High-Injury Network
In developing the Action Plan, Forward Pinellas analyzed all crashes that occurred in Pinellas County that were not on a freeway resulting in a fatality or serious injury for the years 2015 through 2019. Vision Zero work in other municipalities has shown that roadway characteristics, such as number of lanes, posted speed limit, and intersection control types, are very important to identify historic collision trends and help municipalities take a proactive approach to identify and improve high-risk locations. Vision Zero work has also highlighted the disproportionate burden traffic crashes have on vulnerable populations, such as seniors and Communities of Concern. Forward Pinellas incorporated roadway characteristic and demographic datasets into its collision analysis to understand how these patterns play out locally.

A High-Injury Network (HIN) which identifies transportation corridors with the highest levels of fatal and serious crashes for people walking, riding bikes, and in vehicles, was developed. In addition to the HIN, hot-spot locations were identified to allow for improvements to focus on roadway segments and intersections where a high proportion of KSI collisions occur with the most frequency, with a focus on locations where vulnerable roadway users were involved in a KSI collision.

The High-Injury Network accounts for about 40 percent of all KSI crashes, which occur on about 2.7 percent of the roadway network in Pinellas County as measured by centerline miles. Most of the roadways on the HIN have a speed limit greater than 40 mph, and the majority are under FDOT jurisdiction (75 percent), as compared to Pinellas County (23 percent) and municipalities (3 percent).

Over one-third of the County’s elementary, middle, and high schools are located along the HIN, which also tends to have speed limits greater than 40 miles per hour. When a vulnerable roadway user is involved in a collision with a person driving greater than 40 miles per hour, the chance of survival is very low. 73 percent of the HIN falls within or runs through a Community of Concern, which compromises only 32 percent of the County’s geographic area.
Pinellas County roadways with speed limits of 40MPH or higher were the site of:

- All Collisions: 60%
- KSI Collisions: 67%
- Bicycle KSI Collisions: 59%
- Pedestrian KSI Collisions: 60%

- 87% of the HIN has speed limits of 40MPH or higher
- 66% of the HIN has speed limits of 45MPH or higher
Figure 15
High-Injury Network and Hot Spots
Figure 16
High-Injury Network and Hot Spots: North County

- High-Injury Network
- Hot Spots
- KSIs

KSIs at Hot Spots:
- Auto
- Bicycle
- Pedestrian
- Motorcycle
- Truck

353
157
61
21
48
14
77
32

Automobile KSI Collisions
Pedestrian KSI Collisions
Bicycle KSI Collisions
Motorcycle KSI Collisions

All collisions
Collisions along HIN and at hot spots
Figure 17
High-Injury Network and Hot Spots: Central County

- High-Injury Network
- Hot Spots
  - KSI Collisions

<table>
<thead>
<tr>
<th>Category</th>
<th>Collisions along HIN and at hot spots</th>
</tr>
</thead>
<tbody>
<tr>
<td>All collisions</td>
<td>1,181</td>
</tr>
<tr>
<td>Automobile KSI</td>
<td>702</td>
</tr>
<tr>
<td>Pedestrian KSI</td>
<td>267</td>
</tr>
<tr>
<td>Bicycle KSI</td>
<td>176</td>
</tr>
<tr>
<td>Motorcycle KSI</td>
<td>339</td>
</tr>
</tbody>
</table>

KSIs at Hot Spots:
- Auto
- Bicycle
- Pedestrian
- Motorcycle
- Truck
Figure 18
High-Injury Network and Hot Spots: South County

- High-Injury Network
- Hot Spots
  - KSIs

Automobile KSI Collisions: 926
Pedestrian KSI Collisions: 313
Bicycle KSI Collisions: 267
Motorcycle KSI Collisions: 148
All collisions: 225

KSIs at Hot Spots:
- Auto
- Bicycle
- Pedestrian
- Motorcycle
- Truck
Contestant Artwork
Figure 19
High-Injury Network and Communities of Concern

- Hot Spots
- Communities of Concern
Figure 20a
Percent of People Who are 65+ and Older

Figure 20b
Percent of People Who are Language-Isolated
Figure 20c
Percent of People Who are Low-Income

Figure 20d
Percent People of Color
Figure 20e
Percent of People Walking or Biking
Figure 20f
Total Population

[Map showing traffic patterns and population distribution]

- High-Injury Network
- 1,000 or less
- 1,001-2,000
- 2,001-3,000
- 3,001-4,000
- 4,000+
Figure 21
High-Injury Network with Parks and Schools within a Half-Mile
Over a third of the elementary, middle, and high schools in Pinellas County are within a quarter-mile of the HIN, resulting in a large proportion of school trips necessitating travel on a portion of the HIN. This indicates potential safety challenges and concerns for students walking or bicycling to school and resulting in more people choosing to drive their student to school. As more people opt to drive a vehicle for trips that could be made by walking or bicycling, the potential for congestion increases, especially at peak school times. This in turn increases the likelihood of conflicts between those driving and those walking or bicycling to school.

The Pinellas County School District has about 150 schools in the County and provides Safe Routes to School resources to schools. Pinellas County Schools also serves as the coordinating body to the Pinellas STEPS (School Transportation & Enhanced Pedestrian Safety) committee which is comprised of individuals who represent law enforcement, traffic, planning and safety staff from all major municipalities in Pinellas County, as well as members representing All Children’s Hospital, FDOT, and Pinellas County Schools. Forward Pinellas hosts a School Transportation Safety Committee (STSC), which is made up of local elected officials and school board members that meet to address school-related transportation access and safety issues while also working to improve communication and coordination between transportation agencies and the Pinellas County School Board. Many partner agencies and private schools in the community also have Safe Routes to School programs. Maps and data in this plan help identify potential barriers, such as crossing the HIN or navigating a HIN hot spot location, for students walking and bicycling to school.
Figure 22
High-Injury Network with Ridership at Transit Stops on the Network
Transit Ridership

There is a connection between transit ridership and the HIN: 14 percent of Pinellas Suncoast Transit Authority (PSTA) stops are sited on the HIN, with 17 percent of systemwide ridership. There is a strong correlation between hot spot locations and high ridership areas. While there is not sufficient data to determine how many people involved in a KSI collision were using transit at some point during their trip, there are a number of locations in the County where KSI collisions involving a vulnerable roadway user occur in the vicinity of a mid-block transit crossing where the closest signalized crossing on a four- or six-lane roadway is more than one-half mile away.
Land use strategies are an important component to improving transportation safety. When people must drive long distances for daily needs such as employment, education, food, and medical care, it not only increases the average length of vehicle trips and adds cars to the roadway network, but people driving can become impatient when experiencing congestion. Increased travel time and delays can increase undesirable driver behaviors, such as speeding and aggressive driving. When travel times are already long, people may be unwilling to accept even a modest increase in travel time to improve transportation safety outcomes.

Goals in the 2045 Advantage Pinellas Plan call for creating 20-minute neighborhoods which support walking and bicycling as realistic travel options for daily activities. By placing complementary land uses in close proximity and providing direct transportation connections, people who drive may be willing to accept a ten percent increase in travel time on a ten-minute drive during peak travel hours if it means better bicycle and pedestrian connections and safety outcomes at all times of the day.

Forward Pinellas will work with local government planners to encourage new developments that enhance access to destinations for all residents and improve accessibility for all travel modes.
To be truly effective, local agencies need to consider pairing land use strategies with urban design strategies. Urban design relates to the process of shaping the physical features of our communities, including how roadways, buildings, landscaping, and other human-made and natural features are connected. As areas redevelop, there are opportunities to improve transportation safety through common urban design elements that can contribute to safer streets:

- **Building placement** Placing buildings and their primary entrances/storefronts at the sidewalk can encourage more active transportation and transit use as people do not have to walk across a parking lot to reach building entrances. The transitional space between buildings and the curb can be activated with uses such outdoor dining facilities, landscaping, and pedestrian scale lighting.

- **Parking requirements and location** Flexible parking requirements, such as setting parking maximums as opposed to parking minimums, can promote more efficient use of scarce land, as current regulations may require more space to be devoted to vehicle storage than for the building. This can be a deterrent to in-fill development, and a barrier to creating communities that are less reliant on vehicle travel.

- **Connectivity and Street Design** Built environments that have a high level of intersection density make destinations more accessible for all travel modes. Grid networks provide opportunities to connect streets at regular intervals and offer the most direct routes for all travel modes. Meanwhile, street networks characterized by cul-de-sacs and loop roadways tend to increase average trip length, decrease the potential for walking, bicycling and transit modes to constitute a significant share of travel, concentrate vehicle traffic onto a smaller number of roadway facilities, and exacerbate the potential for vehicle congestion.
Figure 23
High-Injury Network with Land Use Overlay
Land use patterns that discourage cross-parcel access further concentrate travel onto the regional street network and create circuitous movements. Improved safety outcomes can be realized for all travel modes when there is reciprocal access. Strategies include consolidating driveways, installing signalized access, requiring cross-access easements, and constructing median islands.

Streets and buildings that are designed for people, not automobiles, tend to generate a larger share of travel from non-automobile modes. Providing supporting facilities, such as secure bicycle parking, shaded walkways, pedestrian-scale lighting, and transit shelters with connecting sidewalks can also contribute the safer streets for everyone.

- **Street enclosure** Creating streets that are comfortable for people also relates to building heights and the width of streets. Research shows that wide streets and single-story buildings set-back from the street can make people walking feel uncomfortable and encourage people to drive in excess of posted speed limits. Balancing building heights, roadway widths, and other design features can improve pedestrian comfort, and context appropriate speeds for people driving.

- **Landscaping** Well-placed landscaping can serve several needs, such as providing shade, buffering pedestrian realms from vehicle travel, and slowing vehicles.

The FDOT Context Classification Guide\(^\text{14}\) provides additional information about built environment factors and street design guidance.

Contestant Artwork