VISION ZERO POLK

Polk Transportation Planning Organization

VISION ZERO CONDITIONS ASSESSMENT STUDY

August 2023

A Message From Sheriff Grady Judd: Speeding & Aggressive Driving

Images and graphics contained in this document courtesy of Polk TPO, Kittelson & Associates, Inc., and Federal Highway Administration.

Message from Parag Agrawal
Executive Director
Polk Transportation Planning Organization

On average, nearly two people every week are killed in traffic collisions in Polk County. In 2022, our metropolitan area was ranked as one of the top 25 most dangerous places for bicyclists and pedestrians in the United States by Smart Growth America; it was one of nine Florida metro areas to appear on the list.

The data shows that our pedestrians and bicyclists are far more likely to be killed or seriously injured in crashes than people in cars, and that most serious traffic collisions are preventable. Accordingly, this document has one main focus: **to prevent fatal and severe crashes by making our roadways safer for everyone.**

This work is complicated and will require both engineering and non-engineering strategies. Enforcement of speed limits and compliance with other traffic laws is important, but we know we cannot prevent all traffic infractions. What we can do is design our roadways to minimize speeding and encourage safer driving. We can also increase bicyclist and pedestrian safety by building facilities that reduce conflict points with vehicles. We are dedicated to a combined and collaborative approach to create a Safe System.

This study was developed in accordance with best safety planning practices, using data that illuminates problem locations, crash causes, and infrastructure improvements to mitigate or prevent them. The first step in the planning process outlined in this report involves identifying Polk County's high-injury network based on number of crashes, their locations, and their severity. The second step will include collaborating with stakeholders and the public—to add context to the data through real-world experience walking, bicycling, and driving on our roadways. The third step will involve development and implementation of a toolbox comprised of policies, engineering, and education solutions that, together, form a comprehensive strategy to resolve our safety problems. Finally, we will work with partners like our cities, Florida Department of Transportatoin (FDOT), and the Federal Highway Administration (FHWA) to start implementing!

This study represents a blueprint for the Polk TPO and its partner agencies to achieve zero traffic fatalities, because even one is too many. Please join this effort through your participation in future planning efforts and dedication to Vision Zero!

We pledge to work together to eliminate deadly and life-altering injury crashes on our streets and in our communities by putting people first through a coordinated holistic approach.

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- Central Florida Regional Planning Council
- City of Fort Meade
- Polk City
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- Polk Vision
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- Central Florida Development Council

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What Is Vision Zero?

Vision Zero strives to eliminate all fatalities and serious injuries that occur during the everyday business of transportation. A Vision Zero approach assumes that human users (like drivers, pedestrians, and bicyclists) will make mistakes as they move from place to place and that the cost of these mistakes should not be death or serious injury.

A Vision Zero approach looks at how existing tools—like roadway policy, roadway technologies, and speed limits—shape human user behavior. By using these tools in new ways, we can produce roadways that are designed to anticipate human error and mitigate its consequences.

Traditional Approach

Traffic deaths are **inevitable**

Assumption of **Perfect** human behavior

Prevent **collisions**

Individual responsibility

Saving lives is **expensive**

VS

Vision Zero

Traffic deaths are **preventable**

Integrate **human failing** in approach

Prevent **fatal and severe crashes**

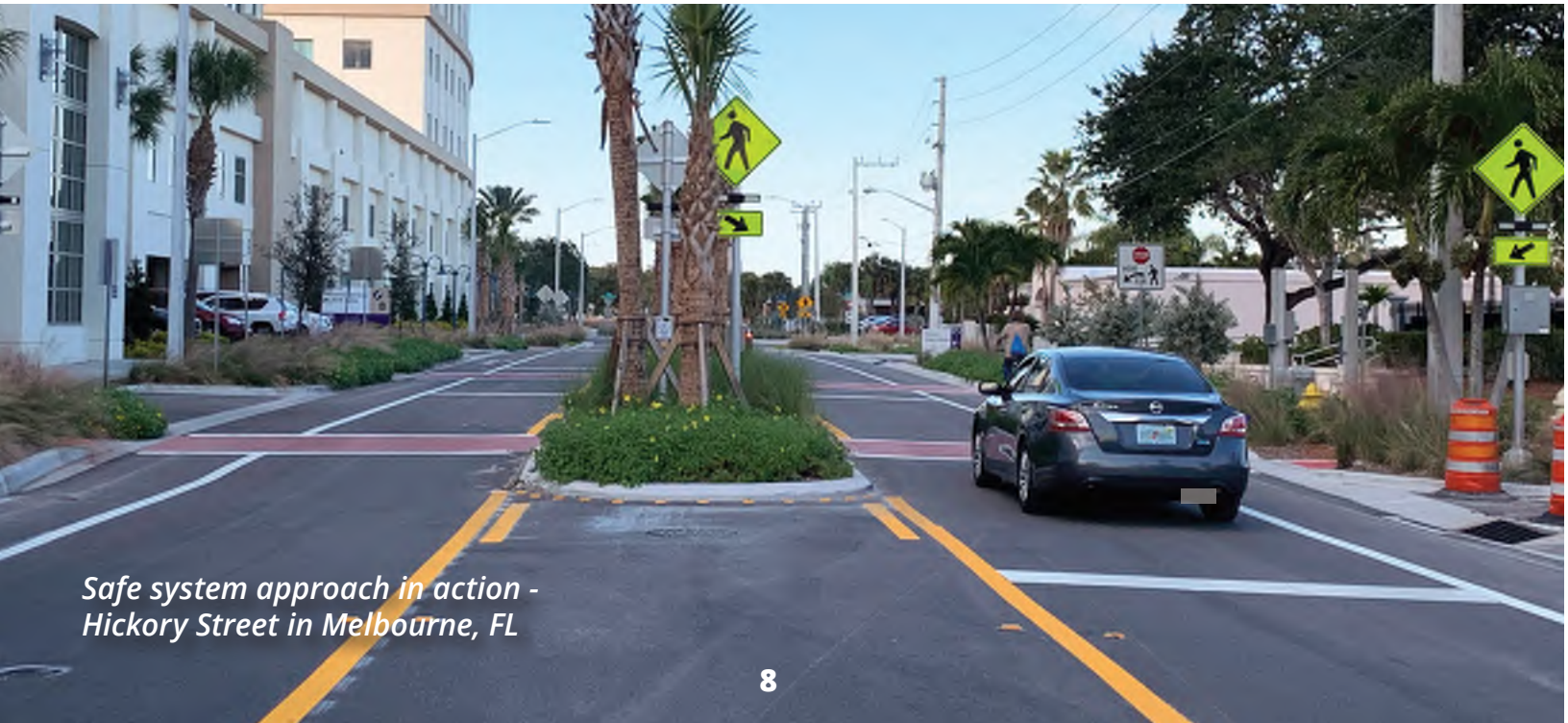
Systems approach

Saving lives is **not expensive**

Zero Requires a Safer System

To achieve zero fatalities or serious traffic injuries, our Vision Zero initiative grounds itself in the principles of the Safe Systems approach, which offers a proactive strategy to safety. No longer does the responsibility of roadway safety belong solely to the driver behind the wheel or solely to the pedestrian looking both ways before crossing the street.

The U.S. Safe Systems approach is informed by similar Swedish and Dutch planning perspectives, and it has been adopted and endorsed by U.S. Department of Transportation (USDOT) and the Federal Highway Administration (FHWA). The approach tasks stakeholders at the highest levels with outfitting multiple layers of protection into a transportation network, resulting in roadways that better serve—and forgive—all users.



Safe system approach in action - Hickory Street in Melbourne, FL

We're Already Working Toward Zero

This Vision Zero Conditions Assessment Study is a natural extension of many safety-focused efforts already underway in Polk County. In 2012, we implemented a Complete Streets policy designed to ensure that our roadways serve all users regardless of mobility, ability, and age. This Conditions Assessment, by drawing attention to the importance of roadway infrastructure design in meeting the needs of all, informs and guides our work on Vision Zero.

Several other transportation initiatives are already working to make Polk County safer, including:

I Pledge to SLOW DOWN
www.pledgetoslowdown.com
Take the Pledge:
www.pledgetoslowdown.com

ALERT TODAY FDOT ALIVE TOMORROW

#GCSSS22 Summit

For prior safety and mobility issues identified by the Pok TPO, see appendix F.

Polk TPO has adopted a target of zero fatalities and serious injuries.

Between 2001 and 2016
- Polk County has won 12 regional awards for safety.
- Polk County has received two national awards for roadway safety public service announcement campaigns.

In 2016, we developed action plans for eight of the highest crash County corridors and took the Every Life Counts pledge.

In 2017, we started a two-year process to evaluate gaps in sidewalk connectivity near schools.

In 2018, we took the Pledge to Slow Down.

In 2020, we updated our safety actions plans for area pedestrians and bicyclists.

In 2022, we participated in the Gulf Coast Safe Streets Summit and formed our Vision Zero task force.

In 2023, Polk County was awarded a Federal SS4A Action Plan grant.

Conditions Assessment Overview

Vision Zero Starts with Our Most Vulnerable

Among other benefits, a Vision Zero approach can help us understand how to prioritize roadway safety strategies and projects. Given that roadway crashes disproportionately impact marginalized groups (including low-income neighborhoods, people with disabilities, adults above the age of 65, and children), starting by improving the roadways in these communities can provide resources to those who need them most while improving County safety overall.

Equity is a concern close to Polk County's heart. According to USDOT and based on criteria supplied from the Center for Disease Control, almost 50 percent of Polk County's population and employment and 65 percent of total County area are considered "transportation disadvantaged." Vision Zero makes our transportation network safer by creating equity in our communities through prioritizing investments in communities that are more likely to walk and bike.

The Justice 40 Initiative

The Justice40 initiative is a Federal program aimed at ensuring that at at least 40 percent of Federal investments in climate and clean energy go to disadvantaged communities. It seeks to address environmental and economic inequalities by prioritizing resources for historically marginalized groups, promoting equity, and reducing pollution.

Transportation Access disadvantage identifies communities and places that spend more, and longer, to get where they need to go. (CDC Social Vulnerability Index, Census America Community Survey, EPA Smart Location Map, HUD Location Affordability Index)

Health disadvantage identifies communities based on variables associated with adverse health outcomes, disability, as well as environmental exposures. (CDC Social Vulnerability Index)

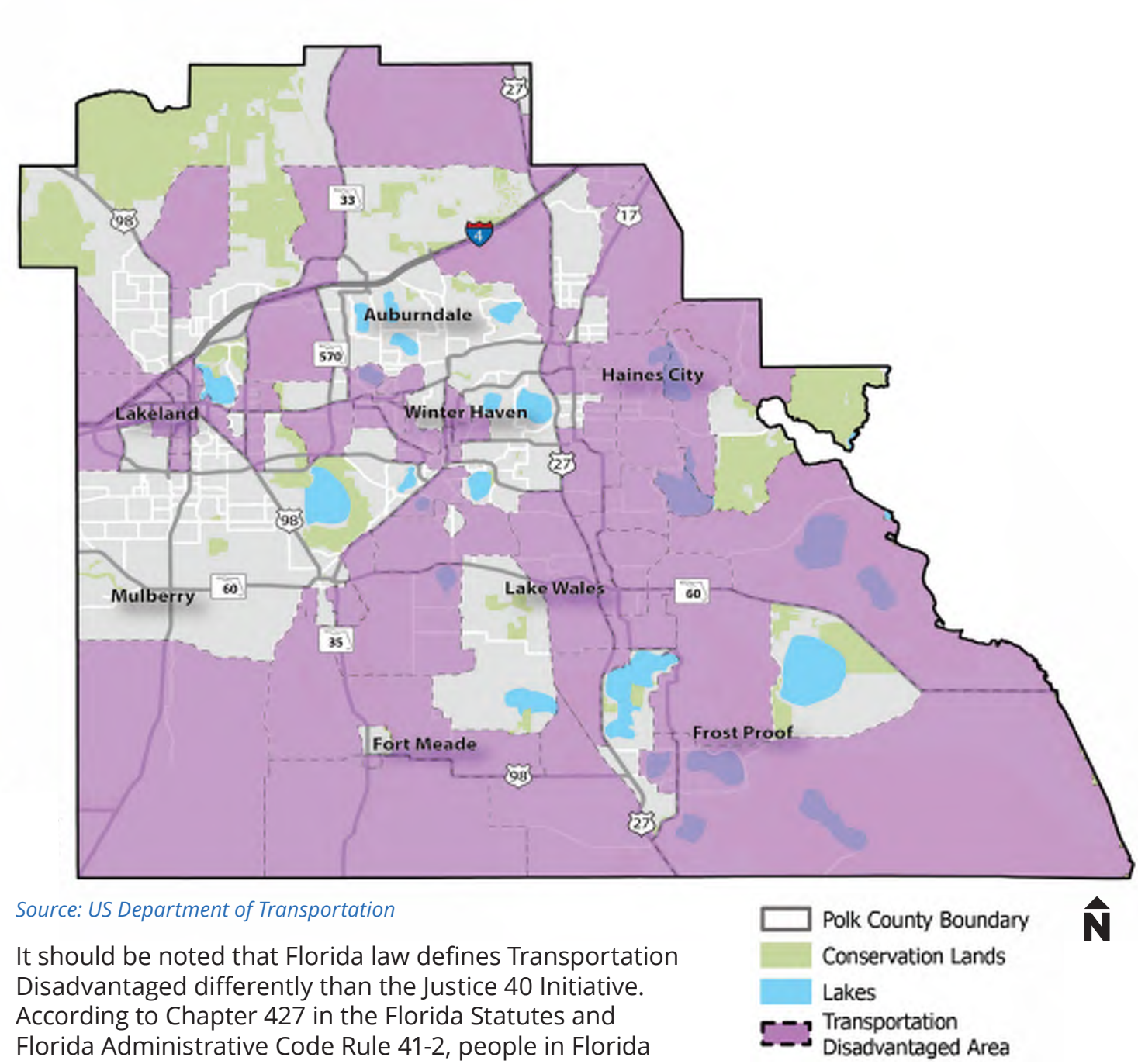
Environmental disadvantage identifies communities with disproportionate pollution burden and inferior environmental quality. (EPA EJ Screen)

Economic disadvantage identifies areas and populations with high poverty, low wealth, lack of local jobs, low homeownership, low educational attainment, and high inequality. (CDC Social Vulnerability Index, Census America Community Survey, FEMA Resilience Analysis & Planning Tool)

Resilience disadvantage identifies communities vulnerable to hazards caused by climate change. (FEMA National Risk Index)

Equity disadvantage identifies communities with a high percentile of persons (age 5+) who speak English "less than well." (CDC Social Vulnerability Index)

TRANSPORTATION DISADVANTAGES AREAS, 2017-2021



Source: US Department of Transportation

It should be noted that Florida law defines Transportation Disadvantaged differently than the Justice 40 Initiative. According to Chapter 427 in the Florida Statutes and Florida Administrative Code Rule 41-2, people in Florida are transportation disadvantaged when they are unable to transport themselves or to purchase transportation and are dependent upon others to obtain access to healthcare, employment, education, shopping, social activities, or other life-sustaining activities.

Behind Every Statistic Is a Life

Maps and data can aid our understanding of the County's safety profile. It's equally important, however, to remember the people behind these figures. Every statistic represents a human life cut short or forever changed by a crash.

Our Partners in Safety

Puerto Rican and Hispanic Chamber of Commerce Polk County
http://www.prhccpc.com

United Way of Central Florida
https://uwcf.org

Polk County Sheriff's Office
https://polksheriff.org

The City of Bartow, FL
https://www.cityofbartow.net

The City of Auburndale, FL
https://www.auburndalefl.com

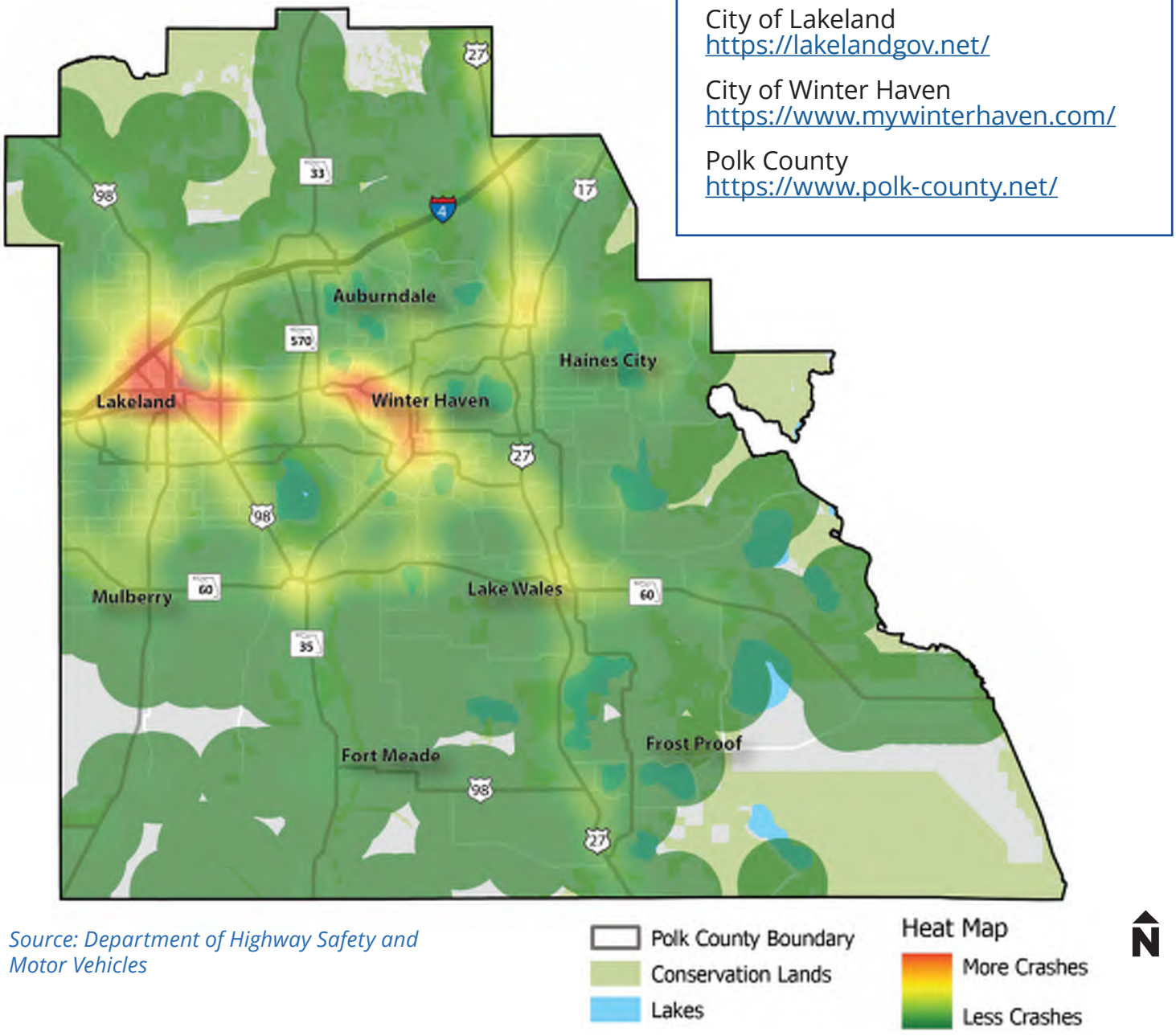
Expedite Life
https://www.expeditelife.org

City of Lakeland
https://lakelandgov.net/

City of Winter Haven
https://www.mywinterhaven.com/

Polk County
https://www.polk-county.net/

CRASH HOT SPOTS IN POLK COUNTY, 2017-2021



Source: Department of Highway Safety and Motor Vehicles

Polk Vision Zero Task Force meeting to discuss preliminary data findings

Task Force Members

- United Way of Central Florida
- Florida Dept. of Health
- Light House for the Blind and Low Vision
- Citrus Connection
- FDOT D1
- City of Lakeland
- Haines City
- Polk County
- City of Winter Haven
- Central Florida Regional Planning Council
- City of Fort Meade
- Polk City
- AARP
- Polk Vision
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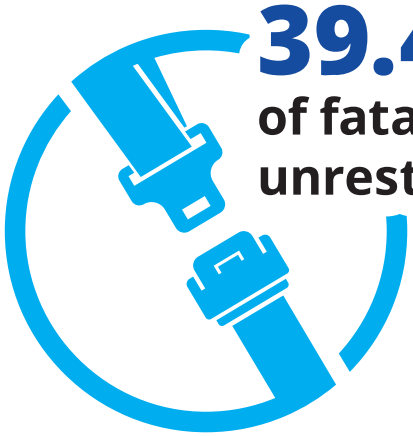
- Central Florida Development Council



39.4%
of fatalities were unrestrained

Community Testimonial

"I was involved in a head-on collision on US-92 in Auburndale on July 27, 2022. I had dropped off my four-year-old daughter and was on my way to work at Disney when the other vehicle, which was traveling in the westbound lane until it swerved to avoid a car, jumped the median into my eastbound lane and struck my vehicle on the front driver side. I was taken by ambulance to Lakeland Regional.

The crash has left me in constant pain. I had a fractured sternum, and two herniated discs and four bulging discs from my neck down to my lower back. I need further physical therapy, another procedure for my spine, and I'm awaiting MRI results for my right knee. I'm also unable to do many of the things I once loved: I'm terrified of commuting on busy roads, and I arrive to work filled with anxiety."

– Casey McNicol

Casey McNicol, (pictured above with her daughter, 2021)

Why Now?

Polk Is Growing

Polk County is one of the fastest-growing areas in the State. The County's ongoing population growth continues to create new traffic patterns and change old ones, making this area important to keep an eye on.

As more people choose to come to the County to live, work, and play, addressing the area's known safety issues becomes even more urgent.

Safety Remains a County Concern

Given the County's growth, what Polk County does today will determine quality of life in the County tomorrow and for decades to come. In order to understand what needs to happen in order to make Polk County roadways safer, we must first understand the crash history.

Between 2017 and 2021, there were:[1]

82,374
total crashes

606
fatal crashes

1,746
severe injury crashes

25,001
total injury crashes

56,767
property damage-only crashes

$12.8B[2]
cost to society

These statistics are more than numbers. They mean that every week around two people die in traffic crashes while another seven people suffer serious injuries, and that every day around 31 crashes cause nearly $7 million in property damage. The human and community costs of these serious crashes make the urgency of our work clear: as Polk County continues to grow and welcome new families and residents, it must also build upon ongoing initiatives to further prioritize the health and safety of everyone.

1 Source: Dept. of Highway Safety and Motor Vehicles
2 Assuming FDOT KABCO Crash Costs in the FDOT 2022 Design Manual.
3 The Central Florida Development Council, 2021

Polk County by the Numbers:[3]

Current County population:
777,019

9th
most-populated county in Florida

2nd
fastest-growing metro area in the U.S.

Since 2020, Polk's total population has increased by more than
44,000.

The County accounts for
$18.7 billion
in total economic activity.

Crashes in Polk County

Any type of crash has the potential to be serious, but the data has indicated that certain conditions increase the likelihood of a fatality or severe injury in crashes across Polk County.

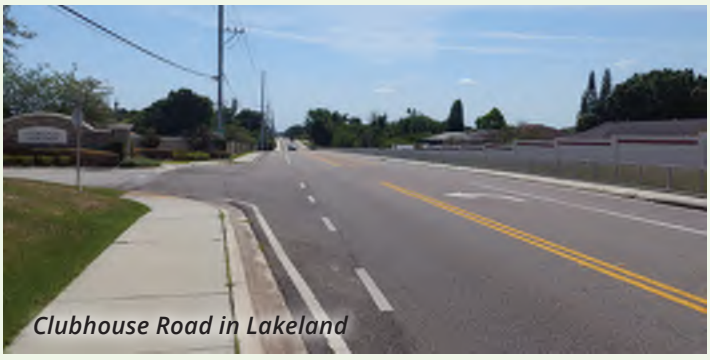
Different Crashes Occur in Different Locations

While Federal and State roads accounted for a higher percentage of fatal and serious crashes overall, as well as for fatal and serious crashes involving pedestrians and vehicles, rural roads accounted for the highest percentage of bicyclist deaths. For this analysis, County and City roads were predominantly analyzed by our team of local safety experts for implementable solutions. Understanding how different roadway groups are at risk at different locations can help us identify productive countermeasures for every location.

Land-Use Context Matters, Too

The land use surrounding the roadway also influences how people use the roadway, and it can sometimes lead to specific crash patterns.These "roadway contexts" are defined by FDOT; in Polk County, two contexts produce a disproportionately high number of crashes. (FDOT)

Suburban Commercial contexts feature poor connectivity for vulnerable users, meaning people bicycling or walking must make high-risk lane changes to turn or cross long stretches at intersections. Meanwhile, the mixed-use nature of the Urban General context may mean users have different expectations for how to use the space, which in turn could produce conflicting roadway behaviors.



Clubhouse Road in Lakeland

C3C/C3R "Suburban Commercial/ Residential" contexts: these are primarily Commercial areas with large building footprints, large parking lots, large blocks, and a disconnected or sparse roadway network. This context also includes roadways surrounded by residential neighborhoods and some businesses.

SR 37 in Lakeland

C4 "Urban General" contexts: these areas feature a mix of single- or multi-family residential and commercial developments and generally strong roadway connectivity.

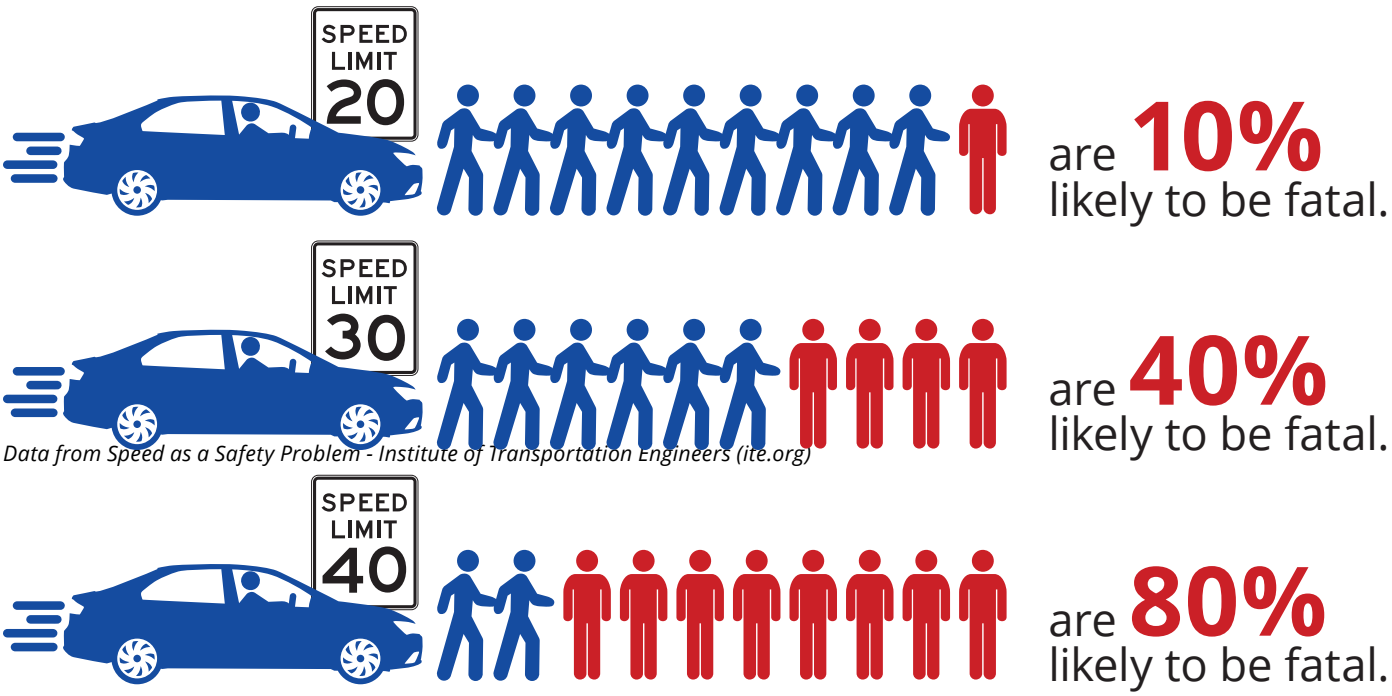
Looking North on Rifle Range Road, the #4 Corridor on the Polk High Injury Network

Speed-Calming

As driver speed increases, the chance of a fatality or serious injury in a crash also increases exponentially. According ot the Institute of Transportation Engineers, a pedestrian has a 10 percent chance of fatality in a collision with a car traveling 20 mph; however, the likehood of death or serious injury jumps to 80 percent when a collision takes places at 40 mph.

Many American roads have historically prized haste over safety—what has mattered is how fast users can arrive at their destinations and not whether they can arrive there safely. A core tenant of the Safe Systems approach is to reverse this thinking; as such, speed-calming measures are an essential component of the Polk County Vision Zero Conditions Assessment.

Pedestrians hit by a person driving at...

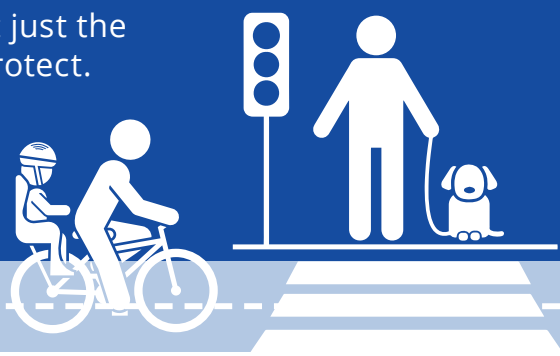


Data from Speed as a Safety Problem - Institute of Transportation Engineers (ite.org)

Vulnerable Roadway Users

You may notice a pattern running through these crash statistics. In all cases, bicyclists and pedestrians are more likely to suffer a fatality or serious injury in a crash than drivers of a car. Protecting these especially vulnerable users is a core aim of our Vision Zero initiative.

While our goal is to protect all users using the roadway and not just the vulnerable ones, these users do warrant more investment to protect. Generally, a roadway designed to be safe for pedestrians will be safe for all users.



Speed Is a Consistent Factor

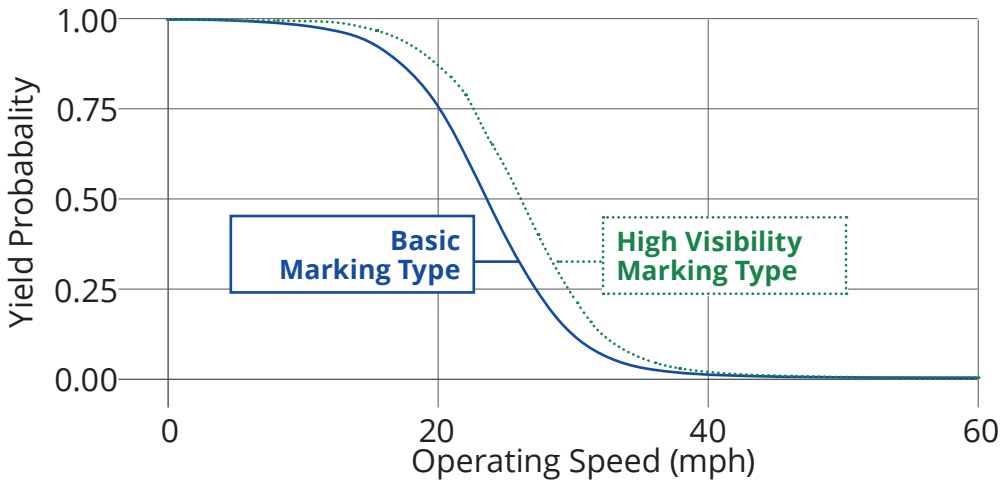
In Polk County, posted speeds often fall within a range that increases threats to safety. Although roads posted 35-45 mph accounted for 30 percent of roadway miles in the County, they produced 36 percent of all fatal or severe crashes. These roads account for even greater shares of pedestrian (46 percent) and bicyclist (50 percent) fatal or severe crashes.

While roadways with posted speeds of 35-45 mph are more likely than higher-speed roads to feature pedestrian or bicycle infrastructure (encouraging such users onto these roads), they also permit cars to operate at speeds that increase the likelihood that these vulnerable users will suffer severe injury or death when they're involved in a crash.

Fatal and Severe Injury Crashes by Mode and Speed Limit (mph) in Polk County (2017-2021)

Speed Limit	<=25	26 – 35	36 – 45	46 – 55	>55
Percent of Roads (by centerline miles)	2%	11%	30%	27%	30%
Percent of Vehicle Fatal and Severe Injury Crashes	1%	8%	33%	27%	30%
Percent of Pedestrian Fatal and Severe Injury Crashes	1%	12%	48%	25%	14%
Percent of Bicycle Fatal and Severe Injury Crashes	2%	14%	50%	22%	13%
Percent of All Fatal and Severe Injury Crashes	1%	9%	36%	27%	28%

Probability of Vehicle Yielding to Pedestrian in Crosswalk by Speed Vehicle is Traveling



Yield rate *at 20 mph* is almost 75% greater *than at 40 mph*

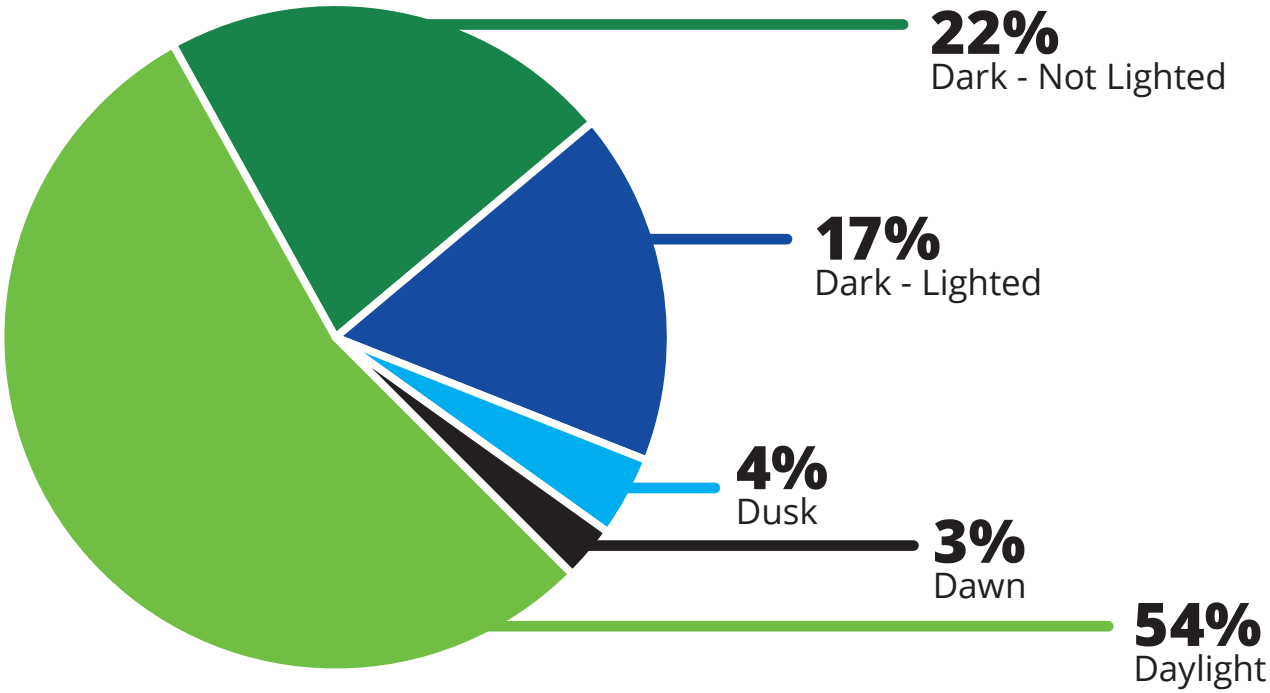
Environmental Factors Play a Role

More than half (55 percent) of pedestrian crashes take place in dark conditions.

On an unlit road at night, it's unlikely that a driver traveling at a speed limit of 35 mph or above would have enough advance warning from their headlights alone to avoid a pedestrian. (Nearly 40 percent of pedestrian crashes take place in dark conditions with no additional lighting source.)

Time of day also correlates with crash severity. Fatal and serious injury vehicle crashes rise throughout the weekday until 6 p.m., when commuting for the day has largely concluded. Serious bicycle and pedestrian crashes, meanwhile, spike during periods of recreation, like in the early mornings and evenings.

Polk County Fatal and Severe Injury Crashes by Lighting Condition (2017-2021)



Individual User Behavior Still Matters

While road design plays an important factor in safety, driver behavior also matters. The Vision Zero approach addresses these behaviors.

From 2017 to 2021 in Polk County, data from crash reports suggested that the behaviors most responsible for producing fatal and serious crashes were "Careless driving" (22 percent of fatal crashes; 28 percent of serious injury crashes); "Failure to yield" (17 percent of fatal crashes; 14 percent of serious injury crashes); and "Ran off roadway" (8 percent of fatal crashes; 6 percent of serious injury crashes).

Additionally, a crash was far more likely to result in fatality or serious injury if drugs and/or alcohol were involved.

40%

of fatal crashes in Polk involve drugs/alcohol.

A crash involving alcohol/drugs is 20% likelier to result in fatality and 84% likelier to result in a serious injury.

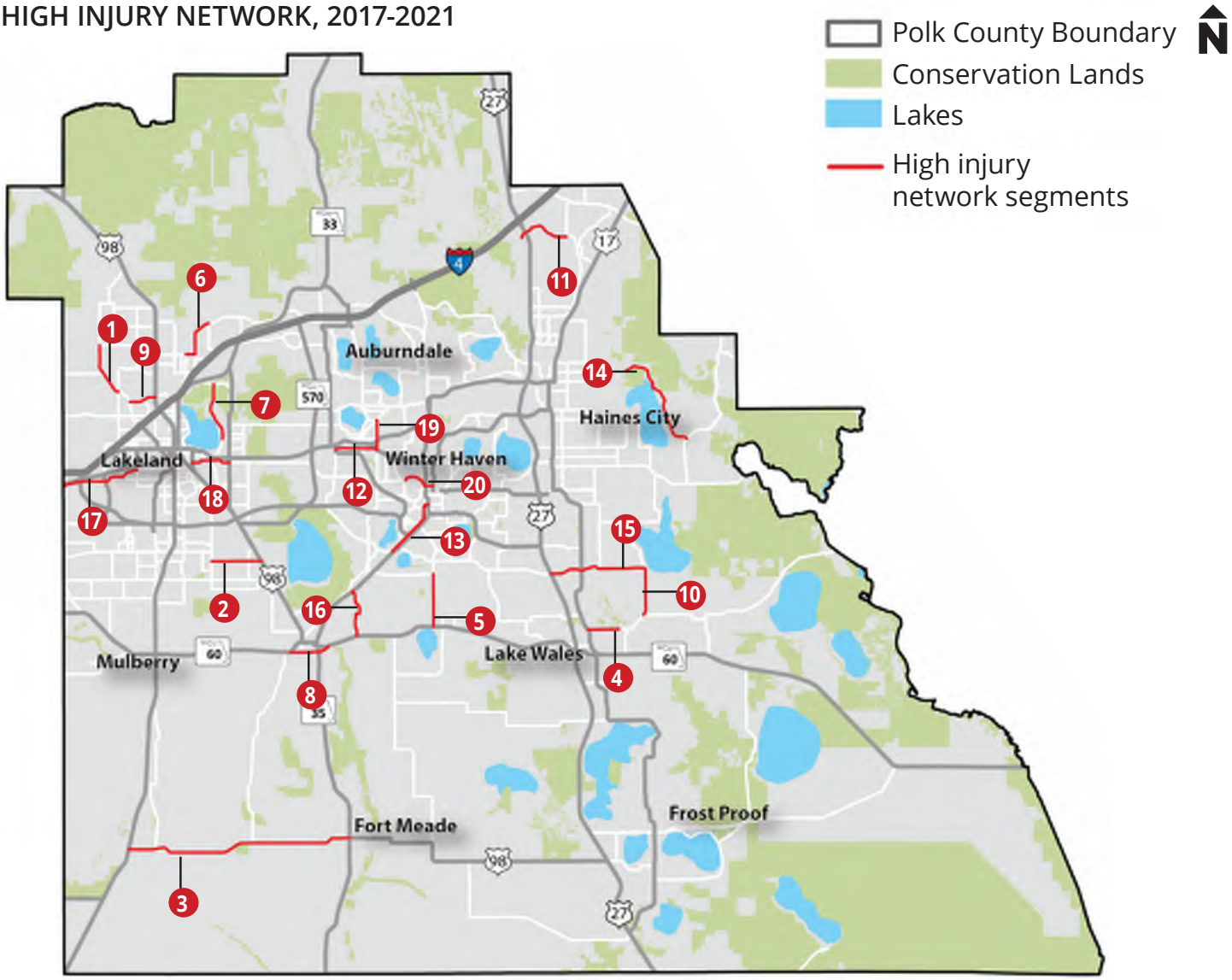
Street in Lakeland, FL

Polk County's High-Injury Network

County and City Roadways

A high-injury network (HIN) is a map that compiles crash data from the previous five years to locate the areas in a transportation network where serious crashes are likeliest to occur. The map below charts Polk County's HIN. **This HIN consists of County and City roadways**, excluding State and Federal. The red lines indicate high crash corridors for all roadway users, while high-injury intersections are show on page 23. In a Vision Zero approach, investing in these area first can have the biggest benefits.

HIGH INJURY NETWORK, 2017-2021



Source: Department of Highway Safety and Motor Vehicles

1. CR 35A (Kathleen Road)
2. CR 540 (Clubhouse Road)
3. CR 630 (Brewster Road)
4. CR 17A (Burns Avenue)
5. CR 655 (Rifle Range Road)
6. Old Polk City Road
7. Lake Parker Drive E
8. Main Street E/Flamingo Drive E
9. Sleepy Hill Road
10. CR 17A (Masterpiece Gardens Road/Masterpiece Road)
11. Ernie Caldwell Road
12. CR 544A (Derby Avenue W)
13. Third Street/Old Eagle Lake-Winter Haven Road/7th Street SW/Avenue M SW/ 6th Street SW/Avenue K SW
14. Lake Marion Creek Drive/ Mcman Road/Eastyway Road/Midway Road/Lake Marion Creek Road
15. CR 17A (Chalet Suzanne Road)
16. Ninety-One Mine Road
17. CR 542 (Old Tampa Highway)
18. CR 542 (Main Street E)
19. Charlotte Road/Dairy Road
20. Lake Howard Drive/ Avenue D NW

Table 1 provides a list of the top 20 high-injury corridors in Polk County's HIN based on 2017-2021 historical crash data. Corridors were ranked based on total number of fatal or serious crashes and on inclusion in a Transportation Disadvantaged Area (TDA). Of the top 20 corridors, 10 are inside a TDA, four are partially within a TDA, and three border a TDA.

CR 35A (Kathleen Road) from CR 542A (Galloway Road N) to Duff Road is the highest crash corridor in Polk County, suffering eight fatal or serious injury crashes.

After reviewing the roadway network in the County, a few trends appeared to indicate where crashes were most likely to happen. First, roadways in more suburban commercial (such as US 92 in Lakeland) and general urban (US 17 between Cypress Gardens Boulevard and Havendale Boulevard) areas tended to have more serious crashes. We also evaluated the roadways by their function and found that Urban Collectors (such as Saddle Creek Road) had more crashes. They generally feature more traffic and vulnerable users mixing together. More information on this analysis, and what crash trends are found in Polk County can be found in the Crash Analysis and Data Trends Memo in Appendix B.

TABLE 1 HIGH-INJURY NETWORK

Rank	Road Segment	Municipality	TDA	Crashes[1]	AADT[2]
1	**CR 35A (Kathleen Road)** *From CR 542A (Galloway Road N) to Duff Road*	Unincorporated Polk County	Borders	8	12,300
2	**CR 540 (Clubhouse Road)** *From CR 37B (Lakeland Highlands Road) to US 98*	Unincorporated Polk County	No	7	12,100
3	**CR 630 (Brewster Road)** *From SR 37 to US 17/98*	Unincorporated Polk County/Fort Meade	Yes	6	3,300
4	**CR 17A (Burns Avenue)** *From SR 17 to Brentwood Drive*	Lake Wales	Yes	6	9,000
5	**CR 655 (Rifle Range Road)** *From SR 60 to CR 559 (Bomber Road)*	Unincorporated Polk County	Yes	6	12,100
6	**Old Polk City Road** *From CR 582 (Socrum Loop Road N) to Walt Williams Road*	Unincorporated Polk County/Lakeland	No	6	12,200
7	**Lake Parker Drive E** *From Idlewild Street to Old Combee Road*	Unincorporated Polk County/Lakeland	Borders	5	2,800
8	**Main Street E/Flamingo Drive E** *From SR 60 to SR 60*	Bartow	Borders	5	7,200
9	**Sleepy Hill Road** *From CR 35A (Kathleen Road) to US 98*	Lakeland	No	5	10,300

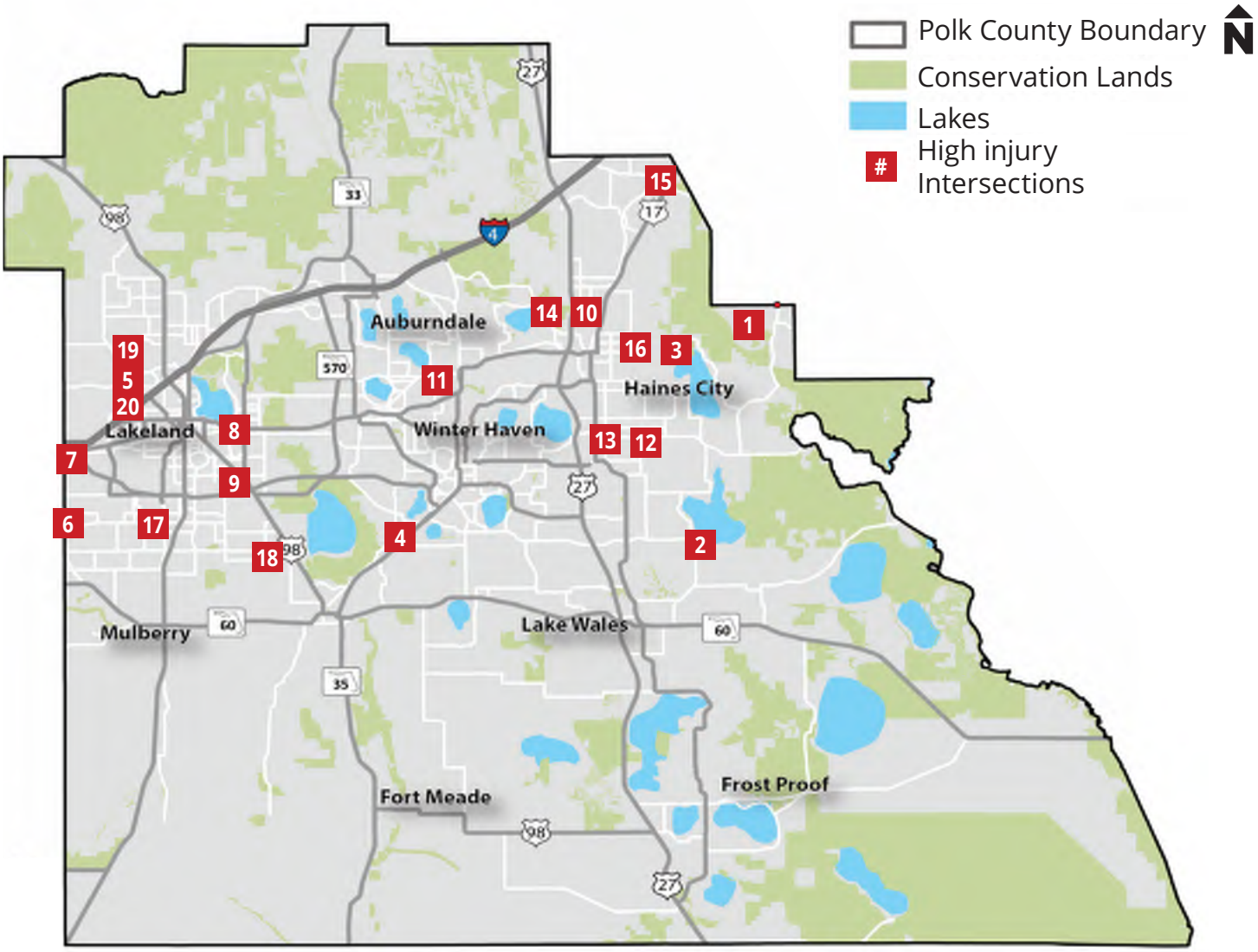
Rank	Road Segment	Municipality	TDA	Crashes[1]	AADT[2]
10	**CR 17A (Masterpiece Gardens Road/Masterpiece Road)** *From Mammoth Grove Road to SR 17*	Unincorporated Polk County	Yes	4	2,900
11	**CR 544A (Derby Avenue W)** *From SR 655 (Recker Highway) to SR 544 (Havendale Blvd)*	Unincorpated Polk County/ Auburndale	Yes	4	3,000
12	**Ernie Caldwell Road** *From Heller Brothers Blvd to Pine Tree Trail*	Unincorpated Polk County	Partial	4	3,000
13	**Lake Marion Creek Drive/ Mcman Road/Eastyway Road/Midway Road/Lake Marion Creek Road** *From Poinciana Pkwy to CR 580 (Cypress Pkwy)*	Unincorporated Polk County	Yes	4	3,700
14	**Third Street/Old Eagle Lake-Winter Haven Road/7th Street SW/Avenue M SW/6th Street SW/Avenue K SW** *From Crystal Beach Road to US 17 (3rd Street SW)*	Eagle Lake/Winter Haven	Partial	4	3,700
15	**CR 17A (Chalet Suzanne Road)** *From SR 17 (Ridge Scenic Highway) to US 27*	Unincorporated Polk County/ Lake Wales	Yes	4	10,400
16	**Ninety-One Mine Road** *From SR 60 to US 17*	Unincorporated Polk County/Bartow	Yes	3	2,500
17	**CR 542 (Old Tampa Highway)** *From County Line Road to Wabash Avenue S*	Unincorporated Polk County/Lakeland	Yes	3	3,700
18	**CR 542 (Main Street E)** *From US 98 (Lake Parker Avenue) to SR 659 (Combee Road)*	Unincorporated Polk County/Lakeland	Partial	3	8,400
19	**Charlotte Road/Dairy Road** *From SR 544 (Havendale Blvd) to Lake Alfred Road*	Unincorpated Polk County/ Auburndale	Yes	3	9,100
20	**Lake Howard Drive/ Avenue D NW** *From Avenue G NW to SR 549 (1st Street)*	Winter Haven	Partial	3	10,800

1 Fatal and Serious Injury
2 Ties in crashes were broken by the smaller AADT. AADT stands for Annual Average Daily Traffic. This is the average number of vehicles that go through an area each day.

Polk County's High-Injury Intersections

County and City Roadways

HIGH-INJURY INTERSECTIONS, 2017-2021



Source: Department of Highway Safety and Motor Vehicles

1. Cypress Parkway & Marigold Avenue
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11. Adams Barn Road & Lake Alfred Road
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13. Detour Road & Lake Hatchineha Road
14. Old Polk City Road & Lake Lowery Road
15. Ronald Reagon Pkwy & Lee Jackson Highway
16. Marion Creek Road & Power Line Road
17. W Pipkin Road & Lunn Road
18. Yarborough Lane & E County Road 540A
19. Kathleen Road & N Galloway Road
20. W 10th Street & N Galloway Road

Table 2 provides a list of Polk County's top 20 high-injury intersections based on 2017-2021 historical crash data from County and City roadways. Of the top 20 intersections, nine are inside a Transportation Disadvantaged Area (TDA), while an additional five border a TDA. Thirteen of the top 20 intersections occurred in unincorporated Polk County.

The intersection of Cypress Parkway and Marigold Avenue has the highest number of fatal or serious crashes, with five. Of the top 20 intersections, eight had three fatal or serious crashes, and 10 intersections had two fatal or serious crashes over the study period.

TABLE 2 HIGH-INJURY INTERSECTIONS

Rank	Name	Municipality	TDA	Crashes[1]	AADT[2]
1	Cypress Parkway & Marigold Avenue	Unincorporated Polk County	Borders	5	25,900
2	Timberlane Road & Masterpiece Road	Unincorporated Polk County	Yes	3	5,000
3	Marion Creek Road & Cypress Parkway	Unincorporated Polk County	Yes	3	14,400
4	Spirit Lake Road & Old Bartow Eagle Lake Road	Unincorporated Polk County	No	3	18,300
5	Knights Station Road & N Galloway Road	Unincorporated Polk County	Yes	3	18,900
6	Medulla Road & S County Line Road	Unincorporated Polk County	No	3	27,000
7	Old Tampa Highway & County Line Road	Lakeland	Yes	3	36,400
8	E Lake Parker Drive & E Main Street	Unincorporated Polk County	Yes	3	37,800
9	Lakeland Highlands Road & Edgewood Drive	Lakeland	No	3	40,400
10	Patterson Road & Holly Hill Road	Haines City	No	2	5,300
11	Adams Barn Road & Lake Alfred Road	Lake Alfred	Borders	2	5,800
12	HL Smith Road & Lake Hatchineha Road	Dundee	Yes	2	5,800
13	Detour Road & Lake Hatchineha Road	Lake Hamilton	Borders	2	6,500
14	Old Polk City Road & Lake Lowery Road	Unincorporated Polk County	Yes	2	8,600
15	Ronald Reagon Pkwy & Lee Jackson Highway	Unincorporated Polk County	Yes	2	16,100
16	Marion Creek Road & Power Line Road	Haines City	Borders	2	21,400
17	W Pipkin Road & Lunn Road	Unincorporated Polk County	No	2	21,900
18	Yarborough Lane & E County Road 540A	Unincorporated Polk County	No	2	23,400
19	Kathleen Road & N Galloway Road	Unincorporated Polk County	Borders	2	25,100
20	W 10th Street & N Galloway Road	Unincorporated Polk County	Yes	2	26,700

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These High-Injury Spots Aren't Random

Inequity Is Reflected in High Crash Locations

Understanding the historical, social, and economic significance of crash locations is an important part of evaluating HIN data. Sixty-four percent of Polk County's surface area qualifies as "transportation disadvantaged." Fifty percent of Polk's total population reside in these areas and suffer from obstacles such as remoteness (as shown on page 9), a lack of access to public transit, greater exposure to environmental elements and pollutants, a lack of close economic opportunity, and infrastructure that is particularly vulnerable to the effects of climate change. Oftentimes, transportation-disadvantaged communities suffer from multiple or even all of these obstacles.

These types of obstacles are products of longstanding inequities in land-use and transportation investment.

In one of Polk County's transportation-disadvantaged districts, any crash you're in is 9 to 16 percent likelier to be fatal or serious...

....and nearly half of Polk County residents live in a transportation-disadvantaged district.

Pedestrians crashes account for **2 percent *of all crashes***, but **18 percent *of all fatal crashes*** in Polk County.

How are these communities identified?

The methodology of this HIN analysis adheres to the US Department of Transportation's Justice40 Initiative (J40). J40 was created to identify and address the communities harmed by longstanding inequities in transportation planning.

We used the USDOT Transportation Disadvantaged Community Tool, which evaluates data related to underinvestment, climate and disaster risk, health vulnerability, and social vulnerability to identify communities with disproportionately high and adverse human health or environmental outcomes.

Memorial site on Bomber Road

Polk County Vision Zero Conditions Assessment

This Polk County Vision Zero Conditions Assessment has three distinct phases to eliminate transportation-based fatalities and serious injuries. Each phase includes clusters of programs, policies, and projects. These individual action items each target one of six different safety goals. Collectively, they will improve the safety of Polk County's transportation network. The six safety goals informing the individual action items are:

Safe System Approach

Safe People

These strategies are designed to encourage individual users to make safer choices.

Safe Roads

These strategies offer us the tools and methods to improve roadway design.

Post-Crash Care

These strategies explore how we can better respond when crashes do occur.

Safe Vehicles

These strategies help us better understand the capabilities of emerging vehicle technologies, and how those capabilities might be put toward the greater good on our roadways.

Safe Speeds

Speed-calming strategies are a central tenet of Vision Zero: these strategies encourage individual users to slow down and save lives.

Project Manager Nathan Kautz presenting to Vision Zero Task Force

The Vision Zero Task Force

This Conditions Assessment was guided by a group of local stakeholders representing community agencies and organizations in Polk County. The intent of the task force was threefold:

1. Provide accountability to the data, analysis, and synthesis of information through the creation of the Vision Zero Conditions Assessment
2. Generate solutions that are based on local knowledge and on-the-ground experiences in the County
3. Share information, excitement, and responsibility with local actors who will help make the strategies in this Conditions Assessment a reality

The task force met twice during this Conditions Assessment's development. The first meeting introduced the project team and collected local testimonials. The second meeting shared the data synthesis and discussed main takeaways of the analysis. Strategies, including projects and programming efforts, were also shared at these meetings and are included herein.

Special acknowledgement goes to the following agency representatives:

- United Way of Central Florida
- Florida Department of Health
- Light House of the Blind
- Citrus Connection
- FDOT D1
- City of Lakeland
- Haines City
- Polk County
- City of Winter Haven
- Central Florida Regional Planning Council
- City of Fort Meade
- Polk City
- AARP
- Polk Vision
- Florida LTAP Center
- Central Florida Development Council

For a more complete list of participating parties, please see page 4 & 5.

Phase 1

Phase 1 of Polk County's Vision Zero initiative uses programs, policies, and projects—some of which have already been completed—to create new communication inroads between Polk TPO and Polk residents. Programs are organized efforts to achieve zero fatalities and establish a new standard of operation, while projects involve constructing and implementing tangible solutions. Vision Zero policies are the official rules guiding our actions and work, aiming to enhance transportation safety. Many of these measures promote messaging on how simple actions, like wearing a seatbelt, can play a big role in safety. These increased communications will serve a larger goal of familiarizing the TPO with the nature and location of ongoing community concerns, which will in turn expand our data collection and understanding of the scope of Polk County's transportation safety problem. See complete lists in Appendix E.

Top Actions in Phase 1

Action	Purpose	Performance Metrics	Implementation Partners
Encourage local agencies and municipalities to adopt Vision Zero resolutions and/ or Action Plan. (Example in Appendix D)	To align all government entities in the County with Vision Zero	Vision Zero adopted	County, cities
Using IIJA Grant funds, implement a Vision Zero Plan for Polk County. Develop interim Vision Zero targets and milestones.	To create a full Vision Zero Plan to direct funds and efforts	Vision Zero Plan created	TPO
Identify Vision Zero champions from disadvantaged communities and translate educational materials into the Spanish language.	To build champions internal to areas of concern who will support and carry the message	Every urban area in Polk has at least one champion	County, cities, TPO
Provide a Vision Zero portal for users in Polk County to share information/ideas/ support, track fatal crashes/ fatalities, and monitor Vision Zero progress and statistics/reporting.	To build a resident-based coalition for Vision Zero where users can be a part of the solution; having a method of reporting to and interacting with the public is critical to pursuing more Federal funding in Polk County for safety projects	Project complete	County, TPO

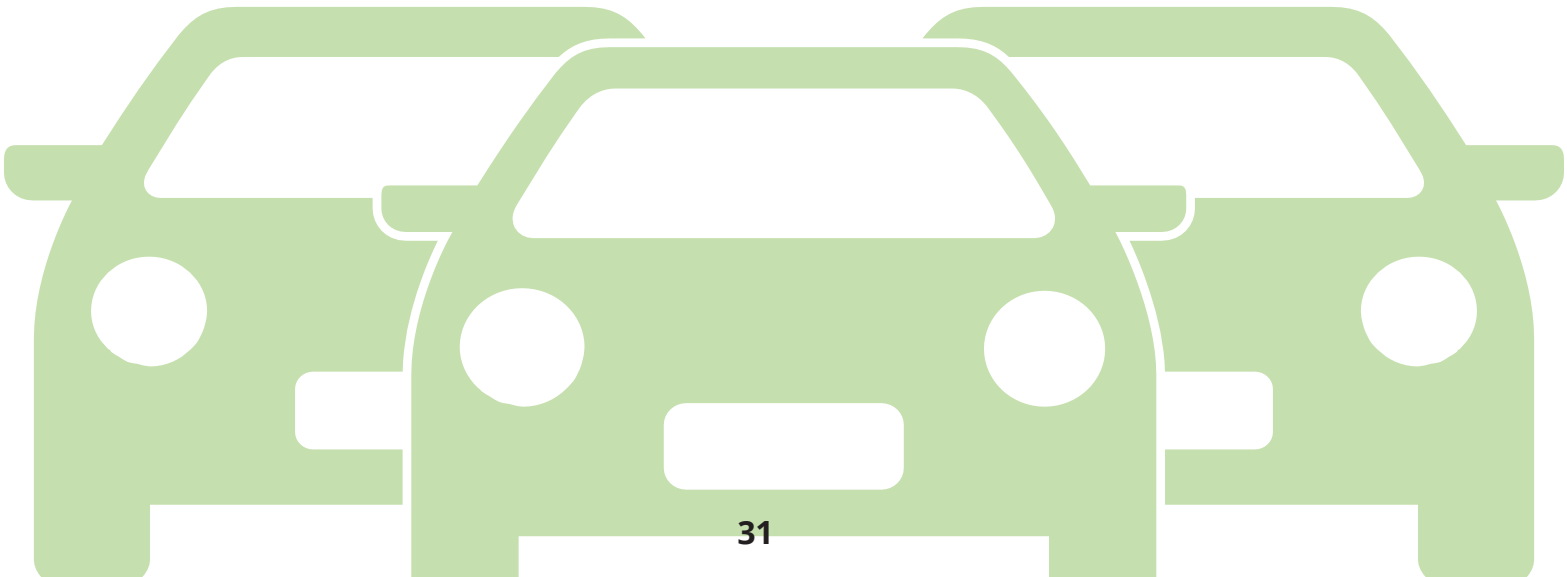
Phase 2

Phase 2 seeks to work with the County's local partners and the people that live and work in the county. This phase is focused on building support for Vision Zero throughout the County, as well as providing our partners the tools they need to address safety issues. Finally, this phase seeks to influence county residents to avoid certain risky behaviors. See complete lists in Appendix E.

Top Actions in Phase 2

Action	Purpose	Performance Metrics	Implementation Partners
Implement campaign in Polk to influence higher usage of seatbelts.	To increase seatbelt usage; seatbelts were not used in almost 40 percent of all fatal crashes in Polk County	Campaign implemented, 80% of population reached	County, law enforcement
Implement campaign in Polk to lower driving under the Influence.	To decrease driving while intoxicated; DUIs were present in over 40 percent of all fatal crashes in Polk County	Campaign implemented, 80% of population reached	County, law enforcement
Present the TPO's Bicycle and Pedestrian Safety Education Program and Vision Zero Action Plan recommendations to the School Board, County and City Commissions, and Polk Vision Governing Board, as well as at other community forums.	To educate system owners to help facilitate and support their role in a Safe System	All explicitly named groups are presented to; 5 other presentations given	TPO
Collaborate with Polk Vision, Polk County Public Schools, FDOT, and other agencies to conduct Vision Zero workshops and educational programs for students and agency staff.	To build knowledge of and consensus for Vision Zero in our communities	Every elected official in Polk has attended a workshop; all government agency heads in Polk have attended a workshop	TPO, State, counties, cities

Action	Purpose	Performance Metrics	Implementation Partners
Develop and implement a toolbox of tactical/ temporary improvements and initiate a quick-build program to support rapid deployment. Allow smaller cities and towns in Polk to use contracts.	To allow and encourage cheaper and faster countermeasures; these can start making a difference as soon as possible	Project complete	Local jurisdictions, County
Collaborate with various agencies and municipalities to prioritize Vision Zero infrastructure investments on HIN corridors and intersections as identified in the Vision Zero Conditions Assessment. The plan recommends Vision Zero projects on HIN should be prioritized in the TPO's Annual List of Priority Transportation Projects, Long-Range Transportation Plan, CIPs, and other planning documents.	To implement high-cost, long-term treatments on roadways with the highest safety concern; the locations on Polk's HIN and HII lists should be closely evaluated and projects developed to address crash issues	List complete	Local jurisdictions, County



Phase 3

Phase 3 of Polk County's Vision Zero initiative will implement programs, policies, and projects that add longevity and sustainability to safe transportation measures in the County. Chief among these strategies are the Vision Zero best practices regarding speed and roadway design. See complete lists in Appendix E.

Top Actions in Phase 3

Action	Purpose	Performance Metrics	Implementation Partners
Look at opportunities to increase network connectivity, instead of widening to accommodate travel modes in Polk County.	To address the fact that larger roadway types (like principle arterials) in Polk overrepresent on fatal and severe injury crashes (45% of fatal and severe injury crashes occur with 25% of lane miles)	Network analysis performed	Local jurisdictions, County, FDOT
Update Polk County Roadway Design Standards; introduce target speeds, context-based design, safety positive designs for new development, and update standards to ensure safest designs are present.	To ensure all work moving forward is in accordance with the proactive, state-of-the-art designs; to "future proof" the roadways in Polk County	Project complete	Local jurisdictions, County
Update the development review practices in Polk County and in Polk County's constituent cities so that they reflect the Vision Zero approach. Strengthen development review standards/ traffic study guidelines to incentivize more multimodal infrastructure (e.g. transit, crosswalks) or safety enhancements. Developers should participate in preventing safety issues. Encourage mixed-use development to reduce the length of trips, particularly by foot/bicycle.	To address the significant proportion of pedestrian crashes on C3Cs (51% of fatal and severe injury within 40% of lane miles); substantial growth in these areas will compound these safety issues, and so future development should be used as opportunities to make the roadway safer	Policy(s) in place	Local jurisdictions

Measuring Our Progress

We will track how successfully the action items are reducing fatalities and serious injuries in Polk County to zero. The broader performance of the study will be measured by the following:

Study-Level Performance Measures	Data Source
Total Fatal and Severe Injury crashes	The total number of fatal and severe injury crashes in Polk County
Fatal Crashes	The total number of fatal crashes in Polk County
Injury Crashes	The total number of severe injury crashes in Polk County
Pedestrian Crashes	The total number of pedestrian crashes in Polk County
Bicycle Crashes	The total number of bicycle crashes in Polk County
Lane Departure	The total number of fatal and severe injury lane departure crashes in Polk County
Intersection	The total number of fatal and severe injury intersection crashes in Polk County
Transportation Disadvantaged Area Crashes	The total number of fatal and severe injury crashes in Transportation Disadvantaged Areas in Polk County
DUI Crashes	The total number of fatal and severe injury crashed involving DUIs in Polk County
No Seatbelt Crashes	The total number of Polk County's fatal and severe injury crashes in which participants did not wear seatbelts
Percentage of HIN with Projects	The percentage of HIN locations being addressed with comprehensive safety projects

Some performance measures will have overlap. For example, a pedestrian fatality may be counted in 'Total KSI', 'Fatal Crashes', 'Pedestrian Crashes', and 'Equity Crashes'.

Moving Forward

The action items of this Vision Zero Conditions Assessment provide tangible strategies that will make our roadways safer; funding these measures will be an ongoing process that will require support from many community partners. Polk TPO was awarded $720,000 to look for additional actionable projects that could help solve the safety issues in Polk County as identified in this analysis. This conditions assessment and the new, additional analysis are the first steps in securing more funding to begin constructing safety projects.

Safe Streets 4 All (SS4A)

What is this program and its goal?

The Bipartisan Infrastructure Law (BIL) establishes the new SS4A discretionary program that will provide $5-6 billion in grants over the next 5 years. Funding supports regional, local, and Tribal initiatives through grants to prevent roadway deaths and serious injuries. The SS4A program supports the Department's National Roadway Safety Strategy and a goal of zero deaths and serious injuries on our nation's roadways.

With the award of $720,000 to complete a full Vision Zero assessment and plan for Polk County, the TPO will be looking to apply for implementation grants from the SS4A program to continue funding safety projects that get constructed and start protecting our County.

Fall 2023 Funding Opportunities

Strengthening Mobility and Revolutionizing Transportation (SMART) Grants Program

Description: Provide grants to eligible public sector agencies to conduct demonstration projects focused on advanced smart community technologies and systems in order to improve transportation efficiency and safety

Timeline: Fall 2023

Buses and Bus Facilities Programs

Description: Funding to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities, including technological changes or innovations to modify low or no emission vehicles or facilities

Timeline: Fall 2023

Low- or No-Emissions Bus Grant Program

Description: Funding for the purchase or lease of zero- and low-emission transit buses as well as acquisition, construction, and leasing of required supporting facilities

Timeline: Fall 2023

2024 Funding Opportunities

Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grants

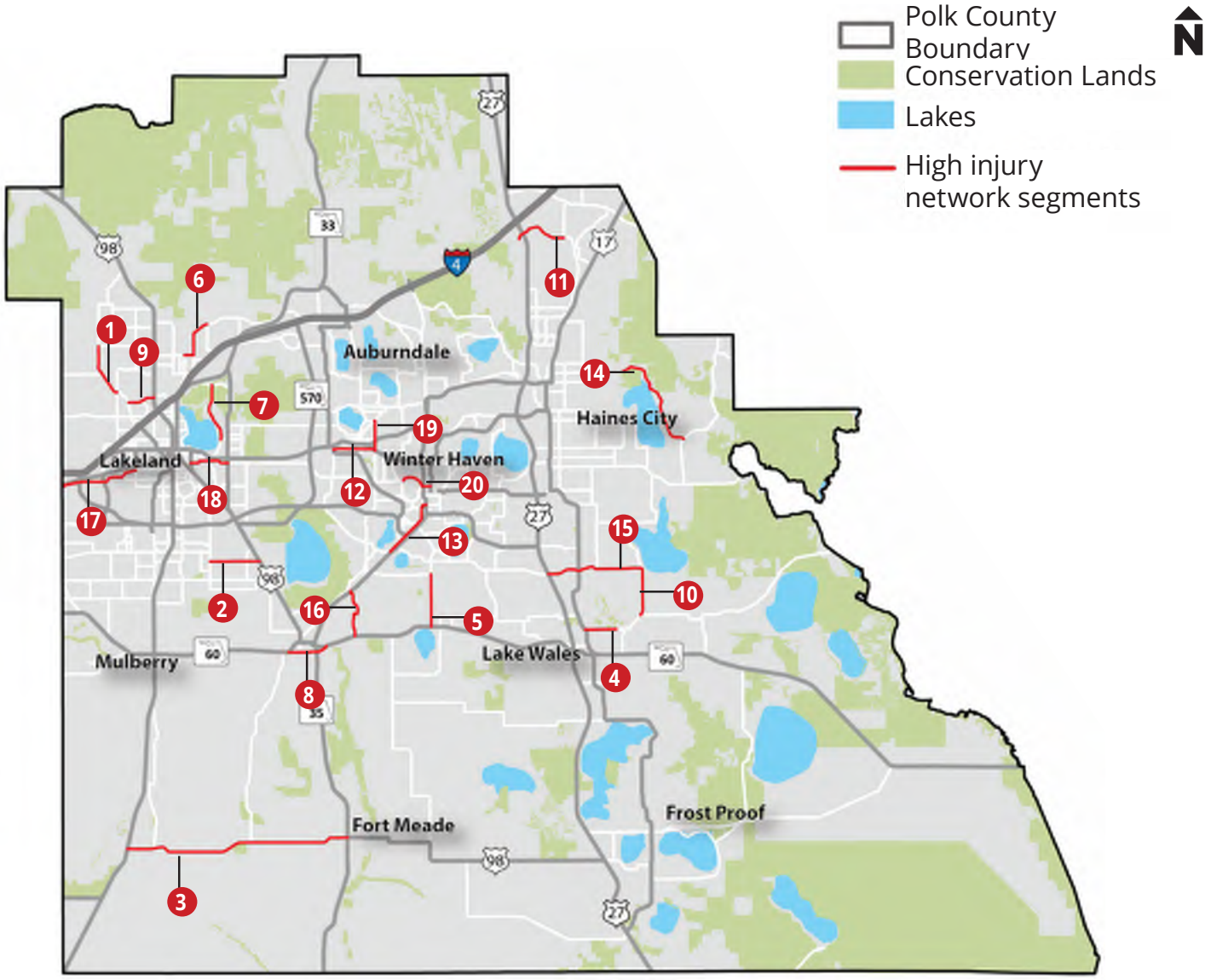
Description: RAISE discretionary grants help project sponsors at the State and local levels, including municipalities, Tribal governments, counties, and others complete critical freight and passenger transportation infrastructure projects. The eligibility requirements of RAISE allow project sponsors to obtain funding for projects that are harder to support through other USDOT grant programs.

Timeline: February 2024

Appendices

A: High Injury Network and Intersections

Polk County's High-Injury Network, 2017-2021



Source: Department of Highway Safety and Motor Vehicles

1. CR 35A (Kathleen Road)
2. CR 540 (Clubhouse Road)
3. CR 630 (Brewster Road)
4. CR 17A (Burns Avenue)
5. CR 655 (Rifle Range Road)
6. Old Polk City Road
7. Lake Parker Drive E
8. Main Street E/Flamingo Drive E
9. Sleepy Hill Road
10. CR 17A (Masterpiece Gardens Road/Masterpiece Road)
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16. Ninety-One Mine Road
17. CR 542 (Old Tampa Highway)
18. CR 542 (Main Street E)
19. Charlotte Road/Dairy Road
20. Lake Howard Drive/ Avenue D NW

High-Injury Network Ranking Details

Rank	Road Segment	Municipality	Equity Area	Crashes[1]	2017 AADT[2]
1	**CR 35A (Kathleen Road)** *From CR 542A (Galloway Road N) to Duff Road*	Unincorporated Polk County	Borders	8	12,300
2	**CR 540 (Clubhouse Road)** *From CR 37B (Lakeland Highlands Road) to US 98*	Unincorporated Polk County	No	7	12,100
3	**CR 630 (Brewster Road)** *From SR 37 to US 17/98*	Unincorporated Polk County/Fort Meade	Yes	6	3,300
4	**CR 17A (Burns Avenue)** *From SR 17 to Brentwood Drive*	Lake Wales	Yes	6	9,000
5	**CR 655 (Rifle Range Road)** *From SR 60 to CR 559 (Bomber Road)*	Unincorporated Polk County	Yes	6	12,100
6	**Old Polk City Road** *From CR 582 (Socrum Loop Road N) to Walt Williams Road*	Unincorporated Polk County/Lakeland	No	6	12,200
7	**Lake Parker Drive E** *From Idlewild Street to Old Combee Road*	Unincorporated Polk County/Lakeland	Borders	5	2,800
8	**Main Street E/ Flamingo Drive E** *From SR 60 to SR 60*	Bartow	Borders	5	7,200
9	**Sleepy Hill Road** *From CR 35A (Kathleen Road) to US 98*	Lakeland	No	5	10,300
10	**CR 17A (Masterpiece Gardens Road/Masterpiece Road)** *From Mammoth Grove Road to SR 17*	Unincorporated Polk County	Yes	4	2,900
11	**CR 544A (Derby Avenue W)** *From SR 655 (Recker Highway) to SR 544 (Havendale Blvd)*	Unincorpated Polk County/ Auburndale	Yes	4	3,000
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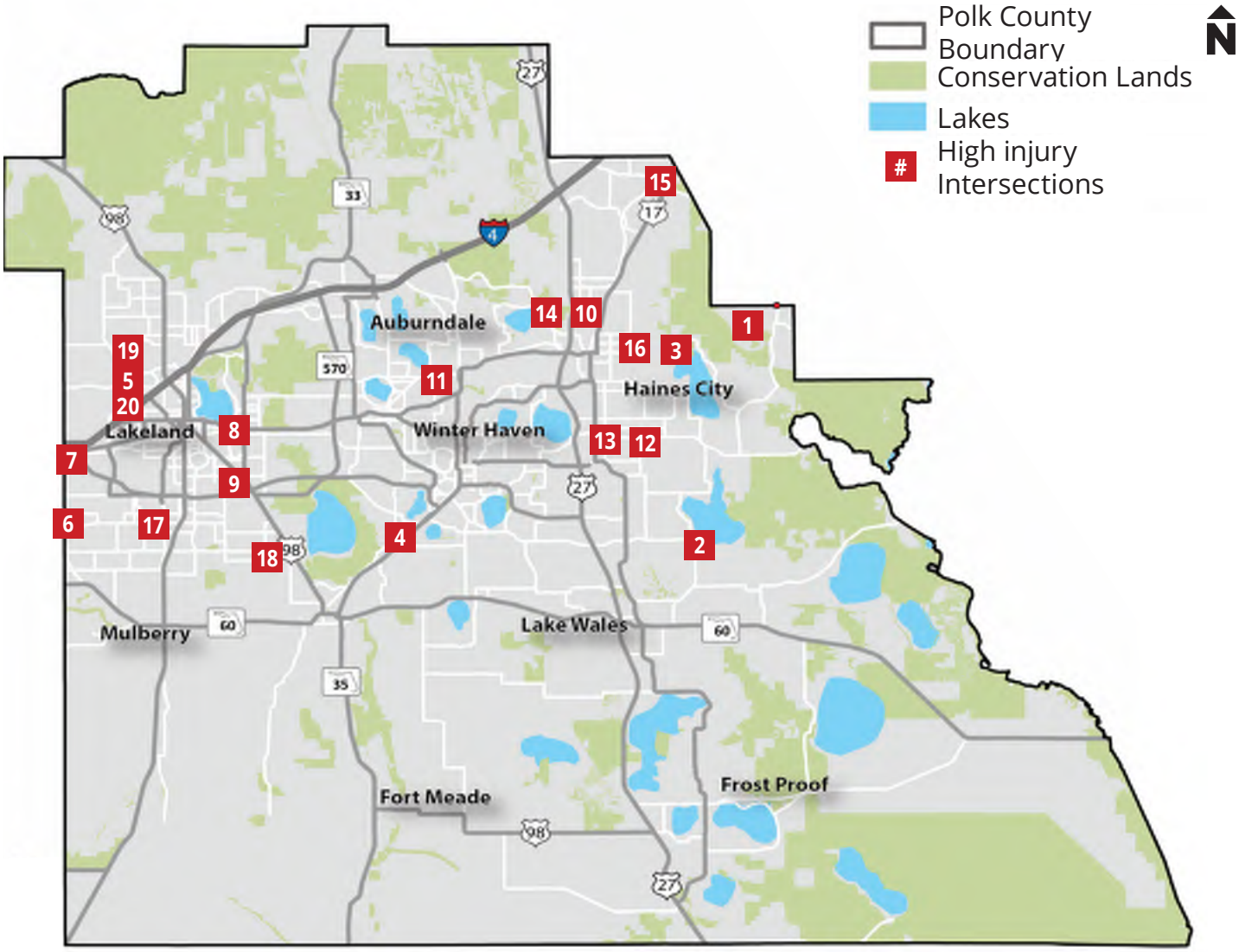

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B: Crash Analysis and Data Trends Memo

KITTELSON & ASSOCIATES
400 North Tampa Street, Suite 1360
Tampa, FL 33602
P 813.556.6970

VISION ZERO POLK

Technical Memorandum

November 14, 2022 Project# 25907.001

To: Ryan Kordek, Parag Agrawal, Hamideh Moayyed

From: Nathan Kautz, Riva Heinrich, Spencer Maddox, James Rinehart

RE: DRAFT Polk County TPO Vision Zero Action Plan - Crash Data Memorandum

Introduction

In 2021, the Lakeland-Winter Haven area was listed as the 9th most dangerous metro area in the U.S. to be a pedestrian[1]. In 2022, the area was ranked 21st in the nation. While the ranking was lower than 2021, this is not indicative of an improvement: In addition to several areas growing in crash concerns, Dangerous by Design changed their methodology. In addition to the existing safety concerns, Polk County is currently the fastest growing county in Florida and the seventh fastest growing county in the nation. With these facts in mind, the Polk TPO has decided to initiate a Vision Zero Plan, backed by a commitment by the system owners that are the maintaining jurisdictions of the roadways. The intent of this plan is to analyze the crash trends in the county and build on previous planning efforts to work towards implementing projects and solutions that improve safety.

Vision Zero is "a strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all."[2] It is a multidisciplinary, data driven approach that differs from traditional Transportation Safety Engineering. The quote below demonstrates the conceptual thinking of Vision Zero:

> ***"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 severe injuries or fatalities. This means that system designers and policymakers are expected to improve the roadway environment, policies (such as speed management), and other related systems to lessen the severity of crashes." - Vision Zero Network***

To understand crash trends and inform decision-making, Kittelson and Associates, Inc. (Kittelson) has reviewed available data from the Florida Department of Transportation, Polk County, the Polk Transportation Planning Organization (TPO), and the Department of Highway Safety and Motor Vehicles. We have compared data sets and reviewed the data for trends and insights to support the Vision Zero Plan. The purpose of this

[1] Dangerous By Design 2021 - Smart Growth America

[2] What is Vision Zero? | Vision Zero Network

memo is to convey the methodology for data processing and to present the results of the crash analysis according to the following themes:

- Number of Crashes
- Crash Location
- Crash Typologies
- Environmental Factors
- Behavioral Factors
- Equity Characteristics

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Data Collection and Processing

Crash data was collected for Polk County from the Florida Department of Transportation's Crash Analysis Reporting System (CARS), and the University of Florida's Signal Four Analytics (S4). Crash data was collected from 2016 through 2021. Generally, S4 is used to supplement the CARS database as it has additional crash data for non-state roadways and includes short-form police reports.

Crash Data Processing

The CARS and S4 crash data were processed consistent with FDOT methodology published in March 2022[3]. The CARS crash data was used as the primary dataset, and the S4 crash data was used as a secondary dataset for crashes on non-state roadways. S4 crashes with the same crash identification number as CARS were removed from the crash dataset. Additionally, crashes on non-public roadways including forest roads, private roadways, and parking lots were removed from the dataset. During the crash data processing, a total of 7,461 crashes were removed from the analysis since the crashes occurred on forest roads, parking lots, or private roadways. Lastly, crash severities that were coded as "Unknown, None, or Non-Traffic Fatality" were recoded to Property Damage Only (PDO) crashes to not overrepresent the number of injuries or fatalities on the roadway network. During the crash data processing, a total of 1,731 crashes were recoded from "Unknown, None, or Non-Traffic Fatality" crash severity to Property Damage Only. This is because detailed crash severity information is not provided in these police reports, or a Non-Traffic Fatality occurred (such as a medical event while driving).

CARS and S4 databases contain the same information; however, each database codes information differently. CARS codes crash data (types, time of day, roadway conditions, etc.) with numerical codes while S4 data codes crash data with text strings. For example, a fatal crash in CARS is coded as a "5" in the "ACCISSEV" (accident severity) column, while a fatal crash in S4 is coded as "Fatal (within 30 days)" in the "S4_CRASH_SEVERITY_DETAIL" column. To combine and consolidate the crash information, CARS data was recoded to reflect the relevant text string in the S4 database. The consolidated database includes the following crash information:

- Crash Number
- Data source (CARS or S4)
- Location Point (Latitude and Longitude)
- Date
- Year
- Crash Type (Based on Mode)
- Crash Severity
- Light Condition
- Road Surface Condition

[3] FDOT Safety Crash Data Guidance, published March 2022.

- Weather Condition
- Month
- Day of Week
- Hour of Day
- Alcohol and/or Drug Related

Database Differences

Data from the CARS and S4 databases were compared to the National Highway Traffic Safety Administration (NHTSA) Fatal Analysis Reporting System (FARS) database. Slight differences were noted. For example, the FARS database reports 576 fatal crashes from 2016 to 2020 (most recent year) while the processed CARS and S4 database report 571 fatal crashes. The discrepancy is less than 1 percent of fatal crashes. Given that the CARS and S4 databases are specific to Florida, it is recommended that these databases be used in crash analysis within Florida versus the national FARS database.

Potential causes for the discrepancy in reported crashes may vary. **Figure 1** shows the FARS mapped crashes for 2016 to 2020. As highlighted in the crashes in red, those crashes have been geolocated outside of Polk County, but may have been reported as Polk County on the police reports. Through the CARS database verification, those crashes would be reviewed and possibly removed.

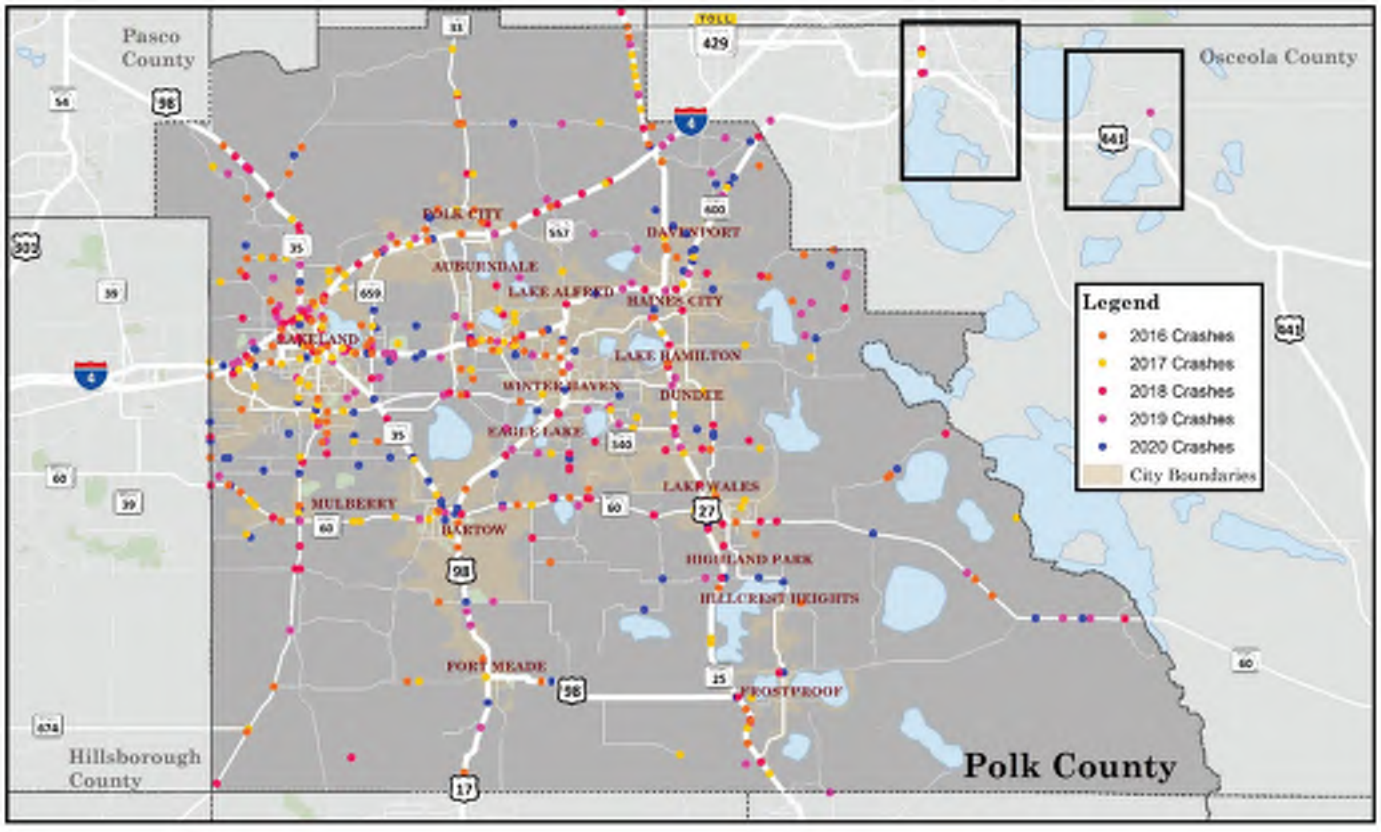


Figure 1. FARS Mapped Fatal Crashes in Polk County (2016 – 2020)

Another potential discrepancy may be based on user judgement when assigning crashes to a specific county. Polk County has multiple roadways that separate it from different county jurisdiction. Ultimately when assigning a crash to a county, the individual processing the crashes may make a judgment call to determine whether the crash is occurring in one county's jurisdiction versus another. This is illustrated in **Figure 2.**

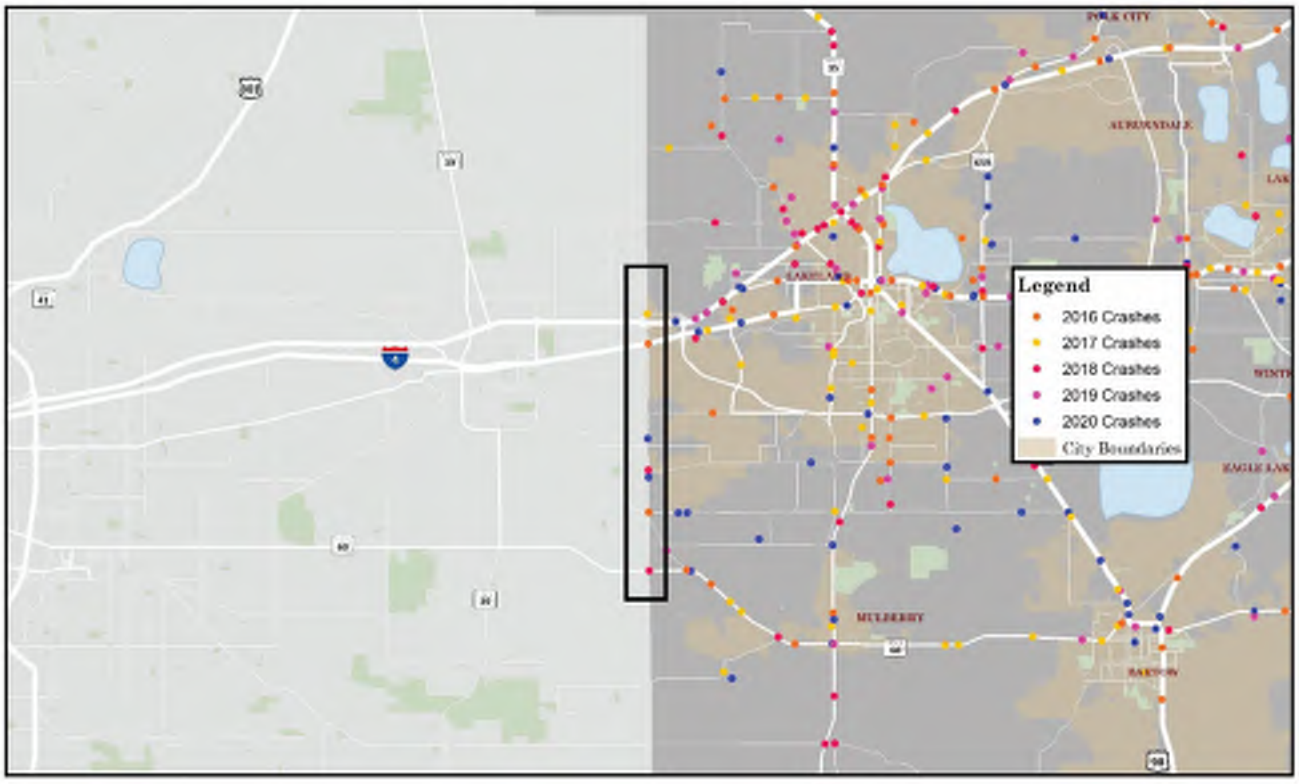


Figure 2. Polk County Border Crashes FARS Fatal Crashes (2016 - 2020)

Overall, the reporting discrepancies between FARS and CARS and S4 databases are not significant. For fatal crashes between 2016 to 2020, the difference between FARS, CARS, and S4 databases are less than 1 percent. This small difference will not impact the countywide findings and identification of the High Injury Network (HIN) and High Injury Intersections (HII). It is assumed that a similar discrepancy would be found in the Vision Zero Plan's analysis years (2017-2021) if the information was available in FARS.

GIS Importing

Using latitude and longitude data, the consolidated crash dataset was imported into ArcGIS as a point layer. Latitude and longitude data, however, was not available for all crashes, and some crashes had incorrect geospatial information that plotted the crashes outside of Polk County.

Mappable crashes are crashes that can be geolocated to Polk County based upon longitude and latitude data provided from CARS or S4. Non-mappable crashes are crashes without or with incorrect longitude and latitude data that cannot be geolocated to Polk County. Non-mappable crashes are still included in overall countywide crash statistics, but they are excluded from any segment, intersection, or equity analysis that requires a crash location in addition to any visualizations.

Table 1 summarizes the mappable crashes in Polk County for 2017 – 2021 for Fatal, Severe Injury, Pedestrian, and Bicycle crashes. Overall, approximately 96 percent of Fatal and Severe Injury crashes from 2017 to 2021 are mappable.

Table 1. Mappable Crashes in Polk County (2017 - 2021)

Crash Type	Mappable Crashes to Polk County	Total Crashes in CARS + S4 Dataset	Mappable Crash Percentage
Fatal Crashes	604	606	99.7%
Severe Injury Crashes	1652	1746	94.6%
Fatal/Severe Injury Pedestrian Crashes	283	291	97.3%
Fatal/Severe Injury Bicycle Crashes	97	99	98.0%
Total Fatal/Severe Injury Crashes	2256	2353	95.9%

Facility Information

Facility information was taken from multiple sources. The Polk TPO 2022 Roadway Network GIS Database was the primary roadway analysis layer used for network information. This layer includes information such as Functional Classification, Number of Lanes, Median Type, Average Annual Daily Traffic (AADT), and Vehicle Miles Traveled (VMT). This roadway layer includes the key roadways within Polk County, and since the layer has VMT, it provides the most robust analysis layer to identify the HIN and HII.

To supplement the Polk TPO Roadway Network information, the speed limit and context classification layers were used from the FDOT GIS Database. The FDOT speed limit layer includes the State Highway System along with some additional segments for county and local roadways. Since Context Classification is only applicable for the State Highway System, the context classification layer includes only the State Highway System. Polk County provided additional point layers such as lighting and signalized intersections. The analysis performed for this Vision Zero effort is based on the ability to relate the crash data imported from CARS and S4 to the provided ArcGIS map layers.

Spatial Analysis

After mapping crashes using latitude and longitude data, crashes were joined to the facility information. Each roadway network evaluated was buffered by 100-feet on each side. The 2017 to 2021 fatal and severe injury crash consolidated dataset was then joined to each buffered roadway layer.

The Polk TPO roadway layer was also used to identify intersections throughout the network. After intersections were identified, the intersections were buffered by 300-feet. A 300-feet buffer was assumed to be the average sphere of influence for an individual intersection. The consolidated crash layer was also joined to buffered intersections.

Crash Analysis

The following section presents crash data analysis and trends for Polk County and breaks them down into charts and graphs to better present the data for understanding.

How Many Crashes Occurred?

Crash data was broken down to determine system wide trends in Polk County for the end purpose of identifying strategies to address and prevent Fatal and Serious Injury (FSI) crashes per the Vision Zero strategy. The focus of Vision Zero is to prevent Fatal and Severe Injury crashes, instead of focusing on all crash types (including Property Damage Only). This approach can move focus away from areas that may traditionally be viewed as problematic due to the frequency of collisions but have low severity crashes, to areas that have fewer but much more severe crashes with the goal of saving lives. From 2017 to 2021 there were:

- 82,374 Total Crashes (~45 per day)
- 606 Fatal Crashes (~2 per week)
- 1,746 Severe Injury Crashes (~7 per week)
- 25,001 Total Injury Crashes (~14 per week)
- 56,767 Property Damage Only Crashes (~31 per day)
- $12.8B Cost to Society[4] (~$7.0M per day)

[4] Assuming FDOT KABCO Crash Costs in the FDOT 2022 Design Manual.

Figure 3. Polk County Crashes per Year by Severity (2017-2021) illustrates these trends year-to-year and highlights the sharp uptick in total crashes in 2021.

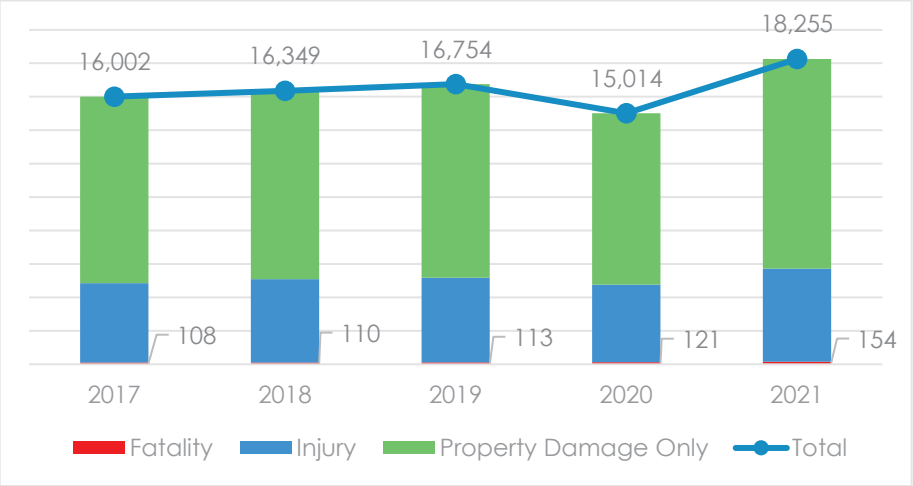


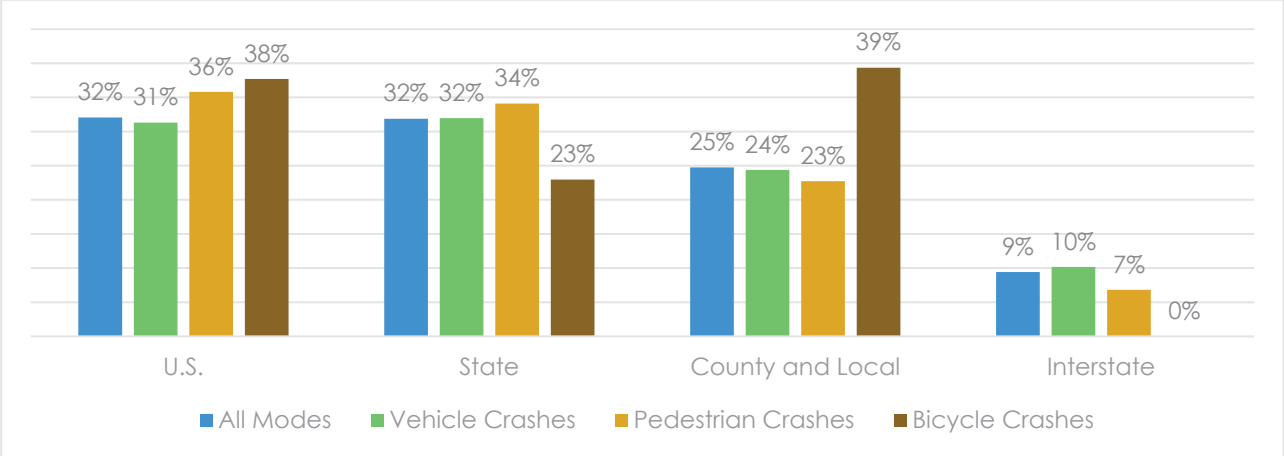
Figure 3. Polk County Crashes per Year by Severity (2017-2021)

Where are the Crashes Occurring?

As outlined previously, ArcGIS data sets from the Florida Department of Transportation, Polk County, and the Polk TPO were used in conjunction with crash data to gain insights on where crashes are happening in our systems. This information can often be used to identify problematic roadway types and features to prioritize strategies to remove or address the issues.

Ownership

As shown in **Figure 4**, Polk County roadways account for 25 percent of all Fatal and Severe Injury crashes, 23 percent for Pedestrian Fatal and Severe Injury crashes, and 39 percent for Bicycle Fatal and Severe Injury crashes. Compared to other roadway types (U.S., State, Interstate), county roadways have the greatest percentage of fatal and severe injury bicycle crashes.



*Note this breakdown is based upon data in the Crash Reports and not a spatial join within GIS. Excludes crashes with roadway type coded as "No Data" or coded "Other". Local Roads comprise approximately 1 percent of All Crash Types, Vehicle Crashes, and Pedestrian Crashes. Toll Roads comprise approximately 1 percent of All Crashes and Vehicle Crashes.

Figure 4. Fatal and Severe Injury Crashes by Roadway System and Mode in Polk County (2017-2021)

Speed

A GIS analysis was performed to identify the breakdown of crashes by speed. Speed was not available for the entire roadway system. Currently, speed limit information includes the State Highway System (SHS) with some coverage on county and local roads. Crashes that were not located on a roadway with this data were not included in the percentage calculations. This information is not complete due to the nature of the incomplete dataset and should only be used as an indication of general trends in Polk County.

As seen in **Table 2**, roadways with a speed limit of 25-mph or less comprise 1 percent of all Fatal and Severe Injury crashes. As posted speeds increase, the percentage of fatal and severe injury crashes also generally increases. Specific to pedestrian and bicycles, the roadways with speed limits between 36 and 45 mph have the greatest percentage of fatal and severe injury crashes. The 36 to 45 mph speed limit bracket comprises 30 percent of centerline miles, but 46 percent of fatal and severe pedestrian crashes and 50 percent of fatal and severe bicycle crashes. Fatal and severe injury crashes that are overrepresented relative to the share of speed limit centerline miles are highlighted in red. These results may suggest that pedestrian and bicycles have the greatest exposure to fatal and severe injuries on these roadways as these posted speed limits are common on suburban arterial roadways that may have a mix of land-uses with pedestrian and bicycle generators. For vehicle fatal and severe injury crashes, the percent of crashes by speed limit generally coincides with the percentage of centerline miles for that speed limit.

Table 2. Fatal and Severe Injury Crashes by Mode and Speed Limit (mph) in Polk County (2017-2021)

Fatal and Severe Injury Crashes by Mode and Speed Limit (mph) in Polk County					
Speed Limit	<=25	26 – 35	36 – 45	46 – 55	>55
Percent of Roads (by centerline miles)	*2%*	*11%*	*30%*	*27%*	*30%*
Percent of Vehicle Fatal and Severe Injury Crashes	1%	8%	33%	27%	30%
Percent of Pedestrian Fatal and Severe Injury Crashes	1%	12%	46%	25%	14%
Percent of Bicycle Fatal and Severe Injury Crashes	2%	14%	50%	22%	13%
Percent of All Fatal and Severe Injury Crashes	1%	9%	36%	27%	28%

Context Classification

A GIS analysis was performed to identify the breakdown of crashes by Context Classification. Context information was not available for the entire roadway system. Currently, Context Classification is only available for the State Highway System. Crashes that were not located on a roadway with this data were not included in the percentage calculations. This information is not complete due to the nature of the incomplete dataset and should only be used as an indication of general trends in Polk County.

FDOT's Context Classification system describes general land use characteristics, development patterns, and roadway connectivity along a roadway. In total, there are eight context classifications ranging from C1 – Natural to C6 – Urban Core. Additional information on Context Classification can be found in the FDOT Context Classification Guide[5]. From the Context Classification analysis, C3C – Suburban Commercial, C2 – Rural, and C3R – Suburban Residential have the highest total share of Fatal and Severe Injury Crashes in the system. The data indicates that C3C and C4 – Urban General are the worst contexts due to the over-representation of crashes present relative to their share of lane miles. The Context Classifications are explained in **Figure 5**.

[5] FDOT Context Classification Guide, updated 2022.

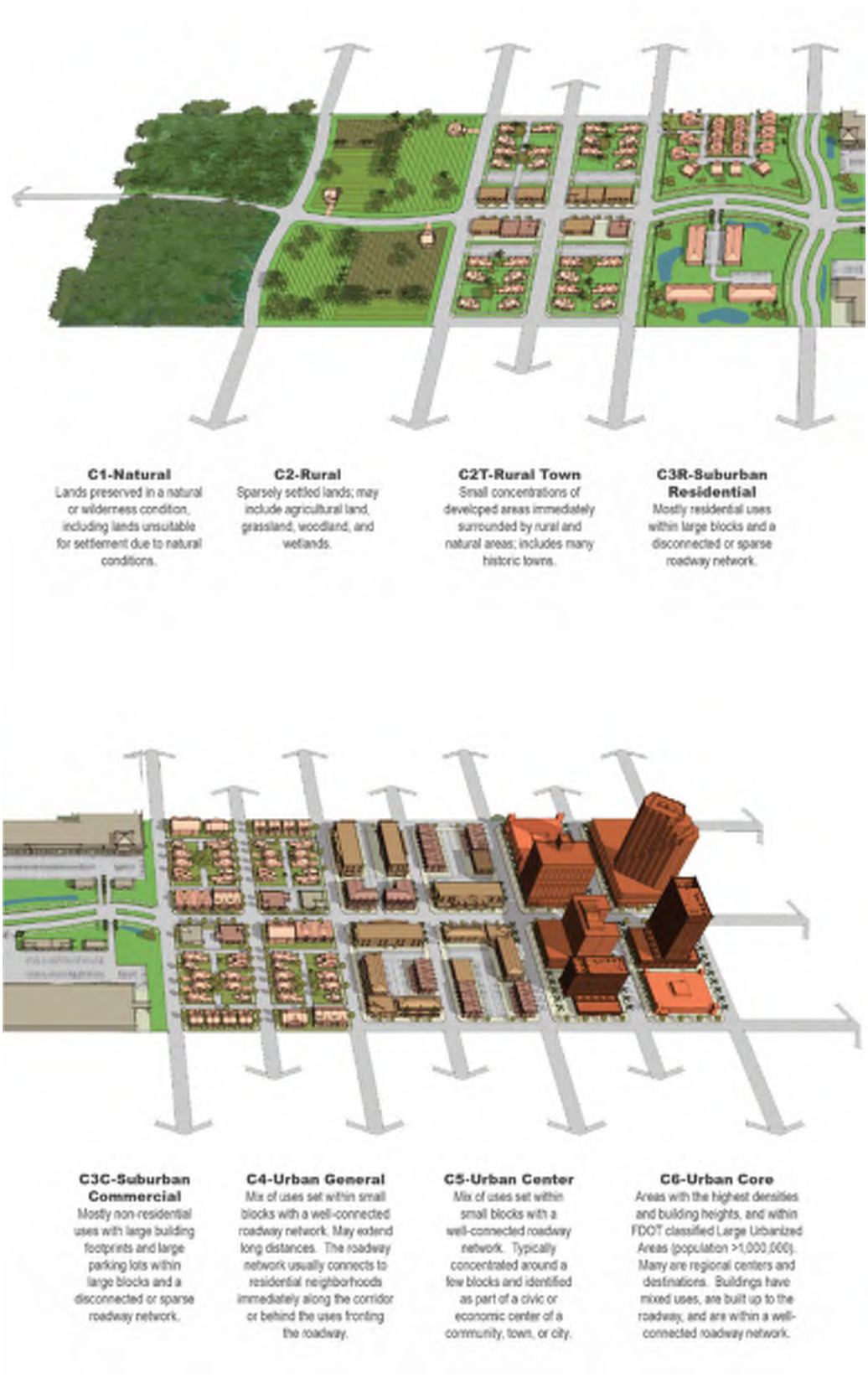


Figure 5 FDOT Context Classifications

Specific to Polk County, example context classifications by roadway segments are depicted in **Table 3**. Note that context classification is only applicable to state roads.

Table 3. Example Polk County Roadway Context Classifications

Polk County Example Context Classifications	
Roadway	**Context Classification**
SR 60 (East of River Ranch Boulevard)	C1 - Natural
State Road 37 (South of Main Avenue)	C2 - Rural
State Road 60 / Canal Street (between Diesel Road and NE 9th Avenue)	C2T – Rural Town
Berkley Road	C3R – Suburban Residential
Baker Street / US-92 (west of Murray Drive)	C3C – Suburban Commercial
6th Street / US-17 (between CR 540 and Havendale Blvd)	C4 – Urban General
SR 37 / N Florida Avenue (between Main Street and Peachtree Street)	C5 – Urban Center

Shown in **Table 4**, over half of pedestrian and bicycle fatal and severe injury crashes occurred in C3C – Suburban Commercial context classification. Distinguishing characteristics for C3C classifications are described as "Mostly non-residential uses with large building footprints and large parking lots within large blocks and a disconnected or sparse roadway network." In C3C areas, the roadway network connectivity is generally poor which means pedestrians or bicyclists must travel long distances to cross at a signalized intersection. This development pattern can encourage pedestrian and bicyclists to cross midblock in C3C areas. Highlighted in red are those crash categories that are overrepresented compared to their percentage of context classified lane miles.

Table 4. Polk County Fatal and Severe Injury Crashes by Mode and Context Classification Relative to Share of Lane Miles (2017-2021)

Polk County Fatal and Severe Injury Crashes by Mode and Context Classification							
Context Classification	**C1**	**C2**	**C2T**	**C3R**	**C3C**	**C4**	**C5**
Percent of Lane Miles	**<1%**	**40%**	**5%**	**12%**	**40%**	**5%**	**<1%**
Percent of Vehicle Fatal and Severe Injury Crashes	<1%	33%	4%	11%	**45%**	**7%**	<1%
Percent of Pedestrian Fatal and Severe Injury Crashes	0%	23%	**6%**	10%	**51%**	**9%**	**1%**
Percent of Bicycle Fatal and Severe Injury Crashes	0%	15%	**6%**	**14%**	**56%**	**10%**	0%
Percent of All Fatal and Severe Injury Crashes	<1%	31%	4%	11%	**46%**	**7%**	<1%

Functional Classification

While Context Classification includes surrounding land-use characteristics, Roadway Functional Classification looks at how the roadway is meant to function. While roadway function cannot be divorced from surrounding land use, it is helpful to consider the roadway type and if certain corridor types may be problematic. The Polk TPO roadway network layer includes Functional Classification and number of lanes data. While the previous analysis covered a more limited network, Functional Classification and number of lanes are available in a much larger roadway network within Polk County. **Table 5** depicts example roadway functional classifications for Polk County.

Table 5. Polk County Example Roadway Functional Classifications

Polk County Example Functional Classifications	
Roadway	**Functional Classification**
Camellia Drive	Local Road
Nichols Mine Road / Old Nichols Road	Local Commercial
Canal Avenue / Watkins Road	Rural Minor Collector
CR 557A / Polk City Road (between SR 559 and CR 557)	Rural Major Collector
CR 546 / Saddle Creek Road	Urban Collector
SR 37 / Church Ave N (between Manatee County Line and W Main Street)	Minor Arterial
Bartow Road / US-98	Principal Arterial

Table 6 depicts the breakdown of lane miles, centerline miles, annual Vehicle Miles Traveled (VMT) by Functional Classification. The breakdown shows that Principal Arterials account for a majority of the annual VMT in Polk County, but not most of the lane miles or centerline miles. The Urban Collector Functional Classification accounts for most of the lane miles or centerline miles.

Table 6. Lane Miles, Centerline Miles, and Annual VMT Breakdown by Functional Classification in Polk County

Functional Classification	Local Road	Local Commercial	Rural Minor Collector	Rural Major Collector	Urban Collector	Minor Arterial	Principal Arterial
Percent of Lane Miles	<1%	<1%	1%	5%	45%	11%	38%
Percent of Centerline Miles	<1%	<1%	2%	7%	55%	11%	25%
Percent of Annual VMT	<1%	<1%	<1%	1%	28%	12%	59%

Within Polk County, Urban Collectors, Minor Arterials, and Principal Arterials account for approximately 97 percent of fatal and severe injury crashes. **Table 7** summarizes the fatal and severe injury crashes by mode and functional classes and compares their relative share to annual VMT. Compared to the relative share of annual VMT, Urban Collectors account for a greater percentage of fatal and severe injury crashes, while Principal Arterials account for a lessor percentage of fatal and severe injury crashes. Functional Classifications which have a greater percentage of fatal and severe injury crashes than the percent share of annual VMT are highlighted in red.

Table 7. Fatal and Severe Injury Crashes by Mode and Functional Classification Relative to Annual VMT in Polk County (2017-2021)

Fatal and Severe Injury Crashes by Mode and Functional Classification in Polk County							
Functional Classification	**Local Road**	**Local Commercial**	**Rural Minor Collector**	**Rural Major Collector**	**Urban Collector**	**Minor Arterial**	**Principal Arterial**
Percent of Annual VMT	*<1%*	*<1%*	*<1%*	*1%*	*28%*	*12%*	*59%*
Percent of Vehicle Fatal and Severe Injury Crashes	0%	0%	**1%**	**2%**	**40%**	**13%**	45%
Percent of Pedestrian Fatal and Severe Injury Crashes	<1%	0%	0%	1%	**39%**	**16%**	43%
Percent of Bicycle Fatal and Severe Injury Crashes	0%	0%	0%	0%	**47%**	**14%**	39%
Percent of All Fatal and Severe Injury Crashes	0%	0%	**1%**	**2%**	**40%**	**13%**	45%

Table 8 depicts the breakdown of lane miles, centerline miles, annual VMT by number of lanes. The breakdown shows that two-lane facilities account for a majority of lane miles and centerline miles, but account for just approximately one-third of the annual VMT.

Table 8. Polk County Lane Miles, Centerline Miles, and Annual VMT Breakdown by Number of Lanes

Number of Lanes	2	3	4	5	6	8
Percent of Lane Miles	52%	<1%	32%	1%	15%	<1%
Percent of Centerline Miles	71%	<1%	22%	<1%	7%	<1%
Percent of Annual VMT	31%	<1%	34%	1%	33%	1%

Table 9 depicts the breakdown of fatal and severe injury crashes by mode and number of lanes. Two-lane facilities have a 15-percent greater share of total fatal and severe injury crashes than its share of annual VMT.

Table 9. Polk County Fatal and Severe Injury Crashes by Mode and Number of Lanes Relative to Annual VMT (2017-2021)

Polk County Fatal and Severe Injury Crashes by Mode and Number of Lanes						
Number of Lanes	**2**	**3**	**4**	**5**	**6**	**8**
Percent of Annual VMT	*31%*	*<1%*	*34%*	*1%*	*33%*	*1%*
Percent of Vehicle Fatal and Severe Injury Crashes	**46%**	<1%	34%	1%	18%	<1%
Percent of Pedestrian Fatal and Severe Injury Crashes	**43%**	**1%**	**43%**	<1%	13%	<1%
Percent of Bicycle Fatal and Severe Injury Crashes	**46%**	<1%	**40%**	1%	11%	1%
Percent of All Fatal and Severe Injury Crashes	**46%**	<1%	**36%**	1%	17%	<1%

Crash Factors - Types

Crash Typing is the process of evaluating how the crash occurred. Identifying which crash types and roadway users are at greatest risk for the most severe outcomes is an important step to improving the roadway network for all users. Typing is a significant part of looking at how to prevent crashes on the roadway. For example, if the predominant crash type in an area was Fixed object/Run-Off Road, a system owner should approach the area with a three step process: Keep Vehicles from leaving their lane (ex. Rumble Strips), allow vehicles a safe recovery (ex. Remove drop offs and provide a roadway shoulder), and finally look to reduce the consequences of hitting an obstruction (ex. Remove utility poles, use guardrail to protect abutment).

Table 10 depicts the total number and percentage of fatal and severe injury crashes by crash type. Crashes involving cars leaving their lane (Fixed Object/Run-Off Road) make up the greatest percentage of fatal crashes followed by Pedestrian crashes, and Angle/Left Turn ("T-Bone") crashes.

Table 10. Polk County Fatal and Severe Injury Crashes by Crash Type (2017-2021)

Crash Type	Fatal Crashes		Fatalities		Severe Injury Crashes		Severe Injuries	
Fixed Object/Run-Off Road	134	22.1%	138	21.1%	286	16.4%	350	15.4%
Pedestrian	112	18.5%	115	17.6%	179	10.3%	190	8.4%
Angle	81	13.4%	88	13.4%	231	13.2%	338	14.9%
Left Turn	68	11.2%	75	11.5%	175	10.0%	244	10.8%
Head On	61	10.1%	75	11.5%	134	7.7%	220	9.7%
Rear End	58	9.6%	60	9.2%	339	19.4%	438	19.3%
Other	45	7.4%	51	7.8%	247	14.1%	297	13.1%
Bicycle	23	3.8%	23	3.5%	76	4.4%	78	3.4%
Sideswipe	23	3.8%	29	4.4%	62	3.6%	93	4.1%
Right Turn	1	0.2%	1	0.2%	17	1.0%	19	0.8%
Total	606	100%	655	100%	1,746	100%	2,267	100%

Another important comparison is looking at crash severity relative to the total number of crashes that occurred to understand which crash types are overrepresented as Fatal and Severe Injury crashes. **Figure** 6 compares All Crashes from 2017 to 2021 to Fatal and Severe Injury Crashes. Rear End crashes comprise 36 percent of All Crashes, but 10 and 19 percent of Fatal and Severe Injury Crashes, respectively. Similarly, Right Turn and Sideswipe crashes also have a lessor Fatal and Severe Injury Crash percentage compared to all Crashes.

On the other hand, Pedestrian, Fixed-Object/Run-Off Road, Head-On, Bicycle, Left-Turn, and Angle crashes all have a greater share of Fatal and Severe Injury Crashes compared to their share of All Crashes. These crash types are likelier to end in more severe outcomes than other crash types. Specifically for pedestrians, 2 percent of All Crashes were Pedestrian Crashes, while 18 percent of Fatal Crashes were Pedestrian Crashes. Pedestrians are grossly overrepresented with their share of fatalities.

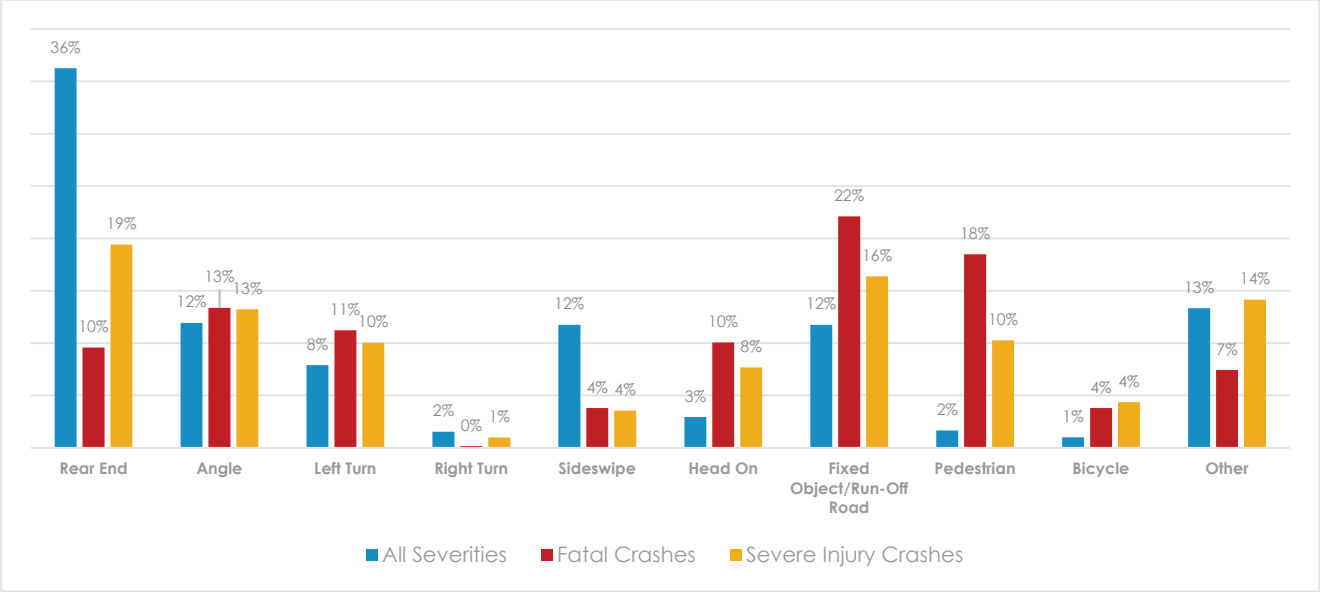


Figure 6. Polk County Crash Type and Severity Comparison (2017-2021)

Crash Factors – Environmental

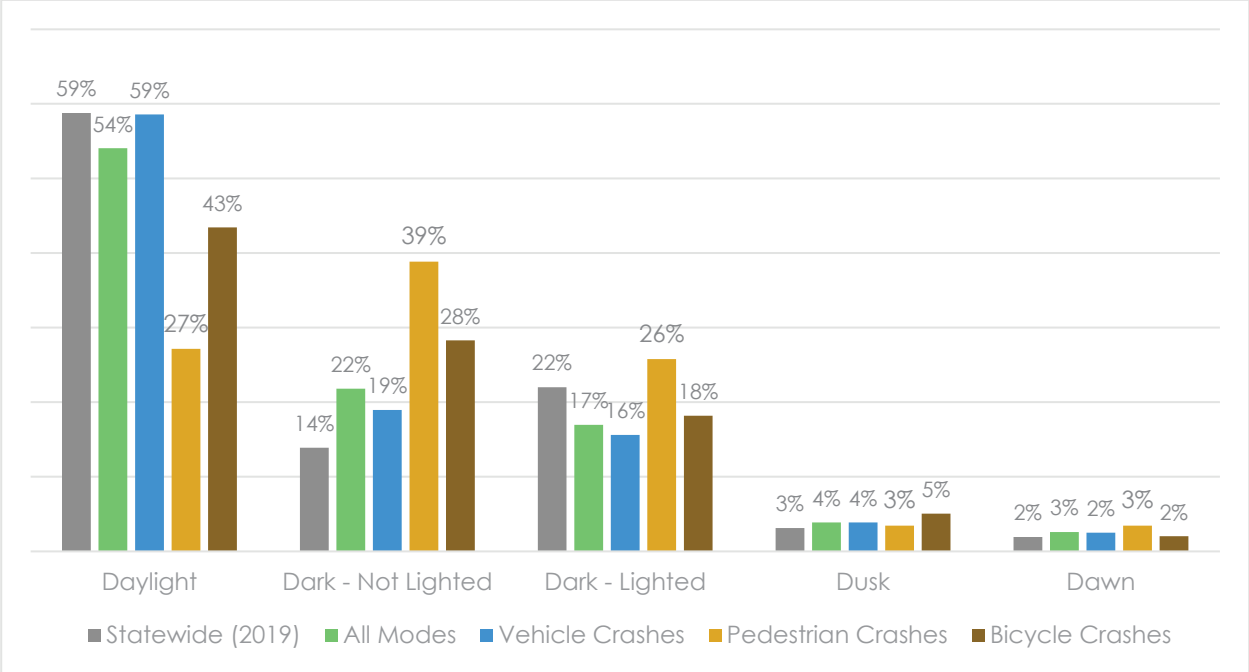
Environmental factors, such as weather, lighting condition, roadway surface condition and time of day, are very influential in crashes. Inclement weather can tax a driver's skills or strain the physics of keeping a vehicle on a roadway. Often, the road user's senses are dulled by an environmental factor, reducing the quality of information they can receive.

Crashes by Lighting Condition

One important environmental factor is lighting conditions. If a roadway is not properly lit, it can be challenging to see one's surroundings, oncoming traffic, and pedestrians or bicyclists within a roadway. According to the Florida Highways Safety and Motor Vehicle Traffic Crash Facts Annual Report 2019, 59 percent of statewide Fatal and Severe Injury crashes occurred during daylight conditions. From 2017 to 2021 in Polk County, 55 percent of Fatal and Severe Injury crashes occurred during daylight conditions which suggests a slightly greater share of nighttime crashes compared to the 2019 statewide average. **Figure** 7 depicts the Fatal and Severe Injury crashes by lighting conditions and compares to the 2019 statewide average. Note that compared to the 2019 statewide average, Dark – Not Lighted crashes occurred more frequently (14 percent to 22 percent) in Polk County (2017 – 2021).

Over half (55 percent) of pedestrian crashes occurred in Dark lighting conditions with 39 percent occurring in Dark – Not Lighted conditions. Pedestrians are at much greater risk compared to vehicles to have a severe crash outcome during Dark conditions,

particularly in Dark - Unlit conditions. On high-speed unlit roadways, a driver likely would not be able to react quickly enough once the pedestrian would be in the vehicle's headlight. A similar trend occurs with bicycles, however, to a lesser extent than pedestrians. Identifying unlit roadways with pedestrian crashes should be a priority in this Vision Zero Action Plan.



*Note that Statewide data is just reported for 2019. Polk County data is reported from 2017 – 2021. Polk County Dark – Other/Unknown Lighting Crashes comprise approximately 1 percent of Pedestrian Crashes and 2 percent of Bicycle Crashes. Polk County Other/Unknown Lighting Condition Crashes comprise approximately 1 percent of Pedestrian and Bicycle Crashes.

Figure 7. Polk County Fatal and Severe Injury Crashes by Lighting Condition and Mode (2017-2021)

Crashes by Time of Day

In addition to breakdown by lighting condition, Fatal and Severe crashes were analyzed by time of day. **Figure** 8 shows the Fatal and Severe Injury by mode and time of day. Vehicle Fatal and Severe Injury crashes generally increased throughout the day and began to decrease around 6 PM.

Bicycle and pedestrian Fatal and Severe Injury crashes show a less clear overall trend. Pedestrian Fatal and Severe Injury crashes spike at 6 AM and sharply decrease from 7 to 9 AM, and level out until 2 PM. Pedestrian crashes then begin to increase from 2 PM through 9 PM. These hours may coincide with commuting and school hours, and as previously mentioned nighttime lighting conditions also influence pedestrian exposure.

Bicycle Fatal and Severe Injury crashes follow a similar pattern to pedestrian crashes. For Bicycles, Fatal and Severe Injuries have a morning peak from 5 to 8 AM. Later in the day, the bicycle Fatal and Severe Injury crash percentage peaks again from 3 PM to 10 PM with the peak hour occurring with 10 percent of crashes at 6 PM. For bicycles and pedestrians, the percent of Fatal and Severe injury crashes is generally the lowest from 9 AM to 2 PM.

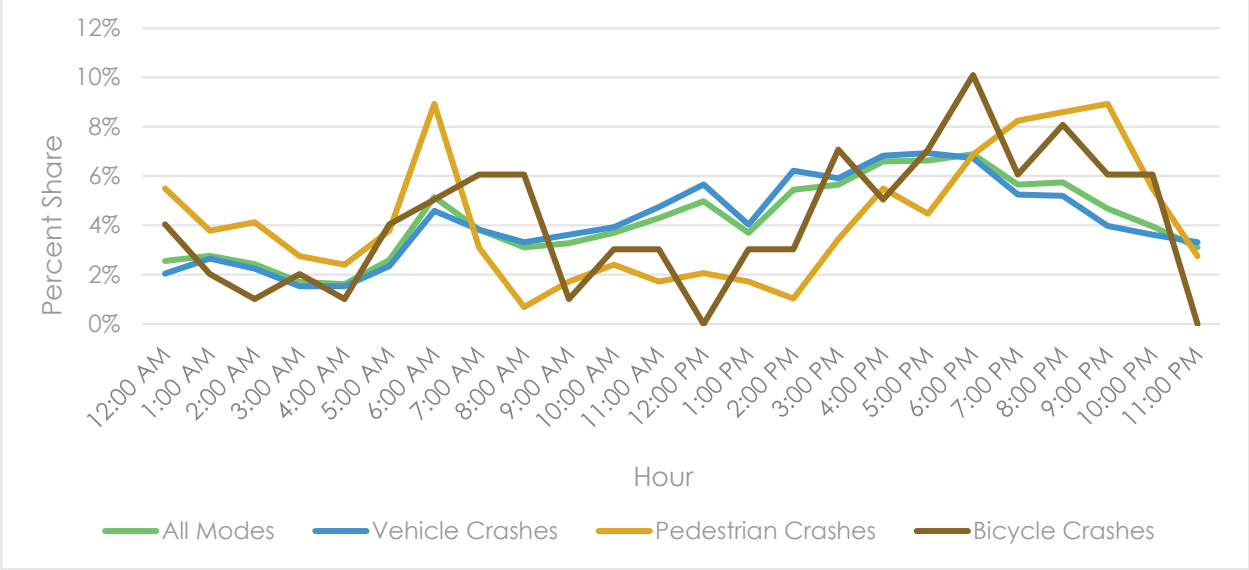


Figure 8. Polk County Fatal and Severe Injury Crashes by Time of Day and Mode (2017-2021)

Crashes by Roadway Surface Condition

Roadway surface conditions can impact a driver's and vehicle's ability to react to events. **Figure** 9 depicts Fatal and Severe Injury crashes by roadway surface condition and mode. From **Figure** 9, there is not a clear pattern between modes and roadway surface condition. Approximately one percent of vehicle Fatal and Severe Injury Crashes occur under wet conditions while for pedestrians and bicycles that percentage is less than one percent. Compared to other Environmental Conditions, such as lighting, roadway surface conditions do not have as clear of an effect on Fatal and Severe Injury crashes.

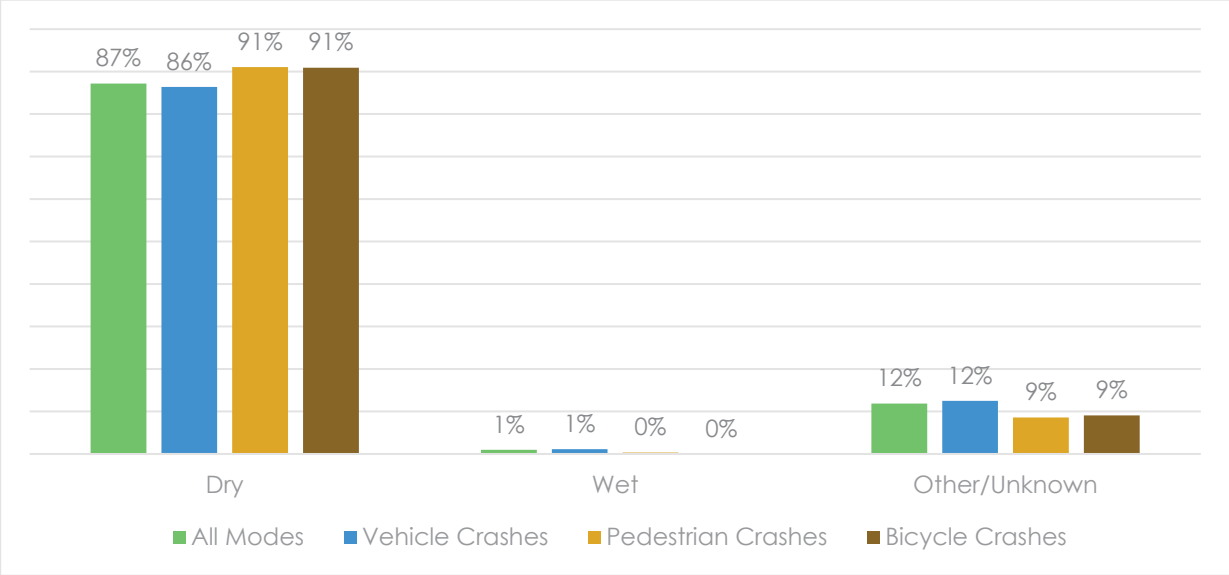


Figure 9. Polk County Fatal and Severe Injury Crashes by Roadway Surface Condition and Mode (2017-2021)

Crash Factors – Behavior

Behavior is often a significant contributor to the occurrence of a crash. The National Highway Traffic Safety Administration (NHTSA) performed a study that concluded that 94 percent of crashes were due to human error. It should be noted that this does not mean the *root cause* of the crash is human error, or that the crash cannot be solved by system owners and designers. This is often misunderstood that if a crash cause is attributed to human error, then nothing could have been done to prevent it. To address this, NHTSA released the following statement:

> ***"The critical reason is the immediate reason for the critical pre-crash event and is often the last failure in the causal chain of events leading up to the crash. Although the critical reason is an important part of the description of events leading up to the crash, it is not intended to be interpreted as the cause of the crash nor as the assignment of the fault to the driver, vehicle, or environment".***

Crash data is derived from the Florida Traffic Crash Report, which is completed by the responding law enforcement officer. For behavior, the law enforcement officer exercises broad professional discretion to accurately report when verifiable, not simply inferred, or suspected, contributing actions occurred. It should be noted that behavior data is difficult for the officer to ascertain at the scene of a crash and is likely underreported or inaccurate. For example, speeding will typically only be indicated if it was verifiable that speed was a factor in causing a crash. According to the Florida Uniform Traffic Crash Manual, the law enforcement officer is limited to up to four

individual contributing actions for each contributing action field. It is important to note that crashes are complex, often involving many contributing factors that are highly variable and are therefore difficult to distill into a standardized report.

The Crash Data Systems and Mapping uses the described information from the crash report to provide a simple Boolean flag indicating that a behavior, or contributing action, occurred. If one or more conditions is met, the entire crash record will be flagged as being influenced by that behavior. With this data set, the behavior of individuals (person walking or the person driving) is not able to be differentiated. **Table 11** is a description of the conditions required for Crash Data Systems and Mapping to flag a behavior.

Table 11. Florida Traffic Crash Manual Conditions by Behavior

Behavior	Florida Traffic Crash Manual Condition
Speeding	Exceeded Posted Speed
Intoxication	Person Suspected Alcohol Use
	Person Suspected Drug Use
	Under the Influence of Medications/Drugs/Alcohol
Distracted	Other Inside the Vehicle
	External Distraction
	Texting
	Inattentive
Electronic Distraction	Electronic Communication Devices
	Other Electronic Device
Aggressive Driving	Failed to Yield Right-of-Way
	Failed to Keep in Proper Lane
	Followed too Closely
	Ran Red Light
	Ran Stop Sign
	Improper Passing
	Exceeded Posted Speed
	Disregarded Other Road Markings
	Operated Motor Vehicle in Erratic Reckless or Aggravated manner
	Disregarded Other Traffic Sign
Disregard Traffic Control Device	Ran Red Light
	Ran Stop Sign

Specific to Polk County, **Table 12** depicts the contributing behavior identified in the police reports. The greatest contributing behavior for Fatal and Severe Injury crashes is Careless Driving. Exceeding the Speed Limit accounts for 4 percent of Fatal and Severe Injury crashes. No Improper Driving or No Contributing Behavior, which means the law enforcement office did not identify that a behavior of the driver caused a crash, was attributed to 17 percent of Fatal Crashes and 14 percent of Severe Injury crashes.

Table 12. Polk County Fatal and Severe Injury Crashes by Contributing Behavior (2017-2021)

Contributing Behavior	Fatal Crashes		Severe Injury Crashes	
Careless Driving	134	22%	492	28%
No Improper Driving	101	17%	252	14%
Failed to Yield ROW	83	14%	285	16%
Other/Unknown	69	11%	191	11%
Ran off Roadway	51	8%	107	6%
Failed to Keep in Proper Lane	42	7%	73	4%
Exceeded Speed Limit	27	4%	63	4%
Improper Passing	19	3%	20	1%
Operated Vehicle in Erratic, Reckless, or Aggressive Manner	17	3%	31	2%
Disregarded Traffic Signal	15	2%	55	3%
Driving Wrong Side/Way	13	2%	12	1%
Disregarded Stop Sign	11	2%	27	2%
Improper Turn	9	1%	16	1%
Followed Too Closely	5	1%	82	5%
Swerved or Avoided	5	1%	17	1%
Over-correcting/Over Steering	4	1%	16	1%
Improper Parking	1	<1%	5	<1%
Disregarded other road markings	0	0%	2	0%

Alcohol and drug use has dangerous consequences when operating a motor vehicle and greatly impairs a driver's judgement and reaction time. **Figure 10** depicts the percent of crashes attributed to alcohol and/or drugs by crash severity. Overall, crashes where a driver is impaired by alcohol and/or drugs makes up 3 percent of all crashes, but 40 percent of all fatal crashes. From this analysis, alcohol and/or drugs are a contributing cause to four out of ten fatal crashes.

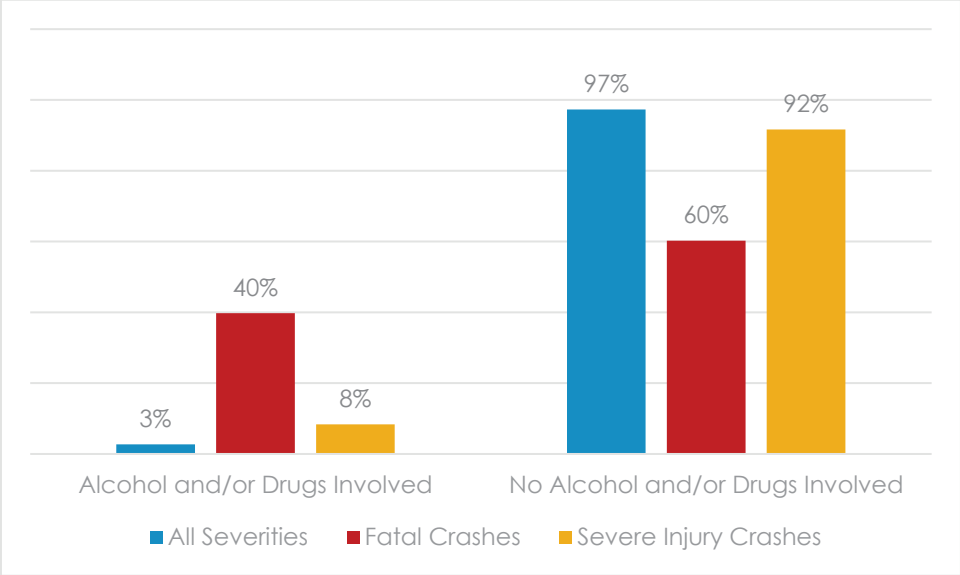


Figure 10. Percent of Crashes with Alcohol and/or Drugs Involved in Polk County (2017-2021)

Since their introduction by federal law in 1968, seatbelts have saved countless lives. Consistency in wearing the seatbelt is still a factor in crashes. **Table 13** shows the relationship between seatbelt usage and fatalities. While there is not a direct link in the data, a significant number of fatalities, and not a few serious injuries, were sustained by unrestrained occupants. It may be possible that proper seatbelt usage may have prevented or reduced the severity of those injuries.

Table 13. Percentage of Seatbelt Usage in Fatal and Severe Injury Crashes in Polk County (2017-2021)

Severity of Crash by Restrained Status	Years					Total
	2017	2018	2019	2020	2021	
Unrestrained Fatalities	39	38	31	38	61	207
All Fatalities	92	98	98	104	134	526
Unrestrained Fatalities Percent	**42.4%**	**38.8%**	**31.6%**	**36.5%**	**45.5%**	**39.4%**
Unrestrained Severe Injuries	71	68	52	70	84	345
All Severe Injuries	417	471	91	318	430	2027
Unrestrained Severe Injuries Percent	**17.0%**	**14.4%**	**13.3%**	**22.0%**	**19.5%**	**17.0%**

Equity Analysis

As a part of implementing the Justice40 Initiative, the U.S. Department of Transportation ("USDOT") developed a definition for disadvantaged communities. The following is taken from the USDOT "Transportation Disadvantaged Census Tracts" website[6]:

"Using existing publicly available data sets, the disadvantaged Census Tracts, exceeded the 50th percentile (75th for resilience) cross at least four of the following six transportation disadvantaged indicators. Each of the six disadvantage indicators are assembled at the Census Tract level using data from the- CDC Social Vulnerability Index, Census America Community Survey, EPA Smart Location Map, HUD Location Affordability Index, EPA EJ Screen, FEMA Resilience Analysis & Planning Tool, and FEMA National Risk Index."

> **Transportation access disadvantage** identifies communities and places that spend more, and longer, to get where they need to go. (CDC Social Vulnerability Index, Census America Community Survey, EPA Smart Location Map, HUD Location Affordability Index)
> **Health disadvantage** identifies communities based on variables associated with adverse health outcomes, disability, as well as environmental exposures. (CDC Social Vulnerability Index)
> **Environmental disadvantage** identifies communities with disproportionate pollution burden and inferior environmental quality. (EPA EJ Screen)
> **Economic disadvantage** identifies areas and populations with high poverty, low wealth, lack of local jobs, low homeownership, low educational attainment, and high inequality. (CDC Social Vulnerability Index, Census America Community Survey, FEMA Resilience Analysis & Planning Tool)
> **Resilience disadvantage** identifies communities vulnerable to hazards caused by climate change. (FEMA National Risk Index)
> **Equity disadvantage** identifies communities with a high percentile of persons (age 5+) who speak English "less than well." (CDC Social Vulnerability Index)"

Within Polk County 74 of the 154 census tracts are defined as Transportation Disadvantaged by USDOT. **Table 14** summarizes the number of these communities by Transportation Disadvantaged indicators. Overall, approximately 87 percent of the census defined communities within Polk County meet have at least two Transportation Disadvantaged indicators. **Figure 11** shows these areas in a mapped in Polk County.

[6] U.S. Department of Transportation Justice 40. https://www.transportation.gov/equity-Justice40

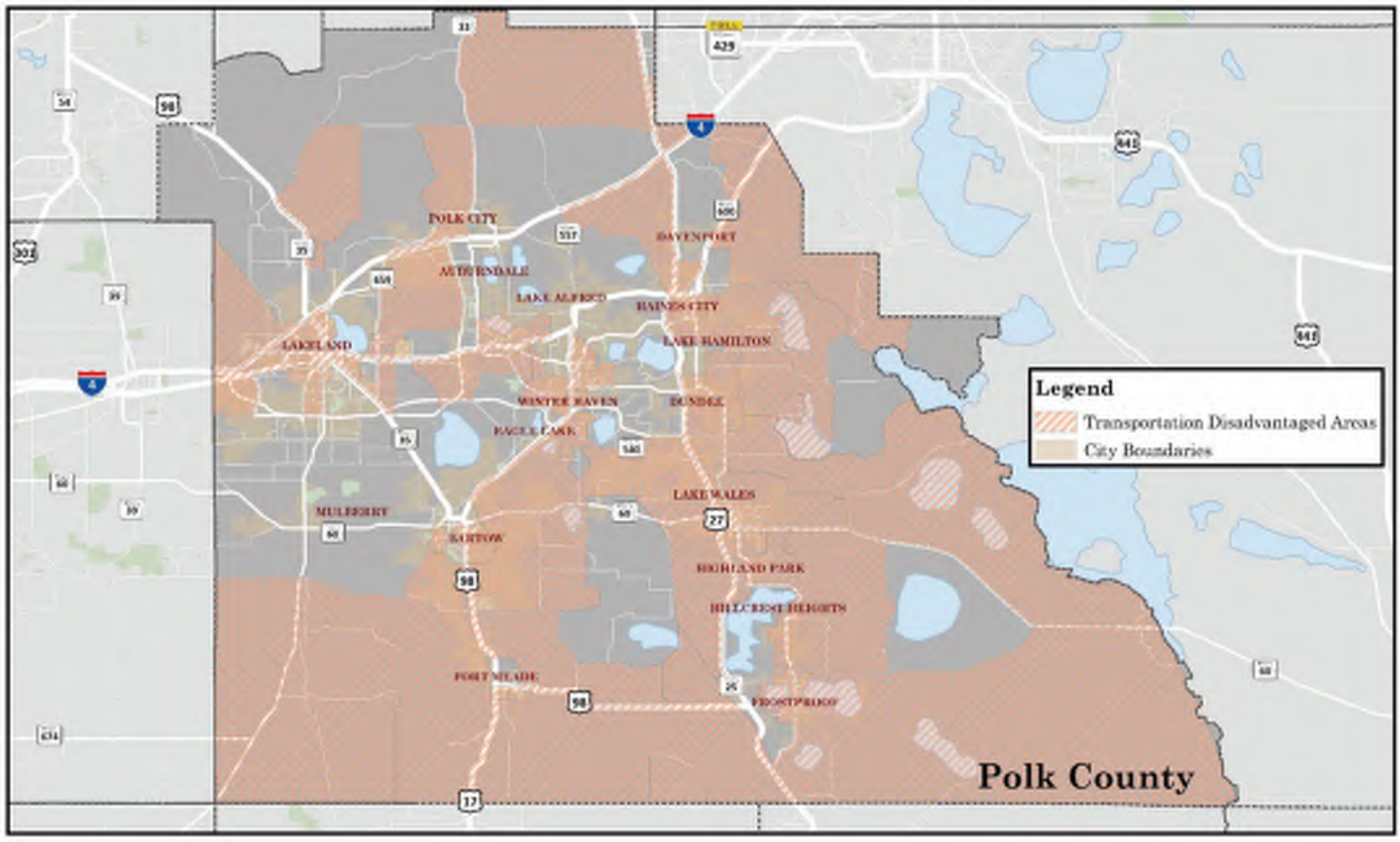


Figure 11 Transportation Disadvantaged Communities in Polk County

Table 14. Number of Communities by Transportation Disadvantaged Indicators within Polk County

Number of Disadvantages Present	Communities	Percentage
1	20	13%
2	21	14%
3	39	25%
4	52	34%
5	22	14%
Total	154	100%

Table 15 depicts the proportion of Transportation Disadvantaged communities to Polk County's area, population, and employment.

Table 15. Proportion of Transportation Disadvantage Communities within Polk County

Metric	Disadvantaged Communities in Polk	All Polk County	Percentage
Area (sq. mile)	1,160	1,797.16	64.6%
Population	327,185	668,671	48.9%
Jobs	131,640	285,041	46.2%

In total, Transportation Disadvantaged communities make up almost 50 percent of Polk County's population and employment while composing almost 65 percent of the total area. Crash analysis was conducted to determine if fatal, severe injury, bicycle, and/or pedestrian crashes disproportionately affect Transportation Disadvantaged communities. **Table 16** depicts the Crash Equity Analysis for Polk County by calculating the proportion of crashes in Transportation Disadvantaged tracts to Polk County totals. For the percentage calculation of crashes within Transportation Disadvantaged communities, only the mappable crashes were considered.

Table 16. Polk County Crash Equity Analysis (2017 – 2021)

Metric	Transportation Disadvantaged Communities	Polk County (Mappable)	Percentage of Mappable Crashes in Transportation Disadvantaged Areas
Fatal Crashes	337	604	55.8%
Severe Injury Crashes	925	1,652	61.8%
Pedestrian Fatal and Severe Injury Crashes	175	283	55.9%
Bicycle Fatal and Severe Injury Crashes	65	97	55.8%
Total Fatal and Severe Injury Crashes	1,262	2,256	61.8%

From **Table 16,** Fatal and Severe Injury crashes in Transportation Disadvantaged communities make up approximately 56 to 62 percent of crashes in Polk County. If crashes were distributed evenly across Polk County, crashes in Transportation Disadvantaged communities should make up a similar percentage to the population and jobs. Comparing to the population and job percentages in Transportation Disadvantaged communities, crashes in Transportation Disadvantaged communities

are approximately 9 to 16 percent greater than expected if crashes were distributed equally in all areas. This data suggests that within Polk County, Transportation Disadvantaged communities have a greater exposure to Fatal and Severe Injury crashes than census tracts that are not Transportation Disadvantaged.

Final Conclusions and Recommendations

The project team evaluated the trends from the data and have formed potential solutions that tie closely to the issues presented in datasets. **Table** 17 presents where these potential solutions may apply to the trends extrapolated from the analysis.

Table 17. Potential Solutions to Identified Trends

Location	Trend	Potential Solution
Figure 4	64% of all Fatal and Severe Injury Crashes happen on State and U.S. owned roads.	Partner with the State to secure and support safety projects.
		Offer to partner with the State using County contracting methods to address certain safety problems more quickly on State and US Roadways.
Table 2	Speeds are higher than the human body can handle in crashes in critical corridors.	Implement a Context Classification and Target Speed Process when designing and planning roadways.
		Review posted speeds and/or implementing speed calming measures on critical corridors.
Table 3	C2T's (Rural Towns) have higher representation of Fatal and Severe Injury crashes	Implement speed calming measures and transition zones in rural towns.
		Assist smaller towns with implementing projects.
		Perform Visioning efforts in each City to ensure the context of the communities and the roadways match up as projects are moved forward in the future.
	C3C's have a significant proportion of Pedestrian Crashes (51% of Fatal and Severe Injury with 12% of lane miles)	Focus on sidewalk gap projects and other low-cost safety solutions in C3C contexts.
		Lower speeds to safer levels in C3C contexts.
		Use best practices when permitting new developments and re-development to ensure developers are participating in preventing safety issues.

	C4's have a significant proportion of Bicycle Crashes (56% of Fatal and Severe Injury Crashes with 40% of lane miles)	Ensure speeds are appropriate in C4 contexts.
		Ensure ROW is available to bicyclists to use. Consider lane diets for cycle tracks if needed, or multiuse paths.
	C3C's have the largest proportion of All Fatal and Severe Injury Crashes (46% of Fatal and Severe Injury Crashes with 12% of lane miles)	Lower speeds to safer levels in C3C contexts.
		Determine what the contributing factors are and ensure design standards are appropriate.
Table 4	Larger roadway types have the most Fatal and Severe Injury Crashes, with Principal Arterials being overrepresented by centerline miles (45% of Fatal and Severe Injury Crashes with 25% of lane miles)	Ensure facilities have appropriate speeds and design standards.
		Evaluate the roadway network to look for opportunities to create more connections, allowing the County the ability to avoid building higher classification roadways and widening.
Table 5	2 lane roads are overrepresented in Fatal and Severe Injury Crashes compared to VMT	Evaluate crash types specific to two lane roadways and look for low-cost countermeasures to install.
		Ensure facilities have appropriate speeds and design standards.
Table 6	Fatal and Severe Injury Crashes rear ends are particularly	Evaluate locations and look for systemic low-cost countermeasures, such as dilemma zone detection.

	high, at 16.9% of all KSI	Consider new signal timings if occurring in coordinated systems.
	Fixed Object/run off road is the highest crash type, at 17.9%	Implement new clear zone requirements and ensure roadways are cleared to new clear zones, frangible bases, or protection for drivers from non-frangible objects.
		Implement new systemic countermeasures (rumble strips, chevrons, etc.).
	Angle and left turn crashes total 25.7% of Fatal and Severe Injury Crashes	Evaluate high crash intersections using ICE, with more emphasis on the SPICE evaluation.
		Look at low-cost system countermeasures at high crash intersections with signals.
Figure 6	22% of all Fatal and Severe Injury Crashes, 39% of all Pedestrian Fatal and Severe Injury Crashes, and 28% of all bicycle fatal and sever injury crashes happened in dark, unlighted conditions	Evaluate high crash density corridors with no lighting for new lighting.
	17% of all Fatal and Severe Injury Crashes, 26% of all Pedestrian Fatal and Severe Injury Crashes, and 18% of all bicycle fatal and sever injury crashes happened in dark, unlighted conditions	Evaluate corridors for proper lighting and perform LED retrofits if needed.
Figure 7	It appears that early morning peak is when most Fatal Crashes occur,	Ensure intersection movements are more protected during these times.
		Ensure sidewalks and protected crossings exist on the way to schools and places of employment.

	along with the full afternoon	
Figure 9	Alcohol was present in 40% of all fatal crashes	Implement campaign in Polk to combat Driving under the Influence.
Table 9	Seat Belts were not used in almost 40% of all fatal crashes.	Implement campaign in Polk to influence higher usage of seatbelts.
Table 10 and 11	55.8% of Fatal and Severe Injury Crashes occur in TD areas, holding only 48.9% of the population	Work with Transportation Disadvantaged communities to implement safety measures that work with their community.

C: Safe Streets For All Action Plan Grant Application

Safe Streets and Roads for All

Action Plan Application Template

This document is not meant to replace the NOFO. Applicants should follow the instructions in the NOFO to correctly apply for a grant. While using this template is not required, DOT encourages its use to provide elements of the required application information. Additional information is required, to be submitted separately. See page 2 of this template and the SS4A website for more information about required materials: https://www.transportation.gov/SS4A

Lead Applicant: Polk County, Florida **UEI:** JBN5EHFNGUG9

Funding request: (choose one)

- ☐ **New Action Plan** *Create a new conforming Action Plan*
- ☒ **Complete Action Plan** *Complete or update components of an existing plan(s) to create a conforming Action Plan*
- ☐ **Supplemental Planning Activities** *Additional planning activities must have a conforming Action Plan documented by a Self-Certification Eligibility Worksheet*

		NOFO Criterion #1			NOFO Criterion #2
Applicant(s)	Jurisdiction Population (#)	Total Count Motor Vehicle-Involved Roadway Fatalities 2016 - 2020 (#)	Alternative Fatality Data Optional (indicate source below)	Average Annual Fatality Rate (per 100,000 population)	Percent of Population in Underserved Communities Census Tracts (%)
	U.S. Census Data	FARS Data	Not Applicable		U.S. Census Data
Total Value for Application:	686,218	631		18.3906571964	50.20 %
Lead Applicant: Polk County, Florida	686,218	631		18.3906571964	50.20 %
Joint Applicant(s): 1 Polk TPO	686,218	631		18.3906571964	50.20 %
2					%
3					%
4					%

If submitting a joint application, provide the aggregated values for the full plan area in this row.

If submitting a joint application, provide the individual values for the lead applicant and each joint applicant's individual portion of the plan area in the rows below.

If more than 4 joint applicants, attach a separate table with additional rows for each additional joint applicant

D: Vision Zero Draft Resolution

RESOLUTION 2023-09

RESOLUTION OF THE POLK TRANSPORTATION PLANNING ORGANIZATION (TPO) ADOPTING THE VISION ZERO CONDITIONS ASSESSMENT REPORT

WHEREAS, the Polk Transportation Planning Organization places a paramount importance on the safety and wellbeing of all individuals residing and travelling within Polk County, and recognize that no person should suffer death or serious injury while travelling on our roadways; and,

WHEREAS, Vision Zero is the concept that traffic deaths and serious injuries on our roadways are unacceptable; and,

WHEREAS, Vision Zero is a holistic strategy aimed at eliminating all traffic fatalities and severe injuries suffered by all road users while increasing safe, healthy, equitable mobility for all; and,

WHEREAS, streets and transportation systems have traditionally been designed primarily to move cars efficiently, and Vision Zero supports a paradigm shift by designing streets and transportation systems to move all people safely, including people of all ages and abilities, pedestrians, bicyclists, public transit users, scooter riders, and motorcyclists, as well as drivers and passengers of motor vehicles; and,

WHEREAS, Vision Zero approach acknowledges that human error is inevitable and, therefore, the road system and related policies should be designed to ensure that those inevitable mistakes do not result in severe injuries or fatalities by improving the roadway environment, implementing policies, and enhancing other relevant systems; and,

WHEREAS, Polk County is the fastest growing county in Florida, and fifth fastest growing county in the United States, and has an estimated total population of 787,404 in 2022, making it the 9th largest county in the State of Florida; and,

WHEREAS, according to Smart Growth of America's 2022 report, Dangerous by Design, the Lakeland-Winter Haven metro area is the 21st most dangerous metro area in the country to be a pedestrian, and for several consecutive years prior to the methodology change in 2022, it was listed among the top 10 most dangerous places in the nation to walk; and,

WHEREAS, Polk County's annual average roadway deaths increased by 7 percent during 2017-2021 over that of the 2016-2020; and,

WHEREAS, Polk County's annual average of roadway fatalities from 2017 to 2021 was 135, which ranked it 7th among counties in the state; and,

WHEREAS, Polk County's annual average of serious injuries from 2017 to 2021 was 457, which ranked it 14th among counties in the state; and,

WHEREAS, Polk County's annual average of bike and pedestrian fatalities and serious injuries from 2017 to 2021 was 83, which ranked it 13th among counties in the state; and,

WHEREAS, an analysis of data in Polk County spanning from 2017 to 2021 has revealed alarming trends in driving behavior, highlighting the significant role of drunk driving and lack of seatbelt usage as contributing factors to fatalities and loss of life; and,

WHEREAS, the same analysis has unveiled a concerning disparity, revealing that a significant majority, approximately 62%, of fatal and severe injuries occurred within transportation disadvantaged communities in Polk County; and,

WHEREAS, the Polk County Transportation Planning Organization (TPO) pursuant to TPO Resolution 2023-01, adopted the Florida Department of Transportation Safety Performance Target of zero (0) for number of fatalities, number of serious injuries, fatality rate per 100 million vehicle miles travelled (VMT), serious injury rate per 100 million vehicle miles travelled (VMT), and number of non-motorized fatalities and serious injuries on roads within Polk County for calendar year 2023; and,

WHEREAS, the Polk County Transportation Planning Organization (TPO) acknowledges that the current crash statistics within the county are unacceptable for the well-being and safety of our residents, commuters, and visitors; and,

WHEREAS, the TPO acknowledges that if the prevailing crash trends persist in the foreseeable future, they pose a significant risk to the continued growth of the resident population and employment opportunities; and,

WHEREAS, throughout the past decade, the TPO has undertaken numerous planning, outreach, education, and implementation initiatives aimed at enhancing safety on Polk County's roadways, demonstrating its commitment to prioritizing the well-being of all road users; and,

WHEREAS, we pledge to aggressively work together to eliminate deadly and life-altering injury crashes on our streets and in our communities by putting people first through a coordinated holistic approach; and,

WHEREAS, the Polk Transportation Planning Organization (TPO) and its member local governments have a shared vision of creating inclusive streets that prioritize the safety and accessibility of all individuals, regardless of their age and abilities; support all modes of transportation and travel choices; facilitate convenient access to community land uses; and foster a sense of place and livable communities through their transportation planning efforts; and,

WHEREAS, the Vision Zero Conditions Assessment Report aims to establish a comprehensive crash database, analyze significant county-wide conditions and trends, identify areas with high incidence of fatal and incapacitating injuries, and develop a preliminary framework of short-term and long-term goals with the overarching objective of eliminating traffic-related fatalities and severe injuries; and,

WHEREAS, the Vision Zero Conditions Assessment Report represents a significant step forward for the TPO in pursuing the ultimate objective of zero traffic fatalities and serios injuries, reinforcing the TPO's dedication to promoting safety measures; and,

WHEREAS, the Polk Transportation Planning Organization (TPO) will hereby commit to decreasing these crash statistics by endorsing Vision Zero, which is a safe systems approach and strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all;

NOW, THEREFORE, BE IT RESOLVED, by the Polk Transportation Planning Organization at its regular meeting convened on August 24, 2023:

1. That the Polk Transportation Planning Organization adopts the "Polk Transportation Planning Organization Vision Zero Conditions Assessment Report" as attached hereto.
2. The Polk Transportation Planning Organization encourages its member local governments to adopt the "Polk Transportation Planning Organization Vision Zero Conditions Assessment Report" as part of the cooperative effort to eliminating traffic deaths and serious injuries in Polk County.
3. That the Florida Department of Transportation and Local Governments are asked to prioritize funding investments on the High Injury Crash Network and budget the necessary funds to address safety needs on their roadways.

Signed:

Commissioner Jack Myers, Chairman
Polk Transportation Planning Organization (TPO)

August 24, 2023
Date

ATTEST:

Parag Agrawal, AICP, TPO Executive Director

Approved by the TPO Attorney as to form and legal sufficiency:

Elizabeth Voss, TPO Attorney
Randy Mink

E: Full Action Item List

Full Action Item List

Phase 1

Phase 1 of Polk County's Vision Zero initiative uses programs, policies, and projects—some of which have already been completed—to create new communication inroads between Polk TPO and Polk residents. Programs are organized efforts to achieve zero fatalities and establish a new standard of operation, while projects involve constructing and implementing tangible solutions. Vision Zero policies are the official rules guiding our actions and work, aiming to enhance transportation safety. Many of these measures promote messaging on how simple actions, like wearing a seatbelt, can play a big role in safety. These increased communications will serve a larger goal of familiarizing the TPO with the nature and location of ongoing community concerns, which will in turn expand our data collection and understanding of the scope of Polk County's transportation safety problem. See complete lists in Appendix E.

Phase 1 Program-Level Items

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Update design standards: introduce target speeds, context-based design, safety-positive designs for new development; update standards to ensure safest designs are present.	Safe Roads	To ensures all work moving forward is performed using the proactive, state-of-the-art designs; "future proof" the roadway	Programs	Project complete	Local jurisdictions, County
Develop and implement a toolbox of tactical/ temporary improvements and initiate a quick-build program to support rapid deployment.	Safe Roads	To allow and encourage cheaper and faster countermeasures that can start making a difference as soon as possible	Programs	Project complete	Local jurisdictions, County

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Develop a comprehensive strategy and toolbox in place for traffic safety and behavior marketing/ education	Safe People	To build around the DUI campaign framework and make future campaigns more efficient	Programs	Project complete	Law enforcement, Local jurisdictions, County
Train police officers in better data collection and appropriate language.	Safe Roads	To improve accuracy and usefulness of the data collected by law enforcement	Programs	Training developed, made mandatory and 100% coverage achieved	Law enforcement
Provide a Vision Zero portal for users in Polk County to share information/ ideas/support, track fatal crashes/ fatalities, and monitor Vision Zero progress and statistics/ reporting.	Safe Roads	To build a resident-based coalition for Vision Zero where users can be a part of the solution	Programs	Project complete	County
Develop mechanism to trigger "after" studies once projects are completed.	Safe Roads	To set the Vision Zero program up for success by developing a tracking mechanism to use in the future	Programs	Mechanism in place	Polk TPO

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Identify potential severe crash risk areas through a systemic approach based on crash history, roadway design, posted speeds, land-use context, and other common factors. Feed into model to identify corridors at risk for future severe crashes.	Safe Roads	To determines if treatments are effective and inform best practices	Programs	Systemic locations mapped	Local jurisdictions, County, FDOT
Review posted speeds and/or implement speed calming measures on critical corridors, including transition zones to rural towns and areas with new development.	Safe Speeds	To lower driving speeds in critical corridors	Programs	All HIN corridors are reviewed for appropriate speeds; and speeds addressed through either changes or speed-calming measures	Local jurisdictions, County, FDOT
Identify high-crash corridors to implement semiregular high-visibility enforcement.	Safe Speeds	To reduce speeds; speeds are currently higher than the human body can handle in crashes in critical corridors	Programs	High-visibility enforcement program initiated	Law enforcement, Local jurisdictions, County, FDOT

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Work with transportation-disadvantaged communities to implement safety measures that work with their community.	Safe Roads	To address the reality that 55.8% of fatal and severe injury crashes occur in TD areas, despite holding only 48.9% of the population	Programs	1-2 workshops held in every Polk City to interact with, and address, community safety needs	Local jurisdictions, County, local organizations
Initiate a rapid response multidisciplinary team to quickly respond to known crash locations and coordinate efforts amongst various departments and agencies. Hold monthly or bimonthly meetings with key staff, police and fire officers, plus other relevant staff or agencies to review recent fatal and severe injury crash reports collectively and identify if there are quick-turnaround treatments.	Safe Post-Crash Care	To initiate preventative measures immediately before another crash occurs	Programs	Project complete	Law enforcement, Local jurisdictions, County, FDOT
Track fatal crashes on Vision Zero website.	Safe System	To continue Vision Zero	Programs	Project complete	County

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Identify Vision Zero champions from disadvantaged communities and translate educational materials into the Spanish language.	Safe Users	To build champions internal to areas of concern to build support and to carry the message	Program	Every urban area in Polk has at least one champion	County, cities, TPO

Phase 1 Policy-Level Items

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Encourage local agencies and municipalities to adopt Vision Zero resolutions and/ or action plan. (Example in Appendix D)	Safe Roads	To align all government entities in the County with Vision Zero	Policies	Vision Zero adopted	County, cities
Require new schools to ensure pedestrian facilities are in place within the radius where busing is not provided.	Safe Roads	To provide a safe facility for vulnerable users when crossing the roadway	Policies	Policy in place	School district, County

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Update design standards to include requirements for lighting crosswalks.	Safe Roads	To address the reality that 22% of all fatal and severe injury crashes (and 39% of all pedestrian fatal and severe injury crashes) happened in dark, unlit conditions	Policies	Update complete	Local jurisdictions, County
Develop roundabout-first policy for dealing with requests for new traffic controls	Safe Roads	To develop effective countermeasures for intersection crashes	Policies	Policy in place	Local jurisdictions, County, FDOT
Incorporate safety improvements when roads are resurfaced.	Safe Roads	To implement best and proactive measures when the opportunity is present	Policies	Policy in place	Local jurisdictions, County, FDOT

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Make traffic signal operations changes to support City goals for safety, Complete Streets, and mobility, including but not limited to: retiming progression of traffic signals to support safe speeds and updated speed limits; restricting turn phases; improving pedestrian; and protecting turns during hours with highest crash rates. Consider new signal timings at signalized locations with high-severity rear-end crashes, especially if occurring in coordinated systems.	Safe Roads	To reduce angle and left-turn crashes, which account for 25.7% of fatal and severe injury crashes	Policies	Context- and Safe System-based timing guidelines developed and policy in place	Local jurisdictions, County, FDOT

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Add safety measures and goals to common policies to positively influence safety. For example, when timing signals, require reporting pedestrian delay or timing signals to corridor target speeds.	Safe Roads	To integrate safety measures across policies that impact the roadway at implementation	Policies	Policies reviewed and amended to support Vision Zero	Local jurisdictions, County
Set target speeds for arterials and collectors to speeds posted at survivable rates.	Safe Speeds	To reduce speeds, which are frequently higher than the human body can handle in crashes in critical corridors	Policies	Policy and standards in place	Local jurisdictions, County

Phase 1 Project-Level Action Items

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Use IIJA Grant Funds to implement a Vision Zero Plan for Polk County. Develop interim Vision Zero targets and milestones.	Safe Roads	To create a full Vision Zero Plan to direct funds and efforts	Projects	Vision Zero Plan created	TPO
Provide a Vision Zero portal for users in Polk County to share information/ ideas/support, track fatal crashes/ fatalities, and monitor Vision Zero progress and statistics/ reporting.	Safe Roads	To build a resident-based coalition for Vision Zero where users can be a part of the solution. A method of reporting and interaction with the public is critical to pursuing more Federal funding in Polk County for safety projects.	Projects	Project complete	County, TPO
Establish a slate of quick-build projects with target dates.	Safe Roads	To implement low-cost, high-yield treatments on roadways with the highest safety concern	Projects	List complete	Local jurisdictions, County
Establish a list of larger-scale projects with target dates.	Safe Roads	To implement high-cost, long-term treatments on roadways with the highest safety concern	Projects	List complete	Local jurisdictions, County

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Make systemic curve improvements.	Safe Roads	To address overall impact of roadway curvature on speed, grading, and sight distance	Projects	List developed and implementation method selected	Local jurisdictions, County
Prioritize safety projects on the HIN and as identified in the Vision Zero Plan, and coordinate with FDOT, the County, and local cities to implement safety improvements on corridors under their jurisdiction. Perform safety audits on these corridors.	Safe System	To develop and refine best practices	Projects	Percentage of projects complete and programmed within 5 years	Local jurisdictions, County
Focus on sidewalk gap projects and other low-cost safety solutions in C3C contexts.	Safe Roads	To address the reality that C3Cs have a significant proportion of pedestrian crashes (51% of fatal and severe injury crashes despite only 12% of lane miles)	Projects	% of sidewalk gaps are eliminated, # of low-cost projects complete	Local jurisdictions, County

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Lower speeds to safer levels in C3C contexts. Many problems identified in this area may be solved with lower speeds.	Safe Speeds	To address the reality that C3Cs have a significant proportion of pedestrian crashes (51% of fatal and severe injury crashes despite only 12% of lane miles)	Projects	Appropriate speed determined and implemented in all C3C corridors	Local jurisdictions, County
Ensure speeds are appropriate in C4 contexts.	Safe Speeds	To address the reality that C4s have a significant proportion of bicycle crashes (56% of fatal and severe injury crashes despite only 40% of lane miles)	Projects	Appropriate speed determined and implemented in all C3C corridors	Local jurisdictions, County
Determine what the contributing factors are in C3C areas and ensure design standards are appropriate.	Safe Roads	To address the fact that C3Cs have the largest proportion of all fatal and severe injury crashes (46% of fatal and severe injury crashes despite only 12% of lane miles)	Projects	Root cause analysis performed, contributing factors identified, and design standards updated to reflect findings	Local jurisdictions, County
Evaluate crash types specific to two-lane roadways and look for low-cost countermeasures to install.	Safe Roads	To address the reality that two-lane roads are overrepresented in fatal and severe injury crashes compared to VMT	Projects	Countermeasures identified and funded	Local jurisdictions, County

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Look at low-cost system countermeasures at high-crash intersections with signals.	Safe Roads	To address the fact that angle and left-turn crashes total 25.7% of fatal and severe injury crashes	Projects	Countermeasures identified and funded	Local jurisdictions, County
Utilize the HIN to prioritize lighting projects that will reduce crashes where dark/ unlit conditions are an observed crash factor; coordinate with power company.	Safe Roads	To address the fact that 22% of all fatal and severe injury crashes (and 39% of all pedestrian fatal and severe injury crashes) happened in dark, unlit conditions	Projects	% of HIN corridors with dark/ unlit crashes as a significant problem with lighting projects programmed.	Local jurisdictions, County
Ensure sidewalks and protected crossings exist on the way to schools and places of employment.	Safe Roads	To address the fact that early morning peak and afternoon are the times when most fatal crashes occur	Projects	Policy implemented for development review, % sidewalk gaps eliminated, policy implemented for new schools	Local jurisdictions, County

Phase 2

Phase 2 of Polk County's Vision Zero initiative complements near-term measures of Phase 1 by tackling the County's longer-term, more entrenched safety obstacles. While Phase 1 focuses on providing relief through quick-build implementations and on promoting tiny changes with big effects, the programs, policies, and projects of Phase 2 seek to revise longstanding traffic precedents that do not serve County safety.

Phase 2 Program-Level Items

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Conduct a campaign against DUIs in English and Spanish.	Safe People	To reduce drunk driving; alcohol was present in 40% of all fatal crashes	Programs	% of people reached, reduction of DUI crashes	Law enforcement
Implement campaign in Polk to influence higher usage of seatbelts.	Safe People	To increase seatbelt usage; seatbelts were not used in almost 40% of all fatal crashes	Programs	Project complete	County, law enforcement
Create bike/ped safety curriculum for schools - look at "Campaign in a Box."	Safe People	To develop and refine best practices	Programs	Project complete	Local jurisdictions, County
Present the TPO's Bicycle and Pedestrian Safety Education Program and Vision Zero Action Plan recommendations to the School Board, County and City Commissions, Polk Vision Governing Board, and at other community forums.	Safe People	To educate system owners to help facilitate and support their role in a Safe System	Programs	All explicitly named groups are presented to, 5 other presentations given.	TPO

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Collaborate with Polk Vision, Polk County Public Schools, FDOT, and other agencies to conduct Vision Zero workshops and educational programs for students and agency staff.	Safe Roads	To build knowledge of and consensus for Vision Zero in our communities.	Programs	Every elected official in Polk has attended a workshop; all government agency heads in Polk have attended a workshop	TPO, State, counties, cities
Improve transit on higher-speed corridors to encourage use of transit in place of (or to augment) walking/biking down higher-speed roads until appropriate physical accommodations can be built.	Safe People	To provide driving options to transportation-disadvantaged populations	Programs	Transit service evaluated on HIN corridors with speeds over survivable speed	Transit authority
Pilot project for safe vehicle technologies in fleet vehicles (driver assistance features, georeferenced speed limiting).	Safe Vehicles	To evaulate technological solutions to human problems	Programs	2 pilot projects complete	Local jurisdictions, County
Review driver education materials and suggest updates.	Safe People	To improve user behavior through education in formative years of driving	Programs	Review completed and recommendations made	Law enforcement, State authorities

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Develop and implement a toolbox of tactical/ temporary improvements and initiate a quick-build program to support rapid deployment. Allow smaller cities and towns in Polk to use contracts.	Safe Roads	To address the finding that C2Ts (rural towns) have higher representation of fatal and severe injury crashes; to allow and encourage cheaper and faster countermeasures that can start making a difference as soon as possible	Programs	Evaluate possible options of implementation; at least one new method developed.	Local jurisdictions, County, FDOT
Look at opportunities to increase network connectivity instead of widening to accommodate travel modes.	Safe Roads	To address the finding that larger roadway types have the most fatal and severe injury crashes, with principal arterials overrepresenting by centerline miles (45% of fatal and severe injury crashes despite only 25% of lane miles)	Programs	Network analysis performed	Local jurisdictions, County, FDOT
Offer to partner with the State using County contracting methods to address certain safety problems more quickly on State and U.S. Roadways.	Safe Roads	To address the finding that 64% of all fatal and severe injury crashes happen on State- and U.S.-owned roads.	Programs	At least one project performed	County, FDOT

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Proactively communicate speed limit changes as well as the connection between speed and safety outcomes to the community.	Safe Speeds	To address the finding that larger roadway types have the most fatal and severe injury crashes, with principal arterials overrepresenting by centerline miles (45% of fatal and severe injury crashes despite only 25% of lane miles)	Programs	Notification process in place, educational campaign ran and reached 85% of Polk residents	Local jurisdictions, County
Collaborate with emergency responders to ensure balance of quick response times and traffic-calming treatments. Identify priority emergency response routes in collaboration with Polk County Fire Rescue and local hospitals.	Safe Post-Crash Care	To develop and refine best practice; to incorporate post-crash technician input	Programs	Routes Identified, EMS reviews speed-calming sections of design standards.	County, fire rescue
Hold focus groups with hospitals and trauma centers to identify ways to incorporate their data on severe injuries and fatalities related to traffic crashes while maintaining patient confidentiality.	Safe Post-Crash Care	To continue Vision Zero	Programs	Data available is identified, Data incorporated with Vision Zero analysis	County, hospital officials

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Convene the Vision Zero Leadership Team semiannually to report on progress and provide relevant updates.	Safe System	To continue Vision Zero	Programs	Two meetings held annually, report completed	County
Form and convene a Vision Zero Task Force focused on implementing the Vision Zero Action Plan that meets monthly to share updates, plan projects, and track progress.	Safe System	To continue Vision Zero	Programs	Task force identified	County

Phase 2 Policy-Level Items

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Strengthen development review standards/ traffic study guidelines at the local level to incentivize more multimodal infrastructure (e.g. transit, crosswalks) or safety enhancements. Developers should participate in preventing safety issues. Encourage mixed-use development to reduce the length of trips, particularly by foot/bicycle.	Safe Roads	To address the finding that C3Cs have a significant proportion of pedestrian crashes (51% of fatal and severe injury despite only 12% of lane miles)	Policies	Policy(s) in place	Local jurisdictions
Provide separated bike/golf cart paths to/from entertainment areas/bars/ package stores to encourage use of slower/ lower mass vehicles.	Safe Vehicles	To accommodate new forms of transportation in the appropriate context	Policies	Policy(s) in place to encourage and provide for cart paths	Local jurisdictions, County, FDOT

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Require inspectors for work zones to ensure proper MOT is put in place and maintained, including a safe pedestrian route.	Safe Roads	To develop and refine best practices	Policies	Inspector Checklists developed and part of construction documentation	Local jurisdictions, County, FDOT
Add traffic-calming and multimodal-friendly requirements to land-use code.	Safe System	To develop and refine best practices; to incorporate appropriate land uses that support safe travel	Policies	Policy in place	Local jurisdictions, County
Establish a schedule for reviewing progress and updating objectives/ strategies.	Safe System	To continue Vision Zero	Policies	Schedule established	County
Focus on enforcing laws against risky driving behaviors.	Safe People	To address the findings that alcohol was present in 40% of all fatal crashes and that seatbelts were not used in almost 40% of all fatal crashes	Policies	Focus placed on DUI and seatbelt laws	Law enforcement

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Ensure all clear zone requirements are context and speed appropriate, and that roadways are assessed using these requirements. Ensure that obstructions are either cleared, frangible, or that protection has been installed for drivers.	Safe Roads	To address the finding that larger roadway types have the most fatal and severe injury crashes, with principal arterials overrepresenting by centerline miles (45% of fatal and severe injury crashes despite only 25% of lane miles)	Policies	Design standards accommodate these requirements and are updated as necessary	Local jurisdictions, County, FDOT
Monitor and track legislation that impacts the County's Vision Zero efforts.	Safe System	To continue Vision Zero	Policies	Report produced every legislative cycle	County
Secure a funding source or dedicated % of money for Vision Zero projects. Advocate for Vision Zero earmarks during annual appropriations.	Safe System	To continue Vision Zero	Policies	Recurring budget allocated to Vision Zero	Local jurisdictions, County

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Utilize a score-based system, similar to this matrix, to rank projects.	Safe System	To ensure that project selection is performed using a data-driven method in which the most effective projects are performed first	Policies	Project prioritization process in place	Local jurisdictions, County
Work with cities to identify a Low-Stress Network; lower posted speeds to 20 mph on streets that overlap with the Low Stress Network. (#20isplenty)	Safe Speeds	To set driver expectations on all minor roadways; to keep speeds low enough that drivers have good awareness, good reaction time in an emergency situation; to reduce lethality of most crashes	Policies	Network identified, speeds lowered	Local jurisdictions, County

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Collaborate with various agencies and municipalities to prioritize Vision Zero infrastructure investments on HIN corridors and intersections as identified in the Vision Zero Action Plan. The plan recommends Vision Zero projects on HIN should be prioritized in the TPO's Annual List of Priority Transportation Projects, Long Range Transportation Plan, CIPs, and other planning documents.	Safe Roads	To implement high-cost, long-term treatments on roadways with the highest safety concern; the locations on Polk's HIN and HII lists should be closely evaluated and projects developed to address crash issues	Policies	List complete	Local jurisdictions, County

Phase 2 Project-Level Items

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Construct separated bicycle facilities on HIN roadways.	Safe Roads	To provide a safe facility for vulnerable users when crossing the roadway	Projects	% of HIN facilities with separated bicycle lanes	Local jurisdictions, County
Examine existing crosswalks for adequate lighting.	Safe Roads	To address the finding that 22% of all fatal and severe injury crashes (and 39% of all pedestrian fatal and severe injury crashes) happened in dark, unlit conditions	Projects	Lighting audit performed	Local jurisdictions, County
Evaluate all streets on the HIN over 30 mph to determine appropriate speed limits and make necessary improvements to the roads to make them self-enforcing.	Safe Speeds	To increase crash safety; speeds are higher than the human body can handle in crashes in critical corridors.	Projects	Evaluation performed and results reported on all HIN corridors over 30mph	Local jurisdictions, County
Implement red light running safety cameras at two HIIs. Expand program to additional HIN following the pilot study.	Safe Roads	To address the finding that angle and left-turn crashes total 25.7% of fatal and severe injury crashes	Projects	Pilot study complete	Local jurisdictions, County

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Develop model codes for cities to draw from to support Vision Zero.	Safe Roads	To continue Vision Zero	Projects	Model code language supporting Vision Zero developed	County
Evaluate severe rear-end locations and look for systemic low-cost countermeasures, such as dilemma zone detection or turn lanes.	Safe Roads	To address the finding that rear-end fatal and severe injury crashes are particularly high, at 16.9% of all KSI	Projects	Evaluation complete, projects identified	Local jurisdictions, County
Develop implementation plan for corridors that require lower posted speeds to match context.	Safe Speeds	To develop and refine best practices	Projects	Implementation plans in place	Local jurisdictions, County

Phase 3

Phase 3 of Polk County's Vision Zero initiative will implement programs, policies, and projects that add longevity and sustainability to safe transportation measures in the County. Chief among these strategies are the Vision Zero best practices regarding speed and roadway design. These principles will increasingly be folded into the County transportation network to bring about lasting, meaningful improvement across Polk roadways.

Phase 3 Program-Level Items

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Partner with Uber, Lyft, local breweries, bars, businesses, etc. to provide free rides home or vouchers/ certificates/ coupons for designated drivers.	Safe People	To address the finding that alcohol was present in 40% of all fatal crashes	Programs	Program in place	Local jurisdictions, County
Offer education/ training for municipal fleet drivers.	Safe People	To develop and refine best practices	Programs	Training developed or identified and released; mandatory training policies in place	Local jurisdictions, County, fleet companies

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Streamline safety concern submissions through an equitable process to center high-priority issues. Update procedures for responding to community traffic safety requests to make responses more transparent, consistent, and equitable and to maximize safety improvements.	Safe Roads	To develop and refine best practices	Programs	Merge the Vision Zero customer database with the prioritization process	Local jurisdictions, County
Explore innovative funding strategies to direct existing and additional funds to multimodal and safety projects. Consider reallocating existing funds towards quick implementation, multimodal infrastructure, and safety improvements.	Safe Roads	To develop and refine best practices	Programs	White paper created outlining strategies	Local jurisdictions, County, FDOT

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Perform visioning efforts in each city to ensure the context of the communities and the roadways match up as projects move forward in the future.	Safe Roads	To address the finding that C2Ts (rural towns) have higher representation of fatal and severe injury crashes.	Programs	% of rural towns with Vision Zero Plans	Local jurisdictions, County
Explore use of speed feedback signs to collect speed data; coordinate implementation of these data loggers and speed feedback signs.	Safe Speeds	To decrease speeds; speeds are higher than the human body can handle in crashes in critical corridors	Programs	Speed feedback sign network deployed, data collected and analyzed	Local jurisdictions, County, FDOT
Launch a Vision Zero campaign.	Safe People	To continue Vision Zero	Programs	Campaign launched with 85% of population engaged	County
Establish and train Speakers Bureau to present to community groups on Vision Zero.	Safe People	To continue Vision Zero	Programs	Complete	County

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Provide training and education outreach to users and staff when introducing new pedestrian or bicycle safety infrastructure; teach all users how to navigate the network.	Safe People	To develop and refine best practices; to ensure safe users on the roadway	Programs	Campaign completed for each new effort	Law enforcement, local jurisdictions, County, FDOT
Give reports to elected officials on why are crashes are happening and what their recommended fixes could be.	Safe System	To continue Vision Zero	Programs	Reporting policy in place	County
Identify or create a position that holds responsibility for being a Vision Zero champion and for coordinating Vision Zero efforts.	Safe System	To continue Vision Zero	Programs	Position created or identified	County
Explore corridors where a speed-management pilot would be applicable and could be deployed.	Safe Speeds	To reduce speeds; speeds are higher than the human body can handle in crashes in critical corridors	Programs	Identify 2 corridors for pilot projects	Law enforcement, local jurisdictions, County, FDOT

Phase 3 Policy-Level Items

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Use USLimits2 or other appropriate method for setting reasonable speed limits based on road context.	Safe Speeds	To develop and refine best practices	Policies	Implement policy	Local jurisdictions, County, FDOT
Lower statutory speed limits in CBD areas and on residential local roads.	Safe Speeds	To reduce speeds; speeds are higher than the human body can handle in crashes in critical corridors	Policies	Implement policy	Local jurisdictions, County, FDOT
Consider crossing distances for pedestrians and increase midblock crossings to provide appropriate density of protected crossings.	Safe Roads	To limit exposure for vulnerable users	Policies	Implement maximum crossing distance policy for new projects	Local jurisdictions, County, FDOT

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Design suburban commercial centers to accommodate pedestrians and bicyclists.	Safe Roads	To address the finding that C3Cs (where these centers likely exist) have the largest proportion of all fatal and severe injury crashes (46% of fatal and severe injury crashes despite only 12% of lane miles)	Policies	Implement policies for development	Local jurisdictions, County, FDOT
Encourage municipalities to adopt Vision Zero policies.	Safe System	To continue Vision Zero	Policies	% of cities adopt Vision Zero	Local jurisdictions, County
Review and work on any needed changes of State and local pedestrian and bicycle laws.	Safe Roads	To develop and refine best practices; to sunset outdated policies and enact updated regulations	Policies	Review performed on State law, white paper of recommended changes produced	Local jurisdictions, County
Allow on-street golf cart use in designated areas (low-speed residential streets) to encourage use of lower-weight, lower-speed vehicles for shorter trips.	Safe Vehicles	To accommodate new forms of transportation in the appropriate context	Policies	Policy in place	Law enforcement, local jurisdictions, County

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Ensure ROW is available to bicyclists to use, especially in C4 contexts. Consider lane diets for cycle tracks if needed, or multiuse paths.	Safe Roads	To address the finding that C4s have a significant proportion of bicycle crashes (56% of fatal and severe injury crashes despite only 40% of lane miles)	Policies	% C4 context roadways are evaluated, policy in place for ROW	Local jurisdictions, County, FDOT

Phase 3 Project-Level Items

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Investigate whether GPS preemption systems would improve response times.	Safe Post-Crash Care	To integrate technology to assist with post-crash care	Projects	Pilot performed	Local jurisdictions, County, FODOT
Implement new systemic countermeasures (rumble strips, chevrons, etc.).	Safe Roads	To address the finding that fixed-object/ run-off-road is the highest crash type, at 17.9%	Projects	% of Identified systemic countermeasures implemented	Local jurisdictions, County, FDOT
Create Polk Web Book of Safety and Speed Calming Resources that provides guidance and organizes recommendations based on functional classification and street typology.	Safe System	To continue Vision Zero	Projects	Resource created	Polk TPO
Hold one demonstration project in a city (ex. City of Lakeland, on first Friday) that coincides with another event.	Safe System	To develop and refine best practices	Projects	% of cities with demonstration	Local jurisdiction, Polk TPO

Action	Emphasis	Purpose	Implementation Type	Performance Metrics	Implementation Partners
Work with local electric companies to facilitate simpler and cheaper lighting projects.	Safe Roads	To address the finding that 22% of all fatal and severe injury crashes (and 39% of all pedestrian fatal and severe injury crashes) happened in dark, unlit conditions	Projects	Partnership with expectations in place for future projects	Local jurisdictions, County
Evaluate corridors for LED retrofits if needed.	Safe Roads	To address the finding that 22% of all fatal and severe injury crashes (and 39% of all pedestrian fatal and severe injury crashes happened in dark, unlight conditions	Projects	Evaluation complete, % of lane miles retrofit	Local jurisdictions, County, FDOT

F: Previous Safety Efforts by the Polk Transportation Planning Organization

List of Previous Safety Efforts

ROADWAY SAFETY AUDITS

- Roadway Safety Audits [8-10 RSAs]

COMPLETE STREET ACTION PLAN

- Complete Streets 2012
- Complete Street_BicyclePed Studies

SCHOOL SIDEWALK GAP STUDY [SIDEWALK AND LIGHTING COVERAGE]

- Sidewalk and Lighting Coverage [three phases, 140 schools, groups of 10-20 schools]

PARKS SIDEWALK GAP

- Park Access Sidewalks 2017

NEIGHBORHOOD MOBILITY AUDITS

- Neighborhood Mobility Audits [two studies. First one had 15 neighborhoods]

BIKE/PED ACTION PLAN STUDIES:

- Bike Safety Action Plan Data Update [April 2020]
- Pedestrian Safety Action Plan Data Update [April 2020]
- Bicycle Safety Action Plan [June 2016]
- Pedestrian Safety Action Plan [June 2016]

VISION ZERO POLK