



ACTION PLAN



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City of Orlando

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State of the City

The Orlando Metro Area continues to rank as one of the fastest growing cities in the nation with an average of 1,000 residents moving into the city per week, more than double the rate of growth in the United States.¹ This growth contributes to an increased need for improvements to the city's transportation system across all modes of transportation for residents and visitors alike.

Amid all of this growth, Orlando and other Central Florida cities continue to rank as some of the deadliest for bicyclists and pedestrians. As reported in Smart Growth America's 2019 *Dangerous by Design Report*, the Orlando-Kissimmee-Sanford Metro Area is ranked number one in the country for pedestrian fatalities. Similarly, in a 2019 report by the League of American Bicyclists, Florida was ranked as fourth most dangerous state for bicyclists and pedestrians as a percentage of all traffic fatalities².

The city is dedicated to making progress through the adoption of transportation safety policies or programs and investment in new infrastructure on our roads. A few highlights are listed below.

- The adoption of complete streets policies in the city's Growth Management Plan in 2015. These policies promote a multi-modal environment that helps the city promote healthy communities and equitable access to destinations for all.

- The city partnered with Smart Growth America and joined the Safe Streets Academy to "learn more about creative ways to make city streets safer places for people."³ The City of Orlando hosted a complete street demonstration project on Curry Ford Road, a commercial street with a history of problems involving vehicular speeding, as well as bicycle and pedestrian crashes.
- To date, the city has increased bicycle facilities to include 267 miles of on-street bike lanes and 43 miles of off-street bike trails. In 2017, an average of 7,631 users biked on city trails on a daily basis. The city continues to partner with Metroplan Orlando and Orange County in order to expand regional connectivity and overall ridership.
- The first pedestrian bridge in Orlando opened in 2019 to expand and connect Orlando's urban trails over Colonial Drive and the railroad tracks near I-4.

In December 2017, Orlando joined cities across the nation by adopting a resolution to set a Vision Zero goal. Every three days someone died or sustained a serious injury in a traffic-related crash in Orlando over the last five years. The Vision Zero program provides structure through which the residents, visitors and businesses actively work together to eliminate traffic related fatalities and serious injuries by 2040. The approach taken to provide safe, equitable mobility for all is further described in this Action Plan.

¹ Fleming, Phoebe. 2018, August 3. "Orlando's Fast Growth in a Category All Its Own." [Orlando News](#)

² LAB 2019 report

³ <https://smartgrowthamerica.org/orlando-fl-demonstration-project-curry-ford-road/>

Orlando's Call to Action

The growth of the city creates a tremendous opportunity to embrace a culture which leads to safer behavior by everyone within the transportation system. Through the adoption of a Vision Zero Action Plan (the Action Plan), the City of Orlando has joined a world-wide effort to eliminate fatal and serious injury crashes by following a multi-disciplinary approach. The city has made a commitment to provide a safe transportation system and improve roadway conditions for all residents and visitors no matter what mode of transportation they choose. This goal can be achieved by recognizing that tragedies on our roads are not acceptable, and in fact, are preventable. As a first step, we can no longer perceive “crashes” as “accidents.”

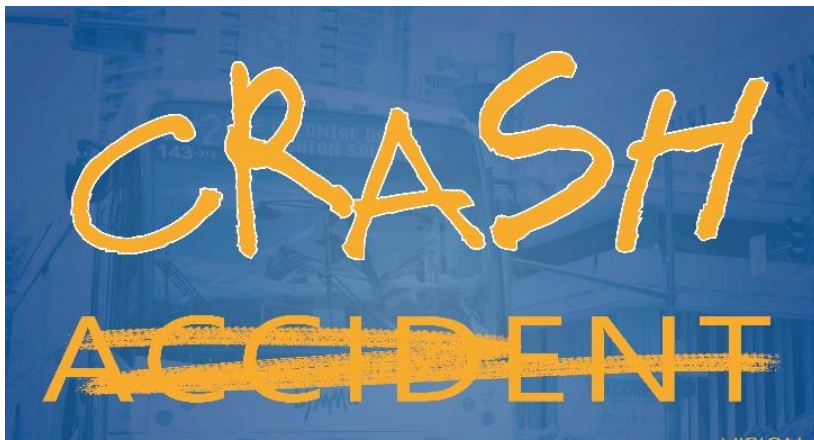


Figure 1: Under Vision Zero, the City of Orlando will assume that all traffic incidents are “crashes,” not “accidents”, thereby accepting responsibility and taking a more proactive approach to providing safety on our roads.

While human error may be inevitable, we must design and manage roads to encourage safe use, so that when a crash occurs those involved can walk away or experience a full recovery from their injuries.

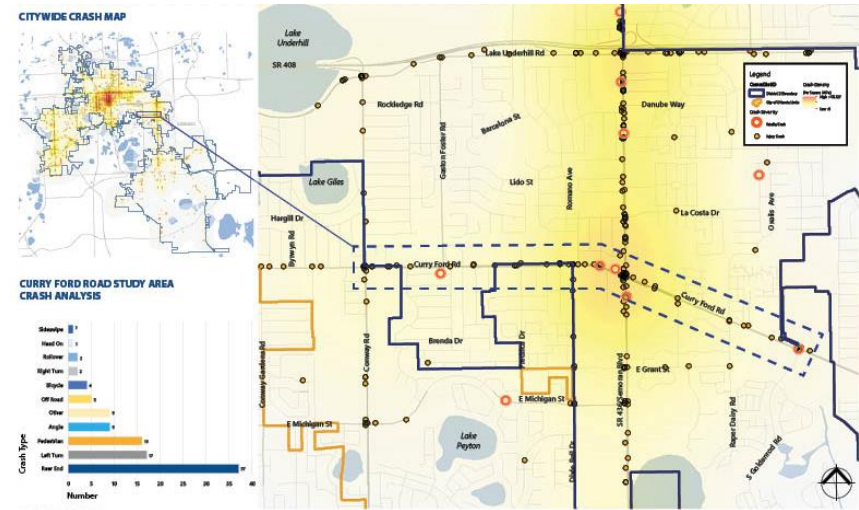


Figure 2: Preliminary analysis of Signal 4 crash data in District 2 shared in public outreach

Vision Zero works by following the fundamental premise that tragedies on our roadways are largely:

- predictable and preventable
- caused by shortcomings of the transportation system, enforcement and/or the built environment.

Vision Zero assumes that, by creating a catalog of identifiable deficiencies and embracing best practices statistically proven to address safety concerns, real-world safety improvements can occur.

The Action Plan is designed to establish trust and accountability throughout all Orlando communities as well as encourage individuals to become engaged in the process as we work together to eliminate traffic fatalities and serious injuries throughout the city of Orlando.

City Commitment

As a city, one of our top priorities is expanding and enhancing our transportation options to connect more of our residents with access to jobs and opportunity, the opportunity for an active lifestyle and reduce our impact on the environment. Ensuring that these options are safe is a key component to the city's focus. Therefore, we will work proactively together as a community to implement proven solutions to eliminate dangerous roadway behavior and all fatal and serious injury crashes.

**Orlando's Vision Zero Mission is to
eliminate traffic deaths and serious injuries
within the city by 2040.**

To achieve this, the City of Orlando has made a commitment to implement concrete solutions in the form of projects and programs to make our streets safer. But we cannot do it alone. Every person is responsible for their actions on the road. Whether you travel by walking, cycling, driving a car, or riding a bus, you must follow safe behaviors and become an advocate for others doing the same.

This edition of the Action Plan presents the first steps towards eliminating traffic fatalities and serious injuries by 2040.



City of Orlando
Mayor Buddy Dyer



District 1
Commissioner Jim Gray



District 2
Commissioner Tony Ortiz



District 3
Commissioner Robert F. Stuart



District 4
Commissioner Patty Sheehan



District 5
Commissioner Regina I. Hill



District 6
Commissioner Bakari F. Burns

Figure 3: City of Orlando Mayor and District Commissioners

A Message from the Mayor:

As a city, one of our top priorities is expanding and enhancing our transportation options to connect more of our residents with access to jobs and opportunities, amenities for an active lifestyle and reduce our impact on the environment. Ensuring that these options are safe is a key component to the city's focus. We have made significant investments in infrastructure improvements to enhance safety and are taking creative approaches to further enhance our street design and improve the safety in our existing corridors.

In December of 2017, the Orlando City Council approved a resolution calling for the elimination of fatalities and serious injuries on our transportation network by the year 2040. This resolution was our first step toward becoming a Vision Zero city. Vision Zero is a systemic approach to increase safety and mobility for all roadway users by engaging communities to expand awareness thorough education and encouragement; implementing and maintaining smarter streets for improved driver behavior; and prioritizing areas with high numbers of pedestrians, cyclists and transit riders.

Traffic crashes are among the leading cause of death and injury within the United States, the State of Florida and the City of Orlando. Central Florida has consistently ranked in the top five on the list of most dangerous places to walk and bike, according to Smart Growth America's Dangerous by Design reports. This is not acceptable.

In this Vision Zero Action Plan, we will address the necessary strategies to reach our goal of zero transportation fatalities and serious injuries in order to protect our residents, commuters and visitors, and the economic sustainability of our city. Planned projects include creating safe walking routes to school for our children, providing protected biking infrastructure, adapting our traffic signals to be more responsive to emergency responders and updating roadway design standards.

The City of Orlando is a great place to live, work and play. We are committed to making our streets safer for everyone and ensure that our transportation network provides our community with not only a safe future, but a sustainable one.



Buddy Dyer
Mayor, City of Orlando



Task Force

Vision Zero requires cross-sector collaboration among an array of experts in transportation engineering, public health, law enforcement and public policy, as well as our elected officials and the community at large. The Vision Zero Task Force's contributions in designing, maintaining and using the transportation network greatly affect the achievement of Vision Zero Orlando goals.



Figure 4: Vision Zero Orlando Task Force Kick-Off Meeting, May 22, 2018

The Vision Zero Task Force meets to discuss progress and challenges related to the adopted action strategies and offer guidance on refinement of these strategies where needed. Together, the city and the Task Force share a commitment to accountability and community engagement. The Vision Zero Orlando Task Force includes representatives from:

- MetroPlan Orlando
- LYNX (Central Florida Regional Transportation Authority)
- Florida Department of Transportation – District Five
- Orange County Transportation Planning
- Orlando Police Department
- Orlando Fire Department
- Orange County Sheriff's Office
- Florida Highway Patrol
- University of Central Florida Campus Police
- Valencia College Campus Police
- Advent Health
- Orlando Health
- Orange County Health Department
- Orange County Public Schools
- Bike/Walk Central Florida (Best Foot Forward)
- Orlando Bike Coalition
- AARP

Vision Zero Orlando Goals

Through a series of meetings with the Vision Zero Task Force, the city shaped and adopted six goals which set the foundation for the Vision Zero Orlando program. These goals embrace the Vision Zero Network model to provide equitable transportation safety solutions through a collaborative, data-driven process. More information about the Vision Zero Network can be found later in this document.



Figure 5: Orlando Urban Trail

Goals were established to enable multidisciplinary collaboration toward advancing Vision Zero, including the use of consistent data, fair and targeted enforcement and the equitable dissemination of information, policies and future improvements. These goals are flexible and inclusive so that stakeholders can commit to Vision Zero. The roadmap to zero fatalities and serious injuries is further refined in the framework where objectives, action strategies, performance metrics and responsible partners are identified to establish shared responsibility and investment in Vision Zero through 2040.



Goal 1: Adopt a safe systems approach in roadway design, operation and maintenance

The Vision Zero Action Plan includes a framework and toolkit by which transportation safety countermeasures can be selected for implementation on our riskiest corridors and intersections. The Risk-Based Analysis provides a comprehensive plan to create change based upon documented trends in behavioral or environmental factors that cause crashes. This data-driven approach allows the city and its partners to accurately employ transportation safety improvements, leading to specific safety outcomes.



Goal 2: Increase everyone's understanding of the leading causes of crashes resulting in fatalities and serious injuries

Heightening awareness throughout the city of how personal action influences safety will shape a culture of responsibility. Through community outreach and real-time reporting on the Vision Zero Orlando dashboard found on the city's website, everyone can learn more about crashes. With access to crash data, the community will be empowered to make safer choices to effectuate change.



Goal 3: Support law enforcement efforts to eliminate behaviors leading to fatal or serious injury crashes

Orlando Police Officers are recognized ambassadors for safe behaviors on Orlando's roads. Their accuracy in reporting crashes helps to identify needed improvements in the built environment as well as provide educational opportunities. Leveraging technology of traffic management systems and law enforcement operations further support efforts in promoting safer use by everyone.



Goal 5: Improve access and travel time to Level 1 Trauma Center and other hospitals

Vision Zero accepts that traffic crashes are inevitable; however, our ability to respond timely and transport injured victims in these incidents can lead to saving lives. Orlando's roads are shared by all residents and visitors and together we can work towards ensuring that we have equitable and prompt access to our emergency facilities once those crashes occur.



Goal 4: Demonstrate continuous progress toward Vision Zero

The success of Vision Zero is inherently dependent on community buy-in and support. Through 2040, progress will be documented and analyzed in ongoing reporting on Vision Zero. Updates will be provided publicly in community meetings and on the city's website, ensuring transparency. City staff will work towards selecting projects and programs that prove effective in improving transportation safety. With this, Orlando's Vision Zero culture will remain focused on a commitment to tangible results.



Goal 6: Prioritize investments and programs in communities of concern

The Vision Zero program has been structured to focus future improvements in communities of concern and the provision of safe access for all persons across all modes of travel. As a citywide program, Vision Zero will advocate for the safety, protection and equitable mobility of the most vulnerable users on our roadways.



Vision Zero Network

Vision Zero is an internationally-recognized transportation safety program founded to eliminate traffic fatalities and serious injuries, while increasing safe, healthy, equitable mobility for all road users. First implemented in Sweden in the 1990s, Vision Zero has proven to be successful across Europe and is now gaining momentum in major American cities. The Vision Zero Orlando program will follow the same kind of multidisciplinary approach.

Vision Zero is a significant departure from the status quo in two major ways: (1) Vision Zero recognizes that people will sometimes make mistakes, so the road system and related policies should be designed to ensure those inevitable mistakes do not result in fatal or serious injury crashes; and (2) Vision Zero is a multidisciplinary approach, bringing together diverse and committed stakeholders to address this complex problem. Several other cities across the nation have documented their successes, highlighted in **Table 1**.

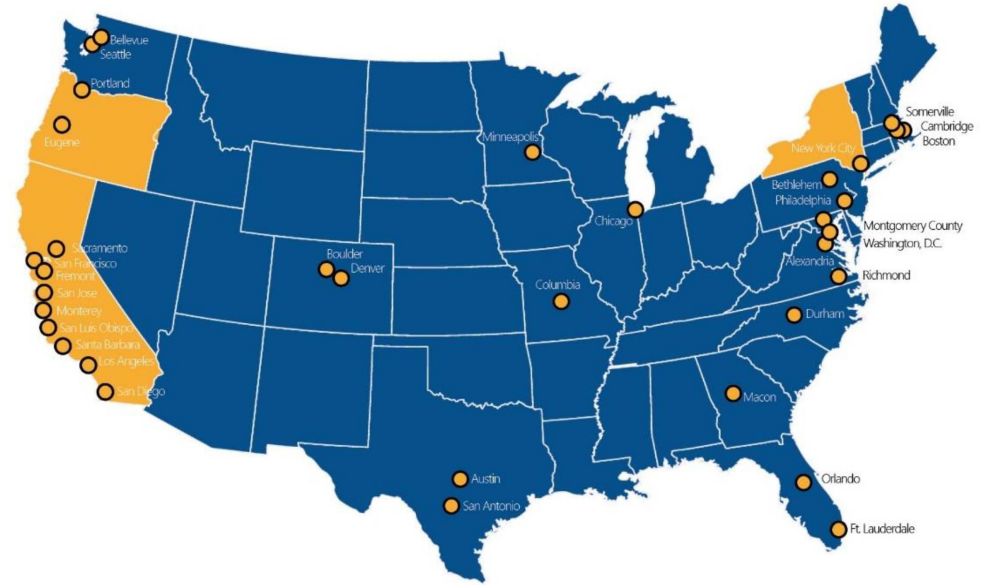


Figure 6: Map of cities in the Vision Zero Network and highlighted success stories

Table 1: Successes in other Vision Zero Cities

Success of Vision Zero		
New York City, New York	San Francisco, California	Portland, Oregon
Through Vision Zero, New York City has lowered speed limits, installed innovative traffic safety devices and increased traffic violation penalties for all road users. Between 2013 and 2017, the number of pedestrian fatalities dropped by 45%. From 2016 and 2017, the city saw another 37% drop in pedestrian fatalities.	San Francisco determined that 70% of all severe and fatal traffic injuries occurred on just 12% of their streets on their High Injury Network (HIN). By focusing improvements on the HIN, educational programs and policy changes, the city saw the fewest number of traffic deaths in history: dropping from 30 in 2016 to 20 in 2017.	Vision Zero Portland determined that approximately 57% of all traffic fatalities occurred at 30 streets and 30 intersections. Most traffic deaths also occurred in areas with posted speeds of 35 – 45 mph. Among other programs, by reducing speeds and focusing improvements in targeted areas, the traffic deaths dropped from 47 to 34 between 2017 and 2018.

Core Elements of Vision Zero Communities

The Vision Zero Network, along with support from key partners, adopted a set of Ten Core Elements to help communities set priorities as they work toward tangible results in promoting safety and benchmarking progress towards set goals. Visit <https://visionzeronetwork.org> to read more. The Vision Zero Orlando Action Plan was designed following these core elements, setting a framework for implementation:

Leadership and Commitment

1. Public, high-level and ongoing commitment
2. Authentic engagement
3. Strategic planning
4. Project delivery

Safe Roadways and Safe Speeds

5. Complete streets for all
6. Context-appropriate speeds

Data-driven Approach, Transparency and Accountability

7. Equity-focused analysis and programs
8. Proactive, systemic planning
9. Responsive, hot spot planning
10. Comprehensive evaluation and adjustment

National Transportation Safety Concerns

Dangerous Behavior/Distracted Driving

Distracted driving is any activity that diverts attention from driving, including talking or texting on your phone, eating and drinking, talking to people in your vehicle, fiddling with the entertainment or navigation system — anything that takes your attention away from the task of alert driving.



In 2016, across the nation, 3,450 people were killed and 391,000 people were injured in auto crashes involving distracted drivers.

Statistic by National Highway Traffic Safety Administration

Texting is the most alarming distraction of today. Sending or reading a text takes your eyes off the road for 5 seconds. At 55 mph, that's like driving the length of an entire football field with your eyes closed. You cannot drive safely unless the task of driving has your full attention. Any non-driving activity you engage in is a potential distraction and increases your risk of crashing. During daylight hours, approximately 481,000 U.S. drivers are using cell phones while driving. That creates enormous potential for deaths and injuries on U.S. roads. Teens were the largest age group reported as distracted at the time of fatal crashes.

Speed

Two of the top contributing factors to fatal traffic crashes are drivers' speed and dangerous behavior/distracted driving. Although crash databases in Florida do not provide adequate information to statistically identify speeding and distracted driving as factors, law enforcement and community-reported behaviors are proven to impact the safety and accessibility of users of our transportation system.

When a driver is traveling at a slow speed, if there is an error in judgement either by the driver, pedestrian or cyclist, the driver has a better opportunity to stop or take evasive maneuvers to avoid a crash or minimize the impact than when they are going faster and needing to respond quickly.

Hit by a Vehicle Traveling At:

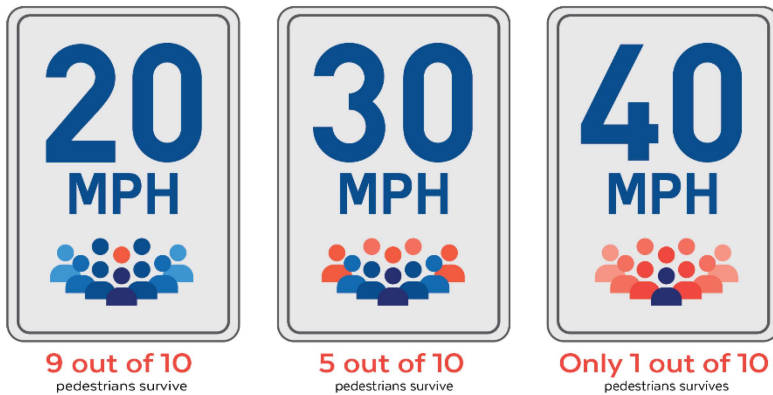


Figure 7: Relationship between speed and survival. Speed is especially lethal for vulnerable users like pedestrians and bicyclists. The risk of serious injury and death increases as speed increases.

There is also a direct correlation between a driver's speed and how quickly they observe and react to avoid a collision due to their field of vision.

Drivers often believe they can focus and see a wider spectrum than they actually can. The faster they travel, the narrower their focus area becomes, putting more into their peripheral vision. The distance it will take to stop in time is also higher than they may realize. This results in the danger they pose to themselves and other people using the roadway, especially vulnerable users: pedestrians, bicyclists and motorcycle riders.

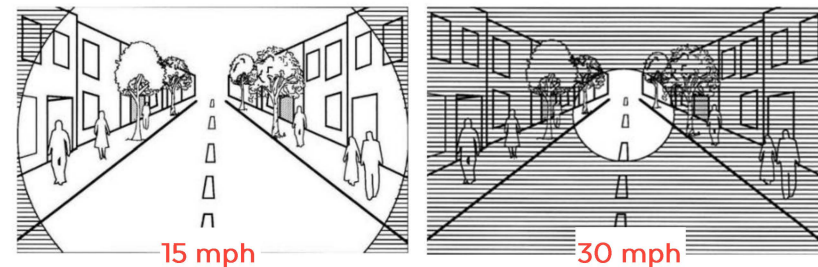


Figure 8: Field of vision based on speed of driver. Original Source Walkable City Rules, Jeff Speck

While the crash data provided from Signal 4 Analytics and the FDOT State Safety Office does not include documentation on these national trends, through ongoing public outreach and implementation of traffic audits at strategic locations, these known contributing factors can be better documented throughout the city. The Vision Zero Orlando program includes strategies to do both.

Public Outreach

Vision Zero requires a cultural shift in everyone's use of our transportation system. It is critical for communities to participate in formulating objectives and strategies to reach the desired results.



Figure 9: Vision Zero Orlando Community Meetings and Public Workshops

The Community Outreach Plan (COP) for the Vision Zero Orlando Action Plan established a framework for engaging stakeholders, first in each district and then in a citywide workshop. The events were used to identify issues and goals leading to the creation of the Action Plan.

The COP describes best practices in outreach activities; it is expected to evolve with the city's action strategies as we approach zero in 2040.

The Vision Zero community outreach objectives include:

- Identifying and establishing relationships with key stakeholders to establish clear, thoughtful expectations and strategies for the implementation of Vision Zero Orlando;
- Engaging the community in the Vision Zero Orlando initiative (including events and social media outreach);
- Holding city commission district-level community meetings where stakeholders can learn about the goals for Vision Zero Orlando while also providing suggestions on how to address specific concerns within their districts;
- Ensuring that project information is shared across an array of online and community-based platforms which allow for an open forum for dialogue (including the sharing of issues and opportunities); and
- Providing project updates and information in a public forum accessible to all residents.

At the end of the public outreach process held in 2018, the Vision Zero public outreach toolkit was created. This toolkit was designed to facilitate community events throughout the city, engage new stakeholders and recruit Vision Zero Orlando advocates to champion the Action Plan.

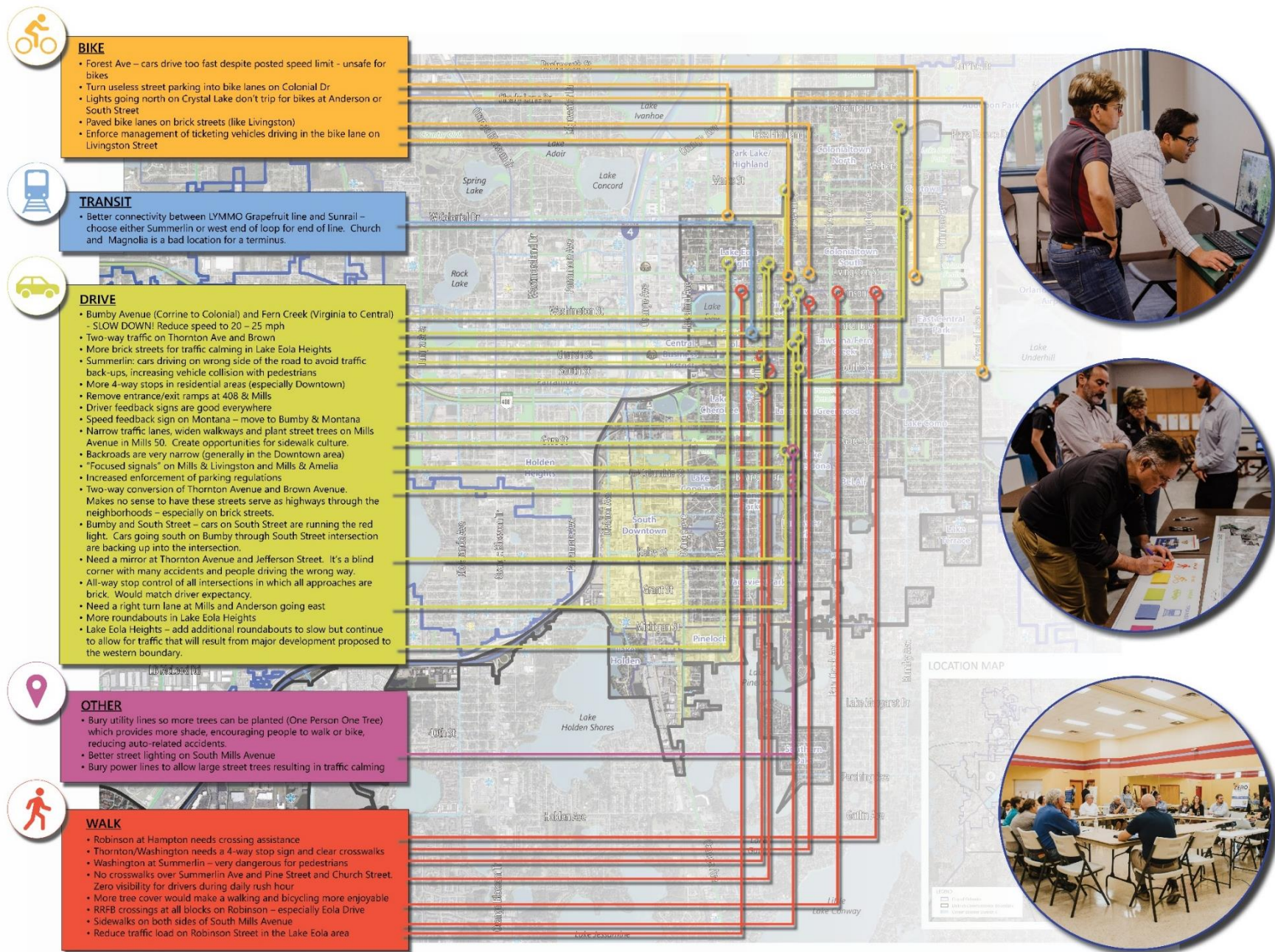


Figure 10: Example of public comments received at a District 4 Community Meeting on November 1, 2018. Comments made refer to local issues across all transportation modes: biking, walking, transit, driving and other. This type of activity will be used in ongoing public outreach to address safety concerns that may not be reflected in crash data.

Transparency Platforms

A critical component of Vision Zero Orlando includes vigilant monitoring of traffic safety within the city. The Vision Zero Network recommends that progress on Action Plan strategies be shared on a comprehensive public website, providing project transparency. As a part of the adoption of the Vision Zero Action Plan, a dashboard where participants can track progress and a webpage providing links to information were developed. Data enforces accountability and transparency. On both interactive platforms, residents and visitors can engage in ongoing dialogue about Vision Zero projects, programs and safety concerns.



Figure 11: 6 E's of Vision Zero



Figure 12: Interactive display of fatal and serious injury crash data from the Vision Zero Orlando dashboard (S4 data)

As a supplement to the Action Plan, the interactive Vision Zero Orlando dashboard provides live updates on crash data and other measures contributing to high risk behaviors. The dashboard also provides a record of data relevant to the 6 E's of Vision Zero Orlando: Engineering, Equity, Education, Evaluation, Economics and Enforcement with visibility for all residents.

On the website, residents can view historic crash data by city commissioner district and leave comments on target areas where they would like to see improvement. These interactive platforms help provide transparency leading towards the implementation of transportation safety measures and the facilitation of conversation about concerns throughout the city.

Data-Driven Approach

With the adoption of the Action Plan, the City of Orlando has created a fundamental framework and established a data-driven process by which we can identify our most dangerous areas and corridors, called the High-Injury Network (HIN), and strategically target these areas to implement specific engineering countermeasures, education campaigns and/or enforcement concentrations.

Crash Data Sources

Two primary datasets were used to analyze crashes in Orlando, create graphics for public outreach, as well as draft the Vision Zero Orlando Action Plan and High Injury Network and Risk Based Analysis report:

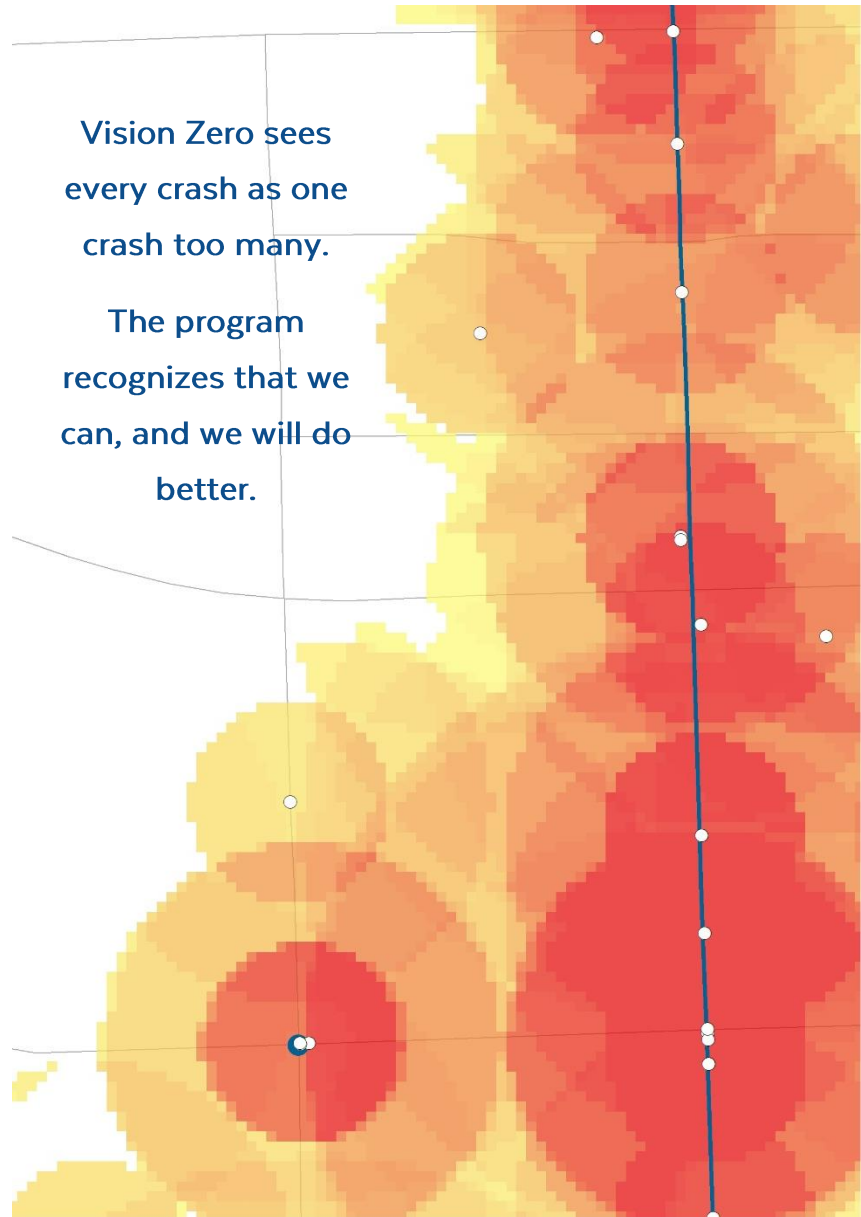
- Signal Four Analytics (S4) hosted by the GeoPlan Center at the University of Florida
- The State Safety Office Geographic Information System (SSOGis) dataset hosted by the FDOT State Safety Office.

All crash data analyses were screened to exclude crashes on limited access roadways (interstates and toll roads) and crashes that did not result in a fatality or serious injury. Across all of the crash data, some crashes resulted in multiple serious injuries and/or fatalities.

There are pros and cons to using each of the two datasets. The Signal Four database is more comprehensive, containing crash data from both long forms and short forms, and is updated daily with the most recent crash data reported by law enforcement. In comparison, the SSOGis system only includes long form crash data with narratives, diagrams and follow-up reports, as well as an added layer of validation

Vision Zero sees
every crash as one
crash too many.

The program
recognizes that we
can, and we will do
better.

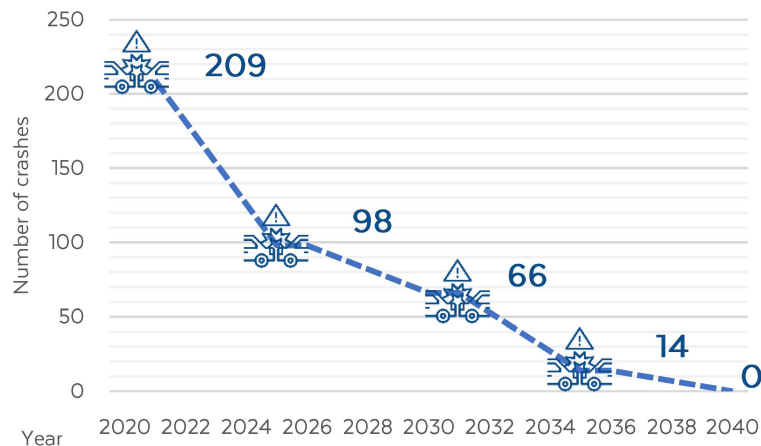


by the office's crash location analysts. This improves the accuracy of the geolocation but also takes additional time. Therefore, in generating the dataset for the High Injury Network and Risk-Based Analysis, it was determined that using a blended dataset would leverage the strength of both crash databases.

Vision Zero Orlando Trend Line

Charting the progress on the path to zero traffic-related fatalities or serious injuries by 2040 is important to visualize and share with everyone. Knowing where we start and where we are headed will help guide decisions and provide opportunities to celebrate while operating in a mode of continuous improvement. The fatal and serious injury crashes trendline below (Figure 13) provides an example of the proposed reduction in crashes citywide as we approach 2040, based upon documented progress seen in other Vision Zero cities.

Figure 13: Fatal and Serious Injury Crashes Trendline



Analysis of Crash Data by Commissioner District

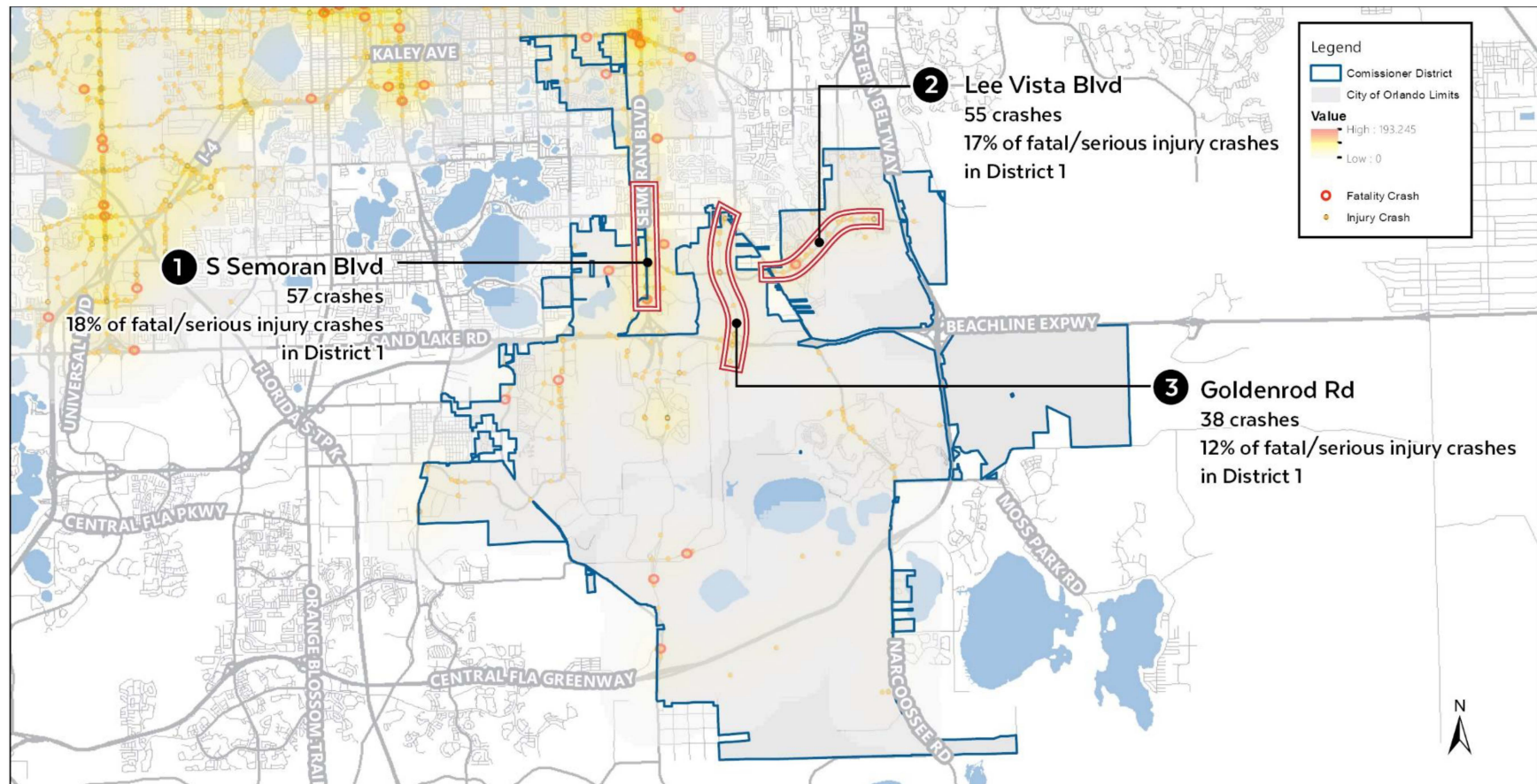
Signal Four Analytics crash data was used in order to identify three (3) High Fatality or Injury Locations for each Commissioner District in Orlando (see Figures 14 – 19). These heat maps reflect all crashes resulting in fatal or serious injury from 2015–2017. Throughout the public outreach process leading to the adoption of the Action Plan, eighteen Signal Four-derived crash exhibits were used to engage workshop participants in a dialog about what actions and/or elements of the built environment could be causing these crashes in the areas where they live, work or play (see Figure 2 as example). The high concentration crash analysis provides a means of identifying specific neighborhoods or roads which are proven to be dangerous. The identification can help the city to prioritize future projects and programs in areas where they may have immediate impact on reducing large numbers of fatal or serious injury crashes.

Table 2. Year 2015 –2017 Fatal and Serious Injury Crash Statistics (S4 data)*

	Citywide	Commissioner District					
		1	2	3	4	5	6
Total Fatal and Serious Injury Crashes	2,768*	391	349	416	491	635	486
Fatalities	66	15	13	12	10	9	7
Serious Injuries	3,513	506	428	511	581	820	667
Vulnerable User Crashes							
Pedestrian Crashes	268	18	34	39	41	99	37
Bicycle Crashes	199	16	25	41	39	53	25
Motorcycle Crashes	255	48	35	39	50	39	44

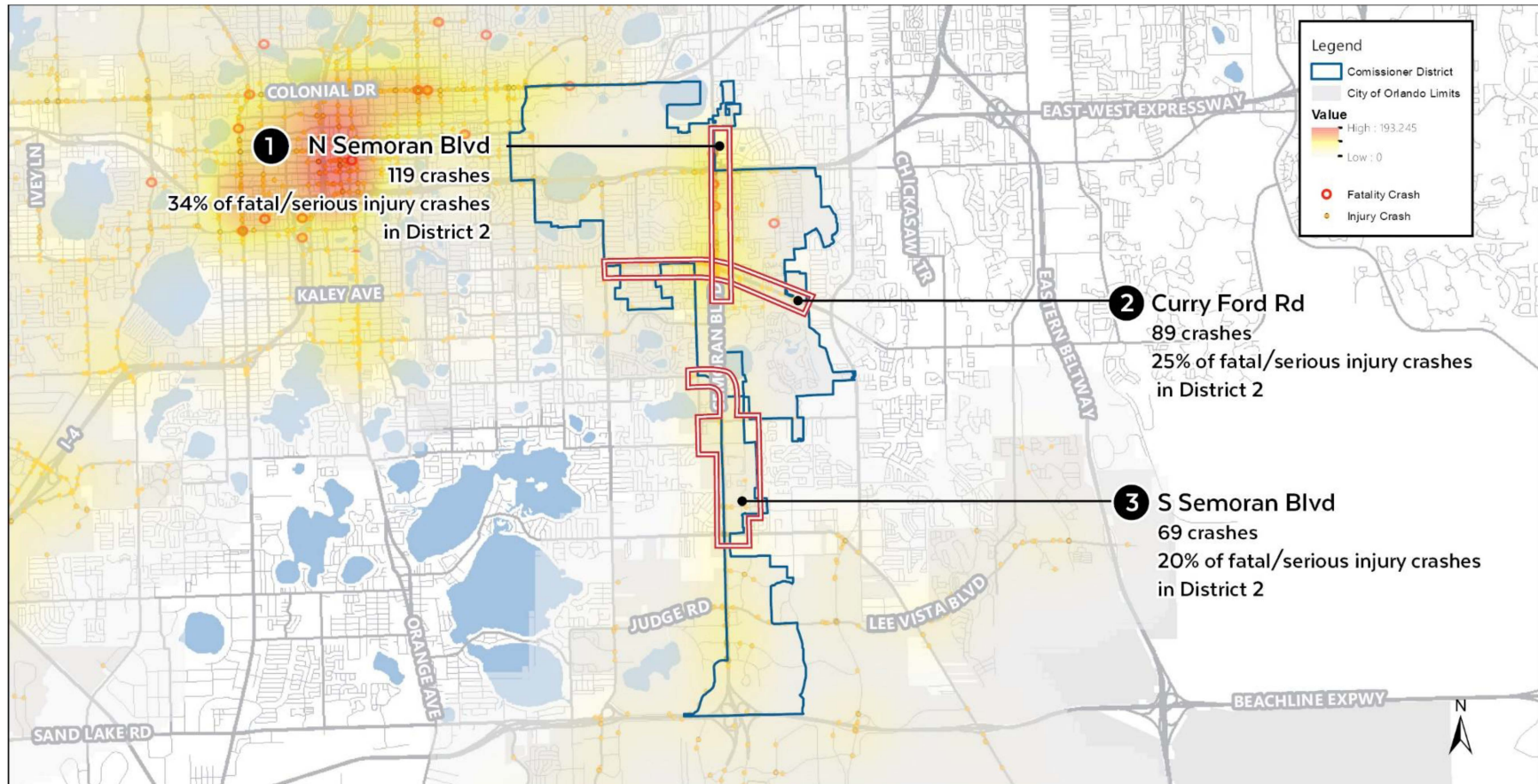
*Some crashes can result in multiple serious injuries and/or fatalities.

Figure 14: Commissioner District 1 High Injury Locations from 2015 - 2017 (S4 data)



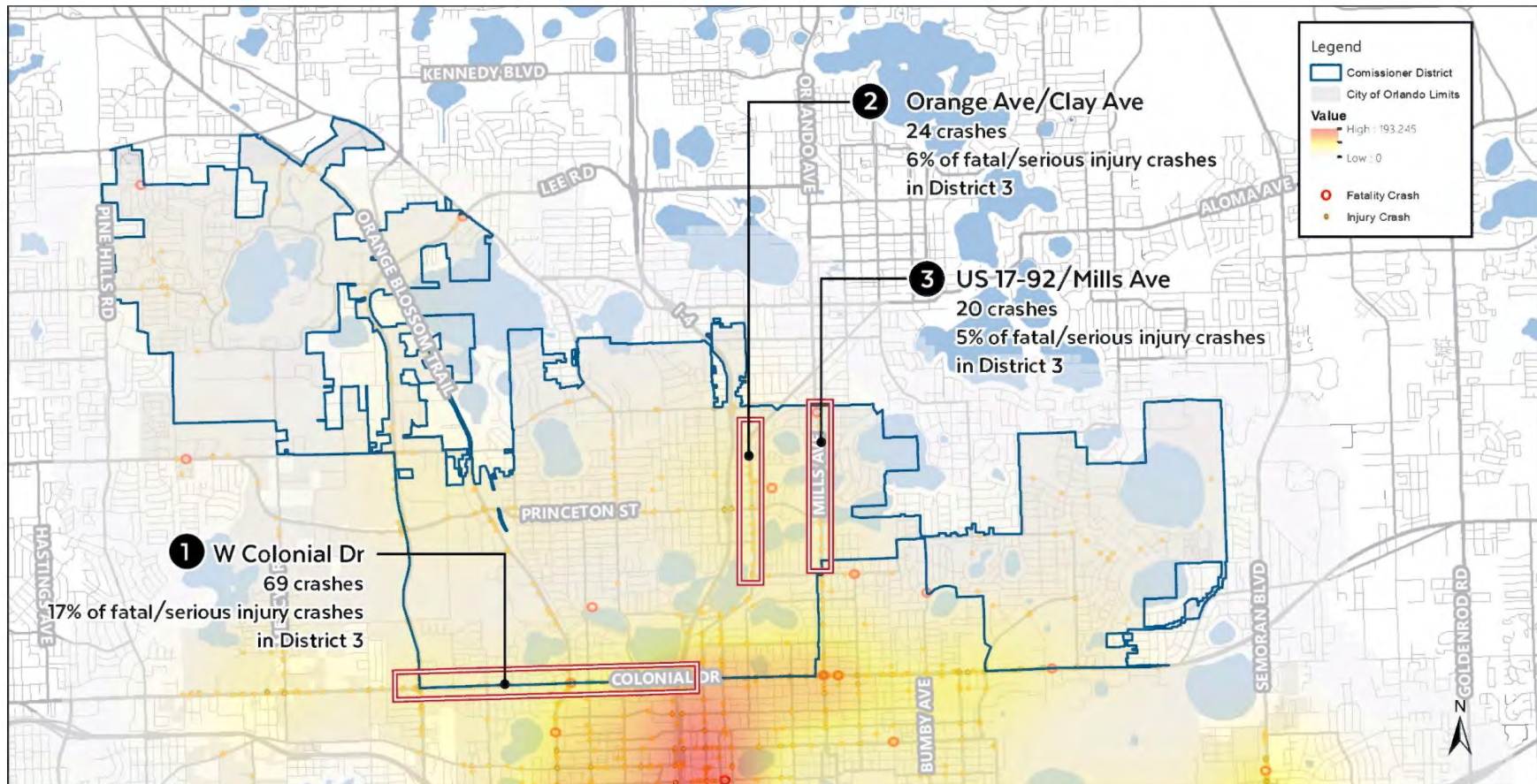
District 1 High Injury Location		From	To	Percent of Total Crashes in District 1	Mode of Transportation Involved in Crashes			
					Pedestrian	Bicycle	Motorcycle	Automobile
1	S Semoran Blvd	Lake Margaret Dr	TG Lee Blvd	57 crashes, 18%	1	1	8	119
2	Lee Vista Blvd	S Goldenrod Rd	Econlockhatchee Tr	55 crashes, 17%	2	3	3	102
3	Goldenrod Rd	Narcoossee Rd	Cargo Rd	38 crashes, 12%	2	3	3	76

Figure 15: Commissioner District 2 High Injury Locations from 2015 – 2017 (S4 data)



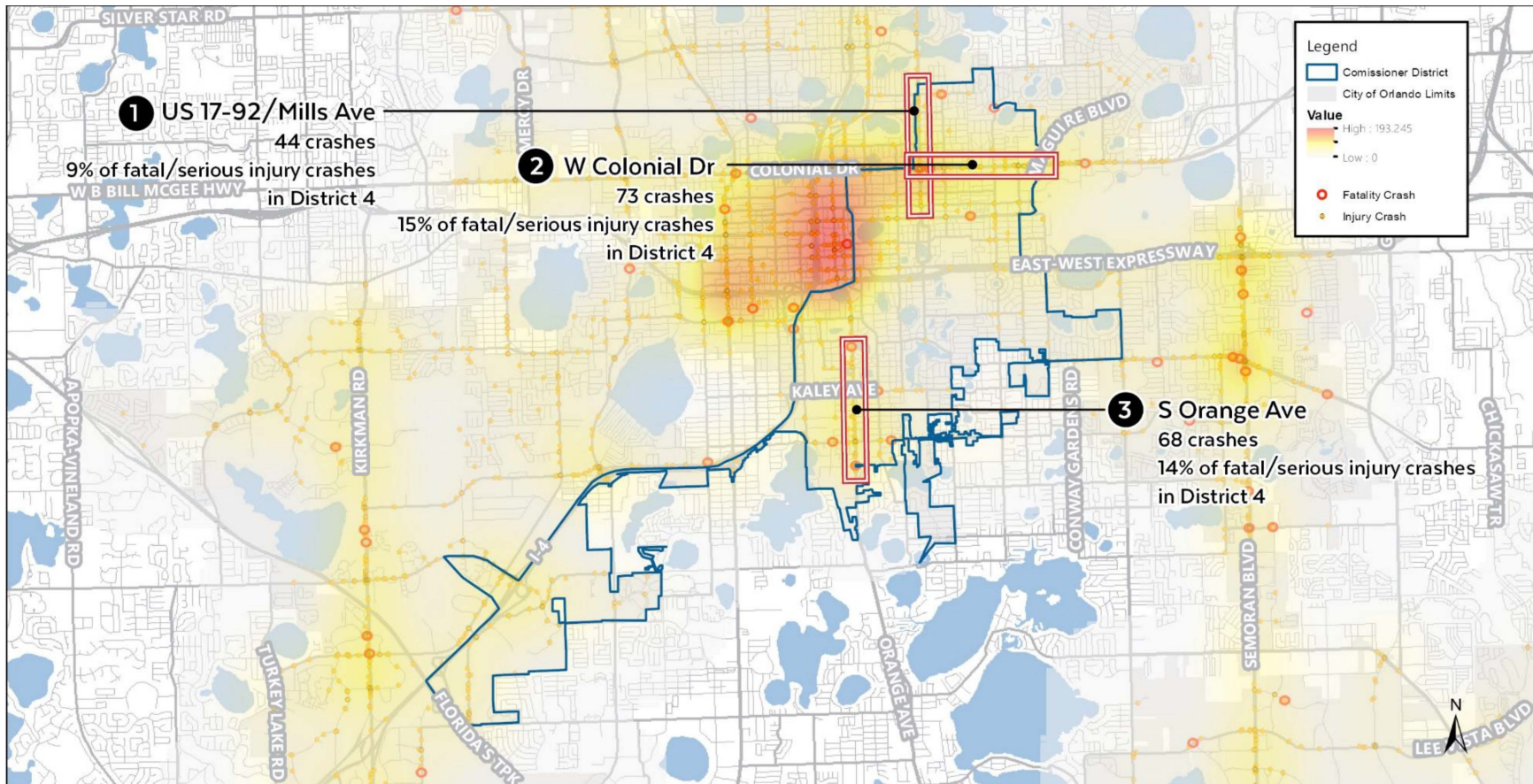
District 2 High Injury Location		From	To	Percent of Total Crashes in District 2	Mode of Transportation Involved in Crashes			
					Pedestrian	Bicycle	Motorcycle	Automobile
1	N Semoran Blvd	Dahlia Dr	E Michigan St	119 crashes, 34%	16	9	11	252
2	Curry Ford Rd	S Conway Rd	Colton Dr	89 crashes, 25%	12	8	10	173
3	S Semoran Blvd Area (Lake Margaret Dr to Hoffner Ave)			69 crashes, 20%	7	3	9	140

Figure 16: Commissioner District 3 High Injury Locations from 2015 – 2017 (54 data)



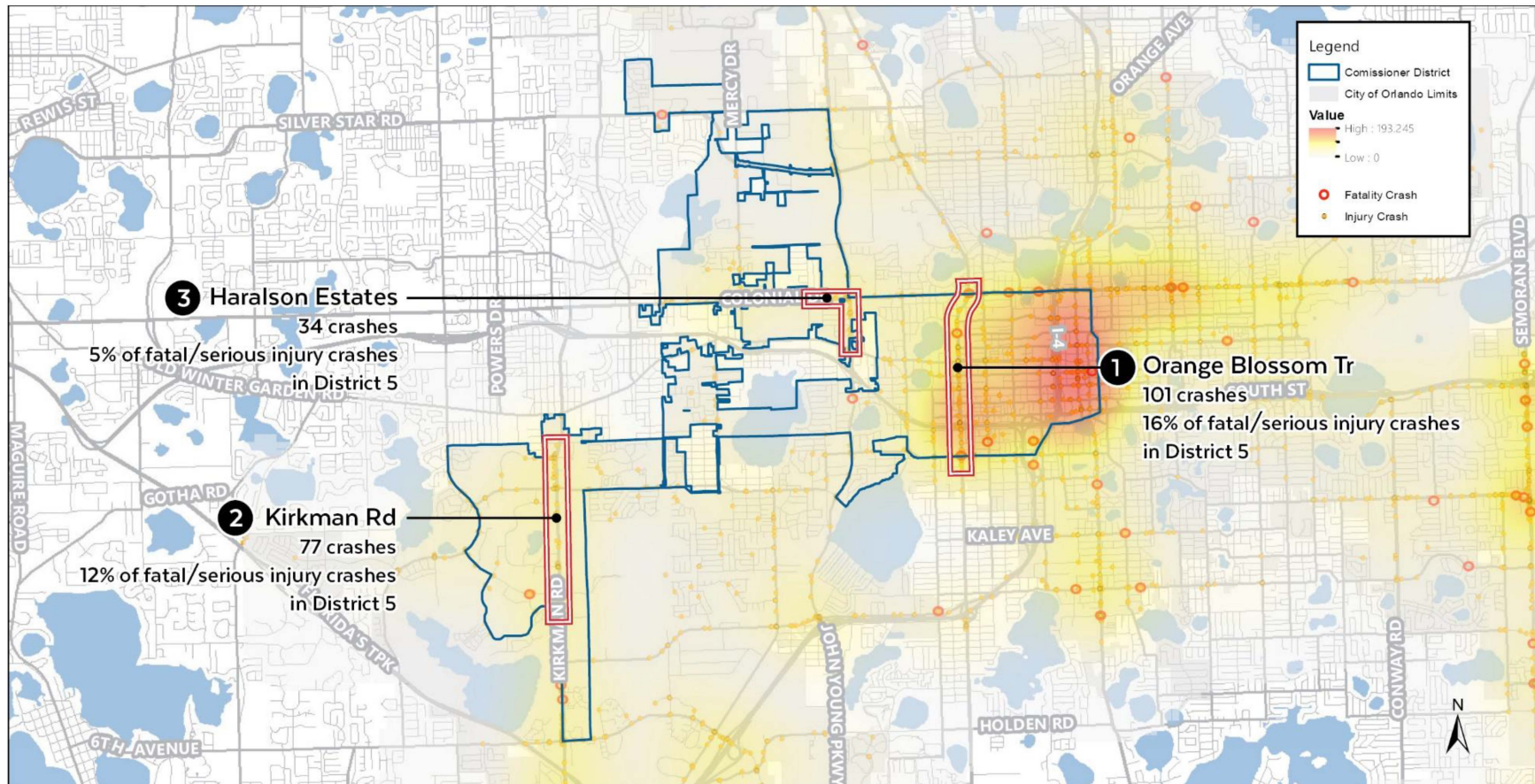
District 3 High Injury Location		From	To	Percent of Total Crashes in District 3	Mode of Transportation Involved in Crashes			
					Pedestrian	Bicycle	Motorcycle	Automobile
1	W Colonial Dr	John Young Pkwy	N Orange Ave	69 crashes, 17%	14	1	1	135
2	Orange/Clay Ave	Virginia Dr	Par St	24 crashes, 6%	4	3	2	45
3	US 17-92/Mills Ave	Nebraska St	Garden Dr	20 crashes, 5%	0	5	2	38

Figure 17: Commissioner District 4 High Injury Locations from 2015 – 2017 (s4 data)



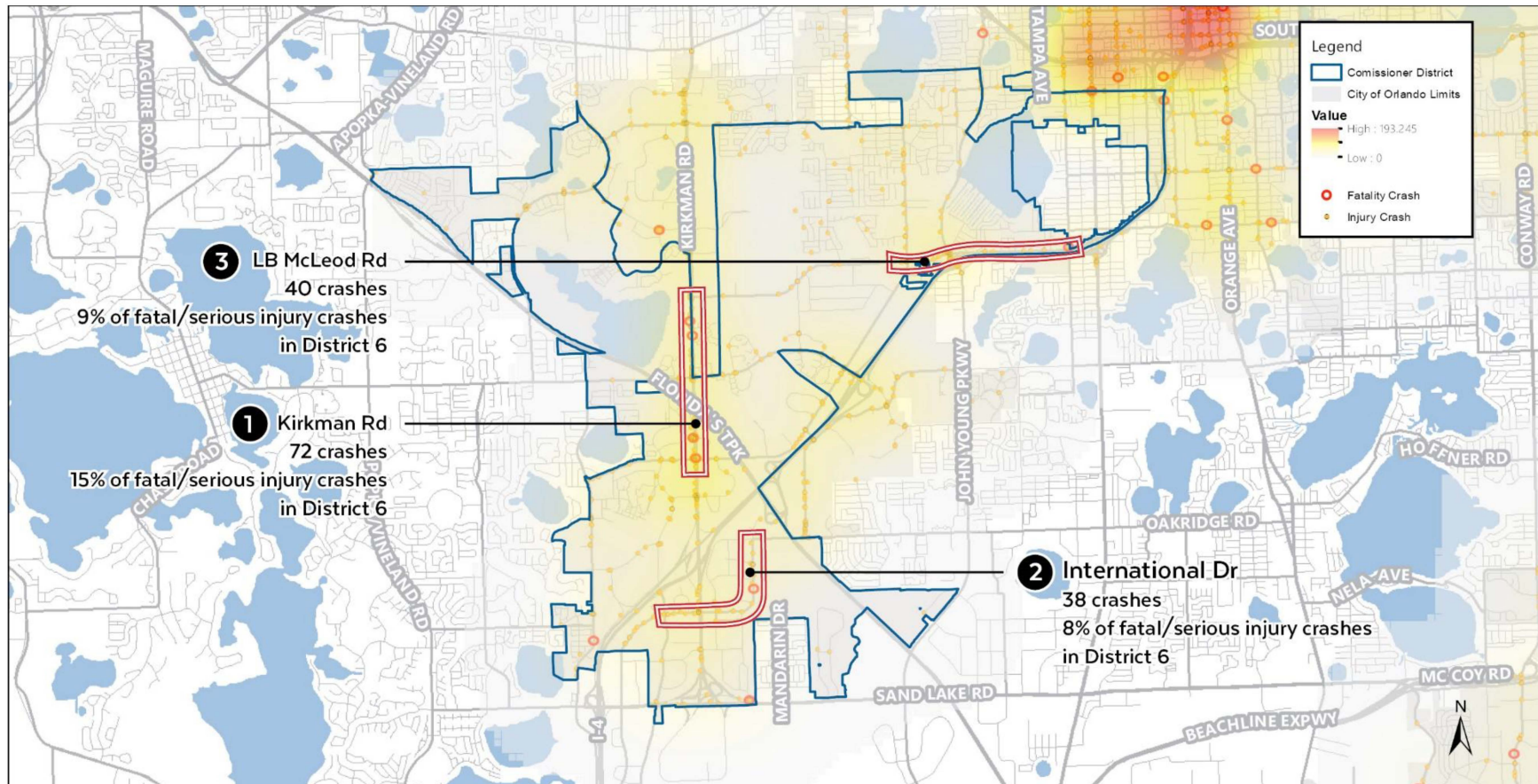
District 4 High Injury Location		From	To	Percent of Total Crashes in District 4	Mode of Transportation Involved in Crashes			
					Pedestrian	Bicycle	Motorcycle	Automobile
1	US 17-92/Mills Ave	Livingston St	Corrine Dr	44 crashes, 9%	2	4	5	88
2	W Colonial Dr	Mills Ave	Maguire Blvd	73 crashes, 15%	8	8	6	145
3	S Orange Ave	Columbia St	Pineloch Ave	68 crashes, 14%	10	10	6	128

Figure 18: Commissioner District 5 High Injury Locations from 2015 – 2017 (\$4 data)



District 5 High Injury Location		From	To	Percent of Total Crashes in District 5	Mode of Transportation Involved in Crashes			
					Pedestrian	Bicycle	Motorcycle	Automobile
1	Orange Blossom Tr	W Colonial Dr	Gore St	101 crashes, 16%	18	7	7	196
2	Kirkman Rd	Old Winter Garden Rd	Metrowest Blvd	77 crashes, 12%	7	4	5	158
3	Haralson Estates (W Colonial Dr and S John Young Pkwy)			34 crashes, 5%	4	6	1	68

Figure 19: Commissioner District 6 High Injury Locations from 2015 – 2017 (\$4 data)



District 6 High Injury Location		From	To	Percent of Total Crashes in District 6	Mode of Transportation Involved in Crashes			
					Pedestrian	Bicycle	Motorcycle	Automobile
1	Kirkman Rd	Pine Shadows Pkwy	Vineland Rd	72 crashes, 15%	3	2	8	157
2	International Dr	Universal Blvd	Oak Ridge Rd	38 crashes, 8%	3	4	4	74
3	LB McLeod Rd	Orange Blossom Tr	Bruton Blvd	40 crashes, 9%	2	2	1	77

High-Injury Network (HIN) Analysis

Through a more thorough analysis of crash data, we can start to identify factors contributing to fatalities and serious injuries on our roadways across the differing modes of transportation. In addition to the High Injury Location maps created using the Signal Four (S4) Data, a High Injury Network (HIN) was created using a more refined heat mapping technique to identify specific intersections and/or shorter segments along the city's most dangerous corridors by mode of transportation (see Figures 21 – 24).

The HIN data analysis used a blended dataset, pulling crash information from the verified SSOGis dataset and Signal Four Analytics, with full data for 2012 through 2015 plus partial year data as available from 2016 and 2017. Similar to all analyses, only those crashes within the city's boundaries that do not occur on limited access facilities were examined. In developing the High Injury Network heat mapping technique, two competing interests were recognized – understanding the effects of how the crashes are clustered spatially while simultaneously limiting the geographic extent of this clustering so that the most critical hot spots and corridors can be identified.

The scoring methodology allows for a geographic extent from the location of one crash to overlap with that of another, or many others in close proximity to one another. This creates a cumulative score of all crashes visualized as gradients of color, thus generating the high-crash heat maps linked to segments of the roadway network. An illustration of the scoring methodology is shown in Figure 20.

This procedure is performed across all crash types and modes:

- crashes involving pedestrians (Figure 21),
- crashes involving bicyclists (Figure 22),
- crashes involving motorcyclists (Figure 23)
- and crashes that involve automobiles only (Figure 24).

Figure 20: Scoring methodology used to identify the High Injury Network

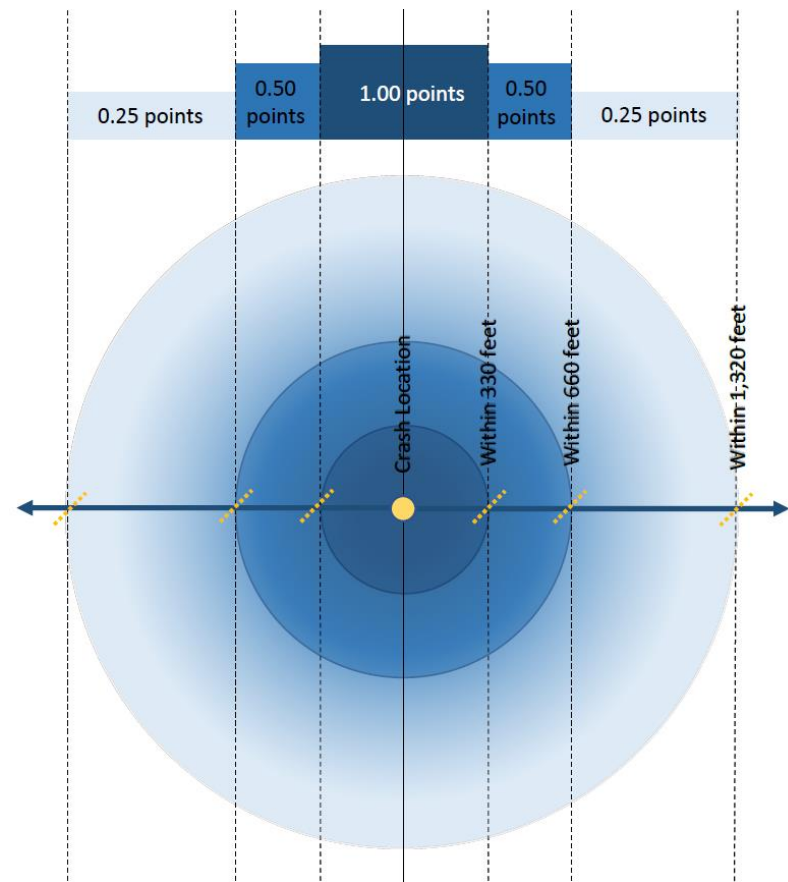
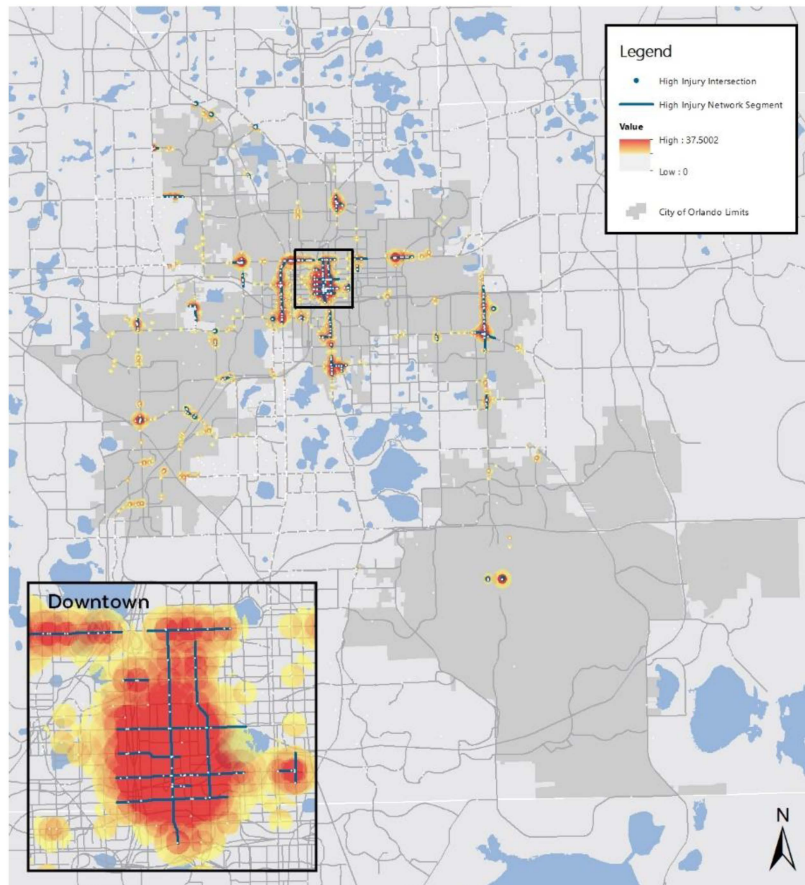
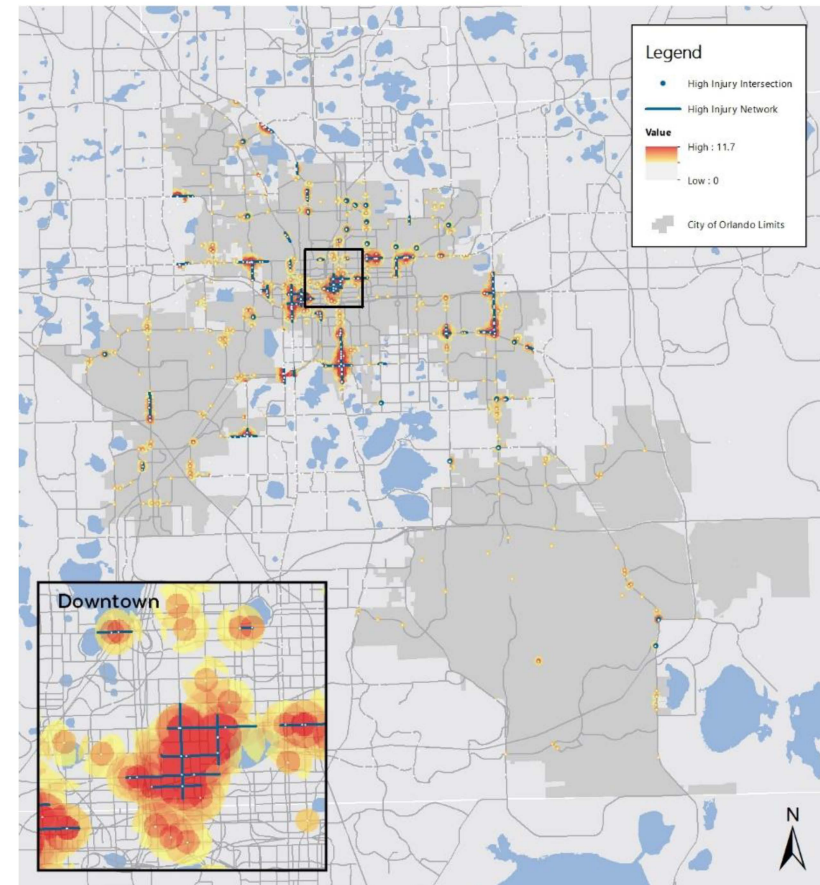


Figure 21: Pedestrian-Involved Crashes Heat Map from 2012 – 2017 (SSOGis and S4 data)



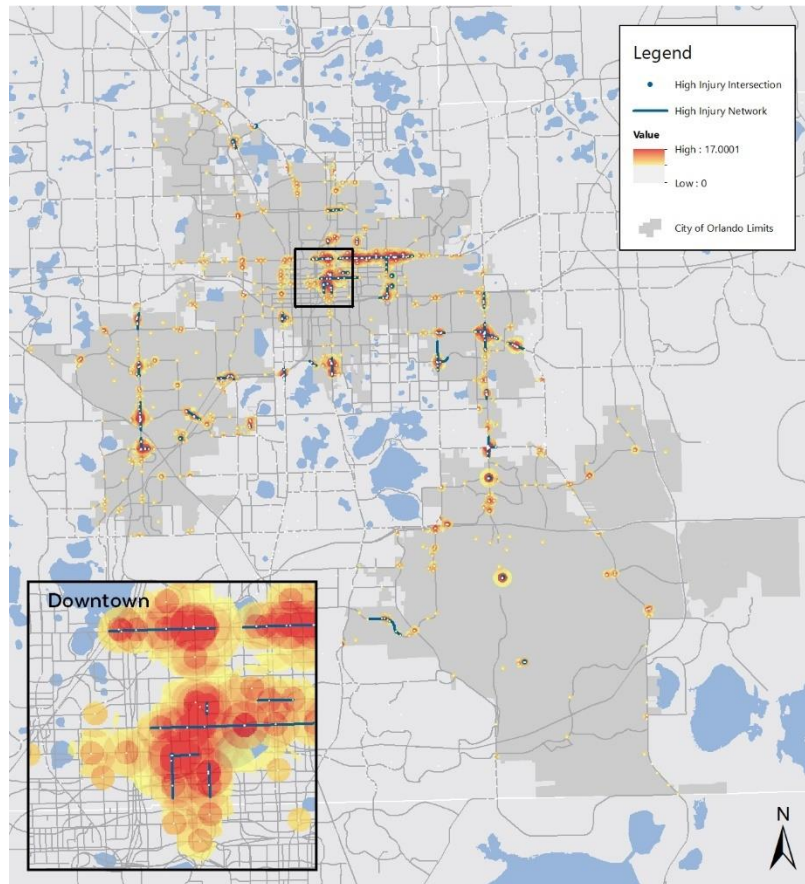
Total Pedestrian Crashes	1,104 of 56,470 total crashes
Percent of Total Crashes	2.0%
Fatal Crashes	50 out of 135 total fatal crashes
Injury Crashes	877 of 16,223 total serious injuries

Figure 22: Bicycle-Involved Crashes Heat Map from 2012 – 2017 (SSOGis and S4 data)



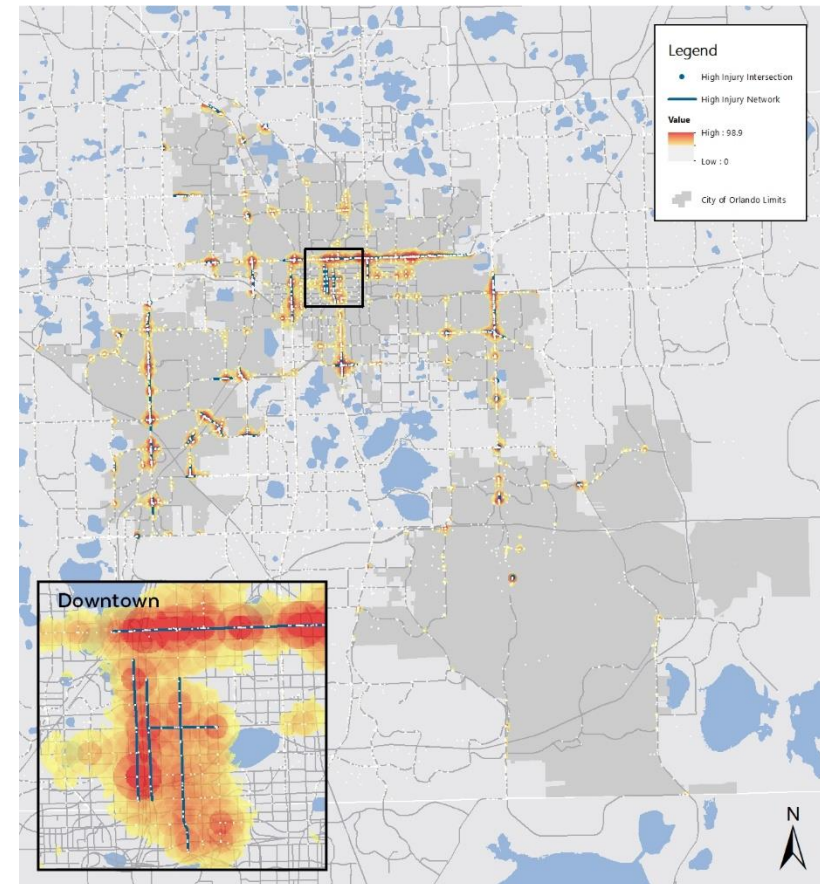
Total Bicycle Crashes	795 of 56,470 total crashes
Percent of Total Crashes	1.4%
Fatal Crashes	9 out of 135 total fatal crashes
Injury Crashes	674 of 16,223 total serious injuries

Figure 23: Motorcycle-Involved Crashes Heat Map from 2012 – 2017 (SSOGis and S4 data)



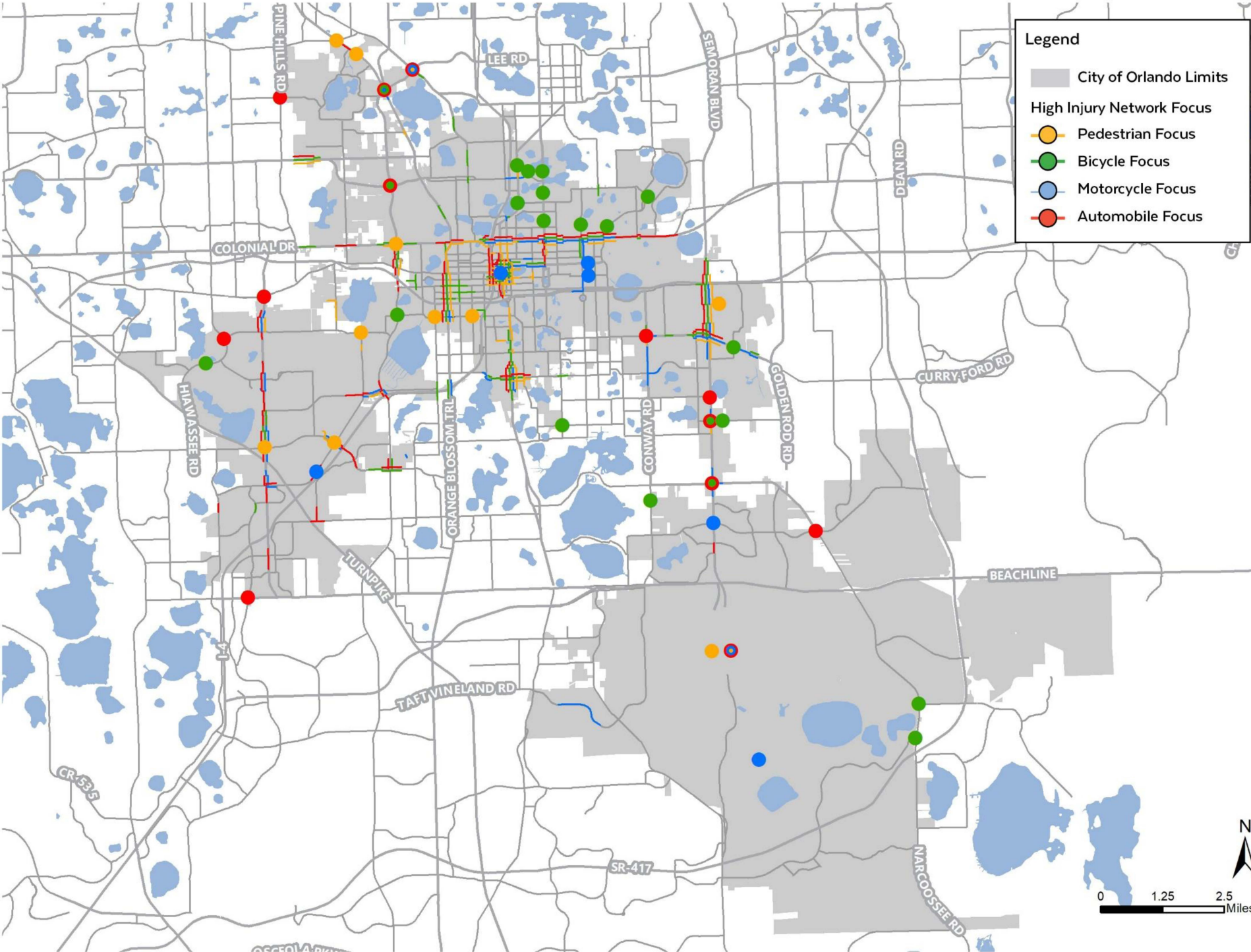
Total Motorcycle Crashes	1,001 of 56,470 total crashes
Percent of Total Crashes	1.8%
Fatal Crashes	25 out of 135 total fatal crashes
Injury Crashes	734 of 16,223 total serious injuries

Figure 24: Automobile-Involved Crashes Heat Map from 2012 – 2017 (SSOGis and S4 data)



Total Automobile Crashes	53,586 of 56,470 total crashes
Percent of Total Crashes	94.9%
Fatal Crashes	0.1% of automobile-only crashes
Injury Crashes	26.0% of automobile-only crashes

Figure 25: Citywide High Injury Network Corridors and Intersections (SSOGis and S4 data from 2012 - 2017)



Risk-Based Analysis to Identify

Contributing Factors and Trends

In addition to the analysis of high injury locations and the High Injury Network (HIN), an analysis of contributing factors and trends was conducted incorporating the SSOGis dataset.

Crash trends are identified through a Risk-Based Analysis (RBA) to gain a better understanding of the factors influencing the occurrence of fatal and serious injury crashes citywide and potential actions that can be taken to counteract their occurrence. An ongoing analysis of the verified crash data is vital to tracking progress and the success of project and program implementation across more specific objectives and countermeasures. The results of the RBA influenced the development and selection of targeted engineering countermeasures, education campaigns and enforcement concentrations to address the city's most common and most severe crash types.

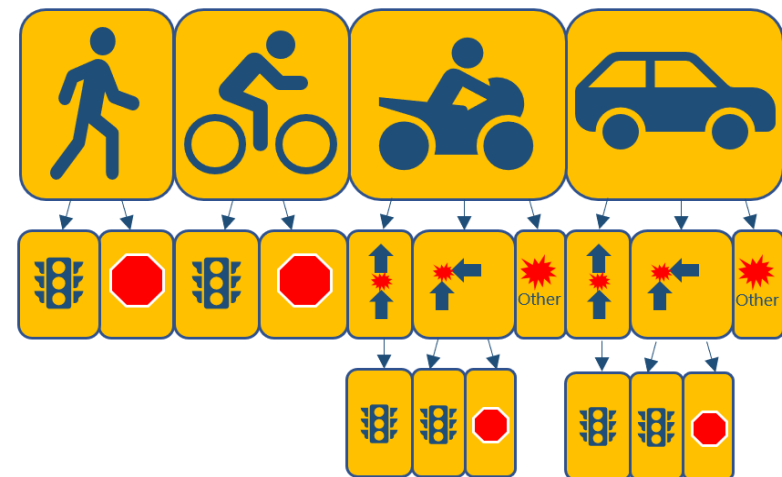
The RBA capitalizes on the use of crash data to identify the root causes (contributing factors) which lead to fatalities or injuries across the different crash types. The analysis follows the decision tree presented here.

- Crashes involving pedestrians are separated from all others. The current trends indicate that the concentration of pedestrian-involved crashes occur at signalized and unsignalized intersection locations.

- Crashes involving **bicyclists** are also reviewed independently. Trends show that bicycle-involved crashes occur most frequently at signalized and unsignalized locations.
- Motorcycle-involved crashes are examined on their own as well. Review of the crash data shows a high incidence of front-to-rear, angle and other crashes.

Front-to-rear crashes were further examined at signalized intersections and angle crash trends were reviewed at both signalized and unsignalized locations. The term “other” is an area of the crash reporting that deserves clarification. At this point, the “other” category is noted to likely be a single-vehicle crash.
- The last set of crashes analyzed are crashes involving **automobiles** only. Examination of the data indicates a large share of front-to-rear, angle and other crashes.

Figure 26: Illustration on how a Risk Based Analysis is conducted



Similar to the High Injury Network, the contributing factors and trends analysis uses both the verified FDOT State Safety Office (SSO) and Signal Four Analytics data. The documentation of trends and contributing factors full data for 2012 through 2015 plus partial year data as available from 2016 and 2017 from SSOGis.

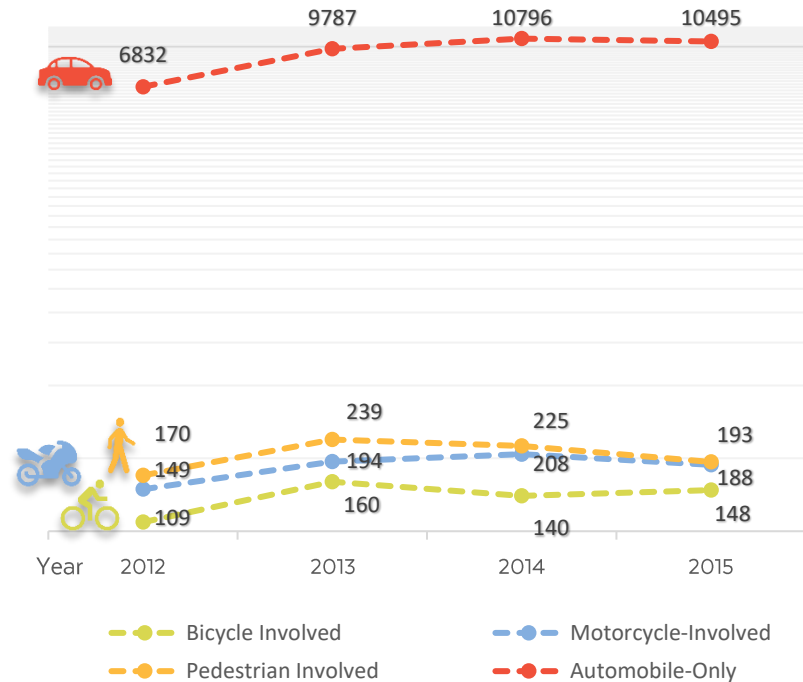
In total, 56,470 crash reports were incorporated into the contributing factors and trends analysis. General trends were extracted and used to target programs and countermeasures in a toolkit included in the Action Plan. These countermeasures can be implemented citywide to improve traffic safety throughout Orlando. The general trends and recommended actions are documented in the Action Plan.

Contributing factors are more thoroughly documented in the High-Injury Network and Risk-Based Analysis Report drafted in tandem with the Action Plan; highlights are included herein in the Action Plan.

Crashes by Mode

As seen in Table 2 and Figure 27, pedestrian, cyclist and motorcycle crashes occur far less frequently than automobile-only crashes. However, a more thorough review of the SSOGis crash data reveals that there is a disproportionate share of fatal and injury crashes involving the city's most vulnerable users.

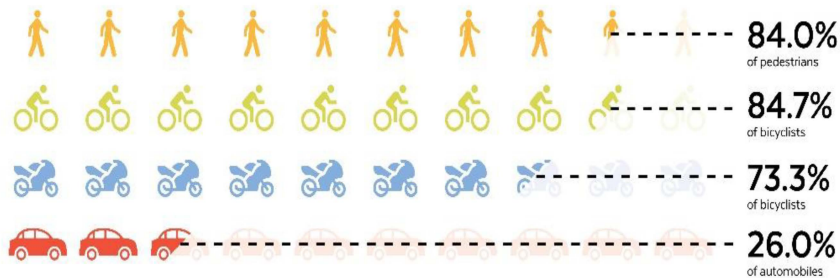
Figure 27. Total Crashes by Type from 2012 – 2015 (SSOGis)



Citywide 2.40% of all crashes were fatal and 28.7% of all crashes resulted in injury. By contrast, 4.53% of all crashes involving pedestrians, 1.13% of all crashes involving bicyclists and 2.50% of crashes involving motorcyclists were fatal. Only 0.1% of crashes involving automobiles were fatal.

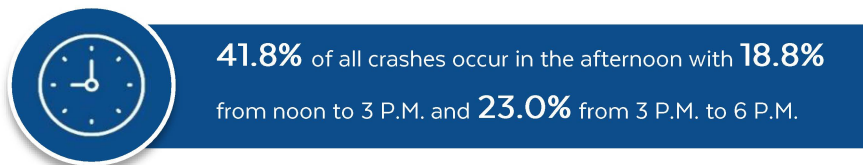
An analysis of crashes resulting in injury reveals the same trends. As seen in Figure 28, where just over one out of every four automobile-only crashes result in a serious injury, nearly three out of every four motorcycle-involved crash will result in a serious injury. And the reality is even more severe for our city's bicyclists and pedestrians, where they have just a 15 percent chance of avoiding serious injury. **Action:** *Evaluate crashes by mode and target countermeasures along the HIN for our most vulnerable users.*

Figure 28. Percent of crashes involving injury by mode, citywide



Time of Day

A review of the SSOGis crash data shows that fatal and serious injury crashes occur most frequently in the afternoon. **Action:** *Focus on programs for getting home safely from school and work.*



Lighting

Although most major roadways are lit throughout the city, a significant share of crashes are occurring at night despite the lighted conditions. This may indicate that lighting may not be adequate. Upgrades to LED lighting should be pursued to provide safety benefits along our roadways while reducing operational and maintenance costs. In comparison to metal halide or high-pressure sodium street lights, LED street lighting can be better controlled to eliminate dark spots and are more capable of providing uniform lighting. **Action:** *Verify roadway lighting presence and quality.*



23.1% of all crashes occur under dark skies with lighted roadway conditions

Intersections

Most crashes occur at intersections indicating that attention by all users is critical. Multiple safety measures and education campaigns will focus on intersections and safer behavior at these locations. **Action:** *Target high crash intersections for safety improvements*



84.6% of crashes occur at intersections, with 50.8% at signalized and 33.8% at unsignalized intersections

Toolbox of Countermeasures

The inaugural Action Plan builds the toolbox of engineering countermeasures, education campaigns and enforcement concentrations for Vision Zero Orlando. The toolbox includes a diverse set of projects and programs to be applied to mitigate against either behavioral or circumstantial causes of traffic accidents, or both. The countermeasures can be applied to effectuate change citywide.

The toolbox was created through an analysis of the historical issues which lead to serious injury or fatal crashes in our city conducted in the Risk Based Analysis.

In addition to RBA, the tools include ideas brought up in the first cycle of public outreach. Every subsequent data analysis and public outreach cycle is expected to identify historical issues and reveal new ones. As new trends become apparent and transportation safety technology advances, tools may be added in.

Once a tool is forged for consistency across the city, the implementation is meant to be distributed at the district level. In some cases, countermeasures will need to be identified through more refined Road Safety Analyses along the High Injury Network. The toolbox will grow over time into a comprehensive set of ways to influence behavior and build a safer transportation system.



Table 3: Toolbox of Countermeasures

Toolbox of Countermeasures	
Engineering Countermeasures	Education Campaigns
<ul style="list-style-type: none"> • Lighting • Pedestrian Priority Traffic Signals • Crosswalk Enhancements • Intersection Control • Sidewalk Network • On-Street Parking Program • Crosswalk Density 	Enforcement Concentrations
	<ul style="list-style-type: none"> • Crosswalk Use • Wrong-Way Cycling
	<ul style="list-style-type: none"> • Yielding on High Injury Network • Speeding on High Injury Network

Engineering Countermeasures



Lighting

- Verify roadway lighting presence and quality along the HIN. Perform pedestrian safety assessments at dusk.
- Check crosswalk lighting



Pedestrian Priority Traffic Signals

- Review traffic signal operations for systemic modifications which serve pedestrians first, confirm how to accommodate cyclists for all movements and improve driver behavior



Crosswalk Enhancements

- Verify the presence and quality of marked crosswalks at unsignalized intersections and determine the need for supplemental enhancements such as refuge islands, signing (with or without beacons) and pavement marking



Intersection Control

- Analyze intersections for installation of four-way stops, modern roundabouts/mini roundabouts or signalization to increase priority for pedestrians and reduce confusion of who has right-of-way



Sidewalk Network

- Provide a complete network of sidewalks



On-Street Parking Program

- Install additional on-street parking
- Allow off-peak on-street parking on some roads



Crosswalk Density

- Increase crossing frequency



Education Campaigns

Crosswalk Use

- Provide education on yielding laws between pedestrians, cyclists and motorists at marked, unmarked and signalized crosswalks (users and enforcement)



Wrong-Way Cycling

- Educate cyclists on the hazards of riding against traffic



Florida Laws

- Provide educational opportunities on Florida traffic laws



Enforcement Efforts

Lack of Yielding on High Injury Network

- Educate and enforce yielding laws between pedestrians, cyclists and motorists at marked, unmarked and signalized crosswalks (users and enforcement)



Speeding on High Injury Network

- Increase speed management practices and enforcement including automated enforcement technology

Communities of Concern

Equity Analysis

One of the primary goals of the Vision Zero Orlando program is to promote equitable, safe transportation for all people in the city, especially those areas with historically underserved populations and high concentrations of transportation disadvantaged. These demographic areas are more generally referred to as communities of concern (CoCs). In an effort to align with other city efforts to improve transportation options, the Action Plan conducted the same equity analysis being used in the city's Bicycle Master Plan update. This analysis allows the city to identify underserved populations in close proximity to the city's high-risk corridors and intersections.

The equity analysis methodology and concept used is similar to what was implemented in the Seattle Bicycle Master Plan from 2014. For purposes of the analysis, the following socio-economic indicators from the 2016 American Community Survey (ACS) were used to define underserved populations:

- Percentage of population below poverty level
- Percentage of minority population
- Percentage of zero-vehicle households
- Percentage of population age 65 or above
- Percentage of population 18 years old or below
- Percentage of means of transportation to work other than personal motor vehicle
- Percentage of population with limited English proficiency (LEP)

The analysis used a threshold for each socio-economic indicator, so that any census block groups that had a greater value than the mean value for any given indicator was given a score of one (1). Scores for individual categories were then added up into a composite equity score (with a maximum score of seven (7) and a minimum possible score of zero (0)). For example, if a census block group had an above average number of zero-vehicle households and an above average number of people 65 years of age or older, the census block group was given a score of two (2). Within the Action Plan, an identified community of concern has a composite score of four (4) or more.

Figure 29: Equity analysis to identify communities of concern

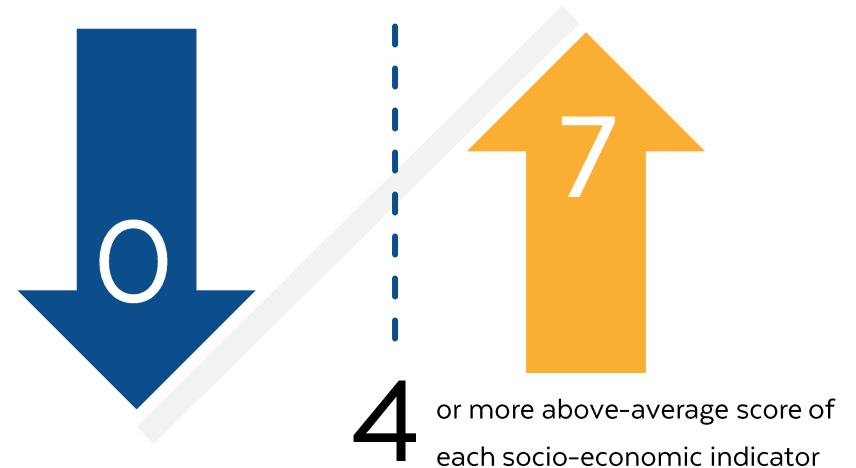
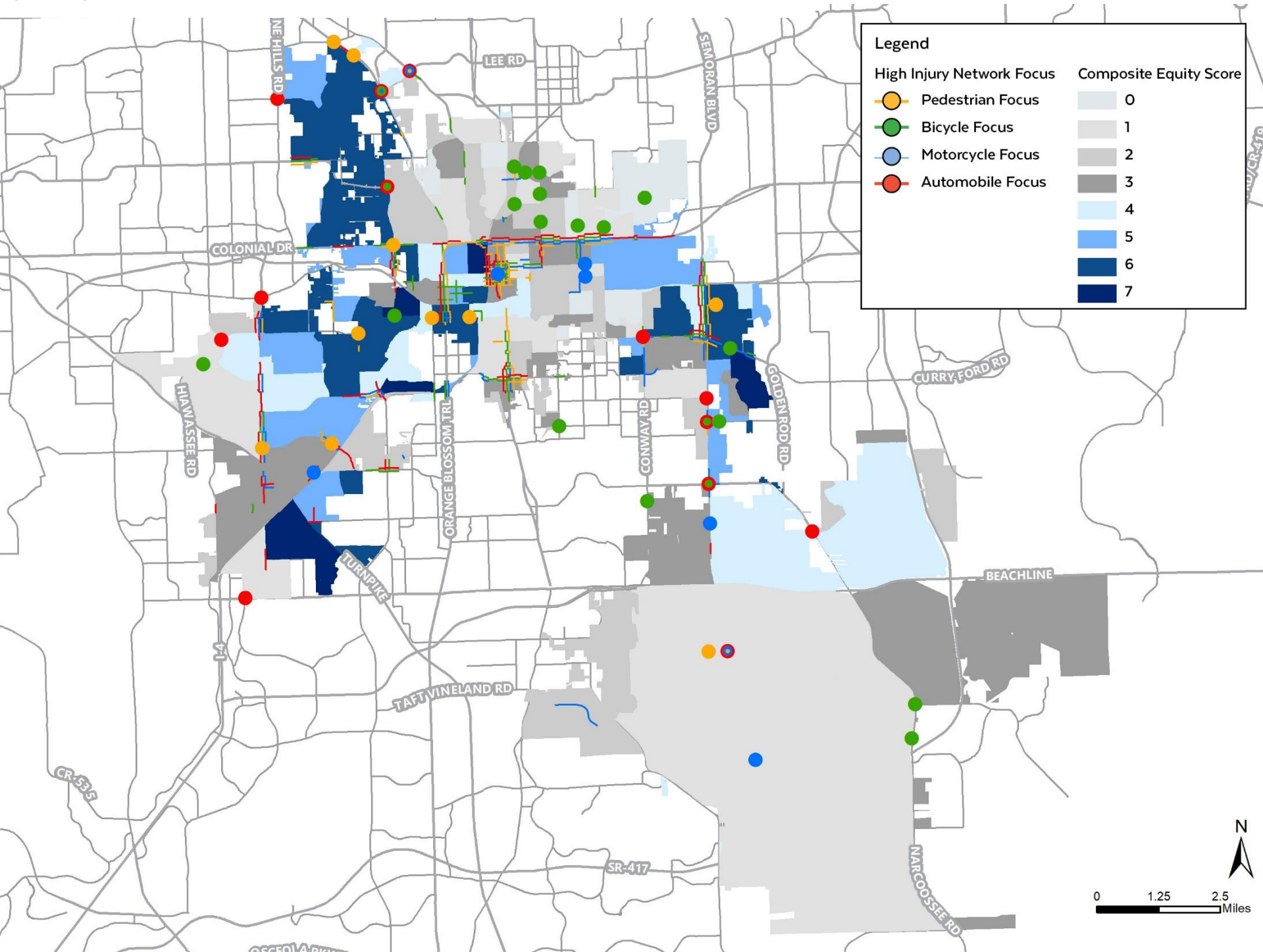


Figure 30: High Injury Network Communities of Concern Analysis – Equity (SSOGis and S4 data from 2012 – 2017, US Census Bureau data)



Specific data trends revealed through the equity analysis are important to access in order to prioritize Vision Zero project and program implementation. Areas where there are higher concentrations of zero-vehicle households or persons commuting by means other than in a vehicle should continue to be monitored and tracked in relationship to the crash data and high injury network. Current data reveals that there are higher concentrations of the following:

- non-auto commuters located west of I-4 in Commissioner Districts 3, 5 and 6 and east of the city along SR 436/S. Semoran Blvd in District 2.
- communities of concern located west of I-4 between Silver Star Rd, N. John Young Pkwy and W. Colonial Dr and east of downtown Orlando near S. Semoran Blvd between Lake Underhill Rd and Curry Ford Rd.

Additionally, several Orlando communities with low levels of bicycle service were identified in the Bicycle Master Plan update. Some specific neighborhoods, listed by commissioner district, include:

- District 1: Southport
- District 2: Englewood Park and Ventura
- District 3: Audubon Park, Rose Isle and Lake Fairview
- District 4: Lake Como and SoDo
- District 5: Lake Sunset
- District 6: Catalina and Windhover

These are areas in which bicycle-specific transportation investments will be prioritized in the future. This is the type of recommendation which meets the equity goals of the Vision Zero Action Plan and aligns

with the city's mission. Additionally, the data shows that with no exception, places with higher concentrations of people 18 years old and below have fewer miles of signed bike routes, on-street or off-street bicycle facilities and total miles of facilities per square mile than the average.

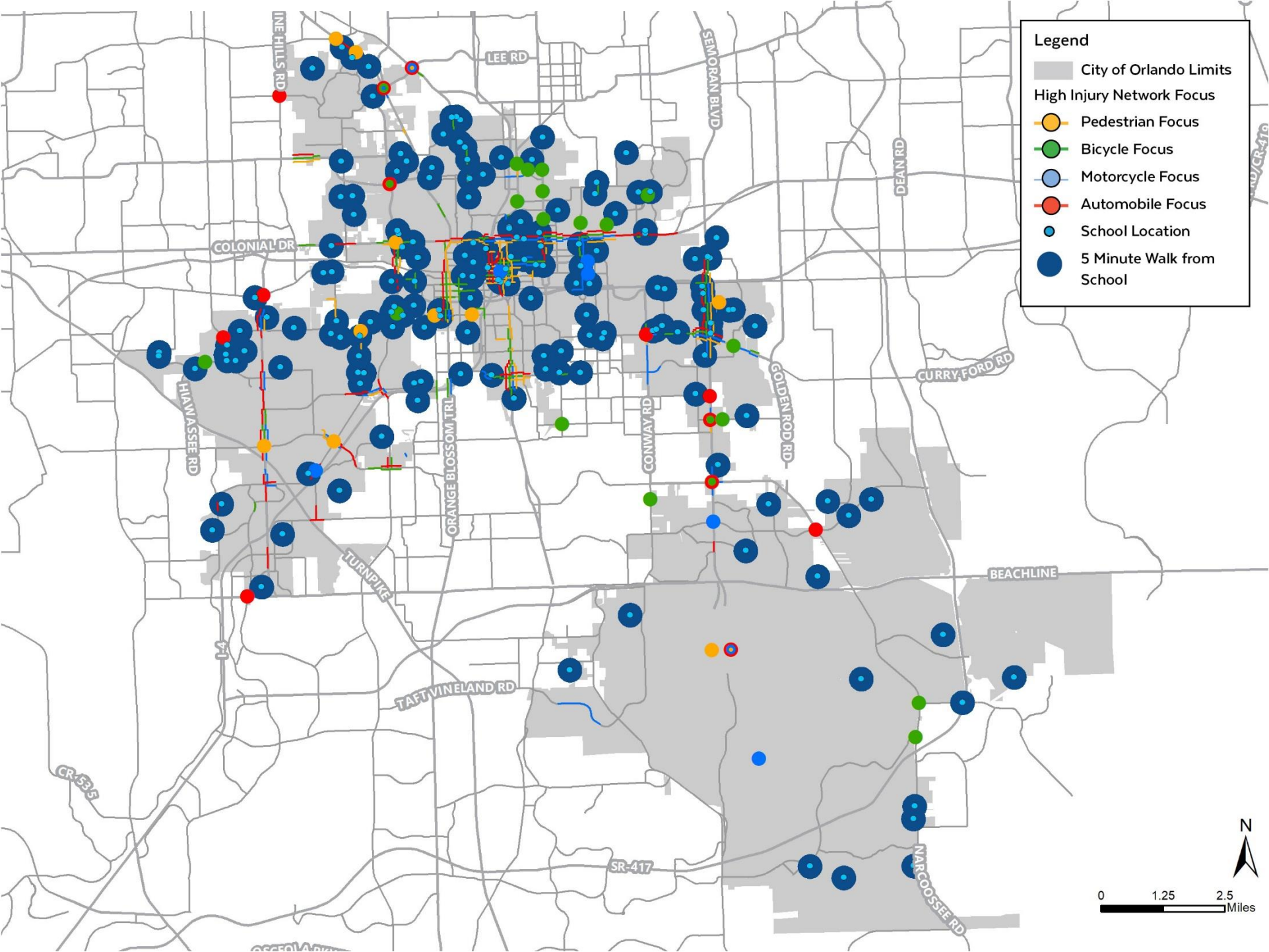
Proximity to High Injury Network Analysis

Correlations to support communities of concern were studied in the drafting of the Vision Zero Action Plan using the same equity analysis. The citywide High Injury Network and Intersections was overlaid with the identified communities of concern, as seen in Figure 30. Additionally, High Injury Network corridors and intersections located within communities of concern are identified in Table 3.

Proximity to School Analysis

A final analysis was conducted to identify those High Injury Network corridors and intersections located within a five (5) minute walk to public, private or charter schools, called the pedestrian shed (see Figure 31). A pedestrian shed of a quarter (.25) mile radius was drawn around each school location and the High Injury Network corridors or intersections in close proximity to these schools were identified. Not only do these areas have high concentrations of traditionally underserved populations as defined above, but they also offer educational and enforcement opportunities to encourage participation in Vision Zero Orlando. Vision Zero Orlando educational programs and promotional materials created can be strategically shared in these areas. Additionally, ongoing enforcement operations may be prioritized in these zones.

Figure 31: High Injury Network Communities of Concern Analysis – Schools (SSOGis and S4 data, US Census Bureau data)



High Injury Network Corridors and Intersections

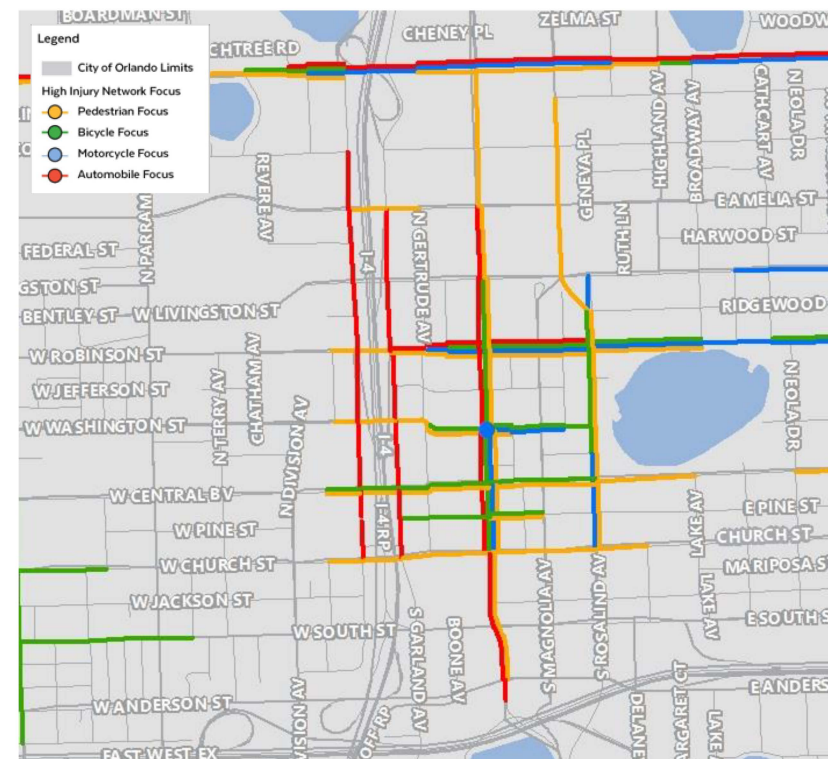
Crashes occur everywhere, but there are certain corridors and intersections in each Commissioner District throughout Orlando where crashes are more prevalent and severe, or even result in multiple serious injuries or fatalities. These severe crash corridors and intersections are identified in the High Injury Network (HIN) analysis, which will be updated by the city every two years. Maps of the citywide High Injury Network and the Central Business District are shared in Figures 25 and 32. These corridors and intersections are separated by mode and many of the intersections and corridors are located in the high crash location maps created using the Signal 4 (S4) data (see Figures 14 – 19).

Following the adoption of the Action Plan, the city and stakeholders in each District can work together to select those target areas they would like to prioritize, specifically addressing safety hazards in communities of concern and in high crash locations. Thereafter, each district will work towards identifying specific countermeasures along these corridors and intersections to improve safety for all users.

A list of countermeasures to consider for each mode of transportation is provided in the Action Plan and further discussed in the corresponding High Injury Network and Risk Based Analysis report. It is anticipated that new countermeasures will continue to be added as technology evolves and new Vision Zero initiatives are started. This

will require coordination with various city departments to create a plan to implement the specific project and programs that can more effectively prevent crashes in these areas.

Figure 32: Downtown Orlando Central Business District High Injury Network-Corridors and Intersections by Mode (SSOGis and S4 data)



Projects and Programs Identification

There are three major components used to identify transportation safety projects and programs for Vision Zero: Public Comment (through workshops and online platforms), the High-Injury Network (HIN) and the Risk-Based Analysis (RBA). Project and program identification incorporates the High Injury Network corridors and intersections, as well as the crash trends found through the Risk Based Analysis. After having been vetted through public outreach, stakeholders will be better able to identify corridors or intersections to seek improvement on. The crash data is then supplemented with public input received through ongoing community outreach in order to identify those issues and needs that are not captured in crash data, like latent demand for a safer transportation system (see Figures 9, and 35 - 38 for examples). Data provides a historical perspective, while public comments add real-life experience to the program.

Every route contributes to the built transportation network; however, because of the level of traffic stress or perceived danger, vulnerable users may avoid travelling to sites such as the grocery store, library or medical services, leaving gaps in the network. These conditions limit the quality of life within Orlando. The benefit of the safe systems approach keeps the community safe and makes it easier to get around. Public comment can also reveal areas that have frequent near-miss crashes, which could lead to solutions that can be implemented to bring about change for the community and empower citizens to recognize their part in the system.

Public engagement opportunities provide the forum for comments and the avenue for implementation necessary to accomplish the cultural change needed to get to zero in 2040.

Figure 33: Project and Program Identification Flow Chart



Projects and Programs Implementation

Strategies defined in the Action Plan have been designed to empower city staff and the community to bring innovative ideas forward to improve transportation safety in Orlando's neighborhoods. Projects and programs can be prioritized based upon foreseeable outcomes and scale of perceived benefits at a district level. In addition to the implementation of citywide strategies, road safety audits or complete street studies may need to be conducted to address the constraints and opportunities for specific corridors or intersections. These will provide more detailed suggestions and address feasibility.

Mid-way through year two, there will be a re-evaluation period in which new action strategies are identified and the Vision Zero goals are analyzed for progress across the performance metrics discussed in the monitoring section of the Action Plan.

Vision Zero Orlando Action Plan reports will outline the success of action strategies countermeasures implemented in each district.

Action Plan Framework and Monitoring

The Vision Zero Orlando Action Plan includes implementation measures that allow all Vision Zero stakeholders, including elected officials, law enforcement officers and planning and health professionals to communicate clear, meaningful expectations. Specific objectives, action strategies and performance metrics have been identified to help ensure that Vision Zero Orlando goals are met. Every two years, the Action Plan will be updated to report on progress toward the completion of Action Strategies. The following pages show the framework which include the goals, action strategies, performance metrics and officer who will continue to track progress for each goal. This framework will evolve as we work together to meet the goal of zero traffic-related fatalities or serious injuries by 2040.

Figure 34: Action Plan Framework Monitoring





GOAL 1: ADOPT A SAFE SYSTEMS APPROACH IN ROADWAY DESIGN, OPERATIONS AND MAINTENANCE

OBJECTIVE	Objective 1.A.			Objective 1.B.			Objective 1.C.	
	Identify and implement proven countermeasures to address crash types that most often lead to fatalities and serious injuries in Orlando			Prioritize sites where systemic safety treatments should be implemented and implement the countermeasures/interventions			Modify the land development code and/or policies to include safe multimodal accommodations, specifically target speeds	
	Analyze crash trends to identify a targeted toolbox of countermeasures	Train staff on the implementation of countermeasures identified in the toolbox	Implement countermeasures identified in the toolbox	Incorporate equity into the prioritization method to target investments in areas with transportation disadvantaged populations	Develop annual list of priority sites for implementation of countermeasures or interventions based on results of the process	Analyze fatal and serious injury crash locations to identify the city's HIN	Review and identify street design guidelines and policies requiring modification to incorporate safe multimodal accommodations	Update land development regulations and the comprehensive plan to support safe access and circulation
	Completed/ Not Completed	% of staff trained in applying countermeasures	# of times a countermeasure is implemented ; % reduction in crashes countermeasure is implemented	% of investments in areas with transportation disadvantaged populations	% change in reported crashes at sites on the annual list	Completed/ Not Completed	Completed/ Not Completed	Completed/ Not Completed
NEXT STEP	Year 3 Perform risk-based analysis (RBA) to identify additions or amendments to the toolbox	Year 2 Organize information and training materials that teach how to link crash trends to countermeasures	Year 2 Establish a GIS-based process for monitoring countermeasure implementation and effectiveness	Year 1 Establish a method to identify areas with transportation disadvantaged populations and communities of concern	Year 2 Establish prioritization method and develop initial list	Year 3 Perform GIS analysis to identify additions or amendments to the High Injury Network	Year 1 Make list of documents to amend	Year 1 Make list of documents to amend



GOAL 2: INCREASE EVERYONE'S UNDERSTANDING OF THE LEADING CAUSES OF CRASHES RESULTING IN FATALITIES AND SERIOUS INJURIES

	Objective 2.A.			Objective 2.B.		Objective 2.C.	
OBJECTIVE	Develop a public education campaign to explain the relationship between individual behaviors and crashes			Create partnerships with allied agencies, such as OCPS, the DMV, Bike/Walk Central Florida, FDOT, colleges, health departments, community groups and major employers to distribute campaign messages and materials		Raise awareness of Vision Zero Orlando within the city and with the public. Encourage city staff to lead by example in promoting the Vision Zero safety culture	
ACTION STRATEGY	Develop materials and programs for each of the educational campaigns identified in the toolbox	Create a multi-platform and multi-lingual marketing and distribution plan to support Vision Zero Orlando outreach efforts, particularly in communities of concern	Promote Vision Zero Orlando and transportation safety in press releases	Increase outreach and provide training along with allied agencies	Leverage the VZ Network, FDOT Alert Today, Alive Tomorrow campaign resources and rethink program resources for community outreach events	Provide annual Vision Zero-focused traffic safety training to all city staff	Provide opportunities to explore active modes of transportation through partnerships with the regional commuter assistance programs
PERFORMANCE METRIC	Completed/ Not completed	# of HOA meetings attended # of children reached # of social media hits # of VZ webpage hits # of partner social media/website hits or shares	# of media stories	# of participants and # of trainings offered	# of campaigns incorporating Vision Zero Orlando	% trained employees tracked by department	# employee-oriented events and challenges promoting active transportation
NEXT STEP	Year 1 Prioritize and develop a plan for educational campaigns	Year 1 Identify the varying audiences and avenues of outreach	Year 1 Establish a communication plan and strategy with press	Year 1 Prepare outline and schedule of training. Work with allies to develop rewards programs similar to United Way campaigns	Year 1 Identify existing programs to lead with. Establish a plan for subsequent two-year cycle	Year 1 Prepare and deliver an introduction to Vision Zero Orlando and how each department contributes to safety. Outline training	Year 1 Establish coalition of partners



GOAL 3: SUPPORT LAW ENFORCEMENT EFFORTS TO ELIMINATE BEHAVIORS LEADING TO FATAL AND SERIOUS INJURY CRASHES

	Objective 3.A.		Objective 3.B.	Objective 3.C.
OBJECTIVE	Provide resources and training to law enforcement on the importance of properly filling out crash reports, laws related to vulnerable road users and positive enforcement methods		Conduct ongoing law enforcement campaigns along high-crash corridors and report changes in crash type, crash severity and contributing behaviors over time	Identify, budget and purchase new technology to reduce undesirable behaviors that lead to crashes, such as speeding, red-light running and distracted driving
ACTION STRATEGY	Increase number of officers and businesses attending training on pedestrian and bicycle laws, crash causes and contributing factors, roll call videos, VZ strategies and significance of accurately filling out crash reports	Monitor and maintain speed reduction on high-crash corridors	Develop enforcement operations plan for priority sites	Purchase and install behavior-influencing technologies for use at priority sites; document outcomes where the new technology is being used
PERFORMANCE METRIC	% increase in officers attending training courses % increase in businesses attending training courses % increase in accurate reporting	# of feedback signs installed Change in speed reduction on corridors that the feedback signs are placed in	% change in yielding behavior % change in crashes by type % change in crashes by severity	Completed/Not completed
NEXT STEP	Year 1-2 Organize refresher courses for Law Enforcement Officers (LEOs) to enhance compliance and consistency in completing crash report forms for the benefit of crash data analysis.	Year 2 Use speed detecting equipment to identify target areas or times for focused enforcement (i.e. speed feedback signs with data collection or microwave detection), monitor legal action allowing auto-enforcement for implementation.	Year 2 Identify additional funding sources for law enforcement campaigns and existing programs to put into action.	Year 1 Identify technology available for use.



GOAL 4: DEMONSTRATE CONTINUOUS PROGRESS TOWARDS VISION ZERO ORLANDO

	Objective 4.A.	Objective 4.B.				Objective 4.C.	
OBJECTIVE	Monitor transportation system user behavior over time to evaluate effectiveness of the Vision Zero Orlando program strategies and countermeasures	Annually review, refine and re-evaluate Vision Zero Orlando action strategies and performance measures for effectiveness; coordinate effort with annual <i>State of the Network Report</i> .				Report changes in fatality and serious injury crash rates using the Vision Zero Orlando webpage and annual evaluation reports	
ACTION STRATEGY	Conduct observational surveys at priority sites annually to evaluate behaviors of pedestrians, bicyclists and motorists; provide reports of observations	Create interagency VZ Orlando team to meet annually to review, refine and re-evaluate performance measures and update strategies	Coordinate with intergovernment agencies to collect data and/or annual reports related to VZ Orlando efforts (refer to VZ Orlando Task Force)	Analyze data collected and their relationship to the VZ Orlando action strategies and performance measures for inclusion in the annual report	Where applicable, edit or propose new action strategies and performance measures for inclusion in the annual report	Update the VZ Orlando webpage and provide annual reports to reflect changing behaviors, trends and outreach strategies.	Disaggregate and show percent changes in fatal and serious injury crash rates and map performance measures relative to transportation disadvantaged populations and communities of concern
PERFORMANCE METRIC	% change in key behaviors, such as pedestrian usage of crosswalk facilities, bicyclist direction of travel, vehicle interaction with crosswalk user, etc.	Completed/ Not Completed	Completed/Not Completed	Completed/ Not Completed	Completed/ Not Completed	Completed/ Not Completed	Completed/ Not Completed
NEXT STEP	Year 1 Develop a process for monitoring the Vision Zero Orlando efforts in the 6 E's of Vision Zero Orlando	Year 1 Use resources from the task force to establish the first team. Develop a monitoring method	Year 1 Identify the data to be collected for monitoring and lead agency	Year 1 Compile and measure performance metrics and establish the annual report format	Year 2 Perform review	Year 2 Update webpage and prepare annual report	Year 2 Compile and measure equity-related performance metrics and incorporate annual report



GOAL 5: IMPROVE ACCESS AND TRAVEL TIME TO THE LEVEL 1 TRAUMA CENTER AND OTHER HOSPITALS

OBJECTIVE	Objective 5.A.				Objective 5.B.		
	Identify corridors that have barriers/impediments to the Level 1 Trauma Center and other hospitals				Partner with the medical and public health community to obtain available health data and correlate this data with crash locations		
ACTION STRATEGY	Integrate new technology to allow for emergency access route alternatives per real-time traffic data	Track violations impeding emergency response by district	Track response time between dispatch location and incident, i.e. the first arriving unit to admission into the trauma center or other hospital	Track time for transfers of patients injured in crashes between hospitals	Maintain and enhance real-time communication system for police, Emergency Management Services (EMS) and hospitals to improve coordination during severe injury crashes	Research relationships between injury severity and traffic safety; review available data from Orlando Fire Department (OFD) on contributing factors (helmet, seat belt and airbag deployment)	Review available data from the Department of Health against fatality reports to identify geographic locations of crashes
	Completed/ Not Completed	# of violations impeding emergency response	% reduction in travel time to severe injury crashes (tracked by minutes)	% reduction in travel time to emergency medical facilities (tracked by minutes)	Completed/Not Completed	Completed/Not Completed	Completed/Not Completed
PERFORMANCE METRIC	Completed/ Not Completed	# of violations impeding emergency response	% reduction in travel time to severe injury crashes (tracked by minutes)	% reduction in travel time to emergency medical facilities (tracked by minutes)	Completed/Not Completed	Completed/Not Completed	Completed/Not Completed
	Year 1 Research and prepare a list of applicable technology for consideration	Year 1 Develop a process for monitoring and prepare a plan for enforcement	Year 1 Incorporate data into the annual report on Vision Zero Orlando	Year 1 Incorporate data into the annual report on Vision Zero Orlando	Year 1 Establish a team to discuss real-time communication systems	Year 2 Relate injury severity data with HIN analysis	Year 1 Research potential data sources and probability of incorporating results into the RBA
NEXT STEP	Year 1 Research and prepare a list of applicable technology for consideration	Year 1 Develop a process for monitoring and prepare a plan for enforcement	Year 1 Incorporate data into the annual report on Vision Zero Orlando	Year 1 Incorporate data into the annual report on Vision Zero Orlando	Year 1 Establish a team to discuss real-time communication systems	Year 2 Relate injury severity data with HIN analysis	Year 1 Research potential data sources and probability of incorporating results into the RBA
	Year 1 Research and prepare a list of applicable technology for consideration	Year 1 Develop a process for monitoring and prepare a plan for enforcement	Year 1 Incorporate data into the annual report on Vision Zero Orlando	Year 1 Incorporate data into the annual report on Vision Zero Orlando	Year 1 Establish a team to discuss real-time communication systems	Year 2 Relate injury severity data with HIN analysis	Year 1 Research potential data sources and probability of incorporating results into the RBA



GOAL 6: PRIORITIZE INVESTMENTS AND PROGRAMS IN COMMUNITIES OF CONCERN (CoC)

OBJECTIVE	Objective 6.A.				Objective 6.B.
	Break down cultural and socio-economic barriers to traffic safety				Conduct ongoing campaigns in communities of concern
ACTION STRATEGY	Identify communities of concern (i.e. higher populations of low-income and minority populations, limited English proficiency (LEP), car-less households, etc.)	Convene focus groups or citizen task forces in communities of concern to discuss cultural and socioeconomic barriers to traffic safety	Validate equitable project implementation at priority sites based on ongoing fatal and serious injury and crash analysis and socioeconomic indicators	Conduct neighborhood mobility audits and needs assessments to examine safety, access and mobility needs	Incorporate implicit bias training for law enforcement
PERFORMANCE METRIC	Completed/ Not Completed	# of focus group meetings held # of participants in focus groups	% share of investment in communities of concern	# of mobility audits conducted in low-income, minority and other traditionally transportation disadvantaged communities	% or # of officers and citizens trained
NEXT STEP	Year 1 Develop a method for monitoring and validating equitable implementation of Vision Zero Orlando in communities of concern	Year 1 Commissioners to appoint District Vision Zero Orlando champions for each district	Year 1 Prepare a process for monitoring implementation and reporting based on CoC definition (score > 4)	Year 2 Train Vision Zero Orlando champions on organizing audits and needs assessments; along with follow up and monitoring effectiveness	Year 1 Research available programs on reducing implicit bias and identify most applicable for implementation in Orlando.

List of Definitions

Action strategy A plan of action designed to achieve a specific goal.

Active transportation The act of using your own power to get from one place to another, such as walking and bicycling.

Autonomous vehicle An autonomous vehicle, also known as a driverless vehicle, is a vehicle that can move and guide itself without human input.

Bicycle master plan A document that describes long-range planning for developing bicycle infrastructure, with emphasis on designating and expanding bike routes, fostering a safe environment for cycling and promoting bicycling as a viable transportation option.

Census block group A geographical unit used by the United States Census Bureau which is between the Census Tract and the Census Block. It is the smallest geographical unit for which the bureau publishes sample data, i.e. data which is only collected from a fraction of all households. Typically, Block Groups have a population of 600 to 3,000 people.

Community of concern (CoC) Areas that have low income and education levels, high concentrations of seniors, low rates of vehicle ownership, high obesity rates and high numbers of schools and community centers.

Community outreach plan (COP) A plan that outlines the audience, messages and tactics that will be employed as well as the timeline, roles and responsibilities in communicating with the community.

Complete street Streets that are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities.

Composite equity score A score calculated from multiple data sources to develop a valid measure of equity in a place.

Crosswalk density The number of crosswalks provided per unit measure of roadway, which is typically an indicator of crossing opportunities for non-motorized users.

Dangerous behavior Actions which have a high risk of being harmful or injurious to roadway safety such as alcohol impairment and distracted driving/walking.

Dashboard An interactive page that displays community outreach, education and real time reporting.

Data-driven approach An approach compelled by data, rather than by intuition or personal experience.

Distracted driving Anything that takes the driver's attention away from the vital task of driving. There are three types of distraction: manual, which is taking hands off the wheel; visual, or taking eyes off the road; and cognitive, which involves taking one's mind off driving. Distracted driving often centers on cell phone use and texting but also includes other activities such as eating, talking to passengers, reading, adjusting the radio or climate controls, dealing with children and being fatigued or drowsy.

Education campaign A program set up to explain and inform the public about the relationship between an individual's behavior and crashes.

Enforcement The act of compelling observance of or compliance with a law, rule or obligation.

Engineering countermeasure Engineering actions or methods related to roadway design and operations that help to prevent, avert, or reduce a specific type of crash or threat to pedestrians, bicyclists and/or vehicles.

Equitable mobility Safe and fair access for all road users.

Equity analysis A detailed examination of a set of elements or the structure of policies that ensure they are not discriminatory.

Florida Department of Transportation (FDOT) State Safety Office

The overseeing safety office in the State of Florida whose mission is to continually improve the safety of the traveling public. The Safety Office consists of 6 sections, including federal highway safety grants, crash data, bicycle pedestrian program, safe routes to school program, crossing guard train the trainer and employee health and safety.

High Injury Network corridor or intersection A specific street corridor or intersection where crashes are more prevalent and severe.

Geographic information system (GIS) A computer-based tool that analyzes, stores, manipulates and visualizes geographic information on a map. GIS links geographic locations on Earth with attribute information enabling users to visualize patterns, understand relationships and trends.

Heat mapping A two-dimensional representation of data in which values are represented by colors, providing a visual summary of information.

High injury network (HIN) A network of streets that has a higher incidence of severe and fatal collisions.

Implicit bias training Training to counteract the automatic association people make between groups of people and stereotypes about those groups.

Intersection control Devices such as traffic signals, stop signs and roundabouts that provide continuity of the flow of traffic at an intersection.

Latent demand In terms of traffic, latent demand is demand for additional roadway capacity, but, for any number of reasons, is suppressed by the inability of the transportation system to handle it.

Level 1 trauma center A comprehensive regional resource that is a tertiary care facility central to the trauma system. Capable of providing total care for every aspect of injury- from prevention to rehabilitation.

Limited access roadway A highway or arterial road for high speed traffic which has many or most characteristics of a controlled access highway including limited access to adjacent property, some degree of separation of opposing traffic flow, use of grade separated interchanges, prohibition of some modes of transportation and very intersecting cross streets.

Modern roundabout A type of circular intersection or junction in which traffic is permitted to flow in one direction around a central island and priority is given to traffic already in the roundabout. Modern roundabouts observe various design rules to increase safety.

Multidisciplinary approach Drawing appropriately from multiple disciplines to redefine problems outside of normal boundaries and reach solutions based on new understanding of complex situations.

Multimodal Multiple options of travel that lead to a destination, including walking, biking, car, bus, train, airplane and ship.

Objective A subset of goals, providing measurable strategies to measure progress towards stated goals. Objectives does not stand alone without a goal. Objectives are specific, measurable and have a defined completion date.

They are more specific and outline the “who, what, when, where and how” of reaching the goals.

Pedestrian priority traffic signal A signal that allows pedestrians to enter the crosswalk with vehicle traffic yielding.

Pedestrian or walking shed An area encompassed by the walking distance from a town or neighborhood center. Usually the distance that can be walked in 5 minutes.

Performance metric Figures and data representative of an organization’s actions, abilities and overall quality.

Refuge island A small section of pavement or sidewalk that is completely surrounded by asphalt or other road materials where pedestrians can stop before finishing crossing the road. It allows a pedestrian to cross a street in two phases.

Risk-based analysis (RBA) A data-driven review of risks associated with a particular event or action that contributes to crashes.

Road safety analysis Detailed examination of the methods and measures used to prevent road users from being killed or seriously injured.

Serious injury Personal injury which involves substantial risk of death, protracted and obvious disfigurement, or protracted loss or impairment of the function of a bodily member or organ or mental faculty.

Signal 4 Analytics A statewide interactive, web-based geospatial crash analytical tool developed by and hosted at the University of Florida, Geoplan Center.

Socio-economic indicator An indicator used to measure social and economic development within a specific population. Data is gathered from the census, administrative databases or polls in an area and it is used to assess characteristics of the community, such as employment rates, crime rates, poverty status, education levels and life expectancy.

Speed management practice The use of various speed control devices with the goal of reducing and/or eliminating speed-related problems.

Task force A group of people specially organized for overseeing and guiding specific planning projects or tasks.

Transparency Lack of hidden agendas or conditions, accompanied by availability of full information required for collaboration, cooperation and collective decision making.

Transportation disadvantaged The segment of the population (older adults, persons with disabilities, persons of low income and children at risk) with no or limited access to employment, health care, education and other vital services.

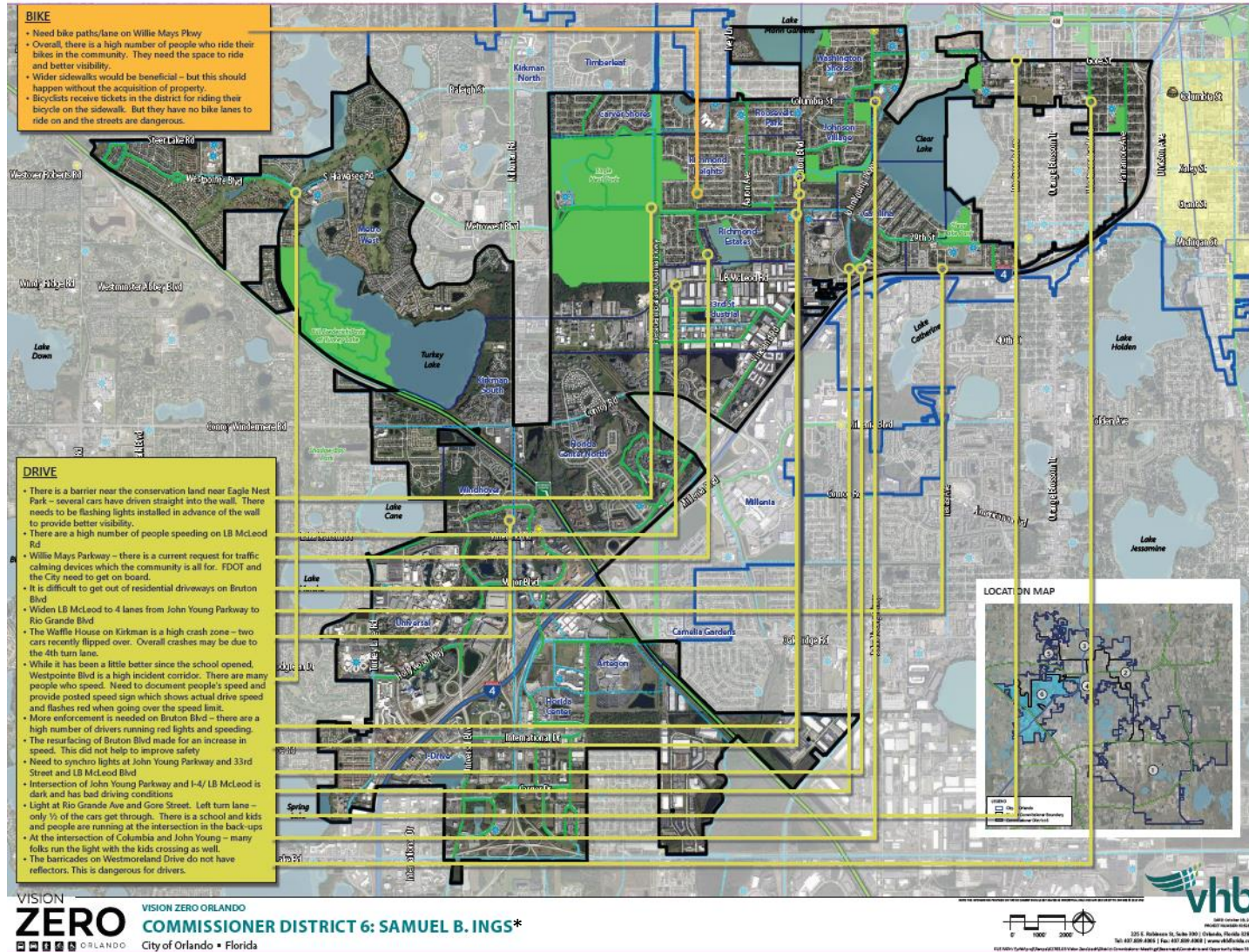
Vision Zero Network A collaborative campaign helping communities reach their goals of eliminating all traffic fatalities and severe injuries, while increasing safe healthy, equitable mobility for all.

Vulnerable user Anyone who is on or alongside a roadway without the protective hard covering of a metal automobile. The term includes bicycle riders, pedestrians, motorcyclists, people in wheelchairs, police, first responders, roadway workers and other users like a person on a skateboard or scooter. It is meant to include people who are especially at risk of serious bodily harm if hit by a car, SUV or truck.

Wrong-way cycling Riding a bicycle against the direction of traffic.

Public Comments from Vision Zero Orlando Commissioner District Community Meetings

Figure 35: Public comments received on bicycle and automobile safety concerns at a District 6 community meeting held on October 25, 2018



*Commissioner at the time of public meeting. As of January 13, 2020, District 6 Commissioner is Bakari F. Burns

Figure 36: Public comments received on transit, walking and other safety concerns at a District 6 community meeting held on October 25, 2018

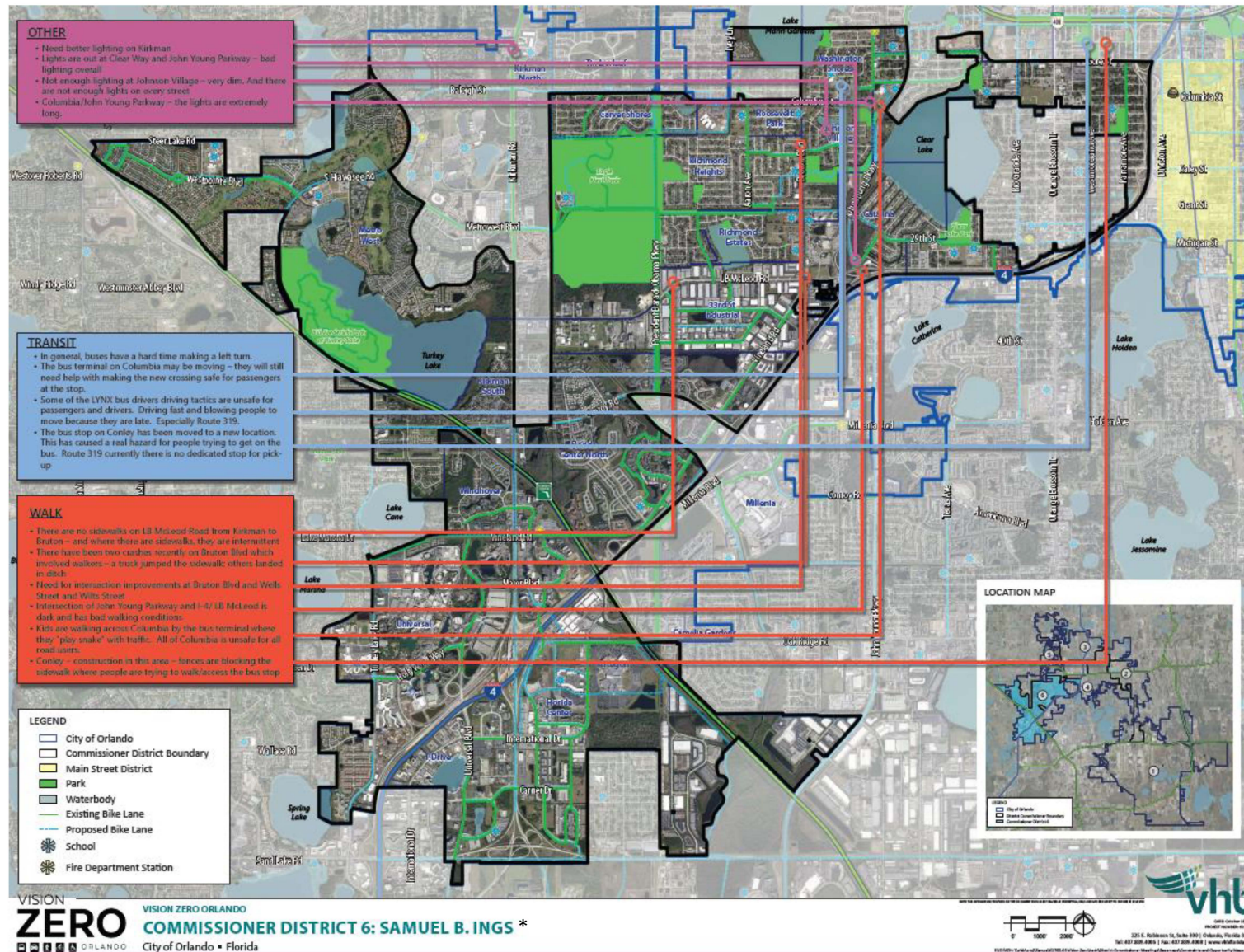


Figure 37: Public comments received on bicycle and automobile safety concerns at a District 3 community meeting held on October 9, 2018

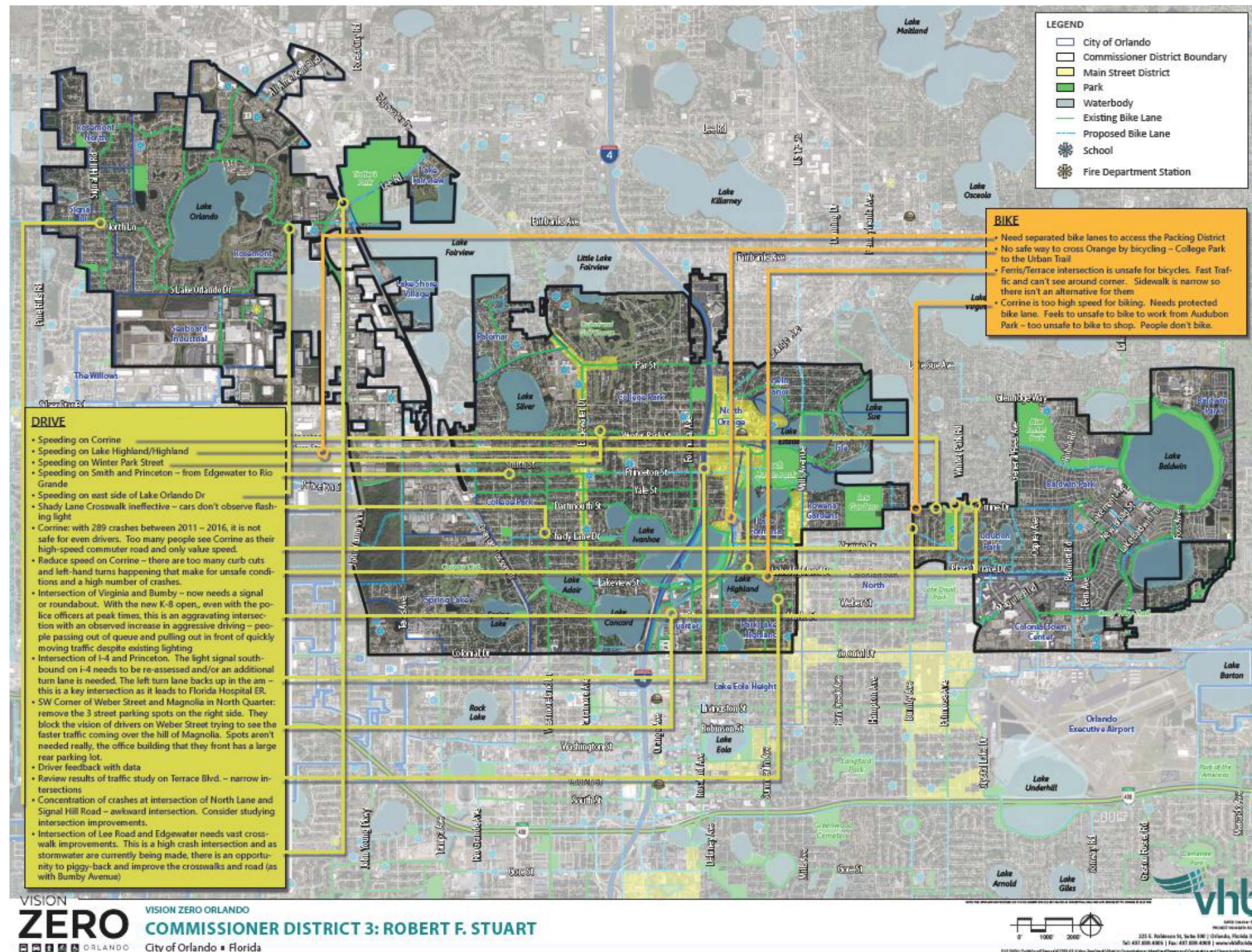


Figure 38: Public comments received on transit and walking safety concerns at a District 3 community meeting held on October 9, 2018

