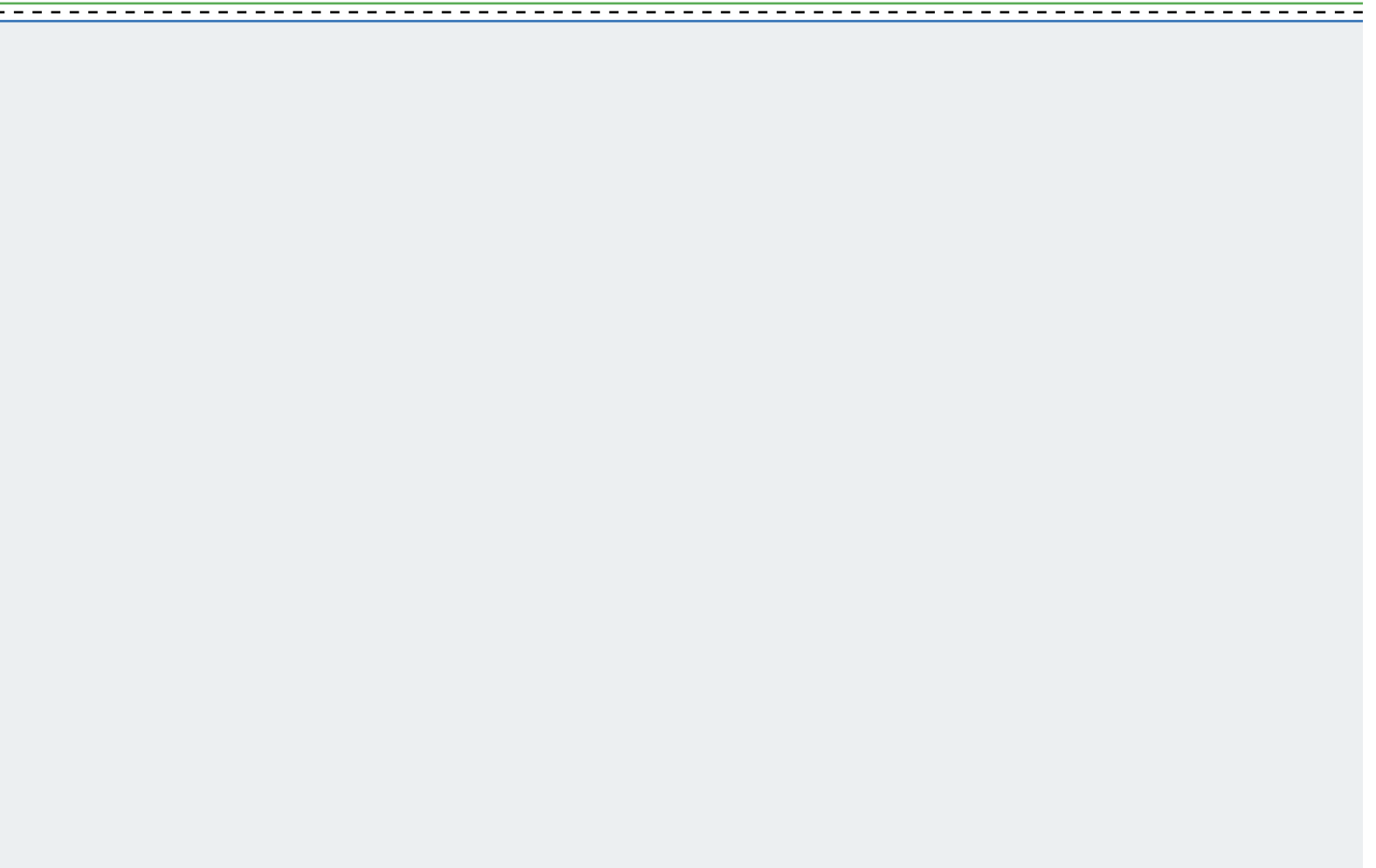




# SAFETY ACTION PLAN

# APPENDIX C

## COUNTERMEASURE AND POLICY RECOMMENDATIONS MEMORANDUM





## **Collier County Safe Streets and Roads for All (SS4A) Comprehensive Safety Action Plan (SAP)**

# Countermeasure and Policy Recommendations Memorandum (CPM)

July 7, 2025 — Contract # 18-7432 MP  
Collier Metropolitan Planning Organization (MPO)



**TYLin**

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## INTRODUCTION

Policy and process change constitute one of eight action plan components required by the U.S. Department of Transportation's (USDOT) Safe Streets and Roads for All (SS4A) program. Aligning policies and processes with the Safe System approach and operationalizing the Safe System principles within standards, guidance, and plans are critical steps that agencies can take to eliminate severe crashes. By taking these steps, the Collier Metropolitan Planning Organization (the MPO) can grow the culture of traffic safety and build capacity to address the root causes of crashes within Collier County through ongoing programs and investments. While some policies and processes might be outside of the MPO's direct control, officials can advocate for the adoption of goals, strategies, and actions to create safer streets for all. This memorandum serves to document existing safety policies and processes within Collier County and make recommendations to be implemented through the Collier County Safe Streets and Roads for All (SS4A) Comprehensive Safety Action Plan.

### The Safe Systems Approach

The Safe Systems approach acknowledges that any death on the transportation system is unacceptable. The approach is based on the understanding that humans make mistakes, and that these mistakes can be anticipated. Through design and management, we can encourage safer speeds and systems so that these inevitable mistakes do not result in fatalities. The Safe Systems approach relies on redundancy in systems, so that when a human makes an inevitable mistake, that mistake does not result in a fatality. The Safe Systems approach is defined by six principles:

1. Death & serious injuries are unacceptable
2. Humans make mistakes
3. Humans are vulnerable
4. Responsibility is shared
5. Safety is proactive
6. Redundancy is crucial

The Safe Systems approach is further organized around five complementary objectives:

- **Safer People**, which encourages safe and responsible driving and behavior;
- **Safer Roads**, which focuses on designing roadways to minimize the consequences of human mistakes, encourage safe roadway behaviors, and accommodate travel by vulnerable roadway users;
- **Safer Vehicles**, which notes the role of vehicles and vehicle systems in preventing crashes and minimizing their impact;
- **Safer Speeds**, which promotes thoughtful, context-appropriate roadway design and speed limits, supported by targeted outreach, education, and enforcement; and
- **Post-Crash Care**, which targets improving the likelihood of surviving a serious crash through access to emergency medical care and creating a safe environment for first responders and traffic incident management practices.

## ASSESSMENT OF CURRENT POLICIES AND PRACTICES IN FLORIDA

### Peer Scan

The project team reviewed relevant Vision Zero and SS4A Safety Action Plans from comparable Florida jurisdictions, including other Metropolitan Planning Organizations (MPOs), cities, and counties. The team reviewed the following jurisdiction safety action plans: City of Gainesville; MetroPlan Orlando; Forward Pinellas; Sarasota County; City of Tampa; City of Orlando; City of Deerfield. This section includes a high-level

summary and key takeaways from these plans as a benchmark for the MPO. See Error! Reference source not found. for the reviewed plans' adoption year and link to the plan document.

Table 1: Safety Action Plans Reviewed

Peer Jurisdiction	Type of Agency	Year of Adoption
<i>City of Gainesville – <a href="#">Vision Zero Action Plan</a></i>	City Government	2024
<i>MetroPlan Orlando – <a href="#">Safety Action Plan</a></i>	MPO	2024
<i>Forward Pinellas – <a href="#">Safe Streets Pinellas Action Plan</a></i>	MPO	2021 – updated in 2023
<i>Sarasota County – <a href="#">Destination Zero Action Plan</a></i>	County Government	2022
<i>City of Tampa – <a href="#">Vision Zero Action Plan</a></i>	City Government	2023
<i>City of Orlando – <a href="#">Vision Zero Orlando</a></i>	City Government	2023
<i>City of Deerfield Beach – <a href="#">Vision Zero Master Plan</a></i>	City Government	2024

## Policy Categories

Many of the reviewed Safety Action Plans were organized around similar policy categories, including: Education and Culture; Design and Engineering; Data Management; Engagement and Public Outreach; Funding; and Equity and Inclusion. See Error! Reference source not found. for a breakdown of policy categories by Safety Action Plan.

Table 2: Peer Safety Action Plan Policy Categories

Jurisdiction	Policy Categories					
	Education & Culture	Design & Engineering	Data Collection & Management	Engagement & Public Outreach	Funding	Equity & Inclusion
<i>City of Gainesville</i>			✓	✓	✓	
<i>MetroPlan Orlando</i>		✓		✓	✓	✓
<i>Forward Pinellas</i>	✓	✓	✓	✓	✓	
<i>Sarasota County</i>	✓	✓		✓		✓
<i>City of Tampa</i>	✓	✓	✓			
<i>City of Orlando</i>	✓	✓	✓			✓
<i>City of Deerfield Beach</i>			✓	✓		

Within each policy category, the Safety Action Plans proposed a variety of actions, as summarized below.

**Education and Culture:** Many jurisdictions focus on bringing awareness to road safety issues and Vision Zero priorities through the preparation and dissemination of information and resources while also offering educational opportunities to media outlets and member governments. Notable strategies in this area include:

- Increasing public awareness of traffic safety by highlighting how specific implementation actions—

such as speed management—directly contribute to the goal of eliminating traffic-related deaths and serious injuries (Sarasota County).

- Working with the Florida Department of Transportation and other local agencies to share and promote training programs aimed at fleet drivers such as bus drivers, truck drivers, and taxi drivers, as well as collaborating with public schools to provide safety resources for middle and high school students (Forward Pinellas).
- Creating partnerships with allied agencies such as public schools, the Department of Motor Vehicles, advocacy groups, universities, health departments and FDOT to distribute educational campaign materials (City of Orlando).
- Encouraging municipal staff to lead by example and promote a culture of safety (City of Orlando).

**Design and Engineering:** Many of the jurisdictions included strategies and actions promoting a safe systems approach to roadway design, operations, and maintenance. These strategies took a broad approach, including infrastructure safety countermeasures and reducing speeds as well as policy changes to project prioritization and land-use.

- Identifying and implementing proven countermeasures to address crash types that most often lead to fatalities and serious injuries (City of Orlando).
- Prioritizing sites where systemic safety treatments should be implemented (City of Orlando)
- Modifying the land development code and/or policies to include safe multimodal accommodations (City of Orlando).
- Updating codes, manuals, and guidance to support speed reductions (City of Tampa).
- Lowering posted speeds and implementing road designs to achieve target speeds (City of Tampa).
- Expanding the active transportation network and prioritizing vulnerable road users (City of Tampa).
- Using context-appropriate speeds by formalizing target speed setting, advancing a regional 20 mile per hour residential speed limit, and piloting the usage of signal timing to reduce speeds (MetroPlan Orlando).

**Data Collection and Management:** Across the five organizations that elected to focus on Data Collection and Management, they identified the following strategies:

- Improving crash geolocation accuracy (City of Gainesville).
- Enhancing communication sharing and data analysis protocols (City of Gainesville).
- Improving GIS data reliability (City of Gainesville).
- Conducting and preparing an annual crash analysis (Forward Pinellas).
- Partnering with local law enforcement agencies and healthcare providers to provide collision reporting and crash related injury coding best practices to improve the value of data analysis (Forward Pinellas).
- Leveraging technology to better understand core collision factors, including collecting automated speed data, and conducting near-miss analysis at hot spots on the high injury network (Forward Pinellas).
- Working with Public Health Departments to determine how hospital data can be obtained (Forward Pinellas).

**Engagement and Public Outreach:** The peer organizations' Safety Action Plans focused on spreading awareness about the Vision Zero approach and goals to better involve the community and key stakeholders in the process of improving road safety. Notable engagement and public outreach strategies include:

- Establishing a Safe Streets Working Group to share updates on crash data, resources, current

activities, policy evolution, and other pertinent information (Forward Pinellas).

- Establishing an ongoing Vision Zero Task Force comprised of local jurisdictions, the Florida Department of Transportation (FDOT), community organizations, the Department of Public Health, and the Police Department to ensure targeted outreach (MetroPlan Orlando).
- Maintaining a Vision Zero website and social media presence (MetroPlan Orlando).
- Exploring opportunities to provide Vision Zero and Safe System training to first responders, and conducting interviews with city field personnel, including police officers and maintenance/operational staff to provide feedback and suggestions to improve safety. (MetroPlan Orlando).

**Funding:** Strategies and actions related to funding focused on identifying overlooked grant opportunities to ensure project delivery of key safety improvements, and on changing the way projects are selected to prioritize safety focused projects in areas of highest need. Notable strategies and actions include:

- Modifying funding prioritization criteria to prioritize safety projects in the High Injury Network (HIN) that address key crash types, hot spots, or otherwise reduce fatal and serious injury (KSI) crashes, and evaluate the effectiveness of current funding criteria (Forward Pinellas).
- Providing grant writing support to member governments for safety-related funding, such as the Highway Safety Improvement Program (HSIP) (Forward Pinellas).
- Supporting legislation to increase the funding available for safety projects and establishing a reliable, dedicated funding stream that allows funds to be directly received by local governments (Forward Pinellas).
- Setting aside funds for pilot programs and rapid deployment of safety interventions (City of Gainesville)
- Evaluate the possibility of a roadway impact fee to forward Vision Zero initiatives (City of Deerfield Beach).

**Equity and Inclusion:** Strategies and actions related to equity and inclusion focused on ensuring that safety benefits reached vulnerable populations and areas of highest need. Notable strategies and actions include:

- Studying the involvement of unhoused people in crashes (MetroPlan Orlando).
- Identifying locations with underreported crashes (MetroPlan Orlando).
- Prioritizing underserved and vulnerable populations (Sarasota County).
- Modifying funding criteria to prioritize safety projects within communities of concern (Forward Pinellas).
- Conducting outreach campaigns in communities of concern (City of Orlando).

## Key Takeaways

Many MPOs and counties within Florida have adopted Safety Action Plans that incorporate the Safe Systems approach. These agencies have developed a broad array of policies and processes to reduce fatal and severe crashes, generally focused on items that can be grouped across six focus areas: education and culture, design and engineering, data collection and management, engagement and public outreach, funding, and equity and inclusion. Within education and culture, jurisdictions are raising awareness, training fleet drivers, collaborating with schools and public agencies, and promoting a culture of safety among municipal staff. Design and engineering strategies emphasize safe systems design, speed management, and expanding multimodal networks. In data collection and management, agencies are improving crash data accuracy and analysis by partnering with law enforcement and health departments and using technology to better understand crash factors. Engagement and public outreach efforts involve working groups, task forces, and



interactive platforms to inform and involve the public. Funding strategies focus on aligning resources with safety goals by reprioritizing investments, supporting grant applications, and exploring new revenue streams. Equity and inclusion are being addressed through efforts to prioritize underserved communities, study crash impacts on vulnerable groups, and ensure safety improvements are equitably distributed.

Within these overall goals, all of the plans included a strategy on design and engineering changes that targeted high-crash locations and vulnerable roadway users and educational campaigns that seek to raise awareness of roadway safety across all user groups.

## ASSESSMENT OF CURRENT POLICIES IN COLLIER

The project team reviewed existing plans, conducted interviews with key staff at the MPO and the MPO's member entities, and conducted a survey of Safety Action Plan Steering Committee members to assess the state of current policies and practices that advance roadway safety. The interview and survey questions sought further information regarding existing policies within the MPO area and suggested areas of improvement from the informed perspective of staff and key stakeholders. The intention of this review was to fully understand current policies and roadway safety practices within the MPO.

### Existing Plan Review

A comprehensive review of existing plans was developed in the Existing Conditions & Safety Analysis Memorandum. The existing plans reviewed included the Local Roads Safety Plan (LRSP), 2045 Long Range Transportation Plan (LRTP), the Transportation Improvement Plan (TIP), the FY22-24 Unified Planning Work Program (UPWP), Congestion Management Process (CMP), and the 2020 Bicycle and Pedestrian Master Plan (BPMP). Common safety themes in these plans were:

- Increased safety of the transportation system for motorized and non-motorized users.
- Safe, connected, efficient, and convenient mobility options including transit.
- Accessibility for people walking and biking through investments in the built environment.
- Equitable community input and inclusive transportation network outcomes.

### Ongoing Plan Review

The 2025 Collier MPO Bicycle-Pedestrian Master Plan builds upon a longstanding commitment to improving active transportation within Collier County and updates the 2020 plan. The overall goal of the plan is to promote active transportation options, reduce reliance on single-occupancy vehicles, and foster healthier, more sustainable communities. The plan includes six thematic goals: safety; connectivity; economy; equity; environment; health; and includes an interactive map.

Safety and equity are the relevant goals for the purposes of the MPO's Safety Action Plan. Below are the objectives and strategies stated under these two goals:

**Safety:** Promoting policies and infrastructure improvements that enhance safety for cyclists, pedestrians, and micromobility users.

- Objectives: Reduce the number of bicycle, pedestrian, and micromobility-related KSI crashes in high-risk areas.
- Strategies:
  - Prioritize shared-use paths and separated bike lanes where feasible and continue improving lower-tier bike-ped facilities through roadway improvements projects.
  - Increase lighting and visibility at intersections and crossings.
  - Conduct safety education campaigns targeting drivers, cyclists, and pedestrians.

**Equity:** Ensure that all neighborhoods, particularly underserved communities, have access to safe and high-quality bicycle and pedestrian facilities.

- Objectives: Ensure equitable access to safe and high-quality facilities in all neighborhoods.
- Strategies:
  - Focus investments on infrastructure improvements within underserved communities.
  - Engage diverse stakeholders to incorporate community-specific needs into the plan.
  - Offer incentives or programs that make micromobility options affordable for all residents.

## Vision Zero Policies within the Collier MPO

The Collier MPO has adopted FDOT's Vision Zero Safety Performance Target and made a commitment to eliminate traffic fatalities with Collier County. Safety criteria is the first element of the MPO's [Performance Based Planning](#) process, and safety is embedded in the selection process for the Transportation Improvement Program. While safety is a criterion in the TIP formulation process, current practices allocate the majority of funding to maintenance and expansion of the transportation system.

The MPO follows design guidance set by FDOT, and MPO member entities have adopted further detailed guidance for local roads based on National Association of City Transportation Officials (NACTO) guidance for lower volume roadways. The MPO also supports FDOT's Statewide Complete Streets Policy.

Resolution 2010-05 gives walking and bicycling the same priority as is given to other modes of transportation and ensuring that there are transportation choices for people of all ages and abilities.

## Stakeholder Interviews

The project team conducted a series of stakeholder interviews to gather on-the-ground insights into existing safety conditions, as well as challenges and priorities for the future. See Error! Reference source not found. for interview details.

*Table 3: Stakeholder Interview Details*

Interviewee	Jurisdiction	Position	Interview Date
David Ennis	City of Marco Island	Police Captain	02/10/2025
Alison Bickett	City of Naples	Civil Engineer	02/13/2025
Justin Martin	City of Marco Island	Public Works Director	02/13/2025
Anthony Khawaja	Collier County Government	Chief Traffic Operation Engineer	02/14/2025

The following section summarizes the key findings from these interviews, focusing on identified barriers, opportunities, and gaps.

### **Barriers:**

#### *Funding Constraints:*

- Budget constraints limit the ability of municipalities to upgrade infrastructure and technology, particularly in smaller and/or seasonal communities like Marco Island.

#### *Staffing Limitations:*

- Lack of dedicated traffic safety staff and competing priorities makes it difficult to conduct public education efforts, perform data analysis, and enforce traffic laws at desired levels.
- Emergency response and traffic units are sometimes stretched thin or get absorbed into general patrol duties.

#### *Issues with E-Bike Usage:*

- Local stakeholders raised concerns about conflicting state and local laws for e-bikes, citing a major growth in this mode of transportation. Uncertainty around enforcement, speed limits, and where e-bikes are permitted, particularly on sidewalks and shared-use paths, was widely cited as a key safety issue.

#### **Opportunities:**

##### *Education and Outreach:*

- There is a strong interest in increasing public education for pedestrians, bicyclists, and drivers in traffic laws and e-bike usage.
- Existing initiatives, such as partnerships with schools, the Police Department, and local businesses (i.e. helmet giveaways, ice cream incentives for safe behavior for children) have shown promise in changing behaviors and should be scaled up.
- Online and social media outreach by the County and Police Department has been used and should continue.

##### *Data-Driven Safety Improvements:*

- Stakeholders are actively using crash data and want to expand into near-miss tracking. Stakeholders also mentioned the importance of prioritizing high-crash intersections and corridors to increase impact on safety.

##### *Technology and Infrastructure Projects:*

- Countermeasures such as Rectangular Rapid Flashing Beacons (RRFBs) and pedestrian warning signage are already being used in the County, particularly in Marco Island. Interviewees found them to have had a positive impact and were interested in implementing this type of countermeasure at more locations.
- Stakeholders were also interested in traffic design interventions such as relocating stop bars to improve sightlines and reducing right-turn-on-red conflicts between vehicles and pedestrians as proactive design interventions.
- Stakeholders expressed interest in exploring additional technological countermeasures, such as signal synchronization, near-miss detection, smart vehicles, and intelligent transportation systems (ITS) to enhance overall safety.

#### **Gaps:**

##### *Education for Adults and Vulnerable Populations:*

- While school outreach is happening, adult riders and older residents are underserved in safety education efforts.

##### *Data Collection and Equity:*

- Near-miss data and detailed crash factors and causation are largely lacking.
- Stakeholders note the need for better incident documentation and real-time data sharing among local agencies.

##### *Policy and Regulation for E-bikes:*

- Stakeholders are waiting for clearer state guidance or lack local ordinances to regulate new modes

such as e-bikes and scooters.

- Some stakeholders raised the issue of outdated speed setting policies (i.e. reliance on the 85th percentile rule).

*Emergency Response Coordination:*

- Post-crash care coordination could be improved to minimize disruption while ensuring safety. This includes reducing the amount of lane closures and increasing local ambulance services, especially on Marco Island which lacks a trauma center.

## Survey Results

In addition to conducting interviews, a survey was distributed to the Steering Committee, which includes representatives from local government agencies, tribal organizations, advocacy groups, and FDOT. See **Table 4** for a full list of Steering Committee members.

*Table 4: Steering Committee Composition*

SS4A Safety Action Plan Steering Committee		
#	Name	Affiliation
1	John McNamara	Concerned Citizen
2	Michelle Avola-Brown	NPC Ex. Director & CTST Chair
3	Anthony Matonti	BPAC Chair
4	Neal Gelfand	CAC Vice-Chair
5	Sophia Spero	MADD, CTST member
6	Dan Hall, PE	County TMSD, Traffic Ops-Safety
7	Lorraine Lantz (alternate Katherine Eastley)	County TMSD, Transportation Planning, TAC Chair
8	Tony Camps	County Emergency Management Services
9	Alison Bickett, PE	Naples -Traffic Engineering, TAC Vice-Chair, CMC
10	Justin Martin, PE	Marco Island Public Works Director
11	David Ennis	Marco Island PD
12	Sgt. Anna Horowitz	County Sheriff Office Traffic Safety
13	Sgt Greg Sheridan	Naples PD Traffic Safety
14	Reggie Wilson	Dept of Health
15	Kyle Kemmish (alternate Amara DeCicco)	FDOT D1, Safety Work Program Team
16	Christie Betancourt	Immokalee CRA, Program Manager
17	Tami Scott	Bayshore CRA, Program Manager
18	John Dunnuck	County CRA, Division Director
19	Kevin Donaldson (alternate Joseph DeBono)	Miccosukee Tribe
20	Adam Ahmad (alternate Hector Garcia)	Seminole Tribe
21	John Lambcke	Collier Public Schools, Transportation Dir.
22	Monica Ramos	Concerned Citizen

The following section summarizes the key findings from the survey, focusing on identified barriers, opportunities, and gaps.

**Barriers:**

- *Resources:* Respondents indicated they lacked the resources needed to deliver safe street interventions, particularly in funding and staffing for enforcement and data collection. This leads to

difficulties implementing needed traffic calming and road re-design projects.

- *Rising Crash Trends Post-2020:* As seen nationwide, many agencies are experiencing an increase in crashes involving serious injuries and fatalities after a reduction during the COVID-19 pandemic.

#### **Opportunities:**

- *Widespread Use of Signal4Analytics:* Most respondents mentioned leveraging data sources like Signal4, traffic dashboards, and community input to identify trouble spots and monitor crashes.
- *Interest in Policy Reform:* Respondents expressed strong interest in legislative and policy-level changes (i.e. support for automated enforcement) which signals an openness to structural improvements.
- *Supportive Collaboration:* Tribal and local partnerships were cited as effective, including programs implemented by the Miccosukee Tribe, in coordination with the Seminole Tribe and community groups.

#### **Gaps:**

- *Policy and Legislative Hurdles:* Many respondents cited the need for updated or more permissive policies around automated enforcement, protected bike lanes, and multimodal infrastructure. Some mentioned the lack of legislative support for change in general.
- *Enforcement Confusion:* Like the interview respondents, there is confusion around how to enforce speed limits and mode-specific regulations, especially with the rise of e-bike usage.
- *Zero Deaths Goal Clarity:* While some jurisdictions have adopted Vision Zero goals, several respondents were unsure or lacked a clear timeframe, perhaps highlighting the need for stronger leadership alignment.

## **EXISTING CONDITIONS AND SAFETY ANALYSIS**

The project team developed a full analysis of crashes between 2019 and 2023. Collier County reported 929 killed or serious injury (KSI) crashes on their roadway network over a five-year period, averaging about 186 per year (152 serious injury crashes and 34 fatal crashes annually). These crashes resulted in 184 fatalities, averaging 36 traffic deaths per year. Crash data revealed several patterns that provide a better understanding of traffic safety issues in Collier County:

- **Seasonality:** More crashes occur in winter and spring, accounting for nearly 60% of all KSI crashes. Concurrently, over half of pedestrian and bicycle KSI crashes, 66%, occur in winter and spring. This contrasts national trends but aligns with the region's annual population fluctuations during these periods.
- **Age of Victim:** In Collier County, individuals aged 20 to 30 are involved in the highest percentage of KSI (Killed or Seriously Injured) crashes, accounting for 24% despite representing only 9% of the population. Additionally, children and teens (0-19) are disproportionately affected in pedestrian and bicyclist KSI crashes, underscoring their vulnerability.
- **Contributing Factors:** Based on the reported crash data, over half (65%) of all fatal and severe injury crashes are attributed to five main causes: failure to yield, roadway departure, reckless driving, disregarding traffic signals, and speeding.
- **Location:** A large share of crashes (25%) occur in parking lots. Parking lot locations accounted for 10% of all fatal and serious injury crashes for pedestrians and cyclists, which is disproportionately higher than for all road users (6%).



A systemic analysis reveals the relative severity of different types of crashes and types of crash locations:

- **Motor vehicle crashes** account for the majority of all crashes and cause the most serious injuries and fatalities. However, non-motor vehicle crashes tend to be more severe when they occur.
- **Pedestrians and cyclists** account for only 4% of all crashes but represent 23% of all KSI (Killed or Seriously Injured) crashes. Motorcyclists are involved in just 1% of all crashes but make up 14% of KSI crashes.
- **For pedestrian crashes**, 1 in every 10 results in a fatality or serious injury. For bicyclists, this figure is 1 in every 9 crashes, and for motorcyclists, it is 1 in every 4 crashes. In contrast, motor vehicle crashes result in a fatality or serious injury every 95 crashes.
- **Motor Vehicle Crash Types:** While rear end, sideswipe, and other / non-collision crashes are the most common motor vehicle crash types, the most severe crash types are roll-over, head-on, left-turn, and ran-off roadway / fixed object crashes (where a motor vehicle strikes a parked car, tree, or other non-moving object).
- **Intersection Crashes:** Risk was assessed for both urban and rural intersections. In urban areas, the relative risk for crashes and KSI (killed or serious injury) crashes is higher at high-volume intersections with more lanes. However, the highest risk for pedestrian KSI crashes is at signalized intersections with 1 or 2 lanes and low average daily traffic (under 25,000 vehicles). All crash types are more frequent at intersections with 6 or more lanes, with the greatest risk at high-volume, non-signalized intersections with 6 or more lanes.
- **At rural intersections**, non-signalized rural intersections have a greater frequency of KSI crashes yet pedestrian and bicyclist crashes are uncommon at rural intersections. The highest risk for vehicle reported crashes were identified to be speed-related on 6+ lane signalized intersections and related to speed.
- **Segment Crashes:** Risk was assessed for both urban and rural roadway segments. On urban roadway segments, the relative risk for roadways with 1 or 2 lanes is consistently low, regardless of average daily vehicle traffic. In general, risk increases with the number of lanes and daily traffic: the risk of KSI crashes is greatest on 6+ lane segments with moderate Average Annual Daily Traffic (AADT) and of the crash types examined, all occur more frequently than average on 3 to 6+ lane roadway segments with moderate AADT.
- **On rural roadway segments**, the risk increases with the number of lanes, even though these roads typically have low average annual daily traffic (AADT)
- **Equity Assessment:** Based on an equity score comprised of demographic and socio-economic factors, areas with a high equity need are overrepresented in the County's crashes and KSI crashes. Although containing only 3% of the county's roadway miles, 9% of KSI crashes occurred in the most disadvantaged communities.

A high injury network (HIN), a set of roads and intersections with the highest rates of severe and fatal crashes determined by data analysis, was developed to support Collier MPO in prioritizing safety projects throughout the county. The HIN includes both intersection and segment locations and was developed based on three equally weighted criteria: Severe Crash Risk Score, Facility Risk Score, and Relative Risk Score. A second HIN was developed for Bicycle and Pedestrian crash locations.

## POLICY RECOMMENDATIONS AND ACTIONS

The MPO Safety Action Plan, through coordination and feedback from the Steering Committee, has

developed six guiding goals to advance roadway safety:

1. **Promote a Culture of Safety** among the public and within agencies to prevent severe crashes by addressing the root causes of dangerous driving, including channels such as increased traffic education and enforcement (**Table 5**).
2. **Design Safe Streets for Everyone** with improvements that reduce speeds and mitigate risky driving and support complete streets/multimodal design (**Table 6**).
3. **Collaborate to Integrate Safety** into multi-jurisdictional policies and processes, reducing severe crash risks (**Table 7**).
4. **Expand Safe Mobility Options** by securing resources for accessible, affordable, multimodal, and connected networks for all ages and abilities (**Table 8**).
5. **Enhance Data Sharing and Transparency** throughout the County and among the member entities (**Table 9**).
6. **Increase/Expand Implementation Pathways**, including funding support (**Table 10**).

The tables below outline strategies and actions that can be taken to achieve these goals. The strategies and actions are organized based on the goals established in the Safety Action Plan and the focus areas of the Safe Systems approach of Safer Roads, Safer People, Safer Vehicles, Safer Speeds, and Post-Crash Care. The actions are further supplemented with information to help the MPO prioritize and implement, such as:

- Time to implement represents the expected time required to implement the action. The actions are broken down between short term (less than one year), medium term (1-3 years), and long term (more than 3 years).
- Cost to implement represents the expected cost to implement the action. The actions are broken down between low cost (represented as \$), medium cost (\$\$), and high cost (\$\$\$). Low-cost efforts are anticipated to be those that could be implemented using existing resources. Medium-cost and high-cost actions may require the responsible party to pursue additional funding, with high costs associated with capital construction projects.
- "Leader" represents the party responsible for implementing the action.
- "Contributor" represents the party or parties responsible for playing a supporting role in implementing the action.
- Performance Metric represents a suggested achievable demonstration that the action is being or has been implemented

Table 5: Collier MPO Safety Action Plan Goals, Strategies, and Actions Goal 1

1. Promote a Culture of Safety in both public and agencies to prevent severe crashes by addressing the root causes of dangerous driving, including channels such as increased traffic education and enforcement.							
Strategy	Action	Safe Systems Objective	Time to implement (Short, Medium, Long)	Cost to Implement (\$, \$\$, \$\$\$)	Leader	Contributor	Performance Metric
1.1. Conduct county-wide outreach and education around traffic safety best practices	1.1.1. Hold regional and local community engagement events tied to the implementation of traffic safety investments that help residents understand new elements of the system and foster a shared vision of traffic safety in Collier County	Safer People	Short	\$	Collier & Lee MPOs	Local Governments, Police/Fire/EMS, Community Traffic Safety Team (CTST), Naples Pathways Coalition (NPC)	Number of events held annually
	1.1.2. Partner with local community organizations and schools to host traffic safety events to educate the demographic groups disproportionately impacted, Children, and those aged 20-3 using shared materials (see Action 3.1.3)	Safer People	Medium	\$\$	Local Governments & Police Departments, Collier County Public Schools (CCPS) Universities, CTST, NPC	Collier MPO	Number of events held annually; groups targeted

**1. Promote a Culture of Safety in both public and agencies to prevent severe crashes by addressing the root causes of dangerous driving, including channels such as increased traffic education and enforcement.**

Strategy	Action	Safe Systems Objective	Time to implement (Short, Medium, Long)	Cost to Implement (\$, \$\$, \$\$\$)	Leader	Contributor	Performance Metric
	1.1.3. Release targeted educational campaigns during winter and spring to increase awareness of increased roadway activity	Safer People	Short	\$	Local Governments, Police/Fire/EMS	Collier MPO	Number of media releases, hits/views
1.2. Strengthen the capacity of law enforcement to strategically enforce roadway regulations and efficiently allocate resources to better protect vulnerable road users	1.2.1. Identify areas on the HIN with high incidents of speeding, distracted driving, and high crash locations for law enforcement to conduct high-visibility enforcement	Safer Speeds, Safer People	Short	\$	Local Police Departments	Collier MPO	Number of high-visibility enforcement events conducted
	1.2.2. Provide training for law enforcement on bicycle and pedestrian traffic laws, including the latest definitions for electric bicycles and other new mobility devices	Safer People, Safer Vehicles	Medium	\$\$	Local Police Departments	Local Governments	Number of trainings held

**1. Promote a Culture of Safety in both public and agencies to prevent severe crashes by addressing the root causes of dangerous driving, including channels such as increased traffic education and enforcement.**

Strategy	Action	Safe Systems Objective	Time to implement (Short, Medium, Long)	Cost to Implement (\$, \$\$, \$\$\$)	Leader	Contributor	Performance Metric
	1.2.3. Provide high-profile enforcement of distracted driving coordinated with an education campaign on safe use of technology while driving	Safer Speeds, Safer People	Medium	\$\$	Local Police Departments	Collier MPO	Number of high-visibility enforcement events conducted
	1.2.4. Assist Police/Fire/EMS in acquiring technological advancements to improve enforcement and response capabilities	Safer Speeds, Safer People	Medium	\$	Police/Fire/EMS	Collier MPO, FDOT	Number and type of technological advancements acquired and implemented
1.3. Improve safety in parking lots through targeted outreach	1.3.1. Research extent of issue; develop an education campaign focused on raising awareness of collisions in parking lots and best practices for drivers and pedestrians in parking lots	Safer People	Short	\$	Collier MPO	Police/Fire/EMS, Chamber of Commerce	Development and distribution of educational materials



**1. Promote a Culture of Safety in both public and agencies to prevent severe crashes by addressing the root causes of dangerous driving, including channels such as increased traffic education and enforcement.**

Strategy	Action	Safe Systems Objective	Time to implement (Short, Medium, Long)	Cost to Implement (\$, \$\$, \$\$\$)	Leader	Contributor	Performance Metric
1.4. Improve the safety of motorcycle travel through targeted outreach	1.4.1. Launch a public awareness campaign on safely sharing roads with motorcyclists	Safer Vehicles	Short	\$	Police/Fire/EMS	Collier MPO	Development and distribution of educational materials
1.5. Increase awareness about e-bikes and their safe operation through targeted outreach	1.5.1. Conduct a public awareness campaign on safe e-bicycle operation and sharing the roadway	Safer Vehicles, Safer People	Medium	\$	Local Governments, Police/Fire/EMS	Collier MPO, NPC, CTST	Number of media releases, hits
	1.5.2. Offer training courses and resources for safe e-bicycle use, including how to operate e-bikes, understanding roadway regulations, and safe operation	Safer People	Medium	\$\$	Local Governments & Police Departments	Collier MPO	Number of trainings held

Table 6: Collier MPO Safety Action Plan Goals, Strategies, and Actions Goal 2

2. Design Safe Streets for Everyone with improvements that reduce speeds and mitigate risky driving and support complete streets/multimodal design.							
Strategy	Action	Safe Systems Objective	Time to implement (Short, Medium, Long)	Cost to Implement (\$, \$\$, \$\$\$)	Leader	Contributor	Performance Metric
2.1. Prioritize funding for safety improvements along the High Injury Network (HIN)	2.1.1. Prioritize the HIN for TIP selections, to fund safety countermeasures on corridors identified in the Safety Action Plan	Safer Roads	Medium	\$	Collier MPO and Local Governments	FDOT	Updated TIP Prioritization
	2.1.2. Conduct roadway safety audits at key segments along the HIN and develop a program to implement the recommendations	Safer Roads	Medium	\$\$	Local Governments	FDOT / Collier MPO	Number of roadway safety audits funded and conducted
	2.1.3. Coordinate with FDOT to ensure investments at high-crash intersections and corridors under the state's jurisdiction	Safer Roads	Long	\$\$\$	Collier MPO	FDOT	Share of TIP dedicated to HIN intersections

2. Design Safe Streets for Everyone with improvements that reduce speeds and mitigate risky driving and support complete streets/multimodal design.							
Strategy	Action	Safe Systems Objective	Time to implement (Short, Medium, Long)	Cost to Implement (\$, \$\$, \$\$\$)	Leader	Contributor	Performance Metric
2.2. Develop and fund projects that implement a toolkit of proven safety countermeasures that can be implemented through roadway projects focused on contributing factors to fatal and serious injury crashes, including speeding and roadway departure	2.2.1. Distribute the Safety Action Plan Countermeasures Toolkit, featuring traffic calming measures as options for enhancing traffic safety in local roadway projects	Safer Roads, Safer Speeds	Long	\$\$\$	Collier MPO	FDOT / Local Governments	Publish, distribute and fund projects that implement the CSAP traffic calming toolkit
	2.2.2. Implement speed feedback signs on the HIN at locations with a higher share of speed related crashes and/or near land-uses that generate pedestrian and bicycle trips	Safer Roads, Safer Speeds	Short	\$\$	Collier County	FDOT / Collier MPO / Local Governments	Number of speed feedback signs installed

2. Design Safe Streets for Everyone with improvements that reduce speeds and mitigate risky driving and support complete streets/multimodal design.							
Strategy	Action	Safe Systems Objective	Time to implement (Short, Medium, Long)	Cost to Implement (\$, \$\$, \$\$\$)	Leader	Contributor	Performance Metric
	2.2.3. Study intersections on the HIN with a history of right-angle and head-on crashes to evaluate the suitability of roundabouts to reduce the number of potential conflicts and fund project implementation	Safer Roads, Safer Speeds	Long	\$\$\$	Local Governments	FDOT / Collier MPO	Number of intersections on the HIN evaluated for roundabout suitability
	2.2.4. Implement proven safety countermeasures that can reduce roadway departure crashes, such as centerline and shoulder rumble strips along rural roadways, wider edge lines, and advance warning signs, pavement markings, and retroreflective strips at curves	Safer Roads, Safer Speeds	Medium	\$\$	Collier County and FDOT	Collier MPO	Number of projects implementing roadway departure countermeasures

2. Design Safe Streets for Everyone with improvements that reduce speeds and mitigate risky driving and support complete streets/multimodal design.							
Strategy	Action	Safe Systems Objective	Time to implement (Short, Medium, Long)	Cost to Implement (\$, \$\$, \$\$\$)	Leader	Contributor	Performance Metric
2.3. Develop complete networks for all modes that prioritize connectivity	2.3.1. Implement projects to close sidewalk gaps identified in the BPMP and projects to meet ADA accessibility requirements	Safer Roads, Safer People	Long	\$\$\$	Local Governments	Collier MPO	Submit projects for MPO and local funding
	2.3.2. Implement the recommendations of the Bicycle-Pedestrian Master Plan, implement projects that create a well-connected network of facilities linking residential areas to schools, parks, business, and public transit	Safer Roads, Safer People	Long	\$\$\$	Local Governments	Collier MPO	Increased bike/ped facility lane miles



2. Design Safe Streets for Everyone with improvements that reduce speeds and mitigate risky driving and support complete streets/multimodal design.							
Strategy	Action	Safe Systems Objective	Time to implement (Short, Medium, Long)	Cost to Implement (\$, \$\$, \$\$\$)	Leader	Contributor	Performance Metric
2.4. Ensure all road users are prioritized in the planning of transportation infrastructure	2.4.1. Incorporate Complete Streets principles in roadway corridor design and construction projects	Safer Roads, Safer People	Medium	\$\$	Local Governments	Collier MPO, FDOT	Updated transit and bike/ped facilities inventory (five-year cycle)
	2.4.2 Separate bicyclists from pedestrians and vehicles through design strategies such as shared-use paths and separated bike lanes, as recommended in the Bicycle-Pedestrian Master Plan	Safer Roads, Safer People	Medium	\$\$	Local Governments	Collier MPO	Updated transit and bike/ped facilities inventory (five-year cycle)
	2.4.3. Conduct outreach to encourage pedestrian, bicycle, motorcycle, micromobility and other non-vehicular road users to participate in public meetings or new	Safer Roads, Safer People	Short	\$	Local Governments	Collier MPO	Representation of user groups at public meetings and comments

2. Design Safe Streets for Everyone with improvements that reduce speeds and mitigate risky driving and support complete streets/multimodal design.							
Strategy	Action	Safe Systems Objective	Time to implement (Short, Medium, Long)	Cost to Implement (\$, \$\$, \$\$\$)	Leader	Contributor	Performance Metric
	roadway projects						
2.5. Prioritize infrastructure investments that increase the safety of school, children, for all modes of travel	2.5.1. Include school-related safety projects for prioritization in the TIP	Safer Roads, Safer People	Medium	\$\$	CCPS and Collier MPO	Local Governments	Inclusion in MPO Board's approved priority project lists

Table 7: Collier MPO Safety Action Plan Goals, Strategies, and Actions Goal 3

3. Collaborate to Integrate Safety into multi-jurisdictional policies and processes, reducing severe crash risks.							
Strategy	Action	Safe Systems Objective	Time to implement (Short, Medium, Long)	Cost to Implement (\$, \$\$, \$\$\$)	Leader	Contributor	Performance Metric
3.1. Bolster the capacity of member entities to conduct traffic safety initiatives and programs	3.1.1. Participate in the CTST quarterly meetings to report on crash data, educational activities, and other road safety metrics in the CSAP	Safer People	Short	\$	Collier MPO	Local Governments, Police/Fire/EMS, and other CSAP Steering Committee Members	Increased participation in CTST quarterly meetings
	3.1.2. Facilitate local governments, police/fire/EMS access to funding for safety-related programs, facilities resources, and public outreach	Safer Roads, Safer People	Long	\$	Collier MPO	Local Governments, Police/Fire/EMS, FDOT	Share of spending on safety focused projects
	3.1.3. Share collateral between local governments, nonprofits and partner agencies on educational, outreach, and engagement efforts	Safer People	Medium	\$	Collier MPO	Local Governments, Police/Fire/EMS, CCPS, NPC	Development and distribution of shared educational materials

3. Collaborate to Integrate Safety into multi-jurisdictional policies and processes, reducing severe crash risks.							
Strategy	Action	Safe Systems Objective	Time to implement (Short, Medium, Long)	Cost to Implement (\$, \$\$, \$\$\$)	Leader	Contributor	Performance Metric
	3.1.4. Integrate traffic safety countermeasures in repaving projects	Safer Roads	Medium	\$	Collier MPO	Local Governments	Include as eligible project category for MPO funding assistance; Number of projects funded
3.2. Collaborate on funding opportunities that enhance Vision Zero goals	3.2.1. Identify funding opportunities for regional or multi-jurisdictional safety improvement projects	Safer Road	Medium	\$\$	Collier MPO	Local Governments, FDOT	Amount of funding dedicated to regional safety improvement projects
	3.2.3. Coordinate a grant strategy across local governments to maximize opportunities to win funding that would impact region-wide safety goals	Safer People	Medium	\$	Collier MPO	Local Governments	Number of grant opportunities pursued

Table 8: Collier MPO Safety Action Plan Goals, Strategies, and Actions Goal 4

4. Expand Safe Mobility Options by securing resources for accessible, affordable, multimodal, and connected networks for all ages and abilities.							
Strategy	Action	Safe Systems Objective	Time to implement (Short, Medium, Long)	Cost to Implement (\$, \$\$, \$\$\$)	Leader	Contributor	Performance Metric
4.1. Protect and connect active transportation users through dedicated infrastructure	4.1.1. Consistent with the BPMP, prioritize recommendations from locally adopted plans and studies that focus on investments in transit, bicycle, and pedestrian connectivity near community destinations such as schools and parks	Safer Roads, Safer People	Medium	\$	Local Governments	Collier MPO, FDOT	Track MPO Board priority projects for bicycle, pedestrian, and transit connectivity
4.2. Consistent with MPO's Bicycle and Pedestrian Master Plan and Congestion Management Plan, prioritize projects for safety funding that improve safety and accessibility for pedestrian and bicyclists	4.2.1. Research the effectiveness and, if warranted, develop guidance and implement pilot projects on the use of leading pedestrian intervals (LPI) and leading bicycle intervals (LBI) to reduce conflicts between pedestrians and turning vehicles	Safer Roads, Safer People	Medium	\$\$	Local Governments	Collier MPO, FDOT	Policy guidance on LPI and LBI; number of pilot projects
	4.2.2. Fund projects that include markings and treatments such as refuge islands, RRFB, HAWK, based on	Safer Roads, Safer People	Medium	\$\$	Local Governments	Collier MPO, FDOT	Number of funded projects



4. Expand Safe Mobility Options by securing resources for accessible, affordable, multimodal, and connected networks for all ages and abilities.							
Strategy	Action	Safe Systems Objective	Time to implement (Short, Medium, Long)	Cost to Implement (\$, \$\$, \$\$\$)	Leader	Contributor	Performance Metric
	roadway and traffic characteristics such as volumes, speed, and number of lanes						
	4.2.3. Establish funding eligibility for streetlighting for pedestrians, micromobility users, and cyclists to provide adequate lighting levels and visibility	Safer Roads, Safer People	Medium	\$	Collier MPO	FDOT / Local Governments	Include streetlighting for pedestrians, micromobility users, and cyclists as an eligible project category for MPO funding.

Table 9: Collier MPO Safety Action Plan Goals, Strategies, and Actions Goal 5

5. Enhance data sharing and transparency throughout the County and among the member entities							
Strategy	Action	Safe Systems Objective	Time to implement (Short, Medium, Long)	Cost to Implement (\$, \$\$, \$\$\$)	Leader	Contributor	Performance Metric
5.1. Establish the routine sharing of information to raise awareness of traffic safety initiatives and progress across the region	5.1.1. Expand safety components of the MPO's Annual Report to track progress on traffic safety goals, crash statistics, and outreach initiatives in the CSAP	Safer People	Short	\$	Collier MPO	Local Governments / FDOT	Annual report
	5.1.2. Investigate current practices and potential improvements in data sharing between local hospitals and police/fire/EMS to ensure completeness of crash data	Post Crash Care, Safer People	Medium	\$	CTST	Collier MPO	Number of data sharing agreements
	5.1.3. Pilot the use of new technologies to collect and analyze traffic safety data, such as near-miss detection and AI; and share the results of the pilots across the MPO	Safe People, Safer Roads	Medium	\$\$	Local Governments	Collier MPO / FDOT	Number of pilot technologies evaluated & implemented

5. Enhance data sharing and transparency throughout the County and among the member entities							
Strategy	Action	Safe Systems Objective	Time to implement (Short, Medium, Long)	Cost to Implement (\$, \$\$, \$\$\$)	Leader	Contributor	Performance Metric
	5.1.4. Report on contributing factors of fatal crashes to the CTST and encourage SAP Steering Committee participation	Safe People, Safer Roads	Shrot	\$	CTST	Collier MPO, Local Governments, Polic/Fire/EMS, FDOT	Increased participation in CTST quarterly meetings

*Table 10: Collier MPO Safety Action Plan Goals, Strategies, and Actions Goal 6*

6. Increase/Expand Implementation Pathways, including funding support.							
Strategy	Action	Safe Systems Objective	Time to implement (Short, Medium, Long)	Cost to Implement (\$, \$\$, \$\$\$)	Leader	Contributor	Performance Metric
6.1. Pursue federal and state funding sources for traffic safety	6.1.1. Leverage alignment with other MPO priorities such as congestion mitigation, bike/ped planning, the Shared Use Non-Motorized (SUN) Trail network, wildlife connectivity, and active transportation network development) to strategically pursue funding streams not explicitly designated for safety, but capable of supporting traffic safety enhancements	Safer Roads	Medium	\$\$	Collier MPO	Local Governments	Share of TIP projects that include safety countermeasures and elements
6.2. Support regional and local project readiness to move projects forward	6.2.1. Pursue Federal Lands Access Program Grants to complete projects that provide safe access to the Everglades and Federal Lands	Safer Roads	Medium	\$	Local Municipalities	Collier MPO	Number of grant opportunities pursued
	6.2.2. Use the crash data and systemic risk analysis from this Safety Action Plan to guide long-term investments in the TIP	Safer People, Safer Roads	Short	\$	Collier MPO	Local Governments	Share of funding dedicated to safety-focused projects