

April 2020

# Managing Speed on Hillsborough's High Injury Network



**Hillsborough MPO**  
**Metropolitan Planning**  
**for Transportation**



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## I. OVERVIEW OF THE PLAN

### A. Plan Purpose and Description

The Hillsborough MPO and its partners are committed to the continued support of the Vision Zero effort to reduce fatalities and serious injuries on Hillsborough roadways. Vision Zero resolutions were passed by Hillsborough MPO and its partners.

According to the statistical evaluation performed for the Safe Streets Now Vision Zero Hillsborough Action Plan,

***“We have a crisis in Hillsborough County. Our streets are some of the deadliest in the country. Each day, Hillsborough County residents travel roads with the highest traffic fatality rate per capita among large counties in the United States.”***

The MPO could not deny that the alarmingly high injury and fatality rates in Hillsborough County were leading the country and the good work being done locally was not effective enough at reducing the number of lives lost. It was time to elevate the issue. The Vision Zero Action Plan identifies four action tracks with a goal of identifying low cost, quickly implemented strategies. The speed management action plan resulted from one of the long term goal.

The safety crisis being faced has social and economic implications for our community, our residents, and our visitors. According to the CDC, fatal crashes cost Floridians an annual \$32 million in medical costs and \$2.99 billion in work loss costs. FDOT estimates that each fatal crash costs society a total of \$10.1 million.

There are various leading causes of road fatalities and severe injuries. Factors that contribute to severe crashes and fatalities include, but not limited to, unsafe behaviors such as speeding, aggressive driving, distracted driving/walking/biking, and impaired driving. System users must take responsibility for their actions and understand the potential impact of their behaviors on others using the same roadway system. But the proper street design can also encourage safer behavior by all users.

### VISION ZERO RESOLUTIONS

The Hillsborough MPO and its partners commit to the continued support of the Vision Zero effort to reduce fatalities and serious injuries on our roadways.

<p style="text-align: center;">RESOLUTION NO. R15-_____</p> <p style="text-align: center;">A RESOLUTION OF THE HILLSBOROUGH COUNTY BOARD OF COUNTY COMMISSIONERS EXPRESSING ITS SUPPORT OF PEDESTRIAN AND BICYCLE SAFETY EDUCATION MEASURES AND EFFORTS TO REDUCE PEDESTRIAN FATALITIES AND SERIOUS INJURIES IN HILLSBOROUGH COUNTY BY STUDYING THE VISION ZERO MODEL PROPOSED BY WALK BIKE TAMPA, THE CITY OF TAMPA, THE HILLSBOROUGH COLLEGE SCHOOL DISTRICT, THE FLORIDA DEPARTMENT OF TRANSPORTATION AND THE METROPOLITAN PLANNING ORGANIZATION...</p> <p style="text-align: center;">RESOLUTION NO. 149 46</p> <p style="text-align: center;">A RESOLUTION OF THE CITY OF TAMPA, FLORIDA, EXPRESSING ITS SUPPORT OF AN INITIATIVE CALLED VISION ZERO WHICH IS THE SWEDISH APPROACH TO REDUCING PEDESTRIAN FATALITIES AND SERIOUS INJURIES THROUGH PEDESTRIAN AND BICYCLE SAFETY EDUCATION MEASURES AND EFFORTS PROVIDING AN EFFECTIVE DATE:</p> <p style="text-align: center;">WHEREAS, the life and health of Tampa's residents are our utmost priority; and</p> <p style="text-align: center;">WHEREAS, Tampa is concerned about the large number of traffic fatalities...</p> <p style="text-align: center;"><b>RESOLUTION</b></p> <p style="text-align: center;">WHEREAS, the health and safety of Hillsborough County students in the school district's priority; and</p> <p style="text-align: center;">WHEREAS, the School District of Hillsborough County serves to protect the safety of thousands of young students walking to school and to bus stops; and</p> <p style="text-align: center;">WHEREAS, Hillsborough faces a disproportionate risk of traffic injuries and fatalities; and</p> <p style="text-align: center;">WHEREAS, people walking and bicycling represent a disproportionate number of fatalities, and in 2011 nearly half of the people who died in crashes in Tampa were pedestrians; and</p> <p style="text-align: center;">WHEREAS, Vision Zero is the concept that there is no acceptable number of traffic deaths and serious injuries on our streets; and</p>	<p style="text-align: center;">RESOLUTION NO. 2015- 961</p> <p style="text-align: center;">A RESOLUTION SUPPORTING THE INITIATIVE CALLED VISION ZERO, WHICH IS THE SWEDISH APPROACH TO DEFINE ROAD SAFETY, SUMMARIZED BY ONE SENTENCE, "NO LOSS OF LIFE IS ACCEPTABLE"; PROVIDING AN EFFECTIVE DATE:</p> <p style="text-align: center;">WHEREAS, the life and health of Tampa's residents are our utmost priority; and</p> <p style="text-align: center;">WHEREAS, the growth and vitality of the City of Tampa requires safe and reliable transportation</p> <p style="text-align: center;">The City of Tampa serves to protect the safety of thousands of citizens who live, work, play and visit in Tampa; and</p> <p style="text-align: center;">WHEREAS, the elderly, people of color and people in low income communities face a disproportionate number of traffic fatalities; and</p> <p style="text-align: center;">RESOLUTION NO. 40-2017</p> <p style="text-align: center;">A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF PLANT CITY, FLORIDA EXPRESSING ITS SUPPORT OF PEDESTRIAN AND BICYCLE SAFETY EDUCATION MEASURES AND EFFORTS TO REDUCE PEDESTRIAN FATALITIES AND SERIOUS INJURIES IN HILLSBOROUGH COUNTY BY STUDYING THE VISION ZERO INITIATIVE.</p> <p style="text-align: center;">WHEREAS, the life and health of Plant City's residents are our utmost priority; and</p> <p style="text-align: center;">WHEREAS, the City of Plant City aims to protect the safety of the thousands of citizens who live, work and play within our city limits; and</p> <p style="text-align: center;">WHEREAS, Plant City recognizes that no one should die or be seriously injured while travelling on our roadways; and</p> <p style="text-align: center;">WHEREAS, Vision Zero aims to achieve zero fatalities and zero serious injuries in the residential and non-commercial urban and downtown centers in our city; and</p>
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**Date of Resolution**

- City of Tampa December 3, 2015
- Hillsborough County School District December 15, 2015
- Hillsborough County January 8, 2016
- Temple Terrace October 18, 2016
- Plant City March 13, 2017

VISIONZERO | HILLSBOROUGH 5

In addition, Complete Streets Policies have also been adopted including at the Florida Department of Transportation. This plan is related and a furtherance of these prior efforts to address safety.



Per Vision Zero tenets, speed matters most. High speeds make crashes more likely and more likely to be deadly. Effective Vision Zero programs manage speed in order to reduce severe and fatal traffic injuries. Speed increases the risk of severe and fatal injuries at an alarming rate. For example, the likelihood of a pedestrian being killed at 20MPH is 5%; however, it increases to 80% at 40MPH. One of the startling statistics in Hillsborough County is that 75% of all fatal crashes occur on roads with posted speeds of +40MPH. Understanding this correlation is critical to understanding that not all crashes can be eliminated, but severe injury and fatal crashes are preventable.

Traditional safety programs have been reactive and address only hot spots where crashes occur. It is important to look at historical crash trends but also be proactive in identifying systemic improvements to prevent future crashes even in locations where there is no crash history. This is often referred to as taking a systems approach to road safety instead of just addressing the hot spots. It should be noted that efforts to influence individual behavior (educating one user at a time) primarily with education and enforcement campaigns have fallen short. Addressing speed requires changing organizational practices and reforming policies. Existing practices, such as designing roads for inappropriately high speeds and setting speed limits too high, often prioritize moving more cars over the safety of all road users (driver, pedestrian, bicyclist, or transit user).

The USDOT has provided significant resources to develop a Speed Management Program Plan. Basic plan attributes include:

- Data-driven – crash, roadway, user, land use data
- Applying road design, traffic operations, & safety measures
- Setting “appropriate/rational/desirable/safe” speed limits

- Institutionalize good practices
- Supportive enforcement efforts
- Effective outreach & public engagement
- Cooperation by traffic safety stakeholders

### Related Speed Management Initiatives

- **Complete Streets:** designing a roadway to enable safe travel by all users of all abilities ([Refer to USDOT Complete Street Webpage](#) )
- **Context Sensitive Solutions:** accommodating all street users, making decisions that reflect a shared stakeholder vision ([Refer to Designing Walkable Urban Thoroughfares: A Context Sensitive Approach](#) )
- **Shared Streets:** giving all modes of travel are equal priority; people walking, bicycling, and driving share the right-of-way and manage conflicts through person-to-person negotiation ([Refer to NACTO white paper on Shared Streets](#) )
- **Traffic Calming:** improvements in non-motorist safety, mobility, and comfort by reducing vehicle speeds or volumes ([Refer to Traffic Calming e-primer](#) )

Source: ITE and Vision Zero Network National Speed Management Workshop



Source: USDOT, SPEED MANAGEMENT PROGRAM PLAN, MAY 2014

### B. Safety Goals of the Plan

Current guidance on managing speed indicates the purpose is to improve public health and safety by reducing speeding-related crashes and the resulting injuries and fatalities. However, it is one of Vision Zero tenets that managing speed reduces all types of crash types that result in fatalities and severe injuries, not just speed-related crashes.

The effort is comprehensive in its approach to look to reduce all fatality and severe injury crashes, not just speeding related crashes. The plan identifies specific actions to be taken by the various

jurisdictional agencies in Hillsborough County to effectively address managing speed and reducing the crash risk on the identified Top20

and Next30 High Injury Network corridors and ways to institutionalize a safe systems approach to safety and design of streets and roads. To accomplish the actions identified, a coordinated effort is needed to address the fundamental engineering, enforcement, education, and communication challenges being faced.

The plan goal is simple:

***Improve public health and safety by reducing road fatalities and serious injuries.***

The plan desired outcomes are comprehensive. Outcomes include improving the safety experience, increase awareness, institutionalize good practices, identify supportive policies, programs and infrastructure and obtain the cooperation and support needed to succeed.

### DESIRED OUTCOMES

- ***Improved safety experience*** for all road users - pedestrians, bicyclists, and motorists.
- ***Increase awareness*** of the dangers of speeding.
- ***Institutionalize good practices*** in road design, traffic operations, engagement, enforcement and safety.
- Identify ***supportive policies, programs and infrastructure*** improvements to meet safety goal.
- Obtain ***cooperation and support*** of stakeholders.



### C. Stakeholder Engagement

The success of any speed management program or plan is enhanced by coordination and cooperation among the various agencies, engineering, enforcement, health and educational disciplines. A thoughtful list of stakeholders was developed, and invitations issued to be part of this fundamental journey to learn how to change the safety culture in Hillsborough County.

The Stakeholder Group met three times throughout the plan development process including at the kick-off stage, upon preliminary safety findings and when the preliminary recommendations were developed.

The first meeting centered on plan goals and desired outcomes, identification of collaborative roles, responsibility and data needs. In addition, preliminary prioritization metrics and potential safety countermeasures currently in use and others to be considered.

The second meeting focused on review of the detailed safety evaluation of the Top20 HIN networks and conversation around current efforts on some of the corridors and what are the next list of corridors each jurisdictional agency can start to address. This led to the Next30 HIN corridor identification process.

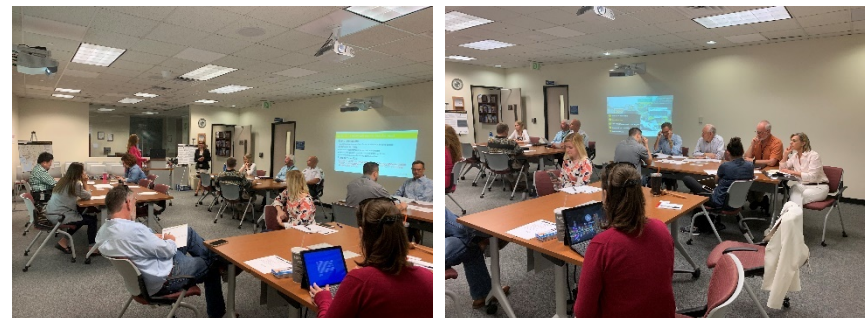
The third meeting presented the preliminary countermeasure tool kits on Safe People, Safe Streets, Safe Interchanges, Safe Operations, Targeted Enforcement, Education and Public Service Announcements. In addition, the Implementation Plan Actions on these same areas of focus plus policy and legislative considerations were reviewed. A fourth call was then scheduled to wrap up comments on the draft plan.

The Stakeholder Group, especially some of the agencies, engaged in several teleconferences to coordinate on current safety projects

and corridors, to provide supplemental data and information related to the formation of the plan. The Stakeholder Group also provided feedback on the final plan. The meeting presentations and are provided in the appendix.

### Partners & Stakeholders

- Hillsborough County MPO
- Hillsborough County
- Hillsborough County School District
- City of Tampa
- City of Temple Terrace
- Plant City
- Law Enforcement
- Florida Department of Transportation
- Hillsborough Area Regional Transit
- Tampa Hillsborough Expressway Authority
- Florida Health Department

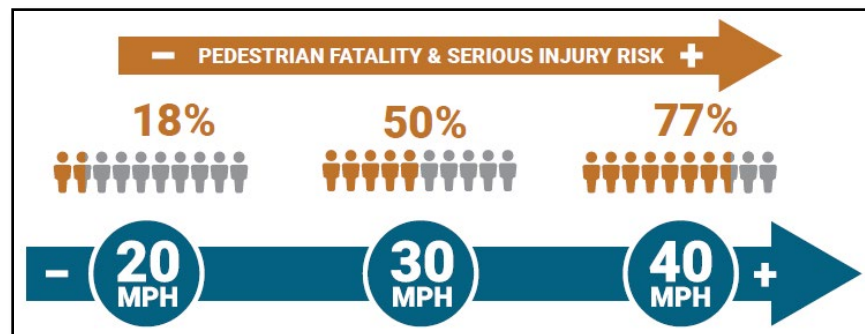




### D. Why Speed Matters

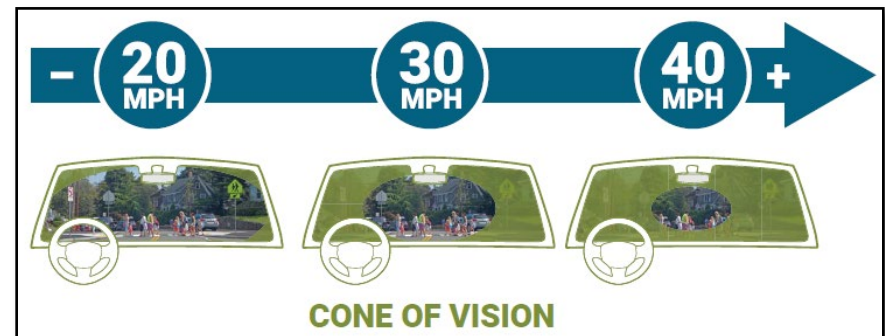
As vehicle speeds increase, two outcomes also increase: the likelihood of crashing and the severity of injuries resulting from the crash.

Higher speeds increase both reaction time and braking distance required to come to a complete stop. If a crash occurs that involves a vulnerable user, the speed differential between the two opposing bodies are more likely to result in severe injuries and even death. Safety increases when speed differential is minimized. For example, freeways are safer because motorists move at similar speeds, access is limited, less friction, and transitions to slower speed roads are handled via ramps to surface streets (where slower users on foot and bicycle are kept on a different network). Low-speed streets (due to low volumes or congestion) can be similarly safe because all users, from motorists to bicyclist to walkers, are traveling at similar speeds. A crash between a vehicle driven at a low speed and a fixed object will typically result in minimal damage because of the lower speed impact<sup>1</sup>.



Source: FHWA Achieving Multimodal Networks

Another major contributor to the dangers of speeding is peripheral vision. As motorist speed increases, the cone of vision narrows so that the motorist can focus on items farther away. When stationary, the cone of vision approaches 180 degrees. When moving, the cone of vision decreases with increasing speeds. Given the limits of the vision cone, it is unrealistic to expect motorists to be able to be aware of all their surroundings when traveling at higher speeds. Design objectives that prioritize lower speeds for motorists on streets where pedestrians and bicyclists are present may enhance visibility.



Source: FHWA Achieving Multimodal Networks

Motorist make decisions on how fast to drive based partially on posted speed limit signs and partially based on physical cues in the environment (trees, parked cars, etc.). If higher speeds feel natural and instinctive, people are likely to drive at those speeds, due to the intuitive nature of such designs.

Currently policy allows speed limits to be adjusted based on operating speed, gathered by observing actual speeds and selecting the 85<sup>th</sup> percentile. The road's design speed is based on 100<sup>th</sup>

<sup>1</sup> ITE "Implementing Context Sensitive Design on Multimodal Thoroughfares" A Practitioner's Handbook, 2017

# VISIONZERO

## SPEED MANAGEMENT ACTION PLAN



percentile speeds and is higher than the posted speed. There is no evidence that the 85<sup>th</sup> percentile speed corresponds to a speed with low crash rates<sup>2</sup>.

A 2017 National Traffic Safety Board study concluded that using the 85<sup>th</sup> percentile speed setting method has led to unintended consequences of higher operating speed and an undesirable cycle of speed escalation and reduced safety. The 85<sup>th</sup> percentile speed setting methodology is not the only method. The USDOT has the USLIMITS2 method that considers road, traffic, crash data, access, density and pedestrian and bicycle activity. The USLIMITS2 more directly resembles Median or 50<sup>th</sup> percentile speed setting limit. Another method of setting speed limit is the Safe Systems Approach which relates to the premise of setting Target Speeds.

Using street design as a language for communicating desired operating speed means designing toward a designated target speed, or the speed at which the community desires motorists to travel. In fact, AASHTO recommends target speed be used on urban arterial streets of 20-45 MPH<sup>3</sup>.

Operating speeds on roadways are successfully managed when design speed, target speed, speed limits and inferred speed converge. This means not just the speed limits but also the design of the roadways must convey the same travel speed, the target speed.

Vision Zero Cities across the US have embraced the importance of managing speed and have taken a proactive approach to reduce posted speeds to the ideal 20-25MPH across neighborhoods and citywide to minimize the risk of crashes leading to fatal and serious injuries.



<sup>2</sup> National Transportation Safety Board “Reducing Speeding-Related Crashes Involving Passenger Vehicles: Safety Study NTSB/SS-17/01” 2017

<sup>3</sup> American Association of State Highway Transportation Officials, A Policy on Geometric Design of Highways and Streets, 6<sup>th</sup> ed, 2011





## SPEED LIMIT REDUCTION RESULTS

### Seattle

- 40% in crashes
- 30% in injury crashes

### NYC

- 14% in crashes
- 49% in pedestrian crashes
- 42% in bicyclist crashes

### Mexico City

- 18% in crashes

### Boston

- 30% in speeds over 35 MPH

### Other Cities

- Washington, DC
- Portland, OR
- Cambridge, MA
- Albuquerque, NM
- Nashville, TN
- Minneapolis
- St. Paul
- Boulder, CO

**SEATTLE**

**SPEED LIMITS**  
**ARTERIAL 25**  
**NON-ARTERIAL 20**  
 UNLESS OTHERWISE POSTED

**FOR A SAFER BOSTON**

**SPEED LIMIT 25**

Boston has a new default speed limit.

IF YOU DON'T SEE A SIGN, THE SPEED LIMIT IS 25 MPH.

HELP SPREAD THE WORD.  
 Talk with your family, neighbors, and friends about the speed limit change.

SHOW YOUR SUPPORT.  
 Visit [boston.gov/25mph](http://boston.gov/25mph) to learn how to show your support and get engaged.

BE AWARE OF YOUR SPEED.  
 Drive at or below the 25 mph speed limit. You can help save lives. If you crash, you're less likely to cause serious injury or death.

WHY THE CHANGE?  
 Reducing driving speeds from 30 mph to 25 mph will help make Boston safer for people of all ages and abilities walking, driving, and bicycling on our streets.

17% 30% 47%  
 LIKELIHOOD OF SEVERE OR FATAL INJURY

WHICH STREETS ARE AFFECTED?  
 The default speed limit applies to all streets without speed limit signs. Some streets will have signs with higher or lower speed limits.

**EFFECTIVE 01.09.17**

BOSTON.GOV/25MPH // VISIONZEROBOSTON.ORG



## II. SPEEDING-RELATED SAFETY CHALLENGES

### A. Problem Identification

In nations around the world speeding is a major driver of fatal crashes. In 2018 in the US alone, 9,378 lives were lost in speeding-related crashes<sup>4</sup>. Speeding endangers everyone on the road. We all know the frustrations of modern life and juggling a busy schedule, but speed limits are put in place to protect all road users.

For more than two decades, speeding has been involved in approximately one-third of all vehicle fatalities. Speed also affects your safety even when you are driving at the speed limit but too fast for road conditions, such as during bad weather, when a road is under repair, or in an area at night that isn't well lit. Another example is if the speed limit is too high for the context.

Speeding endangers not only the life of the speeder, but all the people on the road around them, including law enforcement officers. It is a problem we all need to help solve. But it is not just about the number of crashes identified as a result of speeding but much greater than that, it's about aggressive driver behavior.

Speeding is more than just breaking the law. The consequences are:

- Greater potential for loss of vehicle control.
- Reduced effectiveness of occupant protection equipment.
- Increased stopping sight distance after the driver perceives a danger.
- Increased degree of crash severity leading to more severe injuries.
- Economic implications of a speed-related crash; and

<sup>4</sup> USDOT, National Highway Traffic Safety Association (NHTSA), [nhtsa.gov/risky-driving/speeding](https://www.nhtsa.gov/risky-driving/speeding)

- Increased fuel consumption / cost.

According to the NHTSA, several factors have contributed to an overall rise in aggressive driving:

- Traffic – traffic congestion is one of the most frequently mentioned contributing factors to aggressive driving.
- Running late – some people drive aggressively because they have too much to do and are running late to work, school, their next meeting or appointment.
- Anonymity – a motor vehicle insulates the driver from the world. A driver can develop a sense of detachment from their surroundings.
- Disregard for Others and for the Law – Most motorists rarely drive aggressively, and some never do. For others, episodes of aggressive driving are frequent, and for a small proportion it is their usual driving behavior.

In the US, 83% of speeding-related fatalities occurred on roads other than freeways that is arterials, collectors, and local roads<sup>5</sup>. On urban roads, speeding is particularly dangerous due to increased activity and higher levels of land use density leading to the prevalence of vulnerable pedestrians and cyclists. Effectively managing speeds on urban arterials poses unique challenges. Under the banner of Vision Zero, many US cities are increasingly focusing on speed management to improve traffic safety.

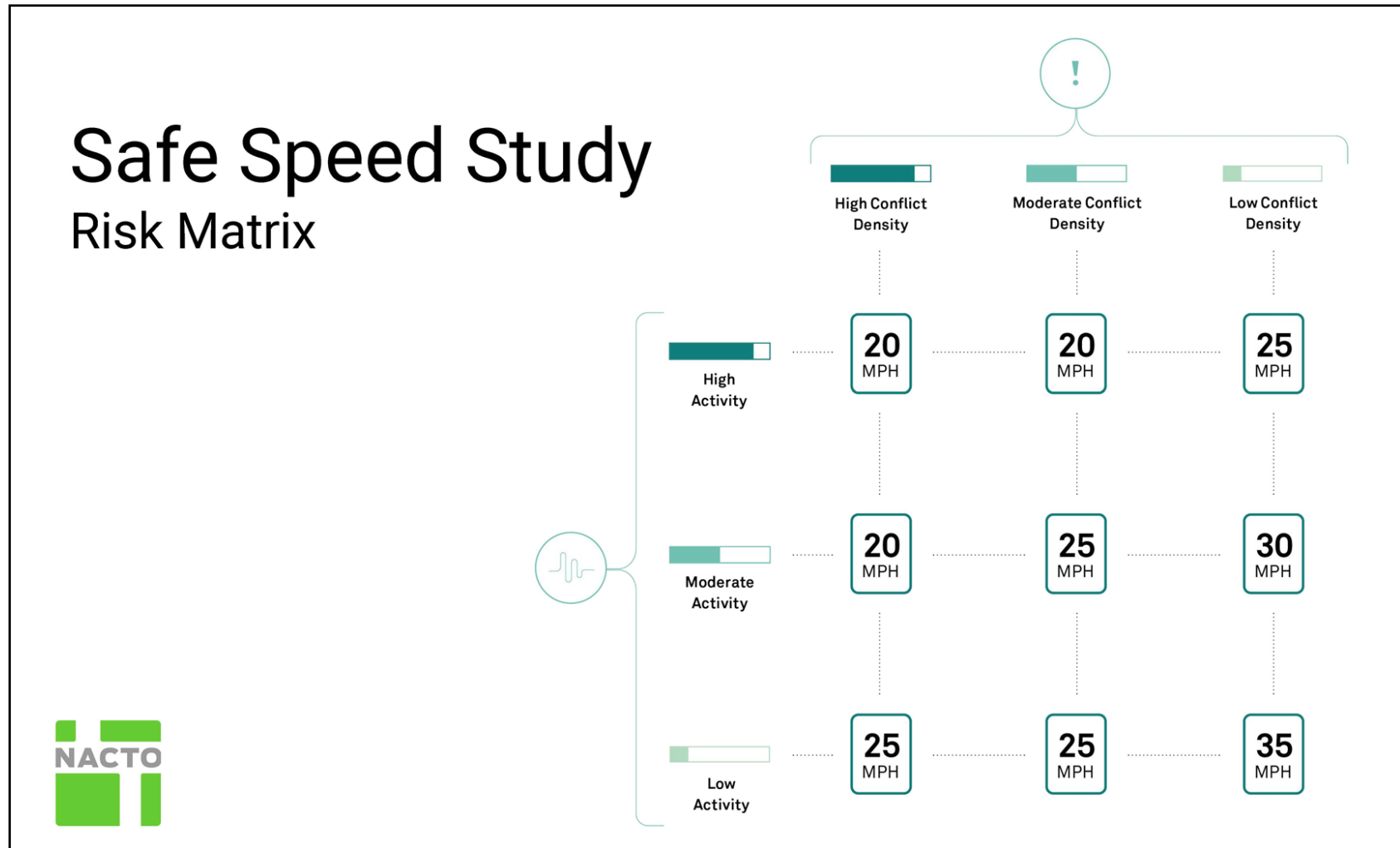
National best practices on speed management and using a safe systems approach to combat the safety crisis on our streets are looking to set new guidelines on speed setting that results in a context sensitive approach to design of roads. National educational organizations such as the Institute of Transportation Engineers and

<sup>5</sup> National Center for Statistics and Analysis, National Highway Traffic Safety Administration, 2016



the National Association of City Transportation Officials (NACTO) are leading the practice by identifying the need to establish new direction for speed setting leading to better design standards of streets to prevent fatalities and serious injuries. Setting speeds based on safety and context of the community, should outweigh past practices that were simply based on driver behavior. Below is a

recent diagram by NACTO articulating the need to consider conflict density and levels of street activity.





### B. Hillsborough County Challenge

In 2017, Hillsborough MPO Vision Zero Action Plan<sup>6</sup> was completed documenting the state of safety conditions and necessary actions to be taken to address traffic safety in Hillsborough County. The plan identified startling statistics in relationship to having the highest traffic fatality rate per capita of all large counties in the country. Identifying that on average, at least one-person walking, and one-person biking are involved in a crash every day, resulting in serious injury or death. Some of the Hillsborough crash statistics that emerged included:

- For every fatal crash, there are eight incapacitating injury crashes.
- A third of our roads account for ¾ of the county’s severe crashes.
- Aggressive driving accounted for 33 percent of all fatal crashes, and 42 percent of vehicle crashes on our roads.
- Electronic distraction was cited as a factor in 19 percent of severe vehicle crashes.
- Intoxication is a factor in 23 percent of all fatal crashes and is a factor in 19 percent of fata pedestrian crashes.
- Dark, unlit roads were a factor in 39 percent of fatal and incapacitating injury crashes.
- 75 percent of fatal crashes occur on roads with posted speeds of 40+MPH

Engineers, planners, law enforcement officials and educators have launched programs and projects across the county to provide safe, comfortable travel conditions for residents and visitors. The action plan built on the many state and local agency safety programs, projects and initiatives underway. Vision Zero Hillsborough provides

an umbrella under which these efforts are organized, connected and promoted.

It is worthy to note a few examples of partner initiatives to address safety, including the Hillsborough County and Florida Department of Transportation District 7’s recent publication of the significant noteworthy positive results on safety related to various implemented improvements on Fletcher Avenue. This is a great example where a combination of various traffic calming and example speed management countermeasures were installed in addition to dropping the speed limit from 45MPH to 35MPH. This is the prototypical application that has to become the norm in existing retrofitting efforts and future street design. Similar treatments are now being applied to 50<sup>th</sup> Street and similar results are anticipated.

**FLETCHER AVENUE COMPLETE STREETS PROJECT**  
BEFORE / AFTER Analysis

- Fatal crashes reduced by ~60%
- Serious injury crashes reduced by ~46%
- Average vehicle speeds reduced
- Over 83% of compliance by pedestrians and 97% compliance by motorists at midblock crossings
- Traffic volumes increased
- Average travel times either decreased, remained the same, or increased at the most by 87 seconds

<sup>6</sup> Hillsborough MPO, Safe Streets Now, Vision Zero Action Plan, December 2017

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## SPEED MANAGEMENT ACTION PLAN



Hillsborough County Engineering is also taking steps to update design standards to reflect context and addressing all users and should be available in late 2020. Hillsborough County is also in the process of completing their street context classification process and has dedicated funding for assessments of the County corridors in the TOP20.

City of Tampa has been coordinating traffic signals in downtown Tampa according to the posted speed limit. This is an easy, quick fix countermeasure to ensure that traffic is moving at or below the speed limit in a dense urban environment. Conversations on a citywide reduction of posted speeds has also been noted. The city has been a trend setter at looking at new tools that both attract and engage the community with their painted Crosswalks to Classrooms and their Art on the Block program that has resulted in five intersection murals that also have a positive traffic calming effect.

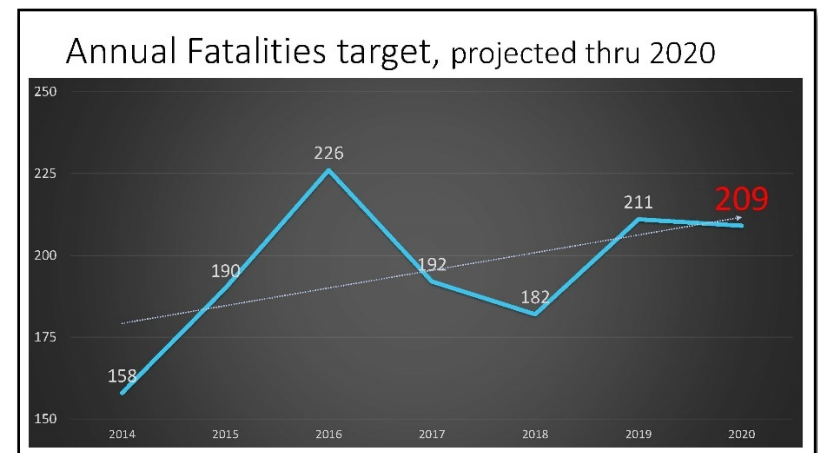
City of Tampa – Intersection Murals, Franklin Street and Twiggs



While great strides are being made to start creating safe streets and change the culture around how we design roads and street, there is still much work to do. Recent reports on crash statistics show that annual fatal crashes continue to rise in Hillsborough County. In fact, safety targets projected through 2020 for fatal crashes is anticipated to rise.



City of Tampa – Crosswalks to Classrooms





### C. High Injury Network - Update

The Vision Zero Action Plan identified the Top20 deadliest corridors in Hillsborough County based on the most severe crashes per mile. These corridors form the initial High Injury Network in Hillsborough County. The plan dived into notable common elements of these corridors including characteristics involving vulnerable users, aggressive driving and lighting conditions. Considering the Top20 High Injury Network (HIN) corridors are the deadliest corridors in the county, it makes sense to develop the Speed Management Action Plan around these priority corridors.

The first step taken was to obtain the latest information from the FDOT – Crash Data Management System for the HIN corridors over a five-year period, January 2014 through December 2018. The data was downloaded and scrubbed for: correct location, proximity to corridor limits, correct street name. In addition, crashes on crossing corridors that are grade separated were eliminated. The scrubbing resulted in a reduction of 7-10% of the total crash records.

In summary, there were several changes in the total crashes on the Top20 HIN corridors since the original Vision Zero Action Plan. Crash occurrences and location changes are expected from year to year. In addition, as the agency partners continue to address these corridors, it is anticipated the severity rate of crashes will decrease to a point that other corridors will become a higher priority.

- Total crashes have increased by **+13%** since the original Vision Zero Action Plan
- Fatalities have decreased by -4%
- Serious Injuries have decreased by -30%
- Motorcycle crashes decreased by -10%
- Pedestrian crashes increased by **+10%**, however,
- Pedestrian fatality crashes increased by **+41%**
- Pedestrian serious injuries reduced by -22%
- Bicycle crashes reduced by -5%
- Bicycle fatality/serious injures reduced by - 20-30%, respectively.

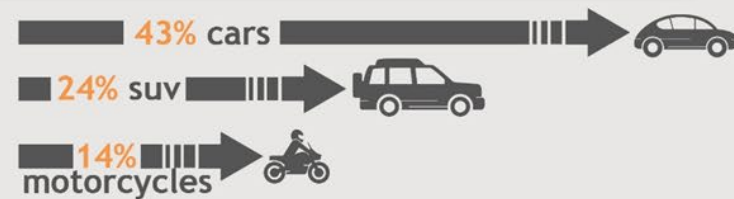
While fluctuations have occurred in this new 5-year period, pedestrian crashes have resulted in a disproportionately higher fatality rate. The following graphic shows the trends for the fatal crashes for the Top20 HIN corridors.





HIN Crash Statistics (2014-2018)

Fatal Crash Characteristics





Of the total Fatal crashes, 83% occurred during non-peak commute hours. During peak commute hours, these corridors may be operating at congested levels and travel speeds may be controlled. During non-peak hours, these corridors have less traffic, still the same number of travel lanes that can lead to higher opportunity for aggressive driving behaviors.

Of the total Fatal crashes, 71% of the contributing factors involved some type of aggressive driving or speeding relation action such as erratic reckless, aggravated maneuvers, ran off the road, exceeded speed limit, ran red light, careless or negligence behavior. This is where this plan differs from strictly focusing only on the “speeding” crashes.

Of the total Fatal crashes, 67% of the people involved were younger than 35 years of age. Not only are our younger residents involved, but they are also dying. Aggressive driving campaigns should be targeted at this younger demographic.

Of the total Fatal crashes, 59% occurred at mid-block locations on the network. Normally the exposure rates for fatal crashes are at the intersections where the number of conflict points are greatest; however, the trends in these corridors indicate differently. The mid-block locations need to be carefully be evaluated to address potential deficiencies for all users.

Of the total Fatal crashes, 59% occurred on corridors with four or more travel lanes. That is expected as the higher the number of lanes, the higher the speeds, the higher exposure for a crash.

Of the total Fatal crashes, 53% during evening hours on corridors identified as being lighted. This fact is suspect considering the limited lighting available in most Hillsborough County corridors. Each Corridor needs to be carefully evaluated and validated to

identify if lighting or no lighting is a factor including at mid-block locations.

#### D. High Injury Network – Prioritization

Considering the significant number of crashes and especially life altering fatal and serious injury crashes in Hillsborough County, one of the primary outcomes of this plan is to identify a way to prioritize top injury corridors so attention and fiscal investment can be allocated by the respective jurisdictional agencies.

During one of the stakeholder meetings, breakout group conversations lead to a series of prioritization factors to be evaluated based on knowledge of the Top20 HIN corridors, the communities they serve. The feedback received on prioritization was summarized based on the most mentioned in the breakout group conversations and is shown below.

The prioritization factors are multifaceted. Based on readily available data, various prioritization factors were evaluated for relevance to the Top20 HIN corridors. Crash history and pedestrian/bicycle crash data is readily available, hence, the crash occurrence per mile was calculated. This simple calculation is consistent with the Vision Zero Action Plan calculations for consistency purposes. The other factors required further evaluation and identification. The next sections expand on how and why they were incorporated.





## Stakeholder Feedback

### Prioritization Factors:

*(Ranked by order of most mentioned in breakout groups)*

- Posted speed vs. context Class
- Regional equity (low income, Commissioner districts)
- Crash history
- Proximity to schools
- Ped/bike injuries
- Absence of lighting
- Ped/Bike level of stress
- Planned projects in Work Program / CIP
- Low hanging fruit - ease of implementation
- **Transit service route**
- **Geometric features (volumes, lanes, intersection spacing)**



### E. Context Classification and Posted Speed Range

The posted speed, design speed and target speed of corridor, combined with the geometric design considerations can have a significant implication on safety of a corridor. The travel speed of motorists also has an impact on a streets ability to attract non-motorized users. It is well known that people walking or riding a bicycle next to high-speed motorists is not comfortable nor safe. However, we must keep in mind that 1/3 of residents in the US do not drive and rely on non-motorized ways to move, to access services, education, jobs and health care.

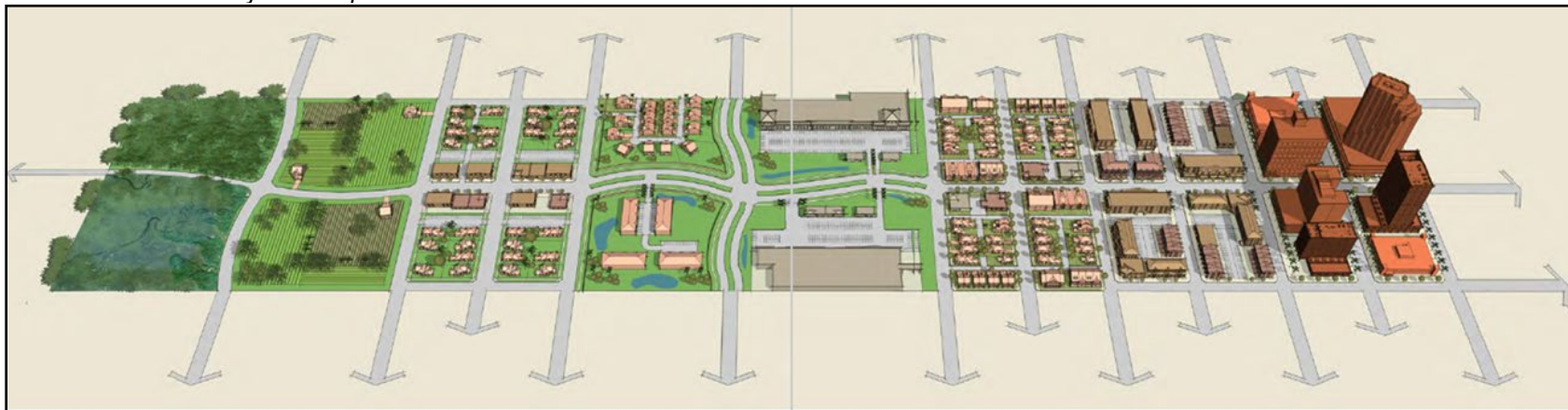
The Florida Department of Transportation (FDOT) context classification system was used as a basis of an assessment to determine if the posted speeds on the Top20 HIN corridors are appropriate and rationale. Context classification broadly identifies various built environments including the urban core, urban center, urban general, suburban commercial, suburban residential, rural town, rural and natural environment. The use of context classification acknowledges that design criteria should be different in each of the classifications. This is important as how a street is

designed in a high density urban core is different from a street designed in a rural setting. The theory behind developing context classification is to clearly provide guidance on design characteristics. While traditional road classifications (i.e., arterials, collector, local streets) has driven design criteria based on simply corridor function and posted speed.

National best practices were consulted to validate if the posted speed limits on the Top20 HIN corridors were appropriate and rationale for their context. The Institute of Transportation Engineers' and Center for New Urbanism publication published in 2010 called *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach – An ITE Recommended Practice* was used for comparison.

Considering the limitations of this study, actual travel speed information was not available for the Top20 HIN corridors. So an evaluation was conducted to compare the posted speed to national best practices according to the general context classifications that each of the corridors traverse.

*FDOT Context Classification Spectrum*





The Context Classifications for each corridor were estimated based on visual assessment of land use patterns, density and various other factors. Both Hillsborough County and FDOT District 7 are currently developing context classifications for all of their roadway network. It is recommended that both the FDOT and Hillsborough County classifications be updated to reflect future land use conditions for the region. As this is used to determine design considerations to accommodate future traffic conditions on the network, the land use projections and plans should also be consistently applied. With the rapidly changing conditions in the county due to economic growth, routine evaluation and update is appropriate.

The table below shows the Top20 HIN corridors with their respective road classification, the estimated Context Classification, Posted Speed, national recommendation for the appropriate context. The resulting Conflict Range is the difference between the posted speed limit on the corridors and what national best practice recommends.

Overall, 70% of the Top20 HIN corridors have posted speed limits that are 5-10MPH over national practice. An additional 15% of the corridors have posted speed limits that are 15-20MPH over national practice for their context. It is critically important to note that the high posted speed limits on the Top20 HIN corridors, are facilitating high risk exposure that result in fatal and serious injuries for all users (motor vehicles, pedestrians and bicyclists).

It should be noted that it is well known that travel speeds are normally at least 5-10MPH above posted speed limits; hence, the severity of the disconnect in the posted speeds versus the context of the corridors is greater than reported. Considering Speed Limit/design speed is one of the highest-ranking factors for determining design parameters for a given street, it is important to

address a new method on how posted speed limits are set.

It is also recommended that partner agencies developing Context Classification categories and speed ranges for each should consult with national best practices. The design parameters that are greatly affected by a roadway's speed limit/design speed include: lane width, acceleration/deceleration lanes, left turn lanes, sight distance, sign placement, traffic signal operations, provision of bicycle facilities, super elevation and so many other geometric characteristics. Starting with the wrong posted/design speed has consequential impacts on the safety of all users.



### Example Assessment -Posted Speed & Context Class

#### Overall

- 70% are 5-10MPH over National Practice
- 15% are 15-20MPH over National Practice

Corridor	Road Classification	Context Classification	ITE/CNU Class Speed Range*	Posted Speed (MPH)	Conflict Range (MPH)
Brandon Blvd from Falkenburg Rd to Dover Rd	Principal Arterial	C3 (35-55)	25-35 Max	45,50, 55	10-20
Gibsonton Dr/Boyette Rd from I-75 to Balm Riverview Rd	Arterial	C3 (35-55)	25-35 Max	45	10
Hillsborough Ave from Longboat Blvd to Florida Ave	Principal Arterial	C3 (35-55)	25-35 Max	45, 50	10-15
Fletcher Ave from Armenia Ave to 50th St	Principal Arterial	C3 (35-55)	25-35 Max	35, 40, 45	5-10
Dale Mabry from Hillsborough Ave to Bearss Ave	Principal Arterial	C3-C4 (30-45)	25-35 Max	45	10
Lynn Turner from Gunn Hwy to Ehrlich Rd	Arterial	C3 (35-55)	25-35 Max	45	10
Meridian Ave from Channelside Dr to Twiggs St	Arterial	C6 (25-30)	25-30 Max	40	10
Bruce B Downs from Fowler Ave to Bearss Ave	Arterial	C3 (35-55)	25-35 Max	45	10
50th/56th St from MLK Blvd to Hillsborough Ave	Principal Arterial	C3 (35-55)	25-35 Max	45	10
15th St from Fowler Ave to Fletcher Ave	Collector	C4 (30-45)	25-35 Max	30	0
Big Bend Road from US41 to I75	Arterial	C3 (35-55)	25-35 Max	45	10
US301 from I75 to Adamo Dr	Principal Arterial	C3 (35-55)	25-35 Max	50	15
Sheldon Rd from Hillsborough Ave to Water Ave	Arterial	C3 (35-55)	25-35 Max	45	10
I4 from I275 to 22nd St	Freeway	Urban (50-70)	50-70	55	0
56th St from Sligh Ave to Busch Blvd	Principal Arterial	C4 (30-45)	25-35 Max	35, 45	10
I275 from Howard Frankland Bridge to Busch Blvd	Freeway	Urban (50-70)	50-70	55, 60	0
Kennedy Blvd from Dale Mabry to Ashley Dr	Principal Arterial	C4 (30-45)	25-35 Max	40, 45	5-10
78th St from Causeway Blvd to Palm River Rd	Arterial	C4 (30-45)	25-35 Max	45	10
CR579/Mango Rd from MLK Blvd to US92	Arterial	C4 (30-45)	25-35 Max	45	10
Florida Ave from Waters Ave to Linebaugh Ave	Arterial	C4 (30-45)	25-35 Max	40, 45	5-10

\*Designing Walkable Urban Thoroughfares: A Context Sensitive Approach- An ITE Recommended Practice, ITE, CNU, 2010

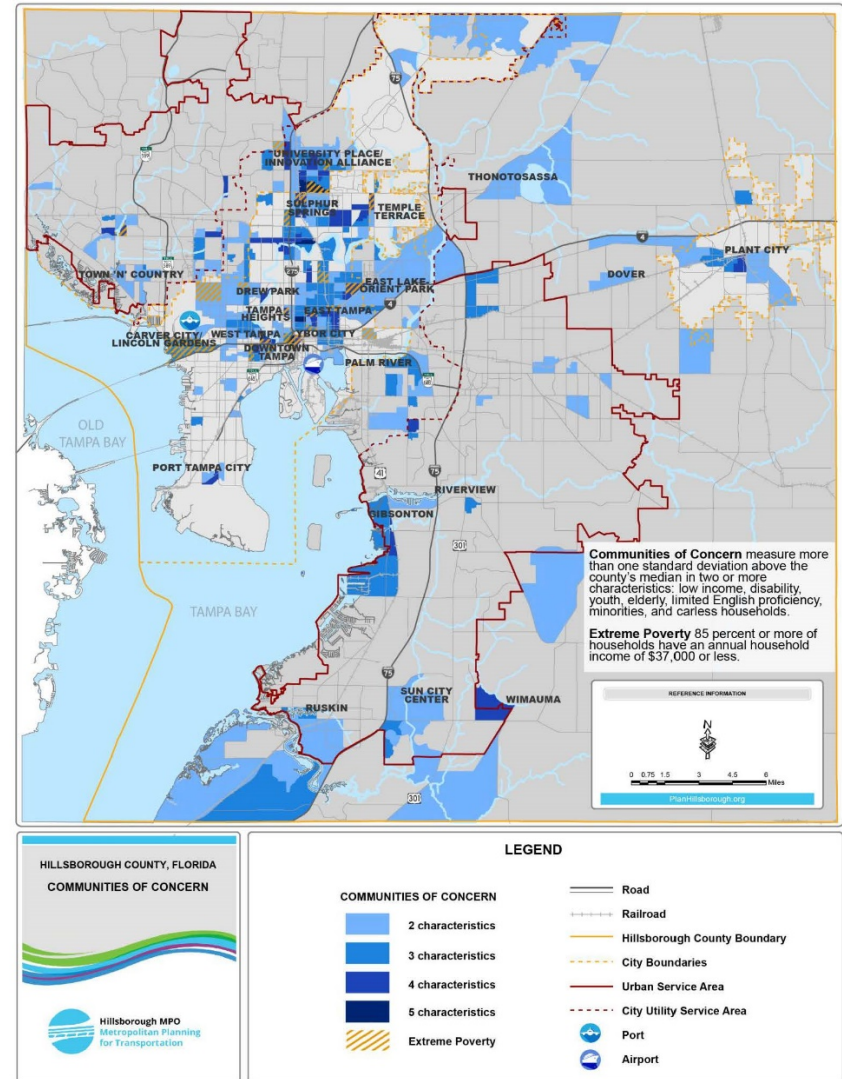


### F. Mobility Equity

Transportation affects the every-day life activities of every-day life. Transportation's ability to provide effective, timely and safety access to our residents disproportionately affects the most vulnerable. Considering one third of the US population (kids, elderly, poor, disadvantaged) does not drive and are heavily reliant on public transportation, and mostly rely on walking and bicycle to get to their destinations. Transportation is a key player that helps lift someone out of poverty. Transportation is how we get to the doctor, to our job and our family and friends. Transportation is a hot button issue in Hillsborough County and ranked 29<sup>th</sup> out of 30 of the biggest metro areas in the US for transportation.

As part of the prioritization process, equitable access to jobs, education, services and health care must be a priority. As such, the Hillsborough County Communities of Concern (COC) were factored into this corridor safety prioritization. Communities of Concern measure more than one standard deviation above the county's median in two or more characteristics such as low income, disability, youth, elderly, limited English proficiency, minorities and carless households. The Top20 HIN corridors were overlaid on the COC map, the estimated distance of the corridor frontage for each COC category was tabulated. A point system for each COC category on the corridor was assigned, with the higher number of deviations getting higher points including extreme poverty. The higher the points assigned indicates a higher probability of vulnerable users present and hence a higher exposure for fatal and serious injuries should crashes occur on the corridor. To summarize, a Risk Performance Level was developed that indicates the higher the deviations, the higher the point, the higher the risk.

PART I: Title VI Components





### G. Transit Service Routes and Exposure

Like Mobility Equity, the importance of access to public transportation is critical. Considering the Top20 HIN corridors are predominantly high-level arterials serving regional travel and access to services, having public transit routes is normal but also can introduce safety concerns if the proper support infrastructure to get users to and from transit stops are not readily available. There is a distinct difference in providing transit service versus the proper support infrastructures such as sidewalks, crossings, bike lanes to and from the transit stops. It is felt that if a transit corridor exists on a corridor, the exposure rate for fatal and serious injuries increase.

The Top20HIN corridors were overlaid on the Hillsborough Area Regional Transit system map to identify how many service routes traverse the corridor, how many routes cross the corridor, identify if transfer centers and park and ride lots exists, and identify how many key destinations (grocery, health care, schools, etc.) exist with transit access.

A point system was assigned to each of these categories and a risk Performance Level was developed that indicated the higher the services provided, the higher the points assigned because of the

**Why Measure Exposure?** Exposure to collisions is one of the most significant predictors in crash frequency. It is commonly measured by how many pedestrians, bicyclists, and motorists pass through a given intersection. Without knowing this information, we may conclude that certain well-used facilities are higher risk than they really are, and vice-versa.

higher probability of pedestrian and bicycle and increasing exposure rates.

### H. Top20 High Injury Network Prioritization

The evaluation process for the Top20 HIN corridors was completed and includes prioritization factors such as:

- Crash Severity per Mile
- Pedestrian / Bicycles Crash Rate per Mile
- Number of Schools per Mile
- Equity – COC Coverage
- Posted Speed-Context Class Conflict
- Transit Route Exposure
- High Traffic Volumes

Each of the factors were then aggregated and a total weighted average score developed for each corridor. Each of the corridors where also ranked in order of priority. The higher the weighted average score the higher the priority. A High, Median and Low priority ranking for each of the corridors was established. The next table shows the final Top20 HIN corridor and their priority.

### I. Next30 High Injury Network Corridors and Prioritization

As some of the jurisdictional agencies have initiated assessments and projects on the Top20 HIN corridors. There was a need expressed to identify the Next30 HIN corridors. Similar to how the Top20 HIN corridors were identified on a crash severity per mile factor, the next 30 HIN corridors were determined.

Each of the Next30 HIN corridors were also preliminarily prioritized on a more limited set of prioritization factors. The next graphic displays the corridors and limits followed by the prioritization table.



### Top 20 - Priority Matrix

## Corridor and Extent

		Crash Severity / Mile	Ped/Bike Crash Rate/ Mile	Schools / Mile	Equity CoC Coverage	Posted Speed – Context Class Conflict	Transit Routes	High Volumes	
Brandon Blvd	Falkenburg Rd to Dover Rd	High	Medium	High	Low	High	Medium	Medium	5.3
Gibsonton Dr/Boyette Rd	I-75 to Balm Riverview Rd	High	Low	High	Medium	High	Low	Low	4.7
Hillsborough Ave	Longboat Blvd to Florida Ave	Medium	High	High	Medium	High	Medium	Medium	5.7
Fletcher Ave	Armenia Ave to 50th St	Medium	High	Low	High	High	Medium	Medium	5.3
Dale Mabry	Hillsborough Ave to Bearss Ave	Medium	Medium	High	High	High	Medium	Medium	5.7
Lynn Turner	Gunn Hwy to Ehrlich Rd	Medium	Low	Low	Low	High	Low	Low	3.3
Meridian Ave	Channelside Dr to Twiggs St	High	Low	Medium	Medium	High	Medium	Low	4.7
Bruce B Downs	Fowler Ave to Bearss Ave	Medium	High	Medium	High	High	High	Medium	6.0
50th/56th St	MLK Blvd to Hillsborough Ave	Medium	Low	Medium	High	High	High	Low	5.0
15th St	Fowler Ave to Fletcher Ave	High	High	Low	High	Low	Low	Low	4.3
Big Bend Road	US41 to I75	Medium	Low	High	Low	High	Low	Low	4.0
US301	I75 to Adamo Dr	Medium	Low	Low	Low	High	Low	Medium	3.7
Sheldon Rd	Hillsborough Ave to Water Ave	Medium	High	High	Medium	High	Medium	Low	5.3
I4	I275 to 22nd St	High	Low	Low	Low	Low	Low	High	3.7
56th St	Sligh Ave to Busch Blvd	Medium	High	Medium	Low	High	Medium	Medium	5.0
I275	Howard Frankland Bridge to Busch Blvd	Low	Low	Medium	Low	Low	High	High	4.0
Kennedy Blvd	Dale Mabry to Ashley Dr	High	Medium	Medium	Medium	High	Medium	Medium	5.3
78th St	Causeway Blvd to Palm River Rd	High	Medium	Low	Medium	High	Low	Low	4.3
CR579/Mango Rd	from MLK Blvd to US92	Medium	Low	High	Low	High	Low	Low	4.0
Florida Ave	Waters Ave to Linebaugh Ave	High	High	Low	High	High	High	Low	5.7

Priority Scoring

- High
- Medium
- Low

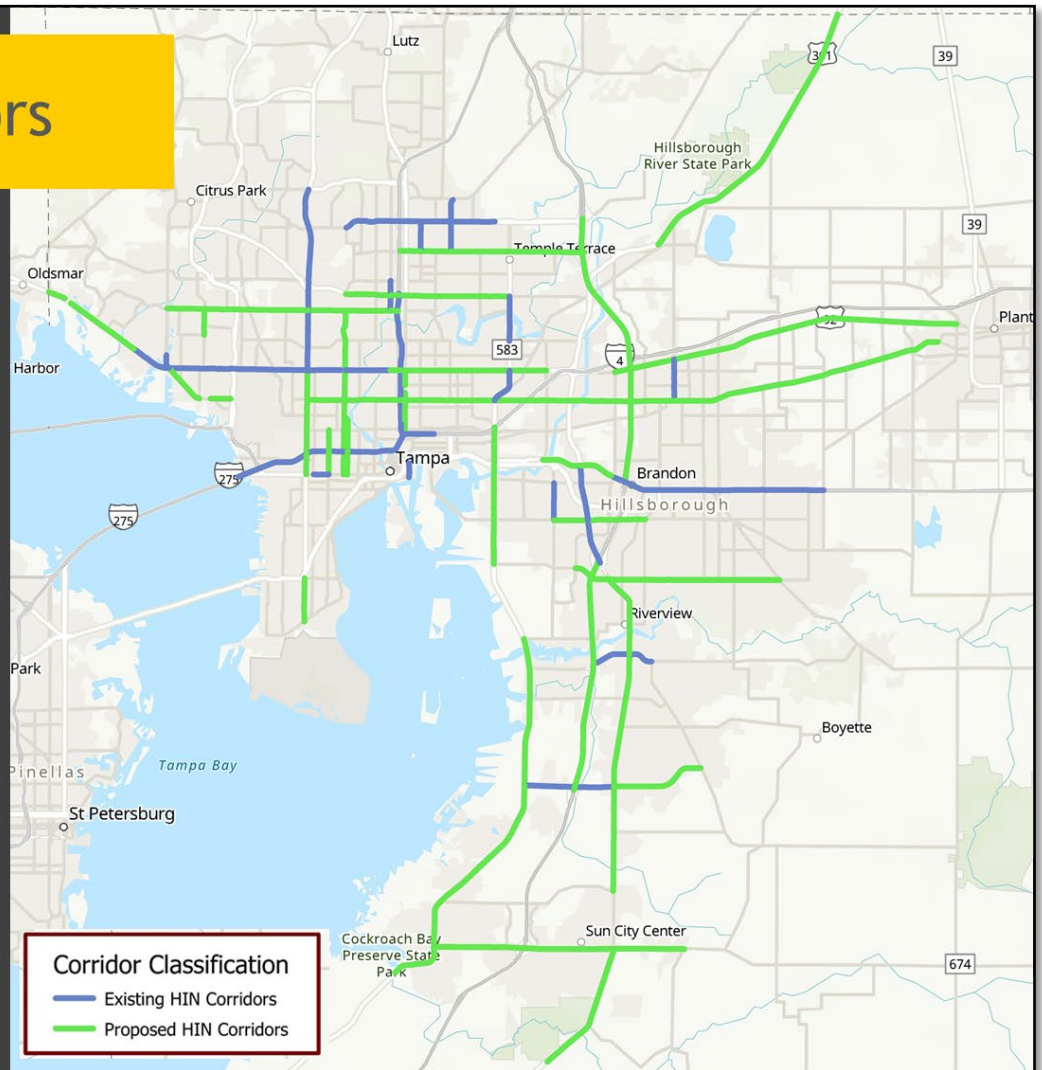
Performance Level

- High
- Medium
- Low



### Next30 High Injury Corridors

- Bloomingdale Ave - US Hwy 301 to Lithia Pinecrest Rd
- US Hwy 41 - Gulf City Rd to Riverview Dr
- US Hwy 301 - 19th Ave to Bloomingdale Ave
- M L King Blvd - Dale Mabry Hwy to Parson Ave
- US Hwy 41 - Madison Ave to I4
- Big Bend Rd - I75 to Balm Riverview Rd
- Busch Blvd - Armenia Ave to 56th Street
- SR 674 (Sun City Ctr Blvd) - US Hwy 41 to CR579
- I-75 - SR 60 to Fletcher Ave
- Hillsborough Ave - Florida Ave to Orient Rd
- Waters Ave - Sheldon Road to Dale Mabry Hwy
- Fowler Ave - I275 to I75
- US Hwy 301 - SR 674 to Lightfoot Rd
- I-75 - Big Bend Rd to US Hwy 301
- SR 60 /Adamo Dr - Orient Rd to Falkenburg Rd
- Causeway Blvd - 78th St to Providence Rd
- Waters Ave - Dale Mabry Hwy to Nebraska Ave
- Progress Blvd - Falkenburg Rd to US Hwy 301
- Hillsborough Ave - Race Track Rd to Longboat Blvd
- Memorial Hwy - Hillsborough Ave to Veterans Expwy
- Hanley Rd - Woodbridge Blvd to Waters Ave
- Dale Mabry Hwy - Interbay Blvd to Gandy Blvd
- Howard Ave - Kennedy Blvd to Tampa Bay Blvd
- Dale Mabry Hwy - Kennedy Blvd to Hillsborough Ave
- US Hwy 92 - Falkenburg Rd to Thonotosassa Rd
- Nebraska Ave - Columbus Ave to Hillsborough Ave
- US Hwy 301 - Stacy Rd to County Line
- Armenia Ave - Tampa Bay Blvd to Waters Ave
- MacDill Ave - Kennedy Blvd to Columbus Dr
- M L King Blvd - McIntosh Rd to Sammonds Rd







### Next 30 - High Injury Corridors Priority Matrix

Corridor and Extent		Crash Severity / Mile	Schools / Mile	Equity CoC Coverage	Posted Speed - Context Class Conflict	High Volumes	
Bloomingtondale Ave	US Hwy 301 to Lithia Pinecrest Rd	●	●	○	●	●	4.0
US Hwy 41	Gulf City Rd to Riverview Dr	○	●	●	●	○	1.3
US Hwy 301	19th Ave to Bloomingtondale Ave	○	●	○	●	●	3.3
M L King Blvd	Dale Mabry Hwy to Parson Ave	○	●	●	●	○	2.7
US Hwy 41	Madison Ave to I4	●	○	●	●	●	3.0
Big Bend Rd	I75 to Balm Riverview Rd	●	●	○	●	○	3.7
Busch Blvd	Armenia Ave to 56th Street	●	●	●	●	○	4.3
SR 674 (Sun City Ctr Blvd)	US Hwy 41 to CR579	●	●	●	●	○	3.7
I-75	SR 60 to Fletcher Ave	○	○	●	○	●	2.3
Hillsborough Ave	Florida Ave to Orient Rd	●	●	●	●	●	2.7
Waters Ave	Sheldon Road to Dale Mabry Hwy	●	●	●	●	●	4.0
Fowler Ave	I275 to I75	○	●	●	●	●	4.0
US Hwy 301	SR 674 to Lightfoot Rd	●	●	○	●	○	3.0
I-75	Big Bend Rd to US Hwy 301	○	●	○	○	●	2.3
SR 60 / Adamo Dr	Orient Rd to Falkenburg Rd	●	○	○	●	●	3.0

Corridor and Extent		Crash Severity / Mile	Schools / Mile	Equity CoC Coverage	Posted Speed - Context Class Conflict	High Volumes	
Causeway Blvd	78th St to Providence Rd	●	●	○	●	○	3.7
Waters Ave	Dale Mabry Hwy to Nebraska Ave	●	●	○	●	○	3.3
Progress Blvd	Falkenburg Rd to US Hwy 301	●	○	○	●	○	3.3
Hillsborough Ave	Race Track Rd to Longboat Blvd	○	●	○	●	○	3.0
Memorial Hwy	Hillsborough Ave to Veterans Expwy	○	●	○	●	○	3.3
Hanley Rd	Woodbridge Blvd to Waters Ave	●	●	○	●	○	3.0
Dale Mabry Hwy	Interbay Blvd to Gandy Blvd	●	●	○	●	○	3.7
Howard Ave	Kennedy Blvd to Tampa Bay Blvd	●	●	●	●	○	3.7
Dale Mabry Hwy	Kennedy Blvd to Hillsborough Ave	○	●	○	●	○	3.3
US Hwy 92	Falkenburg Rd to Thonotosassa Rd	○	○	○	○	○	2.3
Nebraska Ave	Columbus Ave to Hillsborough Ave	○	●	●	●	○	3.3
US Hwy 301	Stacy Rd to County Line	○	○	○	○	○	2.3
Armenia Ave	Tampa Bay Blvd to Waters Ave	●	●	●	●	○	3.7
MacDill Ave	Kennedy Blvd to Columbus Dr	●	●	○	●	○	3.0
M L King Blvd	McIntosh Rd to Sammonds Rd	○	○	○	○	○	3.0

Priority Scoring

High
Medium
Low

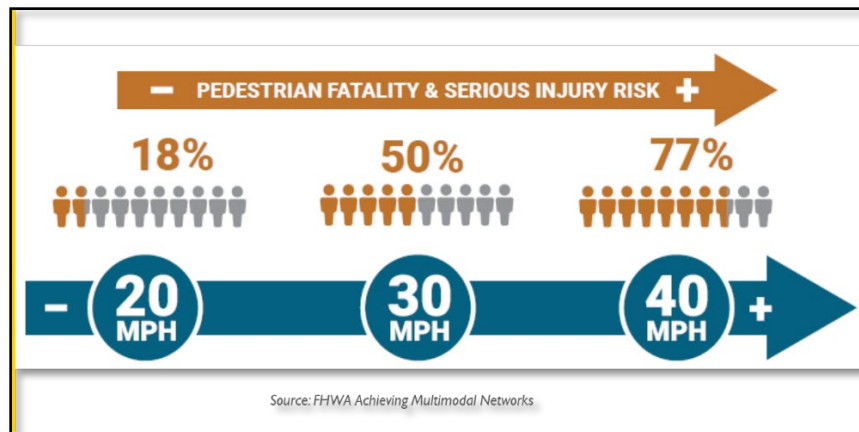
Performance Level

●	High
●	Medium
○	Low



### III. STRATEGIES AND COUNTERMEASURES

Managing dangerous travel speeds is not just an effective strategy but is a critical tenet of Vision Zero. Given the vulnerability of the human body, it is the force of a crash related to speed and weight that most determines the severity. Someone walking who is hit by a car moving at 20 MPH has an 80% chance of survival, while that person only has closer to a 20% chance of survival if hit by a car moving at 40 MPH.



The FDOT, Hillsborough MPO, Hillsborough County and the City of Tampa have committed to Vision Zero, if serious about curtailing fatal and serious injuries, active management of speeds should be a top engineering, policy and legislative priority. It is time to reflect on the Vision Zero Principles:

- **Human life and health** are priorities in our community.
- Traffic deaths and severe injuries are **preventable**.

- **We are human and make mistakes.** The roadway system should be designed to protect us.
- **Speed is a critical factor** in crash severity, the most effective approach is to systematically prioritize safety over speed.
- **Responsibility is shared** between system designers and road users.

According to the Vision Zero Network, there are three major ways to do this:

**First, designing self-enforcing roadways** that physically encourage safe speeds through traffic calming and geometric design (examples include narrower travel lanes, roundabouts, and speed humps). The physical design of a roadway is the first and most impactful way to encourage speeds at safe levels.

**Second, setting and communicating safe speed limits.** In a complicated, multimodal environment, this means setting default speed limits at levels where severe injuries are unlikely when a car collides with a pedestrian, ideally 20 MPH or less. This may require change to some of the most established traffic engineering practices, such as setting speed limits at the 85<sup>th</sup> percentile of a car movements, as well as legislative action. The time is long overdue to change outdated, detrimental policies such as this.

**And Third, enforce safe speed limits.** Automated speed enforcement is a well-tested and proven strategy to encourage safe speeds. Cities such as Washington D.D., Chicago, NYC and many others across the world have effectively discourage speeding via the use of safety cameras. A particularly timely benefit is that this technology can lessen the degree of police officer discretion required in making traffic stops, important at a time when concerns about equitable law enforcement is at a particularly high and troubling level.

There are important considerations in utilizing automated speed enforcement technology, most around privacy and equity (for instance,

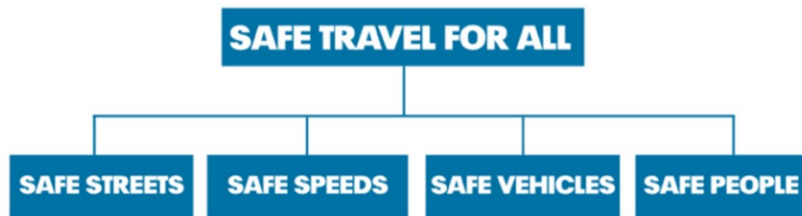
# VISIONZERO

## SPEED MANAGEMENT ACTION PLAN



finer present a disproportionate impact on low-income populations). These are valid concerns and can and should be addressed in any safety camera program, but the value of automated enforcement in protecting lives is high enough that it should be integrated into Vision Zero strategies.

Simply put, communities will not significantly advance Vision Zero goals if they do not directly and assertively manage speed on their roads. Vision Zero work that ignores speed management is merely playing in the margins of effectiveness.



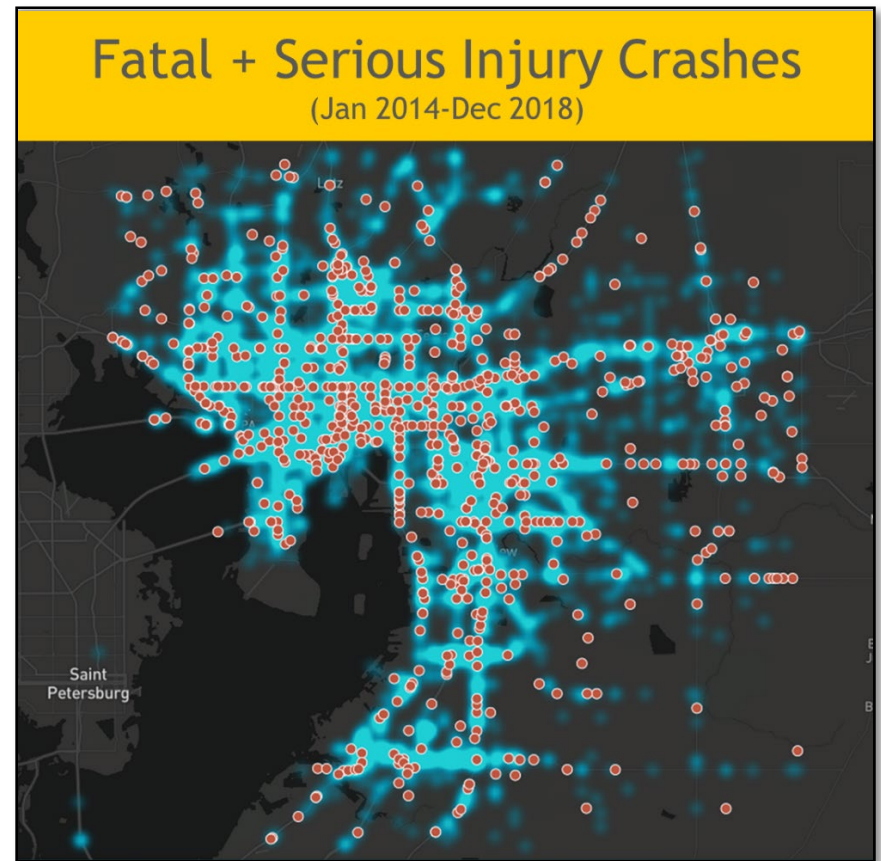
Source: Vision Zero Network

In order to provide guidance on how to design self-enforcing streets, the following tables of Speed Management tools have been created based on national best practices. The tool kit is divided into the following categories for easy access and reference. The tool kits also describe where the tools may be appropriate by Area and Location Type:

- Safe People Walking or Bicycling
- Safe Streets
- Safe Freeway Interchanges
- Safe Traffic Operations
- Education / Public Service Announcements

Details on these tools, their effectiveness and crash reduction effectiveness can be found via:

- Federal Highway Administration / US Department of Transportation
- Institute of Transportation Engineers
- National Association of City Transportation Officials
- Various Vision Zero Cities





### Safe People Walking or Bicycling – Tool Kit

Countermeasure	Area Type			Location Type			Effects		
	Urban (C4,C5,C6)	Suburban (C3)	Rural (C1-C2)	Intersection	Slow Street	Arterial / Corridor	Crash Reducing	Speed Reducing	Severity Reducing
<b>Safe People Walking or Bicycling:</b>									
Pedestrian Crossing - High Visibility	✓	✓	✓	✓	✓	✓	✓	✓	✓
Raised Pedestrian Crossing	✓	✓		✓	✓	✓		✓	✓
Sidewalks Required on both sides	✓	✓		✓	✓	✓	✓		✓
Sidewalks (8 foot min standard)	✓	✓		✓	✓	✓	✓		✓
Sidewalk Separation (from travel lanes)	✓	✓	✓	✓	✓	✓	✓		✓
Mid-Block Pedestrian Crossing/Short Blocks	✓	✓			✓	✓	✓	✓	✓
Refuge Islands (raised/painted)	✓	✓		✓	✓	✓	✓	✓	✓
Painted Intersections / Crosswalks	✓	✓		✓	✓	✓		✓	✓
Protected Intersections	✓	✓		✓	✓	✓	✓	✓	✓
Bike Lanes (separated)	✓	✓		✓	✓		✓	✓	✓
Bike Lanes (protected)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shade Trees / Landscaping	✓	✓	✓	✓	✓	✓	✓	✓	✓
ADA Curb Ramps	✓	✓	✓	✓	✓	✓	✓	✓	✓
Expand Radius of Safe Routes to School	✓	✓	✓	✓	✓	✓	✓	✓	✓
Work Zone Temporary Facilities	✓	✓		✓	✓	✓	✓	✓	✓
Create Shared / Slow Streets	✓			✓	✓		✓	✓	✓
Re-evaluate Context Class	✓	✓	✓		✓	✓	✓	✓	✓
Re-evaluate Target Speed Limit	✓	✓	✓	✓	✓	✓	✓	✓	✓



### Safe Streets – Tool Kit

Countermeasure	Area Type			Location Type			Effects		
	Urban (C4,C5,C6)	Suburban (C3)	Rural (C1-C2)	Intersection	Slow Street	Arterial / Corridor	Crash Reducing	Speed Reducing	Severity Reducing
<b>Safe Streets:</b>									
Chicanes / Lateral Shifts	✓	✓		✓	✓	✓		✓	✓
Full / Half Closure	✓			✓	✓	✓	✓	✓	✓
Lane Width (10 foot standard)	✓	✓		✓	✓	✓	✓	✓	✓
Road Diet (repurpose space)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Gateway Treatment	✓	✓	✓	✓	✓	✓	✓	✓	✓
Roundabout	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mini Traffic Circle	✓	✓	✓	✓	✓		✓	✓	✓
Speed Tables/Raised Intersections	✓	✓		✓	✓	✓		✓	✓
Bulb Outs	✓	✓	✓	✓	✓	✓	✓	✓	✓
Corner Radii / Radius Reduction	✓	✓	✓	✓	✓	✓		✓	✓
Centerline Hardening	✓	✓		✓	✓	✓	✓	✓	✓
Eliminate Acceleration Lanes	✓	✓		✓	✓	✓	✓	✓	✓
Eliminate Deceleration Lanes	✓	✓		✓	✓	✓		✓	✓
Eliminate Right Turn Channelization	✓	✓		✓	✓	✓	✓	✓	✓
On-Street Parking	✓	✓			✓	✓		✓	✓
Tactical Urbanism-Quick Fixes	✓	✓	✓	✓	✓	✓	✓	✓	✓
Provide Street / Pedestrian Lighting	✓	✓		✓	✓	✓	✓	✓	✓
Convert to Two-Way Streets	✓	✓	✓		✓	✓		✓	✓
Enhanced Curve Delineation	✓	✓	✓		✓	✓	✓	✓	✓
Optical Speed Bars/ Converging Chevrons	✓	✓	✓			✓	✓	✓	✓
Re-evaluate Context Class	✓	✓	✓	✓	✓	✓	✓	✓	✓
Re-evaluate Target Speed Limit	✓	✓	✓		✓	✓	✓	✓	✓



### Safe Freeways and Traffic Operations – Tool Kit

Countermeasure	Area Type			Location Type			Effects		
	Urban (C4,C5,C6)	Suburban (C3)	Rural (C1-C2)	Intersection	Slow Street	Arterial / Corridor	Crash Reducing	Speed Reducing	Severity Reducing
<b>Safe Freeway Interchanges:</b>									
Eliminate Acceleration Lanes	✓	✓	✓		✓	✓	✓	✓	✓
Redesign High Speed Exit Ramps	✓	✓	✓		✓	✓	✓	✓	✓
Redesign High Speed On-Ramps	✓	✓	✓		✓	✓	✓	✓	✓
Transverse(in lane) Rumble Strips	✓	✓	✓		✓	✓	✓	✓	✓
Provide Safe Continuous Bike Lanes	✓	✓			✓	✓	✓	✓	✓
Provide Safe Pedestrian Crossings	✓	✓			✓	✓	✓	✓	✓
Re-evaluate Context Class	✓	✓	✓	✓	✓	✓	✓	✓	✓
Re-evaluate Target Speed Limit	✓	✓	✓		✓	✓	✓	✓	✓
<b>Safe Traffic Operations:</b>									
Lower Speed Limits	✓	✓	✓		✓	✓	✓	✓	✓
Add New Signals / Improve Connectivity	✓	✓	✓	✓	✓	✓		✓	✓
Protected-only Left Turn Signal Phasing	✓	✓	✓	✓	✓	✓	✓	✓	✓
Signal Coordination-Target Speed	✓	✓		✓	✓	✓	✓	✓	✓
Variable Speed Limits (Expressways)	✓	✓						✓	✓
Driver Feedback Signs - Speed	✓	✓	✓		✓	✓	✓	✓	✓
Leading Pedestrian Interval	✓			✓	✓	✓	✓	✓	✓
Rectangular Rapid Flashing Beacon	✓	✓		✓	✓	✓	✓	✓	✓
Hybrid Ped Beacon / HAWK	✓	✓		✓	✓	✓	✓	✓	✓
Rest in Red Signal Operation	✓	✓	✓	✓	✓	✓	✓	✓	✓
Advanced Speed Detection Signals	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shorter Signal Cycle Lengths	✓	✓	✓	✓	✓	✓	✓	✓	✓
Traffic Signal- Demand Responsive off-peak	✓	✓	✓	✓	✓	✓	✓	✓	✓
Street Lighting / Pedestrian Level Lighting	✓	✓	✓	✓	✓	✓	✓	✓	✓
Update Pedestrian Countdown Timers	✓	✓	✓	✓	✓	✓	✓	✓	✓
Automated Section Speed Enforcement	✓	✓	✓		✓	✓	✓	✓	✓
Mobile Speed Camera Enforcement	✓	✓	✓	✓	✓	✓	✓	✓	✓
Red Light Cameras	✓	✓	✓	✓	✓	✓		✓	✓
Re-evaluate Context Class	✓	✓	✓	✓	✓	✓	✓	✓	✓
Re-evaluate Target Speed Limit	✓	✓	✓		✓	✓	✓	✓	✓



### Education – Tool Kit

Countermeasure	Area Type			Location Type			Effects		
	Urban (C4,C5,C6)	Suburban (C3)	Rural (C1-C2)	Intersection	Slow Street	Arterial / Corridor	Crash Reducing	Speed Reducing	Severity Reducing
<b>Education / Public Service Announcement:</b>									
Aggressive Driving	✓	✓	✓				✓	✓	✓
Respect for All Users w/Emphasis on Vulnerable	✓	✓	✓				✓	✓	✓
Motorcycle Safety	✓	✓	✓				✓	✓	✓
RRFB's / Hawk Operations	✓	✓	✓				✓	✓	✓
Automated Speed Enforcement	✓	✓	✓				✓	✓	✓
New Pavement Markings/Signs	✓	✓	✓				✓	✓	✓
New Conflict Zone Markings	✓	✓	✓				✓	✓	✓
Target Speed/Coordinated Signals	✓	✓	✓				✓	✓	✓
New Traffic Technology	✓	✓	✓				✓	✓	✓



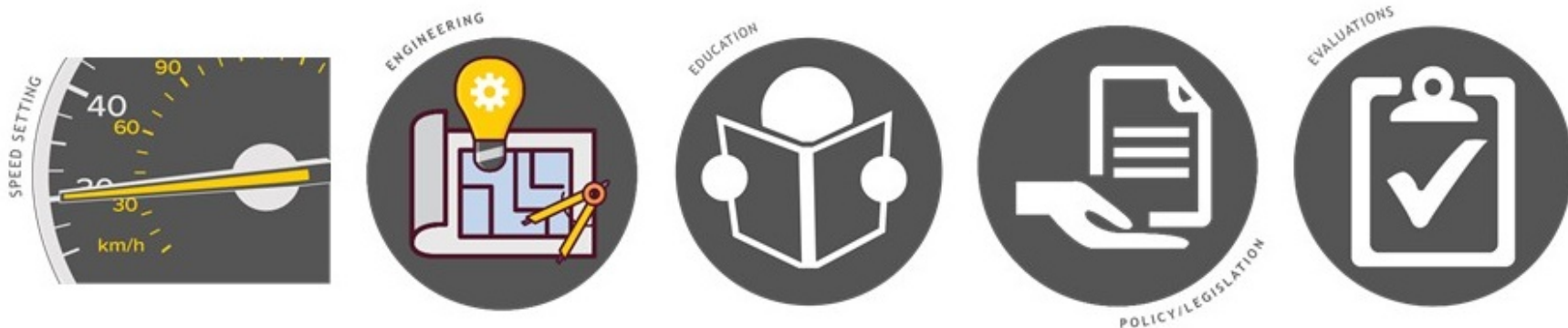
### IV. ACTIONS AND IMPLEMENTATION STRATEGY

This study one and only goal is to improve public health and safety by reducing road fatalities and serious injuries. The desired outcomes agreed to include:

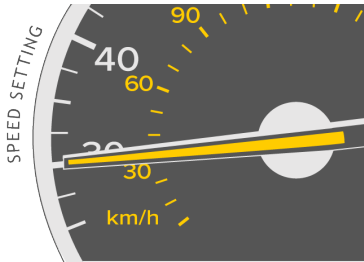
- **Improved safety experience** for all road users - pedestrians, bicyclists, and motorists.
- **Increase awareness** of the dangers of speeding.
- **Institutionalize good practices** in road design, traffic operations, engagement, education and safety.
- Identify **supportive policies, programs and infrastructure** improvements to meet safety goal.
- Obtain **cooperation and support** of stakeholders.

The actions and strategies developed to meet the desired outcomes have been categorized into five elements. These areas represent Speed Setting, Engineering & Operations, Education, Policy & Legislation, and finally, Plan Evaluation. Each element has various actions that are prioritized as short, mid or long-term actions.

It is important to recognize that managing speed to save lives requires a systems approach to safety. It means each of the elements have to be addressed, tried, and possibly adjusted with time. No one item or recommendation in this plan is the silver bullet to eliminating fatal and serious injury crashes. It is the persistent application of best practices in speed management, complete streets and the Vision Zero approach by all stakeholders responsible for use, planning, designing, constructing, and operating that will ultimately save lives.







### SPEED SETTING ACTIONS

#### Action 1 – Regional Context Classification (Short Term)

- ✓ Agencies should update and publish Context Classification for every street in the county per ITE/CNU speed range guidance.
- ✓ Encourage FDOT Context Classification to define design criteria to be used within each classification and in conformance with ITE/CNU best practices.
- ✓ Identify and target corridors with egregious speed limits related to Context Classification.
- ✓ Review and update Context Classifications regularly per local growth and development plans. Classifications should mirror adopted future land use plans.

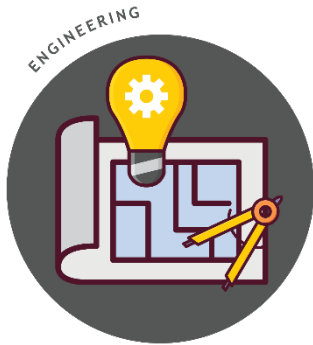
#### Action 2 – Evaluate All Projects (Short Term)

- ✓ Evaluate all ongoing projects at State, County and City levels per new Context Classifications and Speed Management best practices.
- ✓ All projects include: new roads, reconstruction projects, resurfacing projects, operations projects (ITS, signal progression).

- ✓ Incorporate the Safe Systems Approach (Safe Speeds, Safe People, Safe Streets).
- ✓ Ensure countermeasures comply with Safety Tool Kit.
- ✓ Review New Development and access plans for conformance with best practices.

#### Action 3 - Initiate a HC safety task force to engage on speed limit setting, improve consistency of outcomes, and restore credibility of speed limits. Desired task force outcomes: (Mid Term)

- ✓ Improve the methodology for determining operating speed per national best practices.
- ✓ Adopt a Safe Systems Approach – Target Speed
- ✓ Discourage the use of the 85<sup>th</sup> percentile method as the only criteria to set speed limits in urban, suburban and rural town centers.
- ✓ Encourage agencies to seek legislation to establish max speed limits. There will be exceptions, and those need to be justified. With exception of highways and freeways, max speeds per national best practices should be:
  - 20MPH in residential districts and streets
  - 25-35MPH on all other streets
- ✓ Provide guidance that address liability and tort barriers



### ENGINEERING & OPERATION ACTIONS

#### Action 1 - Develop preliminary recommendations for Top50 High Injury Network corridors. (Short Term)

- ✓ Establish standard scope for all Vision Zero corridor evaluations to ensure consistency.
- ✓ Obtain travel speed data for Top50 High Injury Network corridors.
- ✓ Identify feasible countermeasures from the Speed Management resource table.
- ✓ Identify immediate quick fix (Tactical Urbanism) recommendations.
- ✓ Identify longer term recommendations, program and fund.

#### Action 2 – Update Design Manuals and Design Standards for roadway construction, operations and maintenance. (Short Term)

- ✓ Ensure the speed management concepts and countermeasures reflected.
- ✓ Incorporate more flexibility for multimodal design needs.
- ✓ Discourage overdesigning for future motor vehicle capacity where such design would encourage higher operating speeds and volumes.

- ✓ Include design guidance that is more protective of vulnerable users where variable speeds (transition areas) and where land use destinations suggest current or latent demand for walking and bicycling.

#### Action 3 – Incorporate design flexibility to reflect national best practices. (Short Term)

- ✓ Agencies should be encouraged to adopt and require national best practices on safety, vision zero and speed management (ITE, NACTO, Vision Zero Network, etc.)
- ✓ Update FDOT Street Design Standards - Replace “warrant” requirements with “guidelines” per FHWA principals. Especially in justification for pedestrian crossings and signals in high pedestrian areas, and school zones.
- ✓ Update Access Management design standards to ensure increased intersection density with traffic signal control, shorter blocks and improved neighborhood connectivity.

#### Action 4 – Establish Local Street Design Guidelines (Mid Term)

- ✓ Encourage local agencies City and County to establish context sensitive design guidelines to reflect local needs, community character and vision.
- ✓ Ensure prioritization of transportation modes for vulnerable users. Use a “People” first design approach.
- ✓ Ensure close coordination and refinement of land use / zoning / and development regulations.
- ✓ Ensure adoption of local agency ordinances/policies that would require developers to meet safety, speed management, and complete streets principles in new street design.



### Action 5 – Traffic Operations Recommendations (Mid Term)

- ✓ Where operating speeds exceed the context classification ranges, identify and install the appropriate traffic control countermeasures to manage speed.
- ✓ Expand the use of automated traffic safety cameras in school zones, at intersections, and other locations that maybe approved under statute.
- ✓ Use traffic signal timing to manage traffic flow for compliance with target speeds on a corridor.
- ✓ Use radar feedback signs and messaging to help public understand that the speed limit is the maximum speed.
- ✓ Consider other technological applications, such as rest on red, to manage speeds.

### Action 6 – Professional Development and Training (Mid Term)

- ✓ Provide educational opportunities for professionals, public officials on speed management principles, and the importance of vehicle speed and injury severity.
- ✓ Provide training on relationship between 85<sup>th</sup> percentile operating speed and the effect of increasing speed limits on fatal and serious injury crashes, versus less severe crashes.
- ✓ Provide training on speed management principals and how it affects land use, zoning ordinances, and development decisions.
- ✓ Provide educational opportunities on how to determine which streets need traffic calming techniques.

### Action 7 – Fund Improvements to Achieve Speed Management Goals (Mid Term)

- ✓ Inventory current and future sources of funding for safety, speed management, mobility equity and sustainable transportation.
- ✓ Reprioritize increased funding for safety and speed management projects.
- ✓ Encourage competitive grant programs (safety programs, SRTS and Ped/Bicycle Safety Programs) to make speed management practices eligible for funding.
- ✓ Add speed management consideration in selection criteria to receive funding.
- ✓ Identify and pursue opportunities to incorporate speed management treatments with other projects.

### Action 8 – Collaborate with law enforcement, firefighting and other emergency response professionals to generate support for Safety and Speed Management goals and implementation. (Long Term)

- ✓ Potential conversation topics may include:
  - ✓ Enforcement preference for multiple lanes so they have a lane to work in
  - ✓ Grid verses cul-de-sac issues
  - ✓ Lane width
  - ✓ On-Street parking value as friction for speed management
  - ✓ Travel time versus response time



### EDUCATION ACTIONS

#### Action 1 – Educate the Public and Elected Officials (Short Term)

- ✓ Encourage public health and traffic safety partners to educate the public and elected officials about the importance of speed management and injury minimization.
- ✓ Create a one-page injury minimization and speed management that is easy to read and understand for decision makers (one for city and one for county).
- ✓ Apply principles of multicultural communication means to prepare and share traffic safety educational materials.
- ✓ Educate drivers by using advertising, updates to school curriculum and driver's education programs.

#### Action 2 – Encourage Elected officials to adopt Speed Management Policy (Short Term)

- ✓ Replicate steps used to encourage adoption of Complete Streets Policies, in a way that will inform the community and get support from elected officials.

- ✓ Create a one-page concise page that shows how injury minimization efforts support Complete Streets principles for staff and elected officials to use in response to public concerns.
- ✓ Integrate speed management in Complete Streets policies.

#### Action 3 – Develop Education Messages (Short Term)

- ✓ Encourage proper behavior by all road users.
- ✓ Obtain public understanding and support to prevent or reduce road rage and support positive traffic safety culture in communities.
- ✓ Inform the general public about the importance of using appropriate lower speed limits to save lives and achieve Vision Zero goals.

#### Action 3 – Draw on local resources and partners to develop community-based public awareness and education. (Short Term)

- ✓ Ensure that speed limits, including statutory maximums, are well-communicated to drivers.
- ✓ Improve and increase communications about the safety reasons for effective policies and strategies.
- ✓ Increase publicity and visibility of enforcement to enhance deterrent effects.
- ✓ Target education and outreach when speed limit or street design changes occur.



### POLICY & LEGISLATIVE ACTIONS

#### Action 1 – Support Laws and Regulations necessary to ensure people are protected to the greatest extent possible. (Short Term)

- ✓ Encourage partner agencies to consider national best practices on setting speed limits and its implications.
- ✓ Discourage the use of the 85<sup>th</sup> percentile speed setting method as the only criteria used in urban, suburban and rural town centers.
- ✓ Develop and adopt a Speed Management Policy.
- ✓ Integrate speed management goals in Complete Streets policies.
- ✓ Encourage the use of automated traffic safety cameras for speed management in HIN corridors and school zones.

#### Action 2 - Set a firm Vision Zero fatal crash reduction goal (Short Term)

- ✓ Establish parameters for a 50% reduction in fatal and serious injury crashes by 2030.
- ✓ Redefine funding objectives to prioritize safety projects that comply with Vision Zero safety goals.
- ✓ Prioritize retrofitting existing corridors for all road users.

- ✓ Prioritize safety projects in LRTP and UWP to achieve Vision Zero fatal crash reduction goal.

#### Action 3 - Develop an inter-agency speed and safety review process to assess land use and transportation plans, designs, and implemented projects. That will: (Mid Term)

- ✓ Leverage parallel programs and initiatives where there are shared objectives and priorities.
- ✓ Coordinate land use and transportation plans in setting speed limits and street design characteristics.
- ✓ Set or revise speed limits early in project planning process.
- ✓ Conduct road safety audits of all new, pending and maintenance and operations projects.

#### Action 4 – Review and update Land Use Policies to ensure walkable, safe, and healthy communities. (Mid Term)

- ✓ Ensure mixed-use development patterns
- ✓ Ensure grid street system to improve connectivity
- ✓ Ensure multi-modal infrastructure on all developments
- ✓ Maximize the number of entry points to subdivisions
- ✓ Ensure self-enforcing street design
- ✓ Create slow streets in neighborhood settings
- ✓ Integrate neighborhood schools with safe access

#### Action 5 – Review and Initiate Traffic Safety Legislation (Mid Term)

- ✓ Pull on local partnerships and elected political officials to formulate a plan of action to address current and future traffic safety legislative needs, including but not limited to:
  - ✓ Update statutory speed setting legislation
  - ✓ State authority to utilize Automated Speed Enforcement
  - ✓ Initiate the need for a state Motorcycle Helmet Law
  - ✓ Identify other critical safety legislation needs



### PLAN EVALUATION ACTIONS

**Action 1 – Develop evaluation metrics and timeframes for plan updates.**

- ✓ Establish quarterly updates of the Speed Management Action Plan.
- ✓ Establish post-project evaluation measures with qualitative and quantitative approaches, including:
  - ✓ Quantitative measures: speed reduction, crash reduction, serious injury/fatality reduction, and impact on travel time.
  - ✓ Qualitative measures: user observations, surveys



## Appendix – Supporting Materials

Submitted by:

**GPI** Engineering | Design | Planning | Construction Management