44
						10 - 11.9					0		3
						≤ 10	3				0	3	3
TOTALS												0	250

Travel Direction 1 →	North	Speed Data Summary	South	← Travel Direction 2	Both Directions
	213	85th Percentile Vehicle		85th Percentile Vehicle	213
	23	85th Percentile Speed		85th Percentile Speed	23
	125	50th Percentile Vehicle		50th Percentile Vehicle	125
	17	50th Percentile Speed		50th Percentile Speed	17
	16-26	10 mph pace		10 mph pace	16-26

Warning: Multiple 10 mph paces. Highest range shown

Warning: Multiple 10 mph Paces. Highest range shown

State of Florida Department of Transportation
VEHICLE SPOT SPEED STUDY

General Information				Site Information			
Analyst/Observer:		Adam Burnett		Location:		SW 7th Rd from SR 200 to SW 12th St	
Agency or Company:		Ardurra		City:		Ocala	County: Marion
Date Performed:		Thursday, October 9, 2025		Roadway ID:		N/A	
Time Period From:		1:50 PM	To: 2:55 PM	Milepost:		N/A	Posted Speed (mph): 35
Weather/Road Condition: Sunny, Dry				Remarks: Speed Study Location 5			

Vehicles traveling		North bound				Speed (mph)	South bound				Both Directions			
		20	15	10	5		5	10	15	20				
Cum Total	Total										Total	Cum Total		
0	0					≥ 80					0		207	
0	0					78 - 79.9					0		207	
0	0					76 - 77.9					0		207	
0	0					74 - 75.9					0		207	
0	0					72 - 73.9					0		207	
0	0					70 - 71.9					0		207	
0	0					68 - 69.9					0		207	
0	0					66 - 67.9					0		207	
0	0					64 - 65.9					0		207	
0	0					62 - 63.9					0		207	
0	0					60 - 61.9					0		207	
0	0					58 - 59.9					0		207	
0	0					56 - 57.9					0		207	
0	0					54 - 55.9	1				1	106	1	207
0	0					52 - 53.9					0		206	
0	0					50 - 51.9					0		206	
0	0					48 - 49.9					0		206	
101	2					46 - 47.9	1	1			0		2	206
99	2					44 - 45.9	1	1			1	105	3	204
97	3					42 - 43.9	1	1	1		3	104	6	201
94	5					40 - 41.9	1	1	1	1	4	101	9	195
89	8					38 - 39.9	1	1	1	1	6	97	14	186
81	6					36 - 37.9	1	1	1	1	14	91	20	172
75	19	1	1	1	1	34 - 35.9	1	1	1		4	77	23	152
56	27	8	1	1	1	32 - 33.9	1	1	1	1	16	73	43	129
29	19	1	1	1	1	30 - 31.9	1	1	1	1	22	57	41	86
10	6					28 - 29.9	1	1	1	1	10	35	16	45
4	2					26 - 27.9	1	1	1	1	15	25	17	29
2	1					24 - 25.9	1	1	1	1	8	10	9	12
1	1					22 - 23.9	1	1			2	2	3	3
0	0					20 - 21.9					0			
0	0					18 - 19.9					0			
0	0					16 - 17.9					0			
0	0					14 - 15.9					0			
0	0					12 - 13.9					0			
0	0					10 - 11.9					0			
0	0					≤ 10					0			
101	TOTALS											106	207	

Travel Direction 1 →	North	Speed Data Summary	South	← Travel Direction 2	Both Directions
	86	85th Percentile Vehicle	90	85th Percentile Vehicle	176
	39	85th Percentile Speed	37	85th Percentile Speed	39
	51	50th Percentile Vehicle	53	50th Percentile Vehicle	104
	33	50th Percentile Speed	31	50th Percentile Speed	33
	30-40	10 mph pace	24-34	10 mph pace	28-38
	OK		OK		OK

State of Florida Department of Transportation
VEHICLE SPOT SPEED STUDY

General Information				Site Information			
Analyst/Observer:		N/A		Location:		SW 13th St From Sw 37th Ave to SW 33rd Ave	
Agency or Company:		City of Ocala		City:	Ocala	County:	Marion
Date Performed:		Thursday, October 16, 2025		Roadway ID:		N/A	
Time Period From:		10:00 AM	To:	12:00 PM	Milepost:		N/A
Weather/Road Condition:		Overcast, Dry		Posted Speed (mph):		35	
				Remarks: speed Study Location 6, study performed with device			

Vehicles traveling		West bound				Speed (mph)	Vehicles traveling				East bound		Both Directions			
Cum Total	Total	20	15	10	5		5	10	15	20	Total	Cum Total	Total	Cum Total		
	0					≥ 80							0		300	
	0					78 - 79.9							0		300	
	0					76 - 77.9							0		300	
143	1					74 - 75.9							0	1	300	
	0					72 - 73.9							0		299	
	0					70 - 71.9							0		299	
	0					68 - 69.9							0		299	
	0					66 - 67.9							0		299	
	0					64 - 65.9							0		299	
142	2					62 - 63.9							0	2	299	
	0					60 - 61.9							0		297	
	0					58 - 59.9							0		297	
140	2					56 - 57.9							1	157	3	297
	0					54 - 55.9							0		294	
138	14					52 - 53.9							4	156	18	294
	0					50 - 51.9							0		276	
	0					48 - 49.9							0		276	
124	21					46 - 47.9							12	152	33	276
	0					44 - 45.9							0		243	
103	37					42 - 43.9							33	140	70	243
	0					40 - 41.9							0		173	
	0					38 - 39.9							0		173	
66	27					36 - 37.9							30	107	57	173
	0					34 - 35.9							0		116	
39	20					32 - 33.9							41	77	61	116
	0					30 - 31.9							0		55	
	0					28 - 29.9							0		55	
19	7					26 - 27.9							18	36	25	55
	0					24 - 25.9							0		30	
12	5					22 - 23.9							12	18	17	30
	0					20 - 21.9							0		13	
	0					18 - 19.9							0		13	
7	3					16 - 17.9							2	6	5	13
	0					14 - 15.9							0		8	
4	2					12 - 13.9							2	4	4	8
	0					10 - 11.9							0		4	
2	2					≤ 10							2	2	4	4
143	TOTALS													157	300	

Travel Direction 1 →	West	Speed Data Summary	East	← Travel Direction 2	Both Directions
	122	85th Percentile Vehicle	133	85th Percentile Vehicle	255
	47	85th Percentile Speed	43	85th Percentile Speed	47
	72	50th Percentile Vehicle	79	50th Percentile Vehicle	150
	43	50th Percentile Speed	37	50th Percentile Speed	37
	36-46	10 mph pace	32-42	10 mph pace	36-46
	Warning: Multiple 10 mph paces. Highest range shown		Warning: Multiple 10 mph paces. Highest range shown		Warning: Multiple 10 mph Paces. Highest range shown

State of Florida Department of Transportation
VEHICLE SPOT SPEED STUDY

General Information				Site Information			
Analyst/Observer:	Adam Burnett			Location:	SW 19th Ave Rd from SW 14th Ave to SW 22nd Ln		
Agency or Company:	Ardurra			City:	Ocala	County:	Marion
Date Performed:	Monday, October 13, 2025			Roadway ID:	N/A		
Time Period From:	9:30 AM	To:	10:43 AM	Milepost:	N/A	Posted Speed (mph):	40
Weather/Road Condition:	Sunny, Dry			Remarks:	Speed Study Location 8		

Vehicles traveling		North bound				Speed (mph)	Vehicles traveling				South bound		Both Directions	
Cum Total	Total	20	15	10	5		5	10	15	20	Total	Cum Total	Total	Cum Total
0	0					≥ 80					0			210
0	0					78 - 79.9					0			210
0	0					76 - 77.9					0			210
0	0					74 - 75.9					0			210
0	0					72 - 73.9					0			210
0	0					70 - 71.9					0			210
0	0					68 - 69.9					0			210
0	0					66 - 67.9					0			210
0	0					64 - 65.9					0			210
0	0					62 - 63.9					0			210
0	0					60 - 61.9					0			210
0	0					58 - 59.9					0			210
0	0					56 - 57.9					0			210
0	0					54 - 55.9					0			210
106	3					52 - 53.9	1				1	104	4	210
103	5					50 - 51.9	1	1			2	103	7	206
98	5					48 - 49.9	1	1	1		3	101	8	199
93	8					46 - 47.9	1	1	1	1	9	98	17	191
85	13					44 - 45.9	1	1	1	1	7	89	20	174
72	18		1	1	1	42 - 43.9	1	1	1	1	23	82	41	154
54	24	5	1	1	1	40 - 41.9	1	1	1	1	22	59	46	113
30	19	1	1	1	1	38 - 39.9	1	1	1	1	14	37	33	67
11	7					36 - 37.9	1	1	1	1	15	23	22	34
4	4					34 - 35.9	1	1	1	1	7	8	11	12
0	0					32 - 33.9					0			1
0	0					30 - 31.9	1				1	1	1	1
0	0					28 - 29.9					0			
0	0					26 - 27.9					0			
0	0					24 - 25.9					0			
0	0					22 - 23.9					0			
0	0					20 - 21.9					0			
0	0					18 - 19.9					0			
0	0					16 - 17.9					0			
0	0					14 - 15.9					0			
0	0					12 - 13.9					0			
0	0					10 - 11.9					0			
0	0					≤ 10					0			
106	TOTALS											104	210	

Travel Direction 1 →	North	Speed Data Summary	South	← Travel Direction 2	Both Directions
	90	85th Percentile Vehicle	88	85th Percentile Vehicle	179
	47	85th Percentile Speed	45	85th Percentile Speed	47
	53	50th Percentile Vehicle	52	50th Percentile Vehicle	105
	41	50th Percentile Speed	41	50th Percentile Speed	41
	38-48	10 mph pace	36-46	10 mph pace	36-46
	OK		Warning: Multiple 10 mph paces. Highest range shown		OK

State of Florida Department of Transportation
VEHICLE SPOT SPEED STUDY

General Information				Site Information			
Analyst/Observer:		Adam Burnett & Neida Lopez		Location:		SE 36th Ave from SE 15th St to SE 3rd St	
Agency or Company:		Ardurra		City:		Ocala County: Marion	
Date Performed:		Thursday, October 9, 2025		Roadway ID:		N/A	
Time Period From:		9:30 AM To: 10:15 AM		Milepost:		N/A Posted Speed (mph): 40	
Weather/Road Condition: Cloudy, light rain				Remarks: Speed Study Location 9			

Vehicles traveling		<u>South</u> bound				Speed (mph)	Vehicles traveling				<u>North</u> bound				Both Directions		
Cum Total	Total	20	15	10	5		5	10	15	20	Total	Cum Total	Total	Cum Total			
0	0					≥ 80								0		271	
0	0					78 - 79.9								0		271	
0	0					76 - 77.9								0		271	
0	0					74 - 75.9								0		271	
0	0					72 - 73.9								0		271	
0	0					70 - 71.9								0		271	
0	0					68 - 69.9								0		271	
0	0					66 - 67.9								0		271	
0	0					64 - 65.9								0		271	
0	0					62 - 63.9								0		271	
0	0					60 - 61.9								0		271	
0	0					58 - 59.9								0		271	
0	0					56 - 57.9	1	1						2	101	2	271
170	5					54 - 55.9	1	1	1	1	1			1	99	6	269
165	16		1	1	1	1	1	1	1	1	1	1		6	98	22	263
149	16		1	1	1	1	1	1	1	1	1	1	1	7	92	23	241
133	28	9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	218
105	34	9	7	1	1	1	1	1	1	1	1	1	1	1	1	1	174
71	26	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	127
45	23	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	79
22	9					40 - 41.9	1	1	1	1	1			6	20	15	42
13	7					38 - 39.9	1	1	1	1	1			6	14	13	27
6	2					36 - 37.9	1	1	1					3	8	5	14
4	3					34 - 35.9	1	1	1					1	5	4	9
1	1					32 - 33.9	1	1						2	4	3	5
0	0					30 - 31.9	1	1						2	2	2	2
0	0					28 - 29.9								0			
0	0					26 - 27.9								0			
0	0					24 - 25.9								0			
0	0					22 - 23.9								0			
0	0					20 - 21.9								0			
0	0					18 - 19.9								0			
0	0					16 - 17.9								0			
0	0					14 - 15.9								0			
0	0					12 - 13.9								0			
0	0					10 - 11.9								0			
0	0					≤ 10								0			
170	TOTALS														101	271	

Travel Direction 1 →	South	Speed Data Summary	North	← Travel Direction 2	Both Directions
	145	85th Percentile Vehicle	86	85th Percentile Vehicle	230
	51	85th Percentile Speed	51	85th Percentile Speed	51
	85	50th Percentile Vehicle	51	50th Percentile Vehicle	136
	47	50th Percentile Speed	45	50th Percentile Speed	47
	42-52	10 mph pace	42-52	10 mph pace	42-52
	OK		OK		OK

State of Florida Department of Transportation
VEHICLE SPOT SPEED STUDY

General Information				Site Information			
Analyst/Observer:	N/A			Location:	NW 28th ST From NW 1st Ave to NE 4th Ct		
Agency or Company:	City of Ocala			City:	Ocala	County:	Marion
Date Performed:	Thursday, October 16, 2025			Roadway ID:	N/A		
Time Period From:	10:00 AM	To:	12:00 PM	Milepost:	N/A	Posted Speed (mph):	30
Weather/Road Condition:	Overcast, Dry			Remarks:	Speed Study Location 10, study performed with devi		

Vehicles traveling		West bound				Speed (mph)	Vehicles traveling				East bound		Both Directions			
Cum Total	Total	20	15	10	5		5	10	15	20	Total	Cum Total	Total	Cum Total		
	0					≥ 80							0		273	
	0					78 - 79.9							0		273	
	0					76 - 77.9							0		273	
	0					74 - 75.9							0		273	
	0					72 - 73.9							0		273	
	0					70 - 71.9							0		273	
	0					68 - 69.9							0		273	
	0					66 - 67.9							0		273	
	0					64 - 65.9							0		273	
	0					62 - 63.9							0		273	
	0					60 - 61.9							0		273	
	0					58 - 59.9							0		273	
	0					56 - 57.9							0		273	
	0					54 - 55.9							0		273	
	0					52 - 53.9							0		273	
	0					50 - 51.9							0		273	
	0					48 - 49.9							0		273	
126	5					46 - 47.9	1	1					2	147	7	273
	0					44 - 45.9							0			266
121	6					42 - 43.9	1	5					6	145	12	266
	0					40 - 41.9							0			254
	0					38 - 39.9							0			254
115	39					36 - 37.9	6	9					15	139	54	254
	0					34 - 35.9							0			200
76	55					32 - 33.9	#	#					55	124	110	200
	0					30 - 31.9							0			90
	0					28 - 29.9							0			90
21	13					26 - 27.9	#	#					40	69	53	90
	0					24 - 25.9							0			37
8	4					22 - 23.9	3	1	7	7			14	29	18	37
	0					20 - 21.9							0			19
	0					18 - 19.9							0			19
4	3					16 - 17.9	2	1	5	5			10	15	13	19
	0					14 - 15.9							0			6
1	1					12 - 13.9	3	2					5	5	6	6
	0					10 - 11.9							0			
0	0					≤ 10							0			
126	TOTALS														147	273

Travel Direction 1 →	West	Speed Data Summary	East	← Travel Direction 2	Both Directions
	107	85th Percentile Vehicle	125	85th Percentile Vehicle	232
	37	85th Percentile Speed	37	85th Percentile Speed	37
	63	50th Percentile Vehicle	74	50th Percentile Vehicle	137
	33	50th Percentile Speed	33	50th Percentile Speed	33
	32-42	10 mph pace	26-36	10 mph pace	32-42
	Warning: Multiple 10 mph paces. Highest range shown		Warning: Multiple 10 mph paces. Highest range shown		Warning: Multiple 10 mph Paces. Highest range shown

State of Florida Department of Transportation
VEHICLE SPOT SPEED STUDY

General Information				Site Information			
Analyst/Observer:	N/A			Location:	NE 25th Ave From NE 16th St to NE 18th PI		
Agency or Company:	City of Ocala			City:	Ocala	County:	Marion
Date Performed:	Thursday, October 16, 2025			Roadway ID:	N/A		
Time Period From:	10:00 AM	To:	11:00 AM	Milepost:	N/A	Posted Speed (mph):	40
Weather/Road Condition:	Overcast, Dry			Remarks:	Speed Study Location 11, study performed with device		

Vehicles traveling		North bound				Speed (mph)	Vehicles traveling				South bound		Both Directions		
Cum Total	Total	20	15	10	5		5	10	15	20	Total	Cum Total	Total	Cum Total	
	0					≥ 80					0			513	
	0					78 - 79.9					0			513	
	0					76 - 77.9					0			513	
	0					74 - 75.9	2				2	246	2	513	
	0					72 - 73.9					0			511	
	0					70 - 71.9					0			511	
	0					68 - 69.9					0			511	
267	1					66 - 67.9	1				0		1	511	
	0					64 - 65.9					0			510	
266	3					62 - 63.9	3				0		3	510	
	0					60 - 61.9					0			507	
	0					58 - 59.9					0			507	
263	4					56 - 57.9	4				4	244	8	507	
	0					54 - 55.9					0			499	
259	17					52 - 53.9	# 6				6	240	23	499	
	0					50 - 51.9					0			476	
	0					48 - 49.9					0			476	
242	50					46 - 47.9	#				33	234	83	476	
	0					44 - 45.9					0			393	
192	84					42 - 43.9	#				83	201	167	393	
	0					40 - 41.9					0			226	
	0					38 - 39.9					0			226	
108	73					36 - 37.9	#				79	118	152	226	
	0					34 - 35.9					0			74	
35	24					32 - 33.9	#				25	39	49	74	
	0					30 - 31.9					0			25	
	0					28 - 29.9					0			25	
11	9					26 - 27.9	8				8	14	17	25	
	0					24 - 25.9					0			8	
2	1					22 - 23.9	5				5	6	6	8	
	0					20 - 21.9					0			2	
	0					18 - 19.9					0			2	
	0					16 - 17.9	1				1	1	1	2	
	0					14 - 15.9					0			1	
1	1					12 - 13.9	1				0		1	1	
	0					10 - 11.9					0				
0	0					≤ 10					0				
267	TOTALS													246	513

Travel Direction 1 →	North	Speed Data Summary	South	← Travel Direction 2	Both Directions	
	227	85th Percentile Vehicle	209	85th Percentile Vehicle	436	
	47	85th Percentile Speed	47	85th Percentile Speed	47	
	134	50th Percentile Vehicle	123	50th Percentile Vehicle	257	
	43	50th Percentile Speed	43	50th Percentile Speed	43	
	36-46	10 mph pace	36-46	10 mph pace	36-46	
	Warning: Multiple 10 mph paces. Highest range shown		Warning: Multiple 10 mph paces. Highest range shown		Warning: Multiple 10 mph Paces. Highest range shown	

State of Florida Department of Transportation
VEHICLE SPOT SPEED STUDY

General Information				Site Information			
Analyst/Observer:	N/A			Location:	SE Broadway St From SE 1st Ave To SE Watula Ave		
Agency or Company:	City of Ocala			City:	Ocala	County:	Marion
Date Performed:	Thursday, October 16, 2025			Roadway ID:	N/A		
Time Period From:	1:00 PM	To:	3:00 PM	Milepost:	N/A	Posted Speed (mph):	40
Weather/Road Condition:	Overcast, Dry			Remarks:	Speed Study Location 13, study performed with devi		

Vehicles traveling		West bound				Speed (mph)	Vehicles traveling				East bound		Both Directions	
Cum Total	Total	20	15	10	5		5	10	15	20	Total	Cum Total	Total	Cum Total
0	0					≥ 80					0			242
0	0					78 - 79.9					0			242
0	0					76 - 77.9					0			242
0	0					74 - 75.9					0			242
0	0					72 - 73.9					0			242
0	0					70 - 71.9					0			242
0	0					68 - 69.9					0			242
0	0					66 - 67.9					0			242
0	0					64 - 65.9					0			242
0	0					62 - 63.9					0			242
0	0					60 - 61.9					0			242
0	0					58 - 59.9					0			242
0	0					56 - 57.9					0			242
0	0					54 - 55.9					0			242
0	0					52 - 53.9					0			242
0	0					50 - 51.9					0			242
0	0					48 - 49.9					0			242
0	0					46 - 47.9					0			242
0	0					44 - 45.9					0			242
0	0					42 - 43.9					0			242
0	0					40 - 41.9					0			242
0	0					38 - 39.9					0			242
0	0					36 - 37.9					0			242
0	0					34 - 35.9					0			242
0	0					32 - 33.9					0			242
0	0					30 - 31.9					0			242
0	0					28 - 29.9					0			242
31	1					26 - 27.9	1	1			2	211	3	242
0	0					24 - 25.9					0			239
30	1					22 - 23.9	#	#			42	209	43	239
0	0					20 - 21.9					0			196
0	0					18 - 19.9					0			196
29	10					16 - 17.9	#	#			108	167	118	196
0	0					14 - 15.9					0			78
19	15					12 - 13.9	#	#			58	59	73	78
0	0					10 - 11.9					0			5
4	4					≤ 10	2	2	1		1	1	5	5
31	TOTALS											211	242	

Travel Direction 1 →	West	Speed Data Summary	East	← Travel Direction 2	Both Directions
	26	85th Percentile Vehicle	179	85th Percentile Vehicle	206
	17	85th Percentile Speed	23	85th Percentile Speed	23
	16	50th Percentile Vehicle	106	50th Percentile Vehicle	121
	13	50th Percentile Speed	17	50th Percentile Speed	17
	12-22	10 mph pace	12-22	10 mph pace	12-22
	Warning: Multiple 10 mph paces. Highest range shown		Warning: Multiple 10 mph paces. Highest range shown		Warning: Multiple 10 mph Paces. Highest range shown



Appendix B

City of Ocala Ordinance Speed Schedule

Sec. 66-103. Schedule III: Speed limits.

- (a) *Speed limits on specific streets.* In accordance with subsection 66-32(c)(12) and when signs are erected giving notice thereof, the speed limits shall be as set forth in the following schedule upon those streets or portions thereof specified in this subsection:

Street	Speed Limit (mph)
N.E. Third Street:	
From N.E. 12th Avenue to N.E. Silver Springs Boulevard	35
N.E. Seventh Street:	
From N.E. 36th Avenue to east city limits	40
From State Road 40 (Silver Springs Boulevard) to N.E. 36th Avenue	35
From N.E. 46th Court to city limits	45
N.E. Eighth Avenue	35
N.E. Eighth Road	35
N.W. Martin Luther King Avenue:	
From S.W. Broadway to N.W. 14th Street	35
From N.W. 14th Street to north city limits	40
S.W. Martin Luther King Avenue:	
From S.W. Broadway to S.W. Tenth Street	35
From W. Silver Springs Boulevard to S.W. 17th Street	40
From W. Silver Springs Boulevard to N.W. Tenth Street	35
S.W. 17th Street:	
From S.E. Maricamp Road to S.E. 36th Avenue	45
S.W. 17th Street:	
From S.W. Pine Avenue to S.W. Seventh Avenue	40
From S.W. Seventh Avenue to S.W. College Road	45
S.W. 19th Avenue Road:	
From S.W. 17th Street to S.W. 27th Avenue	40
S.W. 20th Street:	
From a point 300 feet west of S.W. 27th Avenue to west city limits	45
N.E. 21st Street:	
From N.E. 36th Avenue to N.E. 46th Avenue	35
N.W. 21st Street:	
From N.W. Martin Luther King Avenue to N.W. 35th Avenue	40
S.E. 22nd Avenue:	
From S.E. 17th Street to S.E. Fort King Street	35
N.E. 25th Avenue:	
From Silver Springs Boulevard to N.E. Third Street	35
From N.E. Third Street to north city limits	40

N.W. 27th Avenue:		
	From N.W. Tenth Street to north city limits	35
S.W. 27th Avenue:		
	From State Road 200 (S.W. College Road) to N.W. Tenth Street	45
N.E. 28th Street:		
	From N.E. First Avenue to N.E. 25th Avenue	35
N.W. 28th Street:		
	From State Road 25 (Pine Avenue) to N.W. First Avenue	35
N.E. 36th Avenue:		
	From East Fort King Street to N.E. 24th Street	35
	From N.E. 24th Street to north city limits	40
S.E. 36th Avenue:		
	From East Fort King Street to S.E. 17th Street	35
	From S.E. 17th Street to S.E. Maricamp Road	40
East Fort King Street:		
	From S.E. 25th Avenue to S.E. 36th Avenue	35
	From S.E. 36th Avenue to east city limits	40
S.E. Fort King Street:		
	From S.E. 11th Avenue to East Fort King Street	35
North Magnolia Avenue		
	From CSX Railroad (N.W. 6th Place) to C.R. 200a	30

(b) *Speed limits generally.* In accordance with subsection 66-32(c)(12) and when signs are erected giving notice thereof, the speed limit shall be as set forth in the following schedule upon these street or portions thereof and at the times specified in this subsection:

- (1) No person shall drive a vehicle on a public street at a speed greater than is reasonable and prudent under the conditions and having regard to the actual and potential hazards then existing. In every event, speed shall be controlled as may be necessary to avoid colliding with any person, vehicle or other conveyance on or entering a public street in compliance with legal requirements and the duty of all persons to use due care.
- (2) Where no special hazard exists, the following speeds shall be lawful, but any speed in excess of such limits shall be unlawful:
 - a. Twenty-five miles per hour in any business district.
 - b. Twenty miles per hour when approaching within a block of or when passing a school during school hours, or when children are going to or leaving school during opening or closing hours, or when approaching and not traversing an intersection or highway, and in or adjacent to public parks.

(Code 1985, § 23-26(c); Ord. No. 1907, § 1, 2-24-87; Ord. No. 1960, § 1, 10-6-87; Ord. No. 2118, § 1, 11-7-89; Ord. No. 2773, § 8, 8-19-97; Ord. No. 5169, § 1, 6-16-03)



Appendix C

NACTO City Limits Quick Guide

CITY LIMITS

Quick Guide on Conducting a Safe Speed Study and Using the Risk Matrix



Using the Quick Guide

In December 2023, FHWA published the 11th Edition of the Manual on Uniform Traffic Control Devices (MUTCD). In this edition, **the MUTCD moves away from using the 85th percentile to set speed zones.** It now requires an engineering study that considers roadway context.

Jurisdictions are able to use speed limit setting tools and methods such as expert systems and those consistent with the safe system approach as part of the required engineering study for a non-statutory speed limit.

“Speed zones (other than statutory speed limits) shall only be established on the basis of an engineering study that has been performed in accordance with traffic engineering practices. The engineering study shall consider the roadway context.”

(MUTCD Section 2B.21, paragraph 6)

First published in 2020, NACTO’s *City Limits* provides cities with clear technical and policy guidance on setting safe speed limits on city streets. It includes a Safe Speed Study methodology that is consistent with a safe systems approach.

This *Quick Guide* demonstrates how to use the Safe Speed Study first published in *City Limits*. **With this tool, engineers analyze a street’s activity level and conflict density in determining the posted speed limit for a speed zone. The resultant speed limit will be compliant with the MUTCD.**

A Safe Speed Study is a contextually sensitive tool for engineers to use in determining a speed zone.

- The Safe Speed Study methodology analyzes **conflict density** and **activity level**, among other contextual factors, to determine the speed limit that will **best minimize the risk** of a person being killed or seriously injured.



CONFLICT DENSITY

How frequently potential conflicts arise on a given street

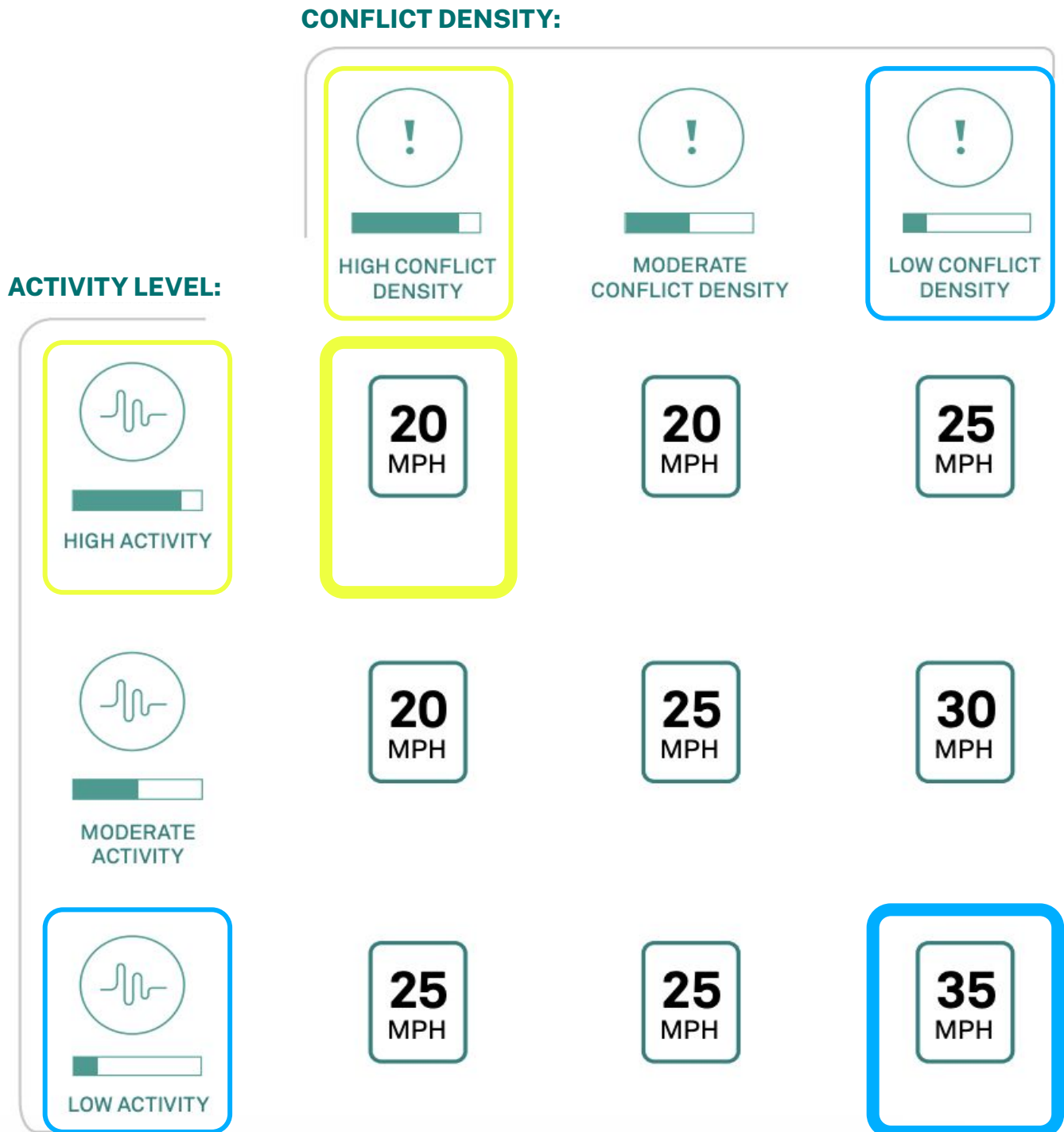


ACTIVITY LEVEL

How active a street currently is or is expected to be

- **High conflict, high activity** streets will require **lower speed limits** since the risk of a crash is high, while somewhat higher speeds can be tolerated on low conflict, low activity streets.
- To conduct a Safe Speed Study:
 - Collect before data
 - Analyze existing conditions
 - Determine best option for speed management
 - Conduct an evaluation
- This *Quick Guide* describes how to use the Risk Matrix to analyze existing conditions. More details are provided in the full-length *City Limits*, available at nacto.org/city-limits.

The risk matrix is based on the idea that **high conflict, high activity** streets will require **lower speed limits** since the risk of a crash is high, while **low conflict, low activity** streets can tolerate **somewhat higher speed limits**.





CONFLICT DENSITY

Two primary factors determine conflict density:

- **modal mixing:** how much physical separation the street offers people walking, biking, and rolling.
- **crossing point density:** how closely spaced intersections and other crossing locations are.



MODAL MIXING

HIGH

- No sidewalks or sidewalks directly adjacent to moving motor vehicle traffic
- Bicycle traffic expected to use a mixed-traffic lane or a designated shared bike/motor vehicle lane (e.g., sharrows)

MODERATE

- Urban Street Design Guide-compliant sidewalk, and/or a curbside loading/parking lane and sidewalk
- If designated as a bike route, a marked bike lane or better
- If not designated as a bike route, a full sidewalk that also permits bicycle use

LOW

- If designated as a bike route, a sidewalk compliant with the Urban Street Design Guide plus a vertically and horizontally protected bike lane, or a shared-use path/trail
- If not designated as a bike route, a full sidewalk that also legally permits bicycle use
- Passengers exiting parked or loading vehicles are not directly in motor vehicle traffic lanes



CROSSING POINT DENSITY

HIGH

3 or more “through” or “X” intersections, “T” intersections, driveways, curb cuts, or other crossing points per ¼ mile

MODERATE

1-3 “through” or “X” intersections, “T” intersections, driveways, curb cuts, or other crossing points per ¼ mile

LOW

0 “through” or “X” intersections, “T” intersections, driveways, curb cuts, or other crossing points per ¼ mile



**ACTIVITY
LEVEL**



How active a street currently is or is expected to be.



HIGH

Streets with lots of existing or expected pedestrian activity, active public spaces, important bike routes or planned bike routes, high curbside demand, and high density of transit stops

- Downtown / Central Business Districts
- Retail corridors
- High density residential and commercial streets

MODERATE

Streets with moderate existing or expected pedestrian activity, moderately used public spaces, some existing or expected bike traffic, frequent driveways, curbside parking/loading, and moderate density of transit stops

- Moderate density residential and commercial streets
- Streets with light retail activity
- Mixed use corridors

LOW

Streets with minimal expected pedestrian volumes, minimal expected or planned bike activity, low curbside demand, and few, if any, transit stops

- Low density industrial and residential streets



Conflict Density Analysis Checklist

IF any of these apply to the street...

No sidewalks

OR

Bicycle traffic in the traffic lane, even where marked or signed (e.g., sharrows)

OR

Sidewalks directly adjacent to moving traffic

OR

≥ 3 "through" or "T" intersections (signalized or unsignalized), major driveways, or other crossing points per 1/4 mile

If NOT, proceed...

...THEN the street has:

HIGH CONFLICT DENSITY

Proceed to the Activity Analysis.

IF the street has...

1-3 "through" or "T" intersections (signalized or unsignalized), major driveways, or other crossing points per 1/4 mile

AND

Curbside loading/parking lane and sidewalk, or a USDG-compliant sidewalk

AND EITHER:

A marked bike lane or better, if designated bike route

OR

A full sidewalk with permissible bike use, if not a designated bike route

If NOT, proceed...

...THEN the street has:

MODERATE CONFLICT DENSITY

Proceed to the Activity Analysis.

IF the street has...

No "through" or "T" intersections (signalized or unsignalized), major driveways, or other crossing points per 1/4 mile

AND

Curbside loading/parking lane and sidewalk, or a USDG-compliant sidewalk

AND

Passengers exiting parked or loading vehicles are not directly in general traffic lanes

AND EITHER:

Protected bike lane, shared use path, or USDG consistent sidewalk, if designated bike route

OR

Full sidewalk with legally permissible bike use, if not designated a bike lane

...THEN the street has:

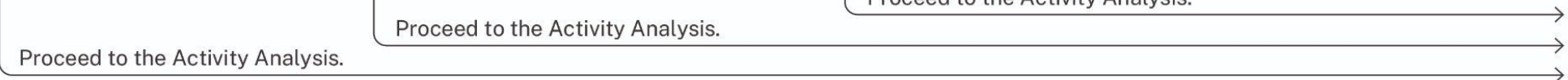
LOW CONFLICT DENSITY

Proceed to the Activity Analysis.

SAMPLE CONFLICT DENSITY METRICS

There are many metrics that a city can use to measure a street's conflict levels. The list below provides a starting point. Cities can set quantitative thresholds based on local conditions.

Pedestrian crossing volume per day or hour	Pedestrians walking in the street per hour
Left turn volume per day or hour	Motor vehicle lane blockage or bike-lane blockage percent per hour
Midblock or uncontrolled-intersection crossings per hour per 1/4 mile	





Activity Level Analysis Checklist

IF the street is any of the following...

- Downtown / Central Business District street
- OR
- Retail corridor
- OR
- High density residential or commercial street

...THEN the street has:

HIGH ACTIVITY

If NOT, proceed...

IF the street is a...

- Moderate density residential or commercial street
- OR
- Street with light retail activity
- OR
- Mixed use corridor

...THEN the street has:

MODERATE ACTIVITY

If NOT, proceed...

IF the street is a...

- Low density industrial or residential street

...THEN the street has:

LOW ACTIVITY

SAMPLE ACTIVITY LEVEL METRICS

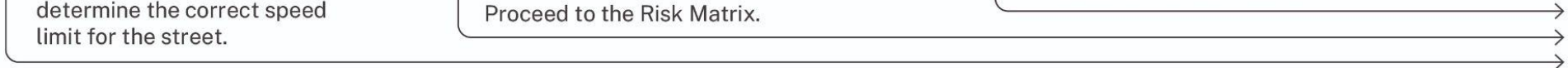
There are many metrics that a city can use to measure a street's activity levels. The list below provides a starting point. Cities can use land use metrics as an alternative in the absence of the volumes below. Cities can set quantitative high, medium, and low activity thresholds based on local conditions.

- Pedestrian sidewalk volume per day or hour
- Scheduled transit stops per hour
- Bicycle volume per day or hour
- Social and public space use volume per day or hour
- Parking or curbside loading maneuvers per hour
- Crash volumes by mode

Proceed to the Risk Matrix to determine the correct speed limit for the street.

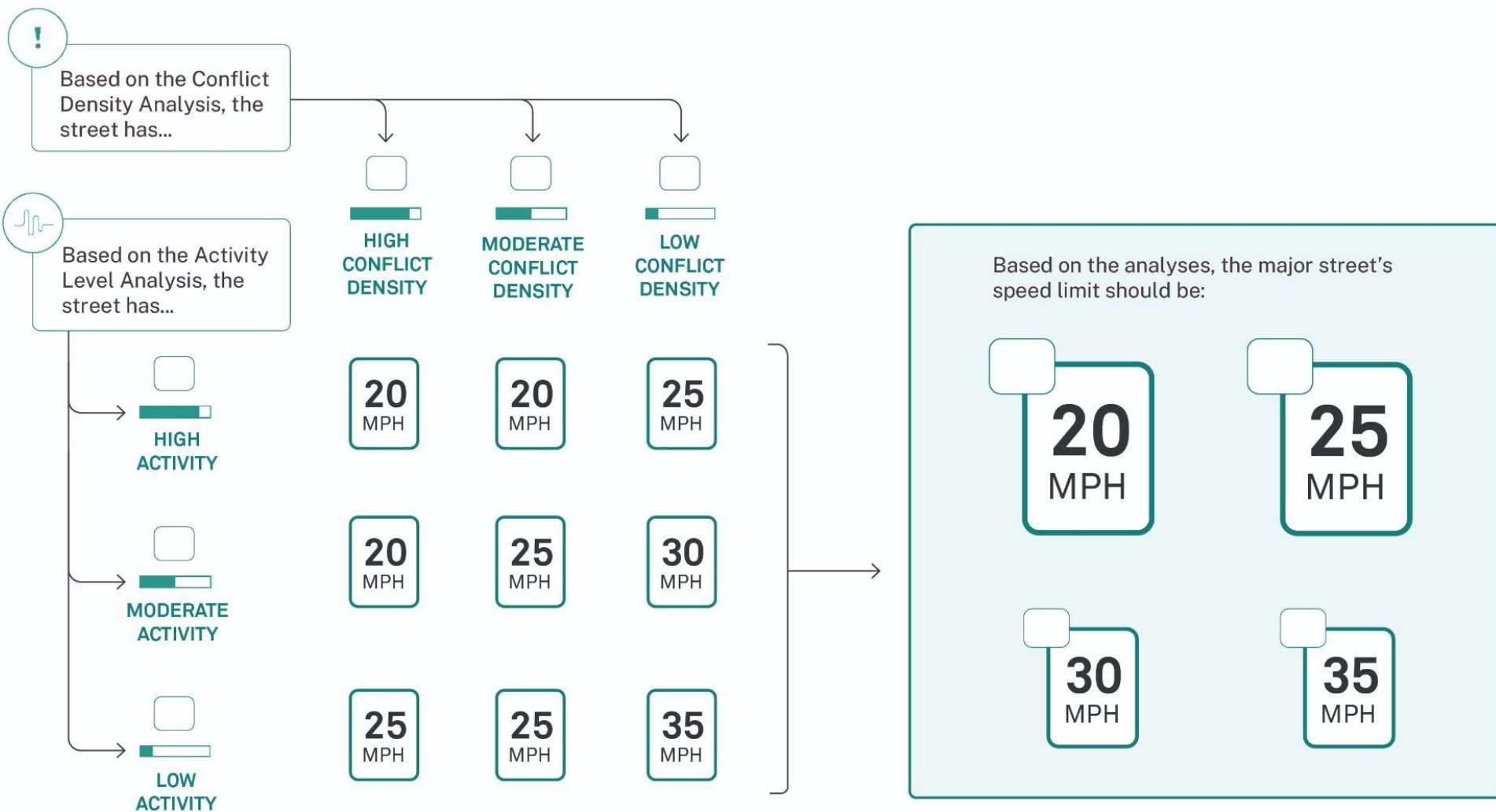
Proceed to the Risk Matrix.

Proceed to the Risk Matrix.





Applying the **Conflict & Activity Level Analysis** to the Risk Matrix





Appendix D

ITE/e-Primer Traffic Calming Fact Sheets

Traffic Calming Fact Sheets

May 2018 Update

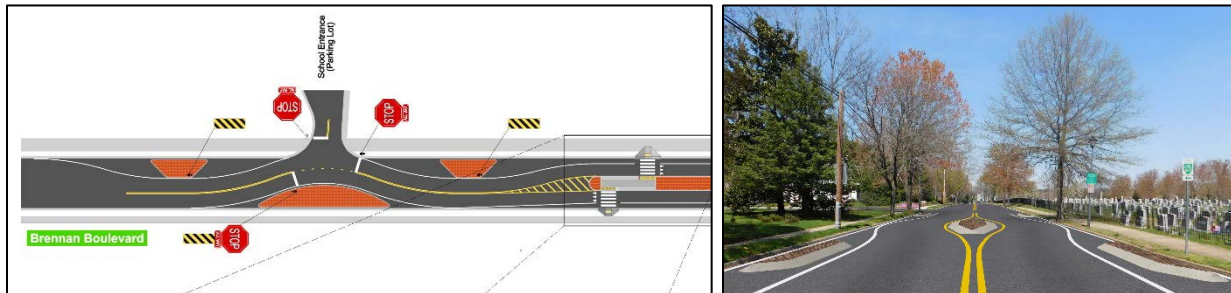
Chicane

Description:

- A series of alternating curves or lane shifts that force a motorist to steer back and forth instead of traveling a straight path
- Also called deviations, serpentines, reversing curves, or twists

Applications:

- Appropriate for mid-block locations but can be an entire block if it is relatively short
- Most effective with equivalent low volumes on both approaches
- Appropriate speed limit is typically 35 mph or less
- Typically, a series of at least three landscaped curb extensions
- Can use alternating on-street parking from one side of a street to the other
- Applicable on one-lane one-way and two-lane two-way roadways
- Can be used with either open or closed (i.e. curb and gutter) cross-section
- Can be used with or without a bicycle facility



(Source: Delaware Department of Transportation)

ITE/FHWA Traffic Calming EPrimer: https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm

Design/Installation Issues:

- Chicanes may still permit speeding by drivers cutting straight paths across the center line
- Minimize relocation of drainage features
- May force bicyclists to share travel lanes with motor vehicles
- Maintain sufficient width for ease of emergency vehicles and truck throughput

Potential Impacts:

- No effect on access, although heavy trucks may experience challenges when negotiating
- Limited data available on impacts to speed and crash risk
- Street sweeping may need to be done manually
- Minimal anticipated volume diversion from street
- May require removal of some on-street parking
- Provides opportunity for landscaping
- Unlikely to require utility relocation
- Not a preferred crosswalk location
- Bus passengers may experience discomfort due to quick successive lateral movements

Emergency Response Issues:

- Appropriate along primary emergency vehicle routes

Typical Cost (2017 dollars):

- Reported costs range between \$8,000 and \$25,000

Traffic Calming Fact Sheets

May 2018 Update

Choker

Description:

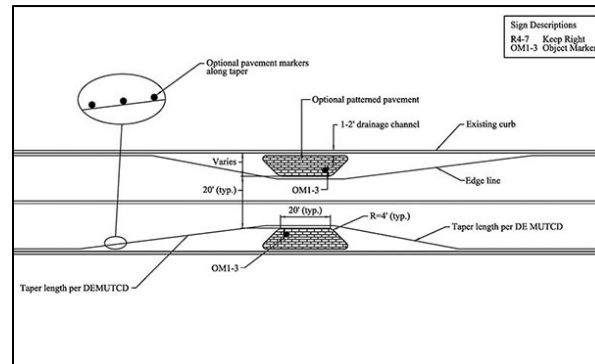
- Curb extension is a lateral horizontal extension of the sidewalk into the street, resulting in a narrower roadway section
- If located at an intersection, it is called a corner extension or a bulb-out
- If located midblock, it is referred to as a choker
- Narrowing of a roadway through the use of curb extensions or roadside islands

Applications:

- Can be created by a pair of curb extensions, often landscaped
- Encourages lower travel speeds by reducing motorist margin of error
- One-lane choker forces two-way traffic to take turns going through the pinch point
- If the pinch point is angled relative to the roadway, it is called an angled choker
- Can be located at any spacing desired
- May be suitable for a mid-block crosswalk
- Appropriate for arterials, collectors, or local streets



(Source: City of An Arbor, Michigan)



(Source: Delaware DOT)

ITE/FHWA Traffic Calming EPrimer: https://safety.fhwa.dot.gov/speedmgt/traffic_caln.cfm

Design/Installation Issues:

- Only applicable for mid-block locations
- Can be used on a one-lane one-way and two-lane two-way street
- Most easily installed on a closed-section road (i.e. curb and gutter)
- Applicable with or without dedicated bicycle facilities
- Applicable on streets with, and can protect, on-street parking
- Appropriate for any speed limit
- Appropriate along bus routes
- Typical width of 6 to 8 feet; offset from through traffic by approximately 1.5 feet
- Locations near streetlights are preferable
- Length of choker island should be at least 20 feet

Potential Impacts:

- Encourages lower speeds by funneling it through the pinch point
- Can result in shorter pedestrian crossing distances if a mid-block crossing is provided
- May force bicyclists and motor vehicles to share the travel lane
- May require some parking removal
- May require relocation of drainage features and utilities

Emergency Response Issues:

- Retains sufficient width for ease of use for emergency vehicles

Typical Cost (2017 dollars):

- Between \$1,500 and \$20,000, depending on length and width of barriers

Corner Extension/Bulb-Out

Description:

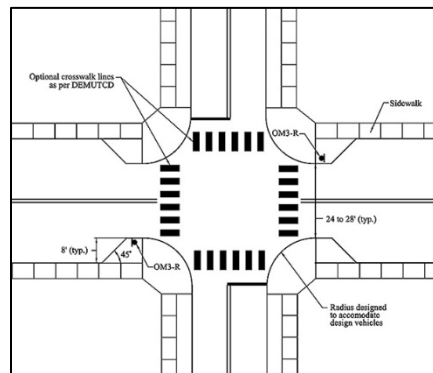
- Horizontal extension of the sidewalk into the street, resulting in a narrower roadway section
- If located at a mid-block location, it is typically called a choker

Applications:

- When combined with on-street parking, a corner extension can create protected parking bays
- Effective method for narrowing pedestrian crossing distances and increase pedestrian visibility
- Appropriate for arterials, collectors, or local streets
- Can be used on one-way and two-way streets
- Installed only on closed-section roads (i.e. curb and gutter)
- Appropriate for any speed, provided an adequate shy distance is provided between the extension and the travel lane
- Adequate turning radii must be provided to use on bus routes



(Source: James Barrera, Horrocks, New Mexico)



(Source: Delaware DOT)

ITE/FHWA Traffic Calming EPrimer: https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm

Design/Installation Issues:

- Effects on vehicle speeds are limited due to lack of deflection
- Must check drainage due to possible gutter realignment
- Major utility relocation may be required, especially drainage inlets
- Typical width between 6 and 8 feet
- Typical offset from travel lane at least 1.5 feet
- Should not extend into bicycle lanes

Potential Impacts:

- Effects on vehicle speeds are limited due to lack of deflection
- Can achieve greater speed reduction if combined with vertical deflection
- Smaller curb radii can slow turning vehicles
- Shorter pedestrian crossing distances can improve pedestrian safety
- More pedestrian waiting areas may become available
- May require some parking removal adjacent to intersections

Emergency Response Issues:

- Retains sufficient width for ease of emergency-vehicle access
- Shortened curb radii may require large turning vehicles to cross centerlines

Typical Cost (2017 dollars):

- Cost between \$1,500 and \$20,000, depending on length and width of barriers

Traffic Calming Fact Sheets

May 2018 Update

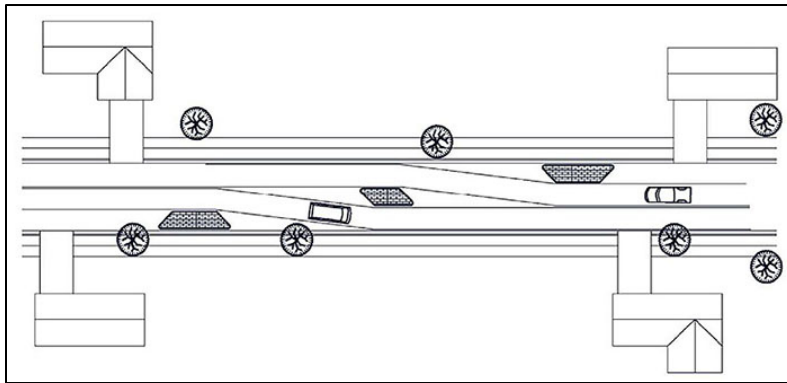
Lateral Shift

Description:

- Realignment of an otherwise straight street that causes travel lanes to shift in at least one direction
- A chicane is a variation of a lateral shift that shifts alignments more than once

Applications:

- Appropriate for local, collector, or arterial roadways
- Appropriate for one-lane one-way and two-lane two-way streets
- Appropriate on roads with or without dedicated bicycle facilities
- Maximum appropriate speed limit is typically 35 mph
- Appropriate along bus transit routes



(Source: Delaware Department of Transportation)



(Source: Google Street View)

ITE/FHWA Traffic Calming EPrimer: https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm

Design/Installation Issues:

- Typically separates opposing traffic through the shift with the aid of a raised median
- Applicable only to mid-block locations
- Can be installed on either open- or closed-section (i.e. curb and gutter) roads
- Location near streetlights preferred
- May require drainage feature relocation
- Should not require utility relocation

Potential Impacts:

- Without islands, motorists could cross the centerline to drive the straightest path possible
- No impact on access
- May require removal of some on-street parking
- Limited data available on impacts on speed, volume diversions, and crash risk
- Provides opportunities for landscaping
- Can provide locations for pedestrian crosswalks

Emergency Response Issues:

- Appropriate along primary emergency vehicle routes or on streets with access to hospitals/emergency medical services, provided vehicles can straddle the street centerline

Typical Cost (2017 dollars):

- Reported costs range between \$8,000 and \$25,000

Traffic Calming Fact Sheets

May 2018 Update

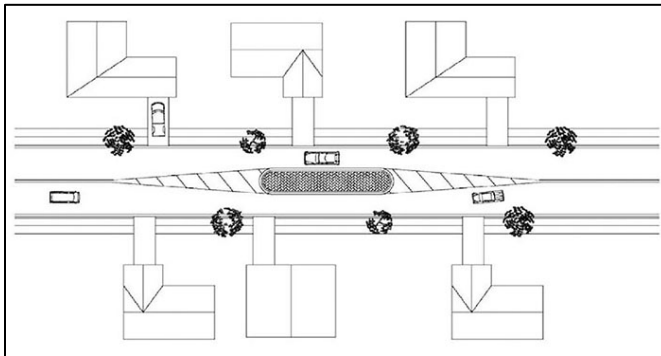
Median Island

Description:

- Raised island located along the street centerline that narrows the travel lanes at that location
- Also called median diverter, intersection barrier, intersection diverter, and island diverter

Applications:

- For use on arterial, collector, or local roads
- Can often double as a pedestrian/bicycle refuge islands if a cut in the island is provided along a marked crosswalk, bike facility, or shared-use trail crossing
- If placed through an intersection, considered a median barrier



(Source: Delaware Department of Transportation)



(Source: James Barrera, Horrocks, New Mexico)

ITE/FHWA Traffic Calming EPrimer: https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm

Design/Installation Issues:

- Potential legal issues associated with blocking a public street (e.g., business or emergency access)
- Barriers may consist of landscaped islands, mountable facilities, walls, gates, side-by-side bollards, or any other obstruction that leave an opening smaller than the width of a passenger car
- Can be placed mid-block or on the approach to an intersection
- Typically installed on a closed-section roadway (i.e. curb and gutter)
- Can be applied on roads with or without sidewalks and/or dedicated bicycle facilities
- Maximum appropriate speed limits vary by locale
- Typically not appropriate near sites that attract large combination trucks

Potential Impacts:

- May impact access to properties adjacent to islands
- No significant impact on vehicle speeds beyond the island
- Little impact on traffic volume diversion
- Safety can be improved without substantially increasing delay
- Shortens pedestrian crossing distances
- Bicyclists may have to share vehicular travel lanes near the island
- May require removal of some on-street parking
- May require relocation of drainage features and utilities

Emergency Response Issues:

- Appropriate along primary emergency vehicle roads or street that provides access to hospitals/emergency medical services

Typical Cost (2017 dollars):

- Cost between \$1,500 and \$10,000, depending on length and width of island

Traffic Calming Fact Sheets

March 2019 Update

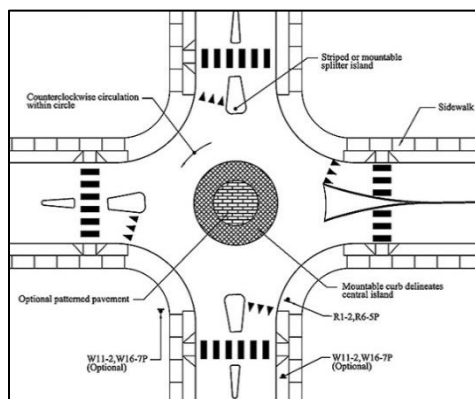
Mini Roundabout

Description:

- Raised islands, placed in unsignalized intersections, around which traffic circulates
- Motorists yield to motorists already in the intersection
- Require drivers to slow to a speed that allows them to comfortably maneuver around them
- Center island of mini roundabout is fully traversable, splitter islands may be fully traversable

Applications:

- Intersections of local and/or collector streets
- One lane each direction entering intersection
- Not typically used at intersections with high volume of large trucks or buses turning left
- Appropriate for low-speed settings



(Source: Delaware DOT)



(Source: Gary Schatz)

ITE/FHWA Traffic Calming EPrimer: https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm

Design/Installation:

- See NCHRP Report 672 for design details
- Typically circular in shape, but may be an oval shape
- Controlled by YIELD signs on all approaches with pedestrian crosswalks, if included, one car-length upstream of YIELD bar
- Preferable for roadway to have urban cross section (i.e., curb and gutter)
- Can be applied to road with on-street parking
- Can be applied to roads both with and without a bicycle facility. Bicycle facilities, if provided, must be separated from the circulatory roadway with physical barriers; cyclists using the circulatory roadway must merge with vehicles. Bicycle facilities are prohibited in the circulatory roadway to prevent right-hook crashes.
- Key design features are the fastest paths and path alignment.

Potential Impacts:

- Slight speed reduction
- Little diversion of traffic
- Bicycle and motorist will share lanes at intersections because of narrowed roadway
- Large vehicles/buses usually drive over the center island for left turns

Emergency Response:

- Emergency vehicles maneuver using the center island at slow speeds

Typical Cost

- Cost is similar to bulb-outs because pedestrian ramps and outside curb lines usually have to be relocated

Traffic Calming Fact Sheets

May 2018 Update

On-Street Parking

Description:

- Allocation of paved space to parking
- Narrows road travel lanes and increases side friction to traffic flow
- Can apply on one or both sides of roadway
- Can be either parallel or angled, but parallel is generally preferred for maximized speed reduction

Applications:

- High likelihood of acceptability for nearly all roadway functional classifications and street functions
- More appropriate in urban or suburban settings
- Can be combined with other traffic calming measures
- Can apply alternating sides of street for chicane effect
- Can combine with curb extensions for protected parking, including landscaping for beautification
- Can apply using time-of-day restrictions to maximize throughput during peak periods
- Can be used on one-way or two-way streets
- Preferable to have a closed-section road (i.e. curb and gutter)
- Appropriate along bus transit routes



(Source: PennDOT Local Technical Assistance Program)



(Source: Google Earth, Fort Collins, CO)

ITE/FHWA Traffic Calming EPrimer: https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm

Design/Installation Issues:

- Appropriate distance needed between travel lane and parking lane
- Impact is directly affected by demand; must have parked vehicles present to be effective
- If used for chicane effect, must verify parking demand to ensure that majority of spaces are occupied when effect is desired most during the day; can use parallel, angled, or combination
- Should not be considered near traffic circles nor roundabouts
- Should not be applied along median island curbs
- For lower-demand locations, can counteract negligible impact with curb extensions or other road-narrowing features

Potential Impacts:

- Can be blocked in by snow during plowing operations; required vehicle removal
- May limit road user visibility and sight distance at driveways/alleys/intersections
- Can put bicyclists at risk of colliding with car doors
- May be impacted if other traffic calming measures are considered or implemented
- Provides buffer between moving vehicles and pedestrian facilities

Emergency Response Issues:

- Preferred by emergency responders to most other traffic calming measures
- Requires consideration of design of parking lanes near hydrants and other emergency features

Traffic Calming Fact Sheets

May 2018 Update



Typical Cost (2017 dollars):

- Approximately \$6000 or less (factor of design specifics and length of application); can be much higher

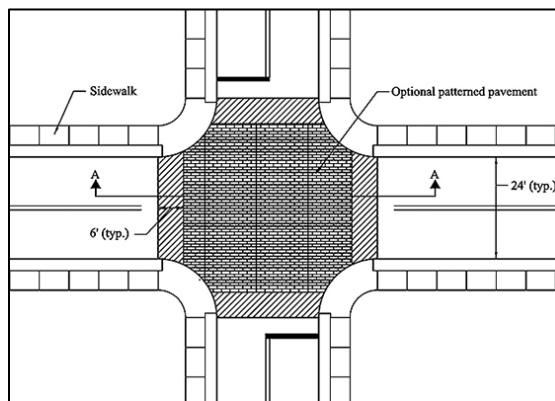
Raised Intersection

Description:

- Flat raised areas covering entire intersections, with ramps on all approaches and often with brick or other textured materials on the flat section and ramps
- Sometimes referred to as raised junctions, intersection humps, or plateaus

Applications:

- Intersections of collector, local, and residential streets
- Typically installed at signalized or all-way stop controlled intersections with high pedestrian crossing demand
- Works well with curb extensions and textured crosswalks
- Often part of an area-wide traffic calming scheme involving both intersecting streets in densely-developed urban areas



(Source: Delaware Department of Transportation)



(Source: Chuck Huffine, Phoenix AZ)

ITE/FHWA Traffic Calming EPrimer: https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm

Design/Installation Issues:

- Used at intersections with a maximum speed limit of 35 mph
- Typically rise to sidewalk level; appropriate if crosswalks exist on all four legs
- Appropriate if a dedicated bicycle facility passes through the intersection
- Detectable warnings and/or color contrasts must be incorporated to differentiate the roadway and the sidewalk
- May require bollards to define edge of roadway
- Storm drainage/underground utility modifications are likely necessary
- Minimum pavement slope of 1 percent to facilitate drainage

Potential Impacts:

- Reduction in through movement speeds likely at intersection
- Reduction in mid-block speeds typically less than 10 percent
- No impact on access
- Can make entire intersections more pedestrian-friendly
- No data available on volume diversion or safety impacts

Emergency Response Issues:

- Slows emergency vehicles
- Appropriate for primary emergency vehicle routes and streets with access to a hospital or emergency medical services

Typical Cost (2017 dollars):

- Costs range between \$15,000 and \$60,000

Traffic Calming Fact Sheets

May 2018 Update



Road Diet (Same as Lane Elimination in the FDM)

Description:

- Revision of lane use or widths to result in one travel lane per direction with minimum practical width, with goal of reducing cross-section; common application involves conversion of four-lane Two-way road to three-lane road – two through lanes and center two-way left-turn lane (TWLTL)
- Can also involve narrowing of existing travel lanes
- Alternate cross-section uses can include dedicated bicycle facilities, left-turn lanes, on-street parking, raised medians, pedestrian refuge islands, sidewalks, etc.

Applications:

- High likelihood of acceptability for nearly all roadway functional classifications
- Can be applied in urban, suburban, or rural settings
- Appropriate for most common urban speed limits
- Can be applied at/near intersections or along road segments
- Appropriate along bus routes



(Source: Chuck Huffine, Phoenix, AZ)



(Source: Chuck Huffine, Denver, CO)

ITE/FHWA Traffic Calming EPrimer: https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm

Design/Installation Issues:

- Must consider transitions from adjacent roadway sections and through intersections
- AADT can be considered but is not the primary volume factor that needs to be evaluated

Potential Impacts:

- Usually reduces number of available travel lanes – impacts demand that can be accommodated; typical acceptable threshold of 1000 vehicles per direction during peak hour
- Reduction of through lanes tends to reduce speeds
- Can improve pedestrian crossing ease and safety
- Can improve bicycle accessibility if travel lanes can be used for shoulders/bike lanes instead

Emergency Response Issues:

- Generally accepted from emergency services; leaves available space for through flow of emergency vehicles

Typical Cost (2017 dollars):

- \$6000 or less, depending on physical geometric changes and length of application
- The biggest impact to cost involves signal modifications, if applicable; other primary costs include pavement marking and signing revisions
- Costs can be much higher if outside portion of pavement is converted to other non-motorized uses (dedicated bicycle facilities, sidewalks, grass buffers)

Traffic Calming Fact Sheets

March 2019 Update

Roundabout

Description:

- Raised islands placed in unsignalized intersections around which traffic circulates
- Approaching motorists yield to motorists already in the intersection
- Requires drivers to slow to a speed that allows them to comfortably maneuver around them
- Different from traffic circles or mini-roundabouts; possible substitute for traffic signal control

Applications:

- Intersections of arterial and/or collector streets
- One or more entering lanes
- Can be used at intersections with high volumes of large trucks and buses, depending on design



(Source: Grant Kaye)



(Source: PennDOT Local Technical Assistance Program)

ITE/FHWA Traffic Calming EPrimer: https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm

Design/Installation:

- See NCHRP Report 672 for design details
- Design vehicle is determined specifically for each site ranging from emergency vehicles to over size/overweight vehicles
- Typically circular in shape but may be an oval shape
- Key physical elements are center islands, truck aprons, and splitter islands
- Controlled by YIELD signs on all approaches with pedestrian crosswalks, if included, one car-length upstream of YIELD bar
- Key design features include: fastest paths, swept paths, and path alignment
- Large vehicles circulating around the center island for all movements may traverse the apron
- Landscaping needs to be designed to allow adequate sight distance per NCHRP 672
- Preferable to have a closed-section road (i.e. curb and gutter)
- Bicycle facilities, if provided, must be separate from the circulatory roadway with physical barriers; cyclists using the circulatory roadway must merge with vehicles. Bicycle facilities are prohibited in the circulatory roadway to prevent right-hook crashes.

Potential Impacts:

- Limited impact on access, except for access points immediately adjacent to intersection
- Limited impact on roadways with on-street parking
- May draw additional traffic but with reduced delays and queues

Emergency Response:

- Appropriate for emergency vehicle routes or streets that provide access to hospitals
- Emergency vehicles may traverse the apron

Typical Cost

- Cost varies widely by site, but is usually comparable to a traffic signal

Traffic Calming Fact Sheets

May 2018 Update

Speed Hump

Description:

- Rounded (vertically along travel path) raised areas of pavement typically 12 to 14 feet in length
- Often placed in a series (typically spaced 260 to 500 feet apart)
- Sometimes called road humps or undulations

Applications:

- Appropriate for residential local streets and residential/neighborhood collectors
- Not typically used on major roads, bus routes, or primary emergency response routes
- Not appropriate for roads with 85th-percentile speeds of 45 mph or more
- Appropriate for mid-block placement, not at intersections
- Not recommended on grades greater than 8 percent
- Work well in combination with curb extensions
- Can be used on a one-lane one-way or two-lane two-way street



(Source: City of Boulder, Colorado)



(Source: PennDOT Local Technical Assistance Program)

ITE/FHWA Traffic Calming EPrimer: https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm

Design/Installation Issues:

- ITE recommended practice - "Guidelines for the Design and Application of Speed Humps"
- Typically 12 to 14 feet in length; other lengths (10, 22, and 30 feet) reported in practice in U.S.
- Speed hump shapes include parabolic, circular, and sinusoidal
- Typically spaced no more than 500 feet apart to achieve an 85th percentile speed between 25 and 35 mph
- Hump heights range between 3 and 4 inches, with trend toward 3 - 3 ½ inches maximum
- Often have associated signing (advance warning sign before first hump in series at each hump)
- Typically have pavement markings (zigzag, shark's tooth, chevron, zebra)
- Taper edge near curb to allow gap for drainage
- Some have speed advisories
- Need to design for drainage, without encouraging means for motorists to go around a hump

Potential Impacts:

- No impact on non-emergency access
- Average speeds between humps reduced between 20 and 25 percent
- Speeds typically increase approximately 0.5 to 1 mph midway between humps for each 100 feet Beyond the 200-foot approach and exit of consecutive humps
- Traffic volumes diversion estimated around 20 percent; average crash rates reduced by 13 percent

Emergency Response Issues:

- Impacts to ease of emergency-vehicle throughput
- Approximate delay between 3 and 5 seconds per hump for fire trucks and up to 10 seconds for ambulances with patients

Typical Cost (2017 dollars):

- Cost ranges between \$2,000 and \$4,000

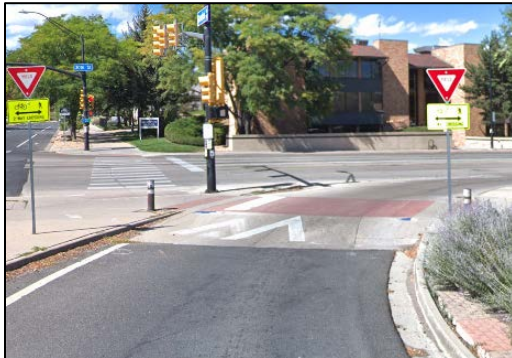
Speed Table/Raised Crosswalks

Description:

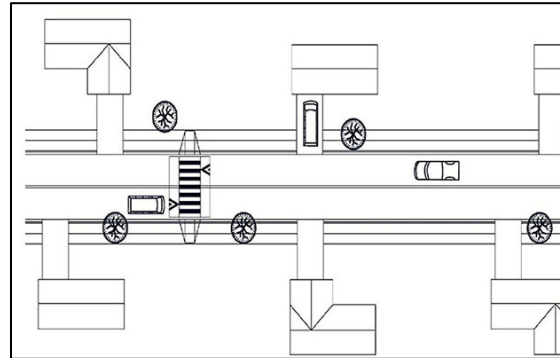
- Long, raised speed humps with a flat section in the middle and ramps on the ends; sometimes constructed with brick or other textured materials on the flat section
- If placed at a pedestrian crossing, it is referred to as a raised crosswalk
- If placed only in one direction on a road, it is called an offset speed table

Applications:

- Appropriate for local and collector streets; mid-block or at intersections, with/without crosswalks
- Can be used on a one-lane one-way or two-lane two-way street
- Not appropriate for roads with 85th percentile speeds of 45 mph or more
- Typically long enough for the entire wheelbase of a passenger car to rest on top or within limits of ramps
- Work well in combination with textured crosswalks, curb extensions, and curb radius reductions
- Can be applied both with and without sidewalks or dedicated bicycle facilities
- Typically installed along closed-section roads (i.e. curb and gutter) but feasible on open section



(Source: Google Maps, Boulder, Colorado)



(Source: Delaware Department of Transportation)

ITE/FHWA Traffic Calming EPrimer: https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm

Design/Installation Issues:

- ITE recommended practice – “Guidelines for the Design and Application of Speed Humps”
- Most common height is between 3 and 4 inches (reported as high as 6 inches)
- Ramps are typically 6 feet long (reported up to 10 feet long) and are either parabolic or linear
- Careful design is needed for drainage
- Posted speed typically 30 mph or less

Potential Impacts:

- No impact on non-emergency access
- Speeds reductions typically less than for speed humps (typical traversing speeds between 25 and 27 miles per hour)
- Speeds typically decline approximately 0.5 to 1 mph midway between tables for each 100 feet beyond the 200-foot approach and exit points of consecutive speed tables
- Average traffic volumes diversions of 20 percent when a series of speed tables are implemented
- Average crash rate reduction of 45 percent on treated streets
- Increase pedestrian visibility and likelihood of driver yield compliance
- Generally not appropriate for BRT bus routes

Emergency Response Issues:

- Typically preferred by fire departments over speed humps, but not appropriate for primary emergency vehicle routes; typically less than 3 seconds of delay per table for fire trucks

Typical Cost (2017 dollars):

- Cost ranges between \$2,500 and \$8,000 for asphalt tables; higher for brickwork, stamped asphalt, concrete ramps, and other enhancements sometimes used at pedestrian crossings

Speed Cushion

Description:

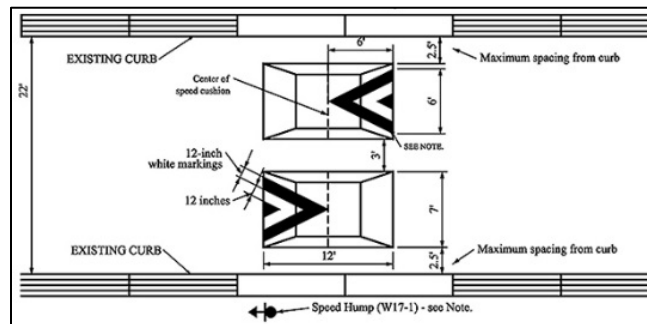
- Two or more raised areas placed laterally across a roadway with gaps between raised areas
- Height and length similar to a speed hump; spacing of gaps allow emergency vehicles to pass through at higher speeds
- Often placed in a series (typically spaced 260 to 500 feet apart)
- Sometimes called speed lump, speed slot, and speed pillow

Applications:

- Appropriate on local and collector streets
- Appropriate at mid-block locations only
- Not appropriate on grades greater than 8 percent



(Source: James Barrera, Horrocks, New Mexico)



(Source: Delaware Department of Transportation)

ITE/FHWA Traffic Calming EPrimer: https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm

Design/Installation Issues:

- Two or more cushions at each location
- Typically 12 to 14 feet in length and 7 feet in width
- Cushion heights range between 3 and 4 inches, with trend toward 3 - 3 ½ inches maximum
- Speed cushion shapes include parabolic, circular, and sinusoidal
- Material can be asphalt or rubber
- Often have associated signing (advance-warning sign before first cushion at each cushion)
- Typically have pavement markings (zigzag, shark's tooth, chevron, zebra)
- Some have speed advisories

Potential Impacts:

- Limited-to-no impact on non-emergency access
- Speeds determined by height and spacing; speed reductions between cushions have been observed averaging 20 and 25 percent
- Speeds typically increase by 0.5 mph midway between cushions for each 100 feet of separation
- Studies indicate that average traffic volumes have reduced by 20 percent depending on alternative routes available
- Average collision rates have been reduced by 13 percent on treated streets

Emergency Response Issues:

- Speed cushions have minimal impact on emergency response times, with less than a 1 second delay experienced by most emergency vehicles

Typical Cost (2017 dollars):

- Cost ranges between \$3,000 and \$4,000 for a set of rubber cushions

Traffic Calming Fact Sheets

May 2018 Update

Traffic Circle

Description:

- Raised islands placed in unsignalized intersections around which traffic circulates
- Approaching motorists yield to motorists already in the intersection
- Require drivers to slow to a speed that allows them to comfortably maneuver around them
- Approaches not designed to modern roundabout principals - no deflection

Applications:

- Appropriate at intersections of local streets
- One lane each direction entering intersection
- Not typically used at intersections with high volumes of large trucks or buses turning left
- appropriate for both one-way and two-way streets in urban and suburban settings



(Source: Scott Batson)



(Source: Scott Batson)

ITE/FHWA Traffic Calming EPrimer: https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm

Design/Installation Issues:

- Typically circular in shape but may be an oval shape
- Usually have landscaped center islands
- Recommend YIELD signs on all approaches
- Preferable for roadways to be closed-section (i.e. curb and gutter)
- Can be applied to roads with on-street parking
- Can be applied to roads both with and without dedicated bicycle facilities; bike lanes not striped in circulatory roadway
- Key design features include: offset distance (distance between projection of street curb and center island), lane width of circulatory roadway, circle diameter, and height of mountable apron for large vehicles

Potential Impacts:

- Minimal anticipated traffic diversion
- Bicyclist and motorists will share lanes at intersections because of narrowed roadway
- Large vehicles/buses usually not able to circulate around center island for left turns
- Landscaping needs to be designed to allow adequate sight distance, per AASHTO
- Minimize routing of vehicles through unmarked crosswalks on side-streets
- May require additional street lighting

Emergency Response Issues:

- Emergency vehicles maneuver intersections at slow speeds
- Constrained turning radii typically necessitates a left turn in front of the circle for large vehicles

Typical Cost (2017 dollars):

- Typical cost is \$15,000, with a range between \$10,000 and \$25,000



Appendix E

Traffic Calming Application



Traffic Calming Request Petition Form

We, the undersigned residents and/or business owners, hereby petition the City of Ocala to perform the necessary evaluation to consider traffic calming measures for the roadway below:

_____ from _____ to _____
Your Street *Cross Street* *Cross Street*

Signatures representing sixty-seven percent (67%) or more of properties located on the street must be obtained before a traffic calming study for the above-mentioned street will be considered. Please indicate the total number of properties with driveways/access onto this roadway segment:
properties

By signing this petition,

- I do hereby certify that my property is located on the street being considered for traffic calming measures installation
- I request that the City of Ocala initiate a study to evaluate the need for traffic calming measures.

No.	Print Name	Address (one signature will be counted per property)	Email	Signature (agree to statements above)
1				
2				
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Traffic Calming Request Petition Form, Continued

(Use this page if additional signatures are needed)

No.	Print Name	Address (one signature will be counted per property)	Email	Signature (agree to statements above)
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Verification Statement

City of Ocala
Attn: City Engineer's Office
1805 NE 30th Ave. Building 300
Ocala, FL 34470

Applicant Verification Statement of Petition Form

There are a total of _____ properties with driveway/access to:

_____ from _____ to _____
Your Street *Cross Street* *Cross Street*

There are _____ valid signatures on the Traffic Calming Request Petition Form, which represents _____ % of the properties located on the street within the aforementioned section.

I verify that the signatures on the Traffic Calming Request Petition Form are valid and only one signature per residence and/or business has been considered in the above percentage.

Signature of Applicant: _____ Date: _____

Contact Information

Name *Email Address* *Phone Number*

Street Address *Zip Code*

City Verification of Petition Form

All 3 of the below statements must be indicated as "yes" to initiate a traffic calming study.

Yes No

- 1) Only 1 signature is listed per property. Yes No
- 2) Signatures represent 67% or more of the properties Yes No
- 3) Street is classified as a local or minor collector roadway with a posted speed of 35 mph or less Yes No

Street qualifies for initiation of a traffic calming study. Yes No

Signature: _____ Date: _____

(City Engineer or Deputy City Engineer)

Neighborhood Traffic Calming Policy Flowchart

