3 Regional Safety Priorities

The CORPO area's transportation system and its roadways span a vast area, so it will be critical for safety interventions to be targeted to address the locations, risk factors, and crash types that are contributing the most to fatal and serious injury crashes throughout the seven-county region. Focusing on these key *Regional Safety Priorities* will help to maximize the return on investment from the limited resources that are available for implementing impactful infrastructure improvements. As such, the following section details the key focus areas that have been identified through data analysis, as well as stakeholder and public input, to help inform the prioritization of safety strategies and interventions in the CORPO area.

3.1 Emphasis Areas

Extensive analysis of the reported crash history from 2018-2022 for the seven CORPO counties was conducted to identify the most critical areas of focus, or **emphasis areas**, for the region. Much of this data was summarized in *Chapter 2, Current Conditions and Related Efforts*, which highlighted the reported crash types that have resulted in the most severe outcomes, the types of roadway environments where disproportionately high numbers of severe crashes have been occurring, specific factors that may have contributed to these severe crashes, as well as the more severe impacts of crashes involving our most vulnerable road users (VRUs). Below is a brief summary of the emphasis areas identified for the CORPO area based on this information, which should be used to guide project development and inform priorities for implementing safety improvements. The four emphasis areas include the following:

- **Severe crash types** – fixed object and angle crashes accounted for more than half of all FSI crashes in the CORPO region. Implementing countermeasures that mitigate these two crash types could significantly reduce fatalities and serious injuries region wide.

- **Target roadway types** – principal arterial, minor arterial, and major collector roads experienced disproportionately high proportions of severe crashes relative to their proportions of total roadway miles in the CORPO area. Major collector roadways with posted speed limits of 55 MPH accounted for the most significant amount of FSI crashes in the region. Targeting safety improvements on these types of roadways could address fatalities and serious injuries more comprehensively.

- **Vulnerable road users** – while people walking and bicycling comprised less than 1% of overall crashes, they accounted for more than 7% of FSI crashes. Pedestrians in particular experience a high rate of fatality and serious injury (1 in 3 crashes). Incorporating safety improvements dedicated to people walking and bicycling will be a critical aspect of mitigating fatalities and serious injuries in the CORPO area.

- **Contributing factors** – a few key factors were identified in the crash data as common themes across fatal and serious injury crashes. This includes speed, impairment, young and older drivers, distracted driving, as well as restraint use. Targeting these factors region wide could help reduce fatalities and serious injuries.

3.2 Equity Considerations

Many of the transportation infrastructure decisions of the past have led to systemic inequities that many CORPO area communities still experience today. The map in Figure 3.2 on the following page illustrates where USDOT-designated Transportation-Disadvantaged communities or Areas of Persistent Poverty exist throughout the CORPO area, which is primarily around older, denser population centers. Comparing the crash history in these areas to that of non-disadvantaged areas, it is evident that transportation safety impacts are not distributed equally across these different communities. As shown in Figure 3.1 below, while 34% of the CORPO area population resides in Transportation-Disadvantaged Census Tracts, more than 60% of all VRU crashes and nearly 57% of the FSI crashes involving VRUs in the CORPO area occurred in these census tracts. Additionally, only about 11% of CORPO residents live in Areas of Persistent Poverty, yet 32% of VRU crashes and nearly 25% of FSIs involving VRUs occurred in those same areas.
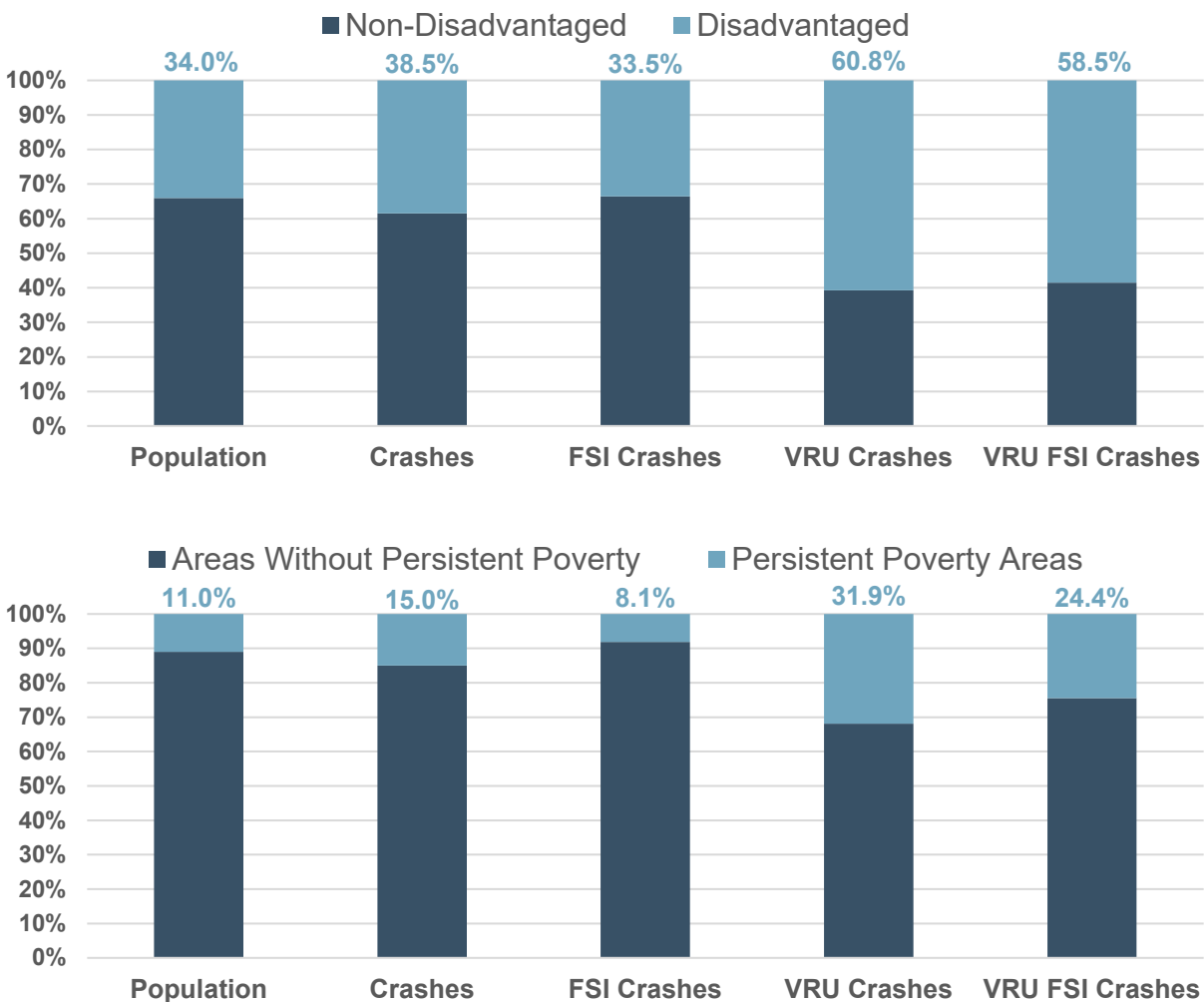

FIGURE 3. 1 - DISPROPORTIONATE CRASH OUTCOMES IN TRANSPORTATION-DISADVANTAGED CENSUS TRACTS AND AREAS OF PERSISTENT POVERTY
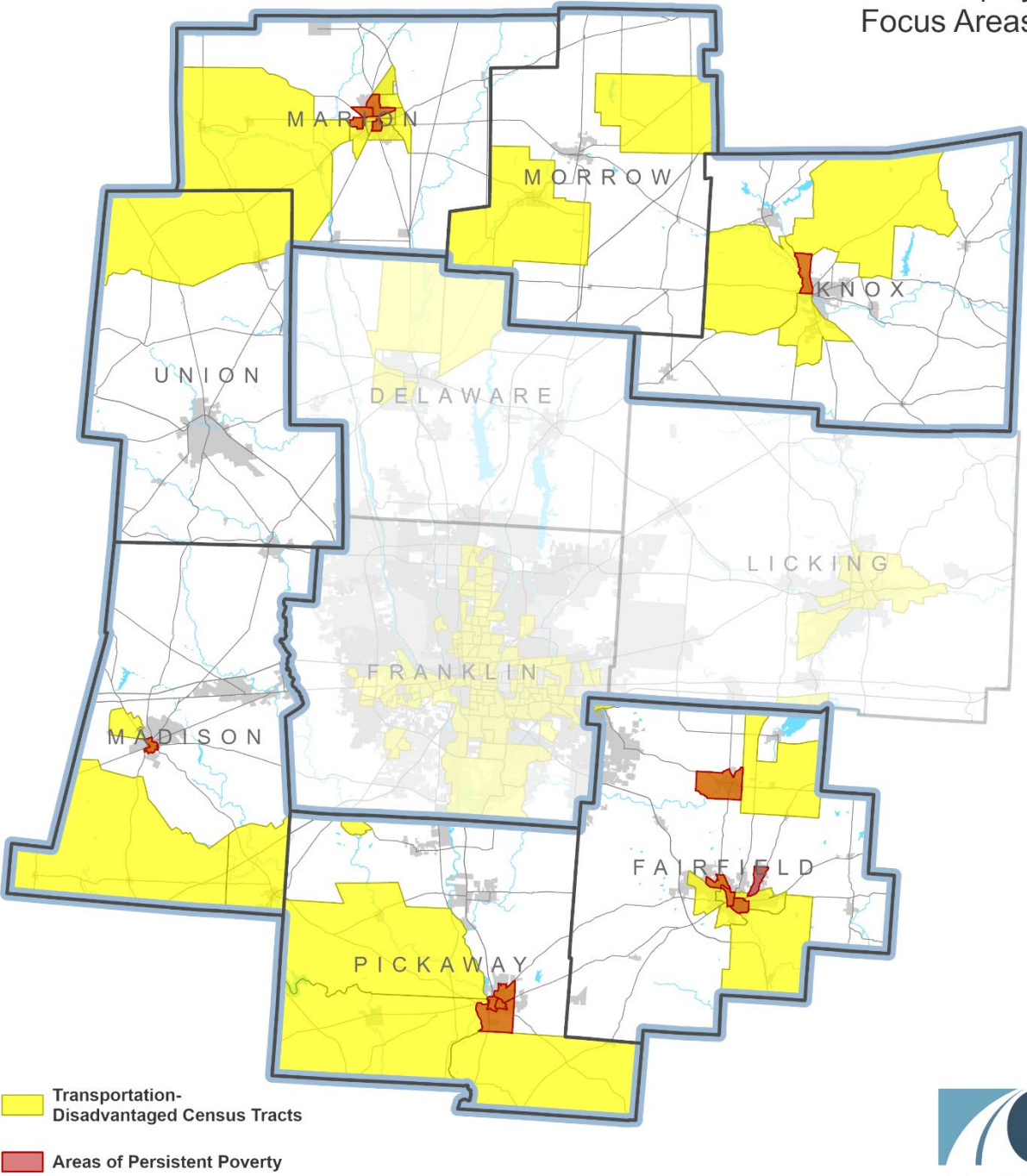
Equity
Focus Areas

Transportation-
Disadvantaged Census Tracts

Areas of Persistent Poverty

corpo

FIGURE 3.1 - SYSTEMICALLY DISADVANTAGED CENSUS TRACTS (SOURCE: USDOT)

It is worth noting that the disproportionate crash outcomes across Transportation-Disadvantaged Communities and Areas of Persistent Poverty are seen only for crashes and crash outcomes involving VRUs, and not for overall crashes. This underlies the reality that lower-income people living in disadvantaged areas may not have reliable access to a personal vehicle, and thus rely more on walking and biking to access many of their daily needs. The higher rates of walking and biking, combined with the insufficiency of infrastructure that provides for safe walking and biking, leads to disproportionately higher rates of crashes, serious injuries, and fatalities involving people walking and biking in these areas.

3.3 Priority Safety Locations

All of the data and information provided within this chapter, as well as Chapter 2, can be used to inform a process of identifying and prioritizing investments in various safety countermeasures, whether that is location-specific infrastructure investments, targeted enforcement activities, road user education, or other strategies and action items identified in this plan. This section highlights specific priority locations that have been identified throughout the CORPO area based on the data available at the time of plan development.

Priority Corridors

Geographic Information Systems (GIS) tools were used to analyze crash data and roadway characteristics to create a series of datasets to help system designers and decision-makers prioritize location-specific safety improvements. Some of these datasets were created through this plan development process, while others were provided by the Ohio Department of Transportation (ODOT) through the Ohio Highway Safety Improvement Program (HSIP).

CORPO AREA HIGH INJURY NETWORKS

The Safer Streets Priority Finder was used to develop a series of High Injury Networks (HIN) for the CORPO area, categorized by road user type. This included a pedestrian-specific HIN, a bicyclist-specific HIN, and a motorized vehicle-specific HIN. Crash data for the CORPO area from 2018-2022 was input into the Safer Streets Priority Finder to conduct a "Sliding Windows Analysis," which allocates the crashes to the roadways on which they occurred based on sliding half-mile segments. The crashes are weighted based on severity, with fatal and serious injury crashes receiving a weight of 3 and all minor injury crashes receiving a weight of 1. Possible injury and property-damage only crashes are not included in the analysis. The weights are then aggregated into "scores" for each roadway segment based on the sliding window segments. The resulting HIN displays the total weighted score for each roadway segment. In essence, the three HIN datasets are described below:

- **CORPO Pedestrian High Injury Network** – roadway segments within the seven-county area that have a higher concentration and severity of *pedestrian* injury crashes per mile

- **CORPO Bicyclist High Injury Network** – roadway segments within the seven-county area that have a higher concentration and severity of *bicyclist* injury crashes per mile

- **CORPO Motorized High Injury Network** – roadway segments within the seven-county area that have a higher concentration and severity of *motorized* injury crashes per mile

These three HIN datasets can be used to identify specific roadway segments or intersections where safety investments for each of the three user types should be prioritized.

ODOT SYSTEMIC SAFETY PRIORITIES

In January 2022, ODOT's Highway Safety Program launched a new systemic safety improvement program with a focus on preventing injuries related to pedestrian and roadway departure crashes. Systemic improvements are meant to be proactive and widely implemented based on roadway features that have been associated with specific crash types.

Through this systemic safety improvement program, ODOT is currently prioritizing addressing pedestrian safety and roadway departure crashes using proven safety countermeasures at priority locations. Those priority locations were established based on analysis of the statewide road network for specific criteria identified as contributing factors in pedestrian and roadway departure crashes. These analyses resulted in the development of two GIS-based datasets that highlight specific roadway segments and the priority level assigned to those segments. This includes the following:

- **Pedestrian Safety Priority Corridors** – roadway segments that have been identified by ODOT as priorities for systemic safety funding for pedestrian safety improvements based on roadway characteristics and risk factors.

- **Roadway Departure Priority Corridors** – roadway segments that have been identified by ODOT as priorities for systemic safety funding for roadway departure safety improvements based on roadway characteristics and risk factors.

The systemic safety improvement program funds will be prioritized for segments assigned values of "critical," "high," or "medium" priority. For any community looking to obtain this funding, or simply prioritizing corridors for these particular investment types, these datasets will be important to review in tandem with the HIN datasets. The image in Figure 3.3 below illustrates how these layers can be overlaid to review the highest priority locations for investment.
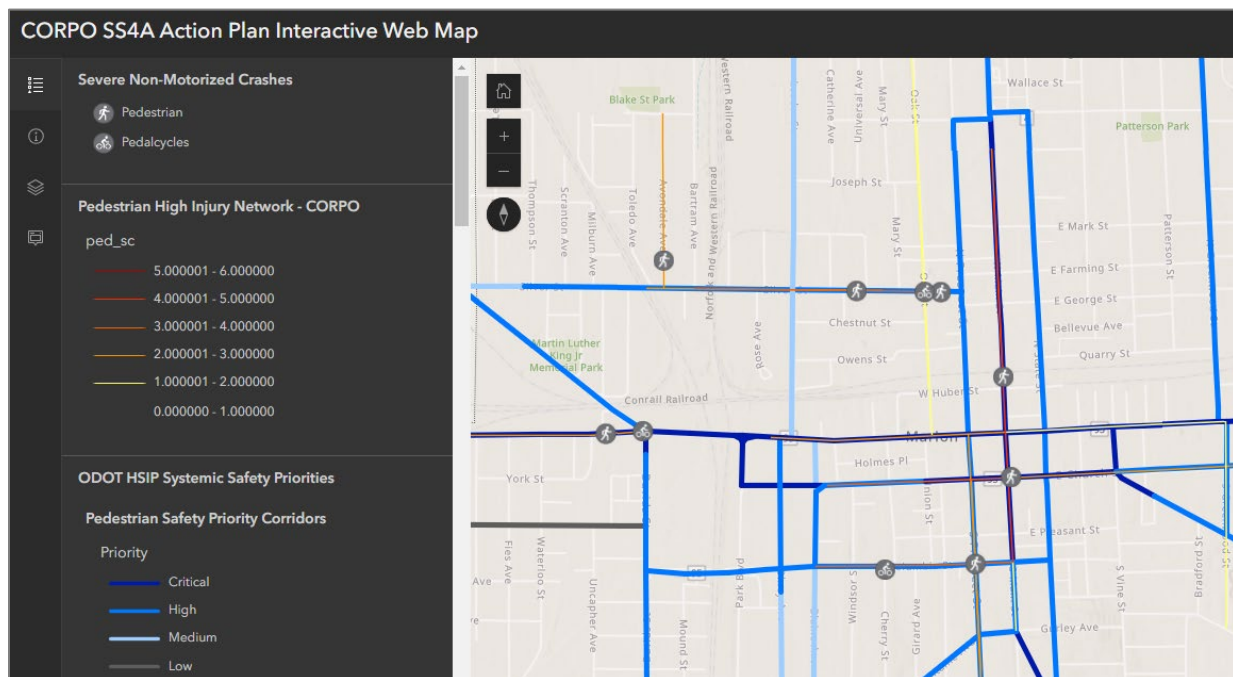

FIGURE 3.2 - MAP OF PRIORITY SAFETY LOCATIONS FOR PEDESTRIANS

Interactive Web Map

An interactive web map was created for stakeholder reference during the safety plan development process that will also be available for anyone to use to review key data related to transportation safety. This map includes the HIN and ODOT HSIP datasets mentioned previously, and it will be provided as a "deliverable" of the safety plan development process for stakeholders to use and guide them through the process of identifying priority safety locations for future safety projects. The images in Figure 3.3 on the previous page and Figure 3.4 below are both screenshots of this web map and highlight the data that is included in the map for reference. More information about how this tool could be used in the project development process is highlighted in *Chapter 5. Implementation and Monitoring*.
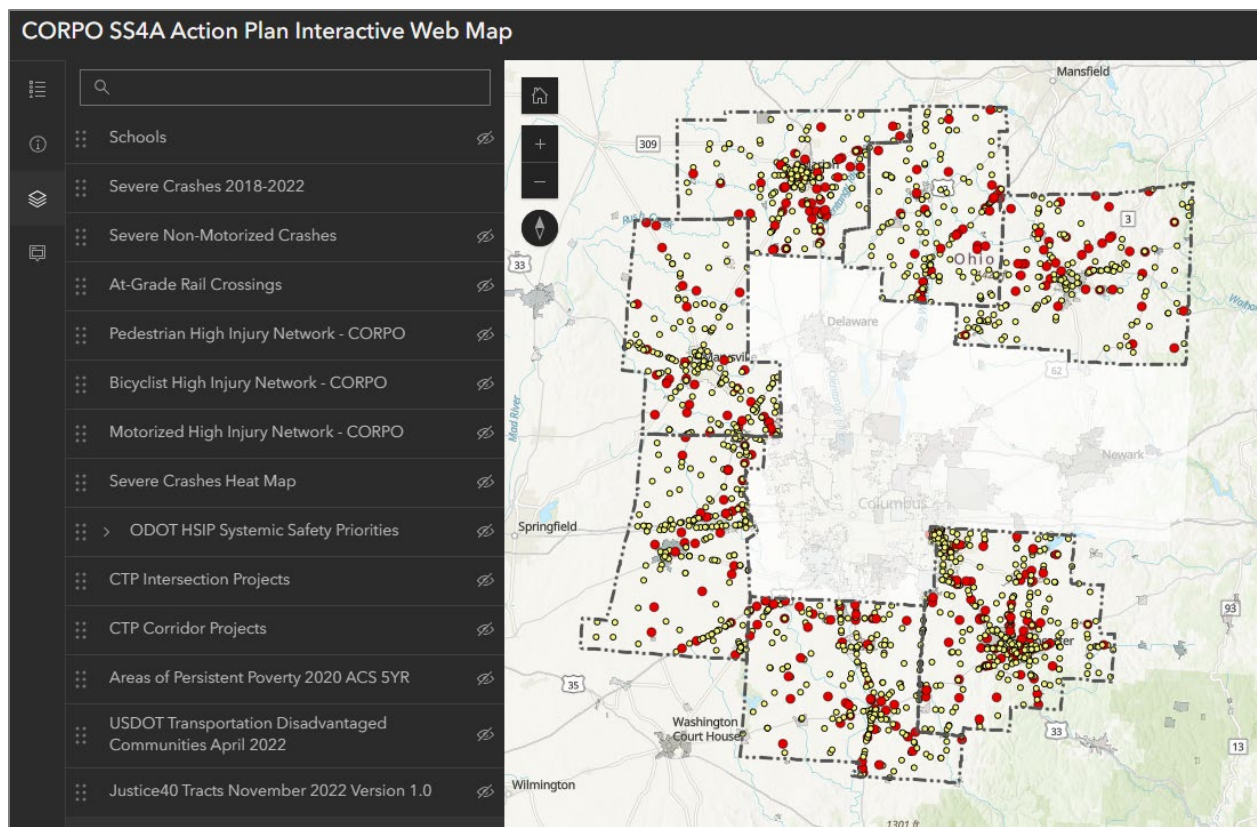

FIGURE 3.3 - INTERACTIVE WEB MAP OF KEY DATA FOR DECISION-MAKING

The individual data layers in the web map include the following:

- **Schools** – individual locations of schools throughout the seven-county area, including elementary, middle, high, university, and vocational schools.

- **Severe Crashes** – individual locations of and key information for each fatal and serious injury crash reported during the five-year period 2018-2022 in the seven-county area.

- **Severe Non-Motorized Crashes** – individual locations of fatal and serious injury crashes involving people walking and bicycling pulled out from the Severe Crashes dataset to highlight these non-motorized crashes specifically in the seven-county area.

- **At-Grade Rail Crossings** – individual locations of at-grade railroad crossings throughout the seven-county area, including key details about each location.

- **CORPO Pedestrian High Injury Network** – roadway segments within the seven-county area that have a higher concentration and severity of *pedestrian* crashes per mile.

- **CORPO Bicyclist High Injury Network** – roadway segments within the seven-county area that have a higher concentration and severity of *bicyclist* crashes per mile.

- **CORPO Motorized High Injury Network** – roadway segments within the seven-county area that have a higher concentration and severity of *motorized* crashes per mile.

- **Severe Crashes Heat Map** – heat map illustrating the concentration or density of the fatal and serious injury crashes reported during the five-year period 2018-2022.

- **ODOT Highway Safety Improvement Program (HSIP) Systemic Safety Priorities**

  - **Pedestrian Safety Priority Corridors** – roadway segments that have been identified by ODOT as priorities for systemic safety funding for pedestrian safety improvements based on roadway characteristics and risk factors.

  - **Roadway Departure Priority Corridors** – roadway segments that have been identified by ODOT as priorities for systemic safety funding for roadway departure safety improvements based on roadway characteristics and risk factors.

- **CORPO Transportation Plan (CTP) Intersection Projects** – individual locations of intersection projects included in the 2023-2050 CORPO Transportation Plan (CTP), including project type information.

- **CTP Corridor Projects** – locations and extents of corridor projects included in the 2023-2050 CORPO Transportation Plan (CTP), including project type information.

- **USDOT Transportation Disadvantaged Communities** – census tracts identified by USDOT as being in the 65th percentile or higher in the Transportation Disadvantage scoring completed for the [Equitable Transportation Community (ETC) Explorer](). This includes elements of transportation insecurity, health vulnerability, environmental burden, social vulnerability, as well as climate and disaster risk burden.

- **Areas of Persistent Poverty** – census tracts designated by the USDOT as having a poverty rate of at least 20%, per the 2014-2018 5-year data series from the American Community Survey.

- **Justice40 Census Tracts** – census tracts designated by the USDOT as "Historically Disadvantaged Communities" and identified in the [Climate & Economic Justice Screening Tool]() (CEJST). This dataset is larger and more general than the Transportation Disadvantaged Communities dataset, which provides deeper insight into the Transportation Disadvantage component of the CEJST.