Chapter 5. Existing Transportation System Conditions

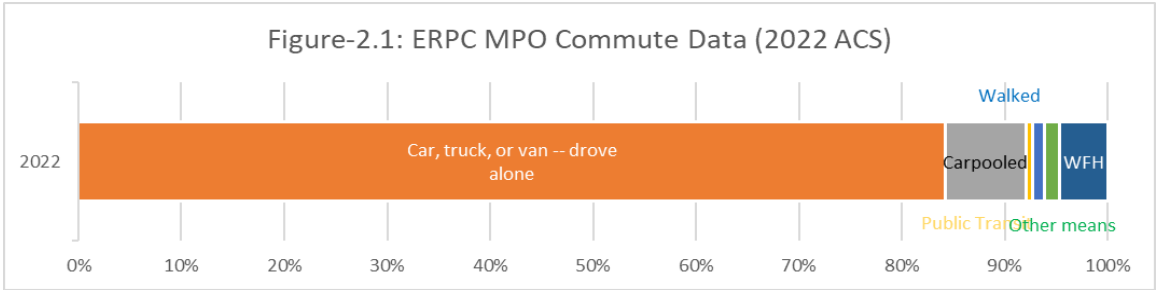
5.1 Overview

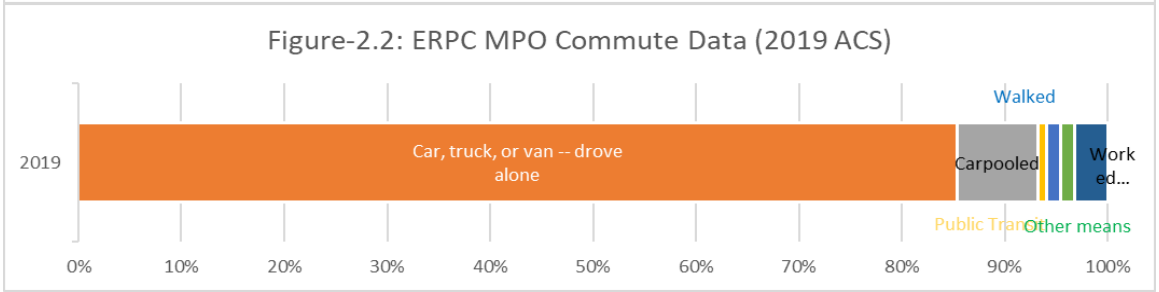
This chapter summarizes the existing transportation conditions within the MPO area. It includes an evaluation of individual transportation modes and explores their interaction and connectivity with the surrounding land uses and environment. The analysis of existing conditions is a "snapshot" of a place and time that is continually changing due to new policies and/or development. This "snapshot" of the current system is important to planning efforts as it is used to forecast future conditions (explored in **Chapter 7**).

5.2 Travel Behavior Summary

Travel Behavior: An analysis of people's travel patterns and behaviors are essential to understanding how the transportation system is used. Across the MPO, traffic patterns differ depending on the time of year as the tourism industry is heavily rooted in the area. The region's traffic flows and travel patterns fluctuate substantially between peak (summer) and non-peak (winter) tourist seasons. With the introduction of new year- round tourist attractions, the area may experience a transition to a more stable transportation system.

Commuter Mode Choice: As of the 2018-2022 American Community Survey (ACS), 84.2% of respondents in planning area drove alone in a private vehicle for their work commute, while 7.8% reported carpooling. Less than 1% (0.6%) reported using public transportation for their commute, while 1.2% reported walking to work and 1.5% reported other means that would include bicycling. The remaining 4.7% of people reported working from home. **(Figure 5-2.1)**. Commuter mode choices is compared below against commute data from the 2015-2019 ACS.

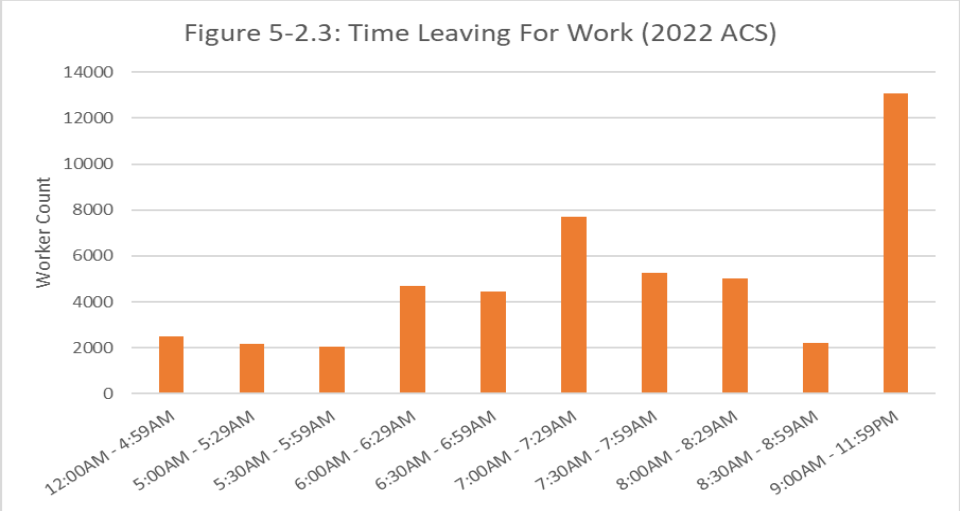




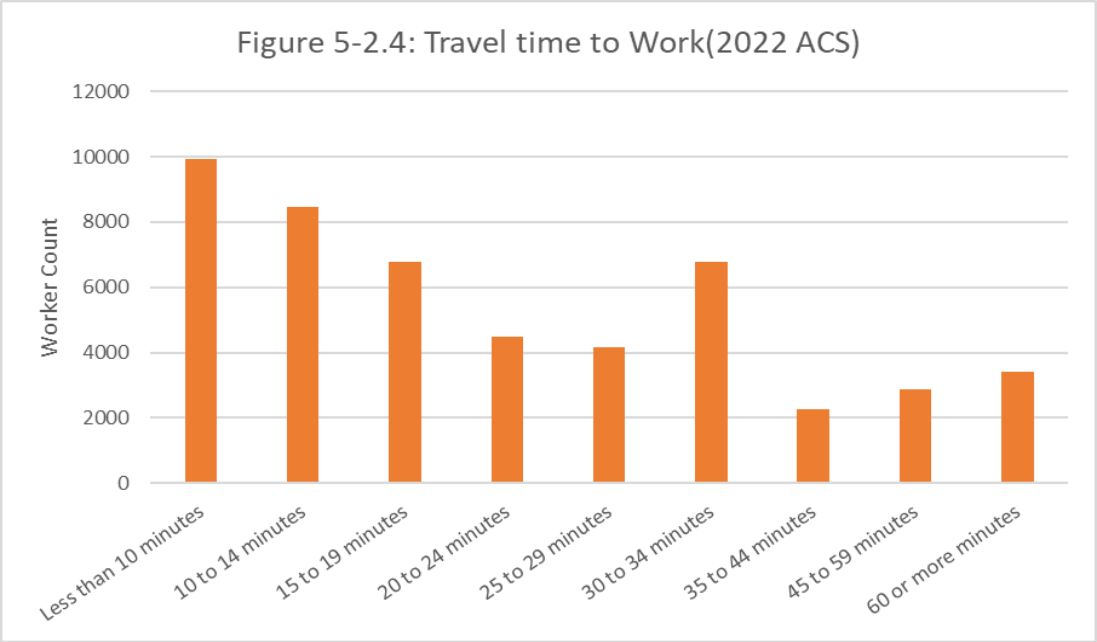
When comparing the two figures, the largest change was largely in estimates for individuals working from home. This in large part due to changes in COVID workplace procedures that are still impacting commutes four years following the pandemic. All other commuter patterns saw slight decreases, aside from a small increase in Other Means commuting up to 1.5%. The largest increase being 4.7% of individuals reporting that they are working from home, up from 3.2% in 2019. **(Figure 5-2.2)**. The increase shows minor evidence to suggest that telecommuting has had a significant impact on commuting behaviors. Residents in rural areas of both counties will be less likely to utilize walking and cycling commuter patterns, and the limited fixed-routes transit provided in Ottawa County will reduce the number of residents utilizing public transit for work. Telecommuting seems to have risen in the region, and may have had a higher impact on residents already utilizing active transportation.

Additionally, when comparing the US 2010 census data to the current 2022 ACS data, there was a slight decrease of residents that reported bicycling/walking, and increase of residents taking transit as their mode choices to commuting to work. The growth in telecommuting may be part of the decline in multimodal choices, as access to high speed internet can be found in cities where multimodal choices are more readily available. Rural areas may lack internet access adequate for full time telecommuting, and may continue to rely on personal vehicles for work commutes.

Time Leaving for Work*:* According to the 2022 ACS, nearly 27 percent of workers across the planning area reported leaving for work between 7:00 and 8:00 AM. (**Figure 5-2.3).** Another 19 percent reported leaving for work between 6:00 and 7:00 AM. A total of 74% of workers reported leaving for work between the midnight and 9AM, with the remaining 26% leaving between 9AM and Midnight.



Travel Time to Work: Travel times are an important factor in measuring the effectiveness of the transportation system. (**Figure 5-2.4)**. Across the planning area, 20% of residents are less than 10 minutes from work, with 51% being within 19 minutes from work. 17% of residents reported commute times between 30 and 29 minutes, with 14% reporting commutes of 30 to 34 minutes. 32% of residents have a commute longer than 30 minutes in the planning area. The mean travel time to work was reported as 23.8 minutes for the planning area.



The travel time information indicates that people tend to make decisions based on a "travel time budget." In other words they tend to live within a particular distance from where they work with respect to the travel time between the two rather than the distance. As such, time saving transportation improvements often impact land use decisions.

Most people living in Erie County also work here. In 2022, an estimated 31,717 (64.5%) people both lived and worked within their respective county of Ottawa, Erie, or Lorain. Of the 49,161 total workers living in the planning area, 35.1% worked outside their county. According to the 2022 US Census Longitudinal Origin-Destination Employment Statistics (LODES), 17,007 people commute into Erie County for work, while 16,663 are employed outside of Erie County but reside here. For all of Ottawa County, including outside of the planning area, 6,272 workers commute in for work, with 12,036 commuting out of county and 5,898 living and working within the county.

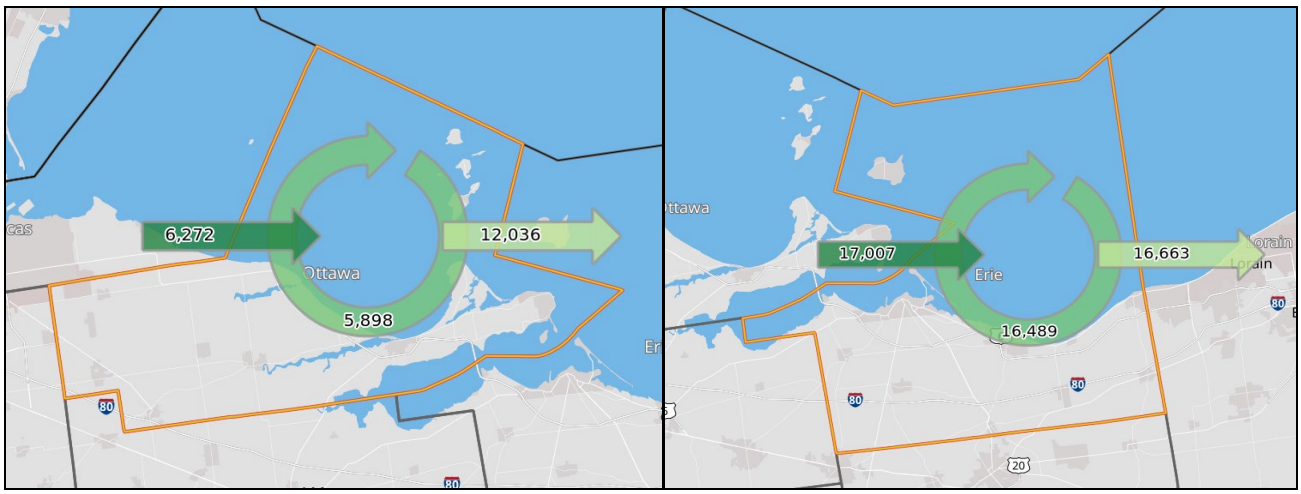


Figure 5-2.5: LODES Inflow/Outflow Analysis

5.3 Transportation Network

Roads: The urbanized area of the MPO is connected to the surrounding communities and rural areas by a system of Federal, State and County highways. The MPO's transportation system includes 1480 miles of roadway. Major routes include: US 6, US 250, State Routes 2, 4, 13, 53, 60, 61, 99, 101, 113 163, and 269. The Ohio Turnpike, I-80/90, is accessible at two locations within the Erie County, and is one of the primary east-west connections. The western portion of Ottawa County has one turnpike interchange outside of the planning area, but locals in Port Clinton are likely to use the interchange north of Fremont in Sandusky County.

Functional Classification System: Functional Classification is the grouping of roads, streets and highways in a hierarchy based on the type of highway service they provide. Streets and highways do not operate independently. They are part of an interconnected network, and each one performs a service in moving traffic throughout the system. Generally, streets and highways perform two types of service. They provide either traffic mobility or land access and can be ranked in terms of the proportion of each service they perform.

Roadways are also divided into urban and rural functional classification systems. The urban system covers all streets, roads and highways located within urban boundaries designated by the US Census Bureau including small urban areas (population 5,000 or more separate from any urbanized area) and urbanized areas (population 50,000 or more.)

The rural functional classification system covers all streets, roads and highways outside small urban and urbanized areas. While urban and rural areas differ, for example, in terms of the density of the land use and intensity of traffic and travel, the same general functional concepts apply to highways in both systems. The principal difference between the two systems is the length of trips both in time and distance.

There are four classes of highways in the Functional Classification System; 1.) Principal arterials, 2.) Minor arterials, 3.) Collector streets, and 4.) Local streets.

The Urban Principal Arterial system is divided into three subclasses: a) Interstates; b) Other Freeways/Expressways- non-Interstate principal arterials with limited access; and c) Other, principal arterials without limited access.

Rural Principal Arterials have two subclasses: a) Interstates, those routes specifically designated as Interstate highways; and Other Principal Arterials.

Because of greater population concentrations, more intense land use, and high traffic volumes in urban areas, some characteristics of urban classes differ slightly from their rural counterparts, for example, in the density and spacing of the urban network and the traffic volume and length of trips. **Figure 5-3.1** below was taken from the 2023 FHWA Highway Functional Classification, Concepts, Criteria, and Procedures manual. The table shows the relationship between classification and travel characteristics.

- Interstates and freeways offer no access to land, only to other roadways in the highway system and carry large amounts of traffic longer distances. The Ohio Turnpike and SR 2 in the MPO area are examples. Principal arterials are usually expressways or major highways such as US 250 and US6

between SR 2 west of Sandusky and SR 2 to the east. They still carry large amounts of traffic longer distances but also offer access to land. Problems arise when in developing areas, developers and community leaders allow the access to land function become more important than the mobility function. Numerous driveways and cross streets create conflicts which can result in congestion and delay with large volumes of traffic.

- Minor arterials support the principal arterial system. Generally they move smaller volumes of traffic moderate to longer distances. In rural areas they connect large towns to each other and larger urbanized areas. SR 53 (Port Clinton to Fremont) and SR 4 (Sandusky to Bellevue and Bucyrus) are examples in the MPO area. In Urban areas, minor arterials are generally major streets such as Perkins Avenue and Columbus Avenue in Sandusky and Perkins Township or US 6 on the east side of the City of Huron or on the west side of the City of Vermilion.

- Collectors collect traffic from local streets (usually residential streets in urban areas and township roads in rural) and deliver it to the arterial street system. Collectors provide access to land but also have a through traffic component. Strub Road in Perkins Township, 6th Street in Port Clinton, River Road in the City of Huron, and West River Road in the City of Vermilion are typical urban collectors. Rural major collectors are the principal connections between townships, provide longer distance intra county travel and deliver traffic to arterials. At an urban-rural boundary, rural major collectors connect directly to urban minor arterials. Rural minor collectors are secondary connectors for townships and small communities. Rural collector roads often link to State Routes (major collectors) or County Routes (minor collectors). E. Bayshore Road and E. Harbor Road are typical rural collectors.

- Local streets provide access to land-residences and businesses in urban areas: farms, residences and occasional business in rural areas. In urban areas most city streets are local roadways in rural areas they are township roads. The traffic on local roads is usually the traveler who intends to access a residence or business along the street.

Functional Classification	Distance Served (and Length of Route)	Access Points	Speed Limit	Distance between Routes	Usage (AADT and DVMT)	Significance	Number of Travel Lanes
Arterial	Longest	Few	Highest	Longest	Highest	Statewide	More
Collector	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Local	Shortest	Many	Lowest	Shortest	Lowest	Local	Fewer

Table 5-3.1 Relationship Between Functional Classification and Travel Characteristics

Maps 5-3.1 and 5-3.3 show the functional classification and Average Daily Traffic (ADT) of roadways in the MPO area. In looking at the map and reading the descriptions of each class it becomes clear that functional criteria and characteristics are more qualitative rather than quantitative. Geography, population density and land use, the size of road network, and travel patterns vary too greatly from state to state, county to county, or city to city, to develop exact criteria for trip lengths, traffic volumes, spacing of routes, or size of population centers. However classification studies by various states show the relative

size of their systems are similar when expressed as a percentage of their total mileage. **Table 5-3.2** below summarizes data taken from the 2023 FHWA Highway Functional Classification Concepts, Criteria and Procedures manual. The table presents a range of percentages to be used in establishing the relative size of the rural and urban systems. In establishing the functional classification of roadways in the MPO area, these guidelines are considered. **Table 5-3.2** also shows the final distribution of the Rural and Urban functional classes in the ERPC MPO area.

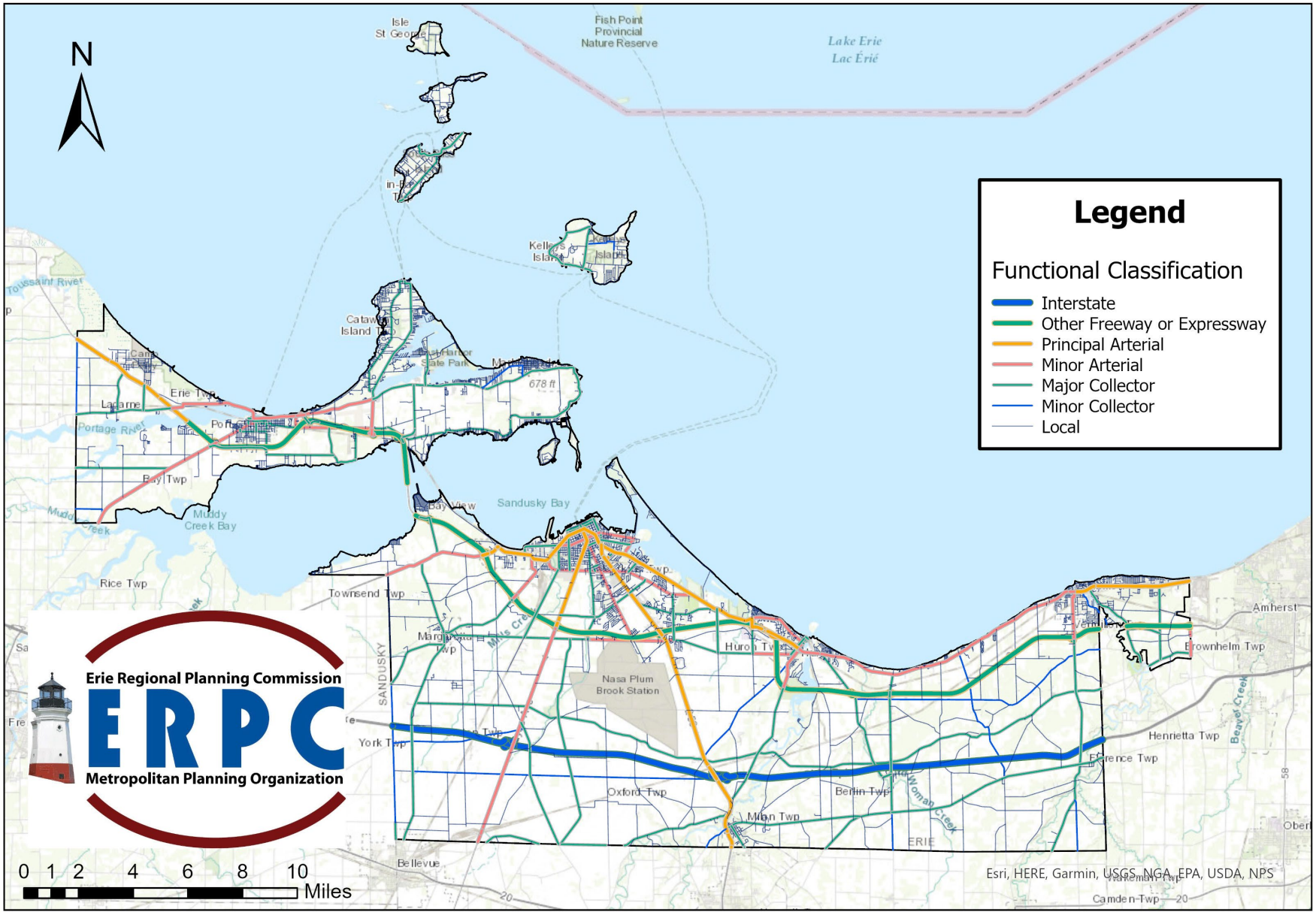
Roadway Functional Classification Group	Range Guidline for Class Group Based On:				IN ERPC MPO Area:	
	Rural		Urban			
	VMT (Vehicles Mile Traveled) [% of total]	Miles (% Of Total)	VMT (Vehicles Mile Traveled) [% of total]	Miles (% Of Total)	Rural % of Miles	Urban % of Miles
Principal Arterial	14 to 30	2 to 6	16 to 31	4 to 5	3.1	9.1
Minor Arterial	11 to 20	3 to 7	14 to 25	7 to 14	2.9	7.4
Major Collector	12 to 23	9 to 19	5 to 13	7 to 15	21.9	10.4
Minor Collector	2 to 9	4 to 15	5 to 13	7 to 15	8.3	1.2
Local	8 to 23	64 to 75	6 to 25	63 to 75	51.6	60.6

Table 5-3.2: Proportion of Roadway Classes in a Regional Network

The Functional classification system has traditionally been used as a method for allocating transportation improvement funds particularly those considered Federal Aid or received through ODOT from the Federal Highway Trust Fund. Prior to 1991 all roads classified as collectors (other than rural minor collectors) and arterials were eligible for Federal Aid. In 1991, the Intermodal Surface Transportation Efficiency Act (ISTEA) created the National Highway System (NHS). The NHS would include the Interstate System plus selected other major roadways serving high volumes of traffic and those providing connections ports and to military facilities. The Interstates and other NHS routes then became the "Federal" system, which Congress and the Federal Highway Administration would focus on. The states (and metropolitan areas) would also receive a block of Federal Aide identified as the Surface Transportation Program, which would cover non-NHS routes except local roads. (Initially Rural Minor Collectors were also excluded.)

The selection of routes eligible for NHS funding was also based on functional criteria although the connectivity to ports and other selected facilities requirement has resulted in lower class roadways such as collectors and local roads are part of the NHS system[1] while principal arterials are not. **Figure 5.3-1** highlight the NHS system in the MPO area. There are approximately 160 miles of NHS highways in the MPO, including 26 miles of Interstate on the Ohio Turnpike. State Route 2 accounts for 72 of the total miles, and US 6 and US 250 has approximately 17 miles and 8 miles respectively. State Route 53 and State Route 163 in Ottawa County have over 7 of the miles, with the remaining 28 miles on the system servicing the area as intermodal connectors. Regarding the National Truck System (shown in **Map 5-3.2**), the MPO area contains approximately 131 miles. SR 2, SR 4 and the Turnpike (80/90) make up most of this route (approximately 108 miles). The remainder of the route is located on SR 53 (5 miles) US 6 (5 miles) and SR 250 (12 miles).

[1] Updated January 2020, FHWA



Map prepared by Erie Regional Planning Commission, and is intended for illustrative purposes only. Erie County, Ohio assumes no responsibility or liabilities for any errors or omissions contained here in.

Figure 5-3.1: Functional Classification

ERPC MPO 2050 Long Range Transportation Plan

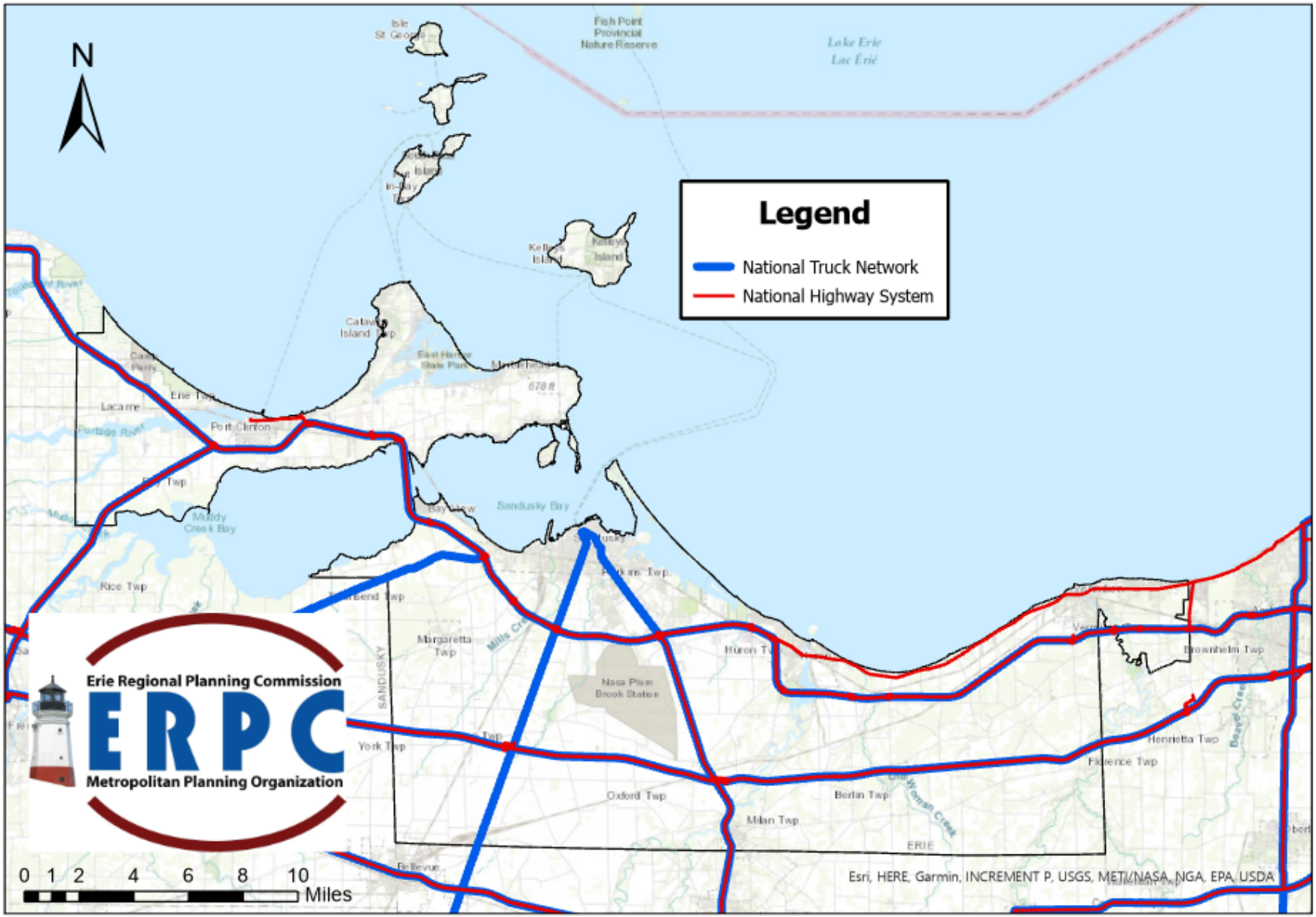


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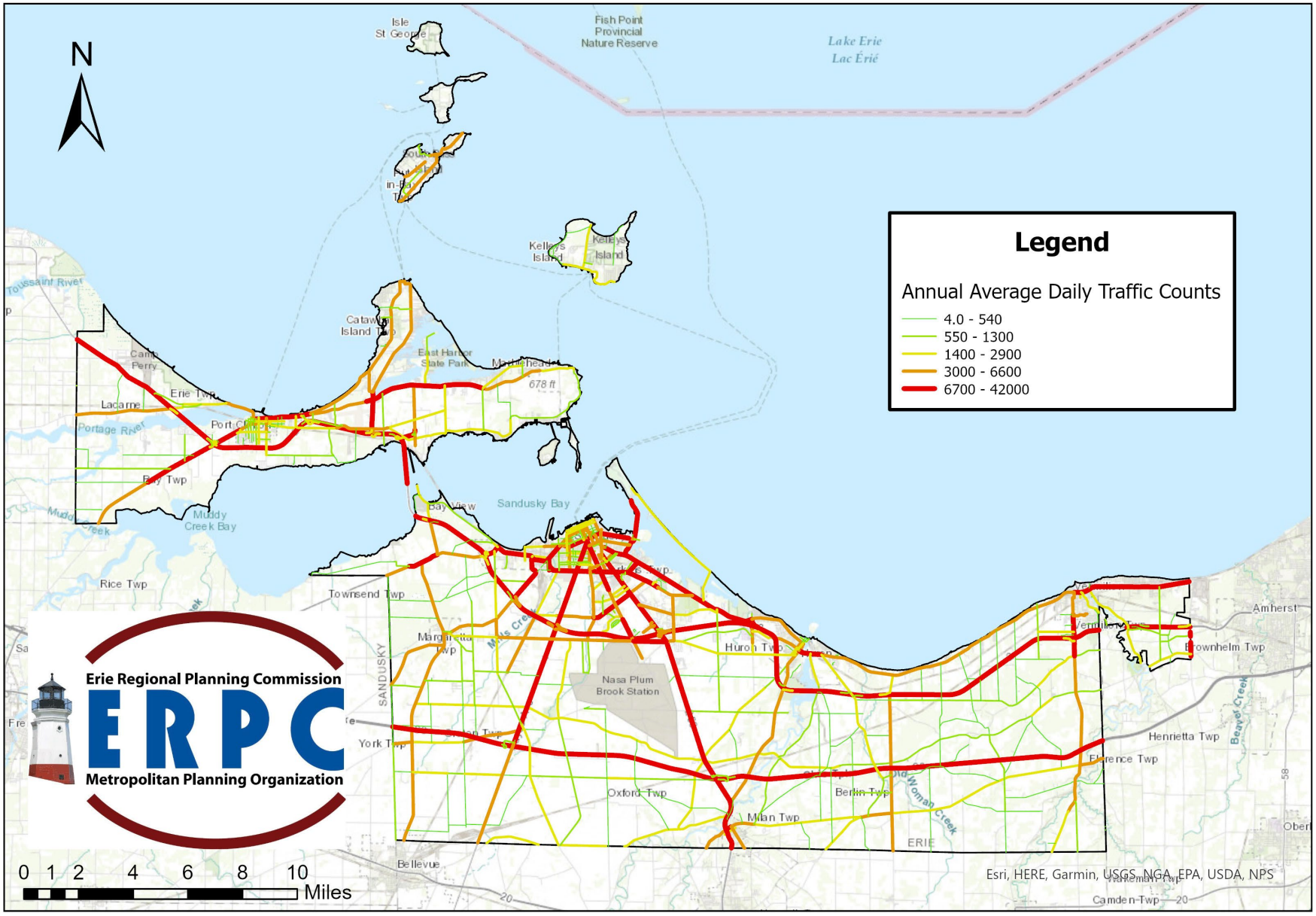
Figure 5-3.2 National Highway System

ERPC MPO 2050 Long Range Transportation Plan



Map prepared by Erie Regional Planning Commission, and is intended for illustrative purposes only. Erie County, Ohio assumes no responsibility or liabilities for any errors or omissions contained here in.

Figure 5-3.3: Annual Average Daily Traffic Counts

ERPC MPO 2050 Long Range Transportation Plan

Level of Service Analysis: An analysis was completed to evaluate the existing roadway systems Level of Service (LOS). LOS is a qualitative measure describing operation conditions within a traffic stream under a given demand. The system uses levels to represent a range of operating conditions defined by measures of effectiveness. The transportation LOS system uses the letters A through F, with A being best and F being worst. The Transportation Research Board's Highway Capacity Manual and **American Association of State Highway and Transportation Officials (**AASHTO) Geometric Design of Highways and Streets ("Green Book") list the following levels of service:

- **LOS A** is the best, described as conditions where traffic flows at or above the posted speed limit and all motorists have complete mobility between lanes. LOS A occurs late at night in urban areas, frequently in rural areas, and often seen generally in car advertisements.

Level of Service	General Operating Conditions
A	Free flow
B	Reasonably free flow
C	Stable flow
D	Approaching unstable flow
E	Unstable flow
F	Forced or breakdown flow

Figure 5-3.4: LOS from AASHTO "The Green Book"

- **LOS B** is slightly more congested, with some hindrance of maneuverability; two motorists might be forced to drive side by side, limiting lane changes. LOS B does not reduce speed from LOS A.

- **LOS C** has more congestion than B, where ability to pass or change lanes is not always assured. LOS C is the target for urban highways in some places, and for rural highways in many places. At LOS C most experienced drivers are comfortable, roads remain safely below but efficiently close to capacity, and posted speed is maintained.

- **LOS D** is perhaps the level of service of a busy shopping corridor in the middle of a weekday, or a functional urban highway during commuting hours: speeds are somewhat reduced, motorists are hemmed in by other cars and trucks. LOS D is a common goal for urban streets during peak hours, as attaining LOS C would require a prohibitive cost and societal impact in bypass roads and lane additions.

- **LOS E** is a marginal service state. Flow becomes irregular and speed varies rapidly, but rarely reaches the posted limit. On highways this is consistent with a road at or approaching its designed capacity. LOS E is a common standard in larger urban areas, where some roadway congestion is inevitable.

- **LOS F** is the lowest measurement of efficiency for a road's performance. Flow is forced; every vehicle moves in lockstep with the vehicle in front of it, with frequent slowing required. Technically, a road in a constant traffic jam would be at LOS F. This is because LOS does not describe an instant state, but rather an average or typical service.

Figure 5-3.4 shows LOS under summer weekday condition; which was determined overall to have more traffic than spring or summer weekends. Most low ranking LOS facilities on the map are located within the City of Sandusky. As tourism levels hit their height during summer weekdays, traffic increases along

main routes particularly those leading to the Cedar Point Amusement Park. Also, it is important to note that the level of service maps generated from the travel demand model may not totally reflect site specific conditions and as such, forecasts of future congestion patterns are typically followed up with site-specific studies before specific improvements are proposed by the MPO's member jurisdictions. **Figure 5-3.4** displays the results of the LOS analysis for existing intersection conditions within the MPO. The map shows LOS for intersections based on delay during a peak hour period. All facilities classified as a local road were excluded in this analysis due to low volumes and the fact that as they are not included in the federal aid highway system, they are not eligible for MPO funding.

Safety Analysis: Crashes are a measure of highway safety. One way to identify high crash locations is the absolute number of crashes occurring at a location in a specified time period, which is usually three years. Another way is to use the crash rate, or the absolute number of crashes in the time period divided by the number of vehicles passing through the location in that time period. The location with the highest number of accidents is ranked first, followed by the location with the second highest number of accidents, and so on. This method does not consider the differing amounts of traffic at each location. Therefore, the frequency method tends to rank high volume locations as high crash locations, even if those locations have a relatively low number of accidents for the traffic volume.

Another way to identify high crash locations is by the crash rate, the absolute number of crashes in the time period divided by the number of vehicles passing through the location in that time period. ERPC uses the frequency method to select a group of high-accident locations and then uses the crash rate method (where traffic counts are available) to calculate the crash rate. ERPC will continue to make concerted efforts in the upcoming traffic counting seasons to capture traffic counts for those locations on the crash frequency list in order to calculate crash rates.

Table 5-3.3 lists the highest-ranking crash intersections by number and severity of crashes (within 0.10 mile from the intersection) during the three-year period 2021, 2022 and 2023. Calculated crash rates are also listed where traffic volume data were available; however, crash rank order is based on equivalent property damage only (EPDO), considering both the frequency of the accidents and the severity to vehicle occupants as a weighted with respect to the severity level. The following two charts (**Table 5-3.3 and 5-3.4)** rank the top 25 accident intersections based on EPDO and on cumulative number of accident, respectively.

The highest number of crashes at any location was 68 in the three-year period, which occurred at US 250 and Strub Road. This is 23 accidents less than the highest crashes as listed in the 2045 LRTP update. Where traffic information was available for all streets at the intersection, the crash rate ranged from 0.56 crashes per million vehicles to 4.55 crashes per million vehicles across the top 25 EPDO intersections. Crash information as presented here is an initial step in determining whether a location has an important and correctable safety problem. Both absolute numbers and the crash rate are important guides. However, the crash rate often carries more weight because the number reflects the potential for a crash at a location. The crash rate is expressed as “crashes per million vehicles entering the intersection”. The crash rate provides a basis for identifying "high crash" sites. Typically, optimal levels for crash rates is 1.0 or below. The crash rate takes into account the traffic volume at the intersection, which is one of the greatest predictors of the quantitative risk of a crash. For example, the intersection at SR 4 and Perkins Avenue had 62 crashes with a crash rate of 1.75. In comparison, SR 269 at Portland Road shows fewer crashes at 17, but the crash rate is higher at 4.55.

Also, it is noted that many crashes are not considered by definition accidents. An accident is defined as no reasonable amount of driver car, caution or roadway improvements could prevented it from occurring while crashes are the result of driver carelessness-speeding, following too closely, driving too fast for conditions, or DWI etc. In some cases, correctable roadway conditions have a direct or contributing effect on the number and severity of crashes at a location. A traffic safety study is usually conducted to determine the seriousness of the crash problem at a location and to identify potential remedies to identified deficiencies. Those remedies can include physical improvements such as new roadway geometry, signals to conveying information about roadway conditions to drivers, or enforcing driving related laws.

ODOT and the MPO regularly review the highest (based on absolute numbers and the crash rate) crash locations to identify those with the most serious conditions. That evaluation includes summary statistics on the severity (fatalities, injuries or property damage), weather conditions, time of day, etc. The most serious crash locations are placed on ODOT's Highway Safety Improvement Program (HSIP) list for further evaluation and recommendations for potential improvements (**Figure 5-3.3 and Figure 5-3.4**).

Table 5-3.3: EPDO Crash Intersection Locations[2]

Intersection Rank (EPDO)	Jurisdiction	Intersection Name	Number of Crashes	Crash Rate
1	Perkins Township	E Strub Rd & US-250 (Milan Rd)	68	2.42
2	Groton Township	Portland Rd & SR 269	32	4.55
3	Perkins Township	Perkins Ave & SR 4 (Hayes Ave)	62	1.75
4	Perkins Township	W Strub Rd & SR 4	38	1.82
5	Perkins Township	Fun Dr & US-250 (Milan Rd)	36	0.97
6	Danbury Township	SR 163 & NE Catawba Rd	41	2.09
7	Sandusky	Perkins Ave & US-250 (Milan Rd)	48	1.34
8	Perkins Township	Mall Blvd & US-250 (Milan Rd)	35	-
9	Huron Township	Perkins Ave & US-6	39	2.51
10	Perkins Township	Perkins Ave & Columbus Ave	35	0.95
11	Perkins Township	On/Off Ramp - SR 2 & SR 4 (Hayes Ave)	27	1.48
12	Perkins Township	E Strub Rd & Columbus Ave	40	2.33
13	Perkins Township	On/Off Ramp - SR 2 (E) & US-250 (Milan Rd)	28	0.88
14	Milan Township	Mason Rd & Mudbrook Rd (SR 13)	17	2.25
15	Huron Township	US-6 & Rye Beach Rd	28	1.37
16	Perkins Township	W Strub Rd & Campbell St	23	1.79
17	Perkins Township	W Bogart Rd & SR 4 (Hayes Ave)	30	1.70
18	Perkins Township	On/Off Ramp - SR 2 (W) & US-250 (Milan Rd)	28	0.65
19	Sandusky	W Monroe St & Clinton St	5	-
20	Perkins Township	Crossings Rd & US-250 (Milan Rd)	23	0.62
21	Perkins Township	W Perkins Ave & Campbell St	18	0.56
22	Milan Township	Mason Rd & US-250 (Milan Rd)	22	1.06
23	Perkins Township	DeWitt Ave & US-250 (Milan Rd)	17	0.80
24	Erie Township	W Lakeshore Dr & SR 2	9	0.91
25	Sandusky	Scott St & Milan Rd	16	1.58

[2] ERPC 2025 Draft Crash Summary Report - Ranked by EPDO

Table 5-3.4: Crash Intersection Locations[3]

Frequency Rank	Jurisdiction	Intersection Name	Number of Crashes	Crash Rate
1	Perkins Township	E Strub Rd & US-250 (Milan Rd)	68	2.42
2	Perkins Township	Perkins Ave & SR 4 (Hayes Ave)	62	1.75
3	Sandusky	Perkins Ave & US-250 (Milan Rd)	48	1.34
4	Danbury Township	SR 163 & NE Catawba Rd	41	2.09
5	Perkins Township	E Strub Rd & Columbus Ave	40	2.33
6	Huron Township	Perkins Ave & US-6	39	2.51
7	Perkins Township	W Strub Rd & SR 4	38	1.82
8	Perkins Township	Fun Dr & US-250 (Milan Rd)	36	0.97
9	Perkins Township	Perkins Ave & Columbus Ave	35	0.95
9	Perkins Township	Mall Blvd & US-250 (Milan Rd)	35	-
11	Groton Township	Portland Rd & SR 269	32	4.55
12	Perkins Township	W Bogart Rd & SR 4 (Hayes Ave)	30	1.70
13	Perkins Township	On/Off Ramp - SR 2 (W) & US-250 (Milan Rd)	28	0.65
13	Perkins Township	On/Off Ramp - SR 2 (E) & US-250 (Milan Rd)	28	0.88
13	Huron Township	US-6 & Rye Beach Rd	28	1.37
16	Perkins Township	On/Off Ramp - SR 2 & SR 4 (Hayes Ave)	27	1.48
17	Perkins Township	Hull Rd & US-250 (Milan Rd)	23	0.58
17	Perkins Township	Crossings Rd & US-250 (Milan Rd)	23	0.62
17	Perkins Township	W Strub Rd & Campbell St	23	1.79
20	Perkins Township	On/Off Ramp - SR 2 & Rye Beach Rd	22	0.94
20	Milan Township	Mason Rd & US-250 (Milan Rd)	22	1.06
22	Sandusky	Cedar Point Dr & US-6	20	1.17
23	Sandusky	Remington Ave & US-6	19	0.81
23	Groton Township	Portland Rd & SR 4	19	1.54
25	Perkins Township	W Perkins Ave & Campbell St	18	0.56
25	Perkins Township	W Perkins Ave & Caldwell St	18	0.65

[3] ERPC 2025 Draft Crash Summary Report - Ranked by EPDO

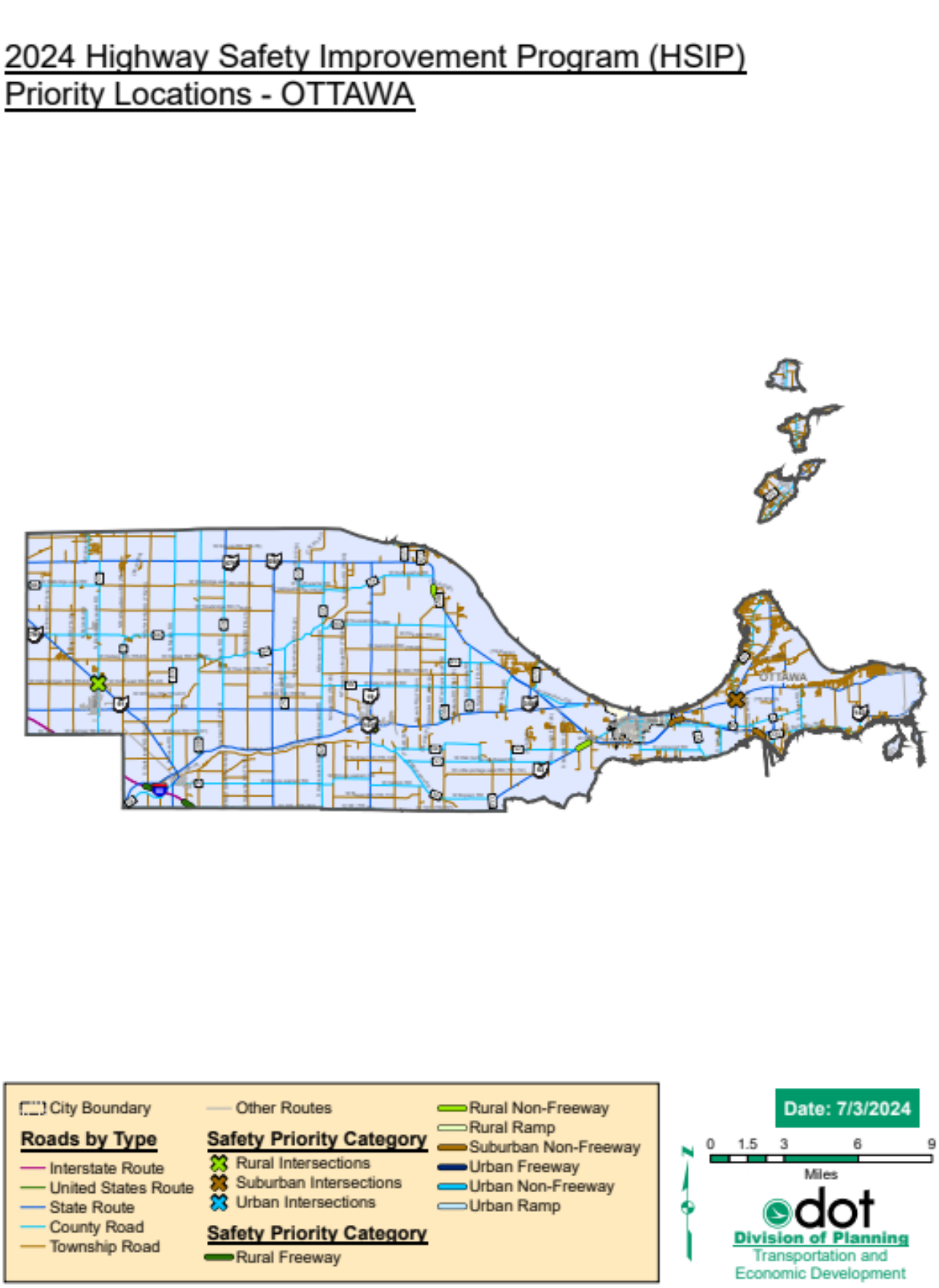


Figure 5-3.3 HSIP Map - Ottawa County

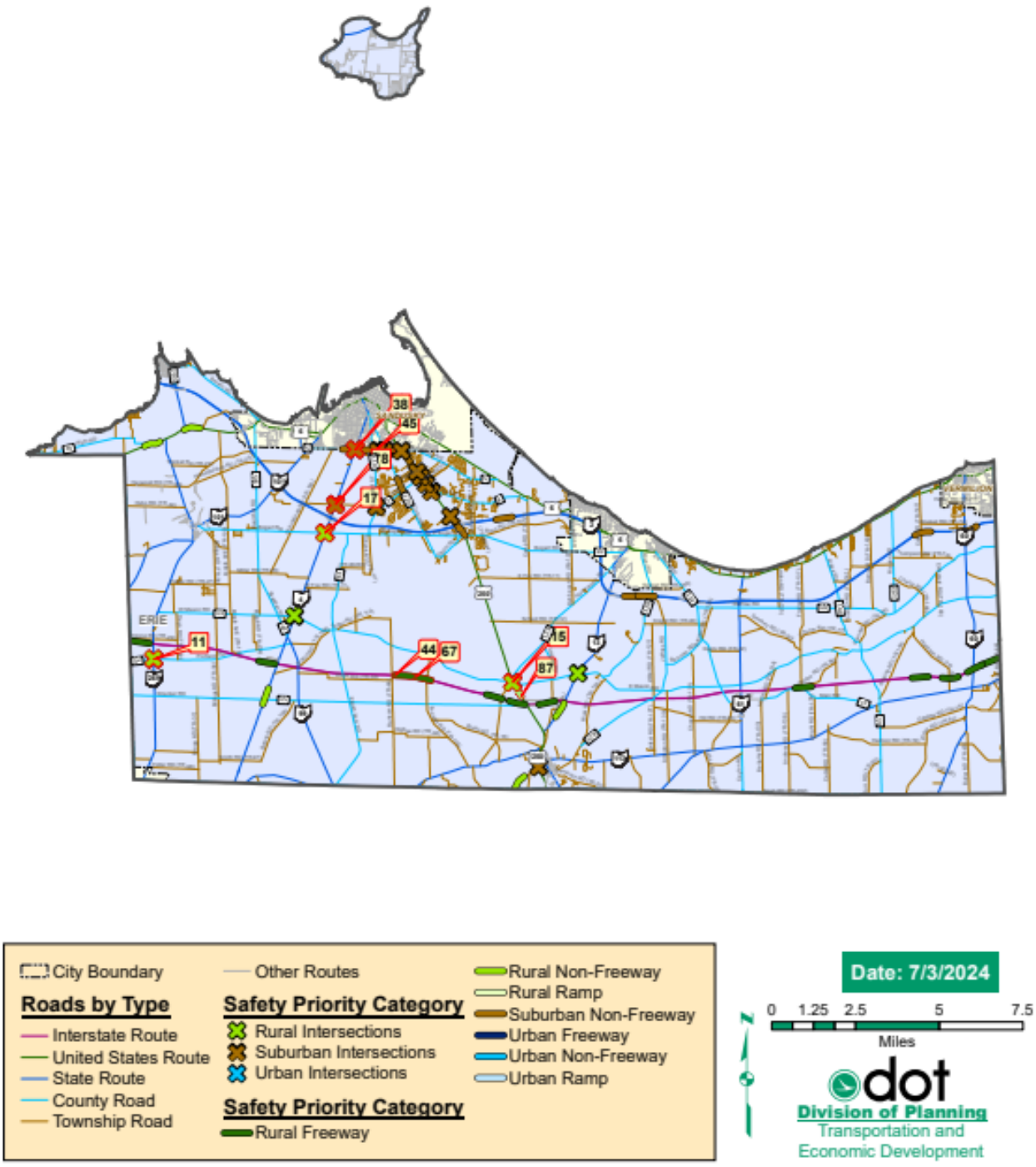


Figure 5-3.3 HSIP Map - Erie County

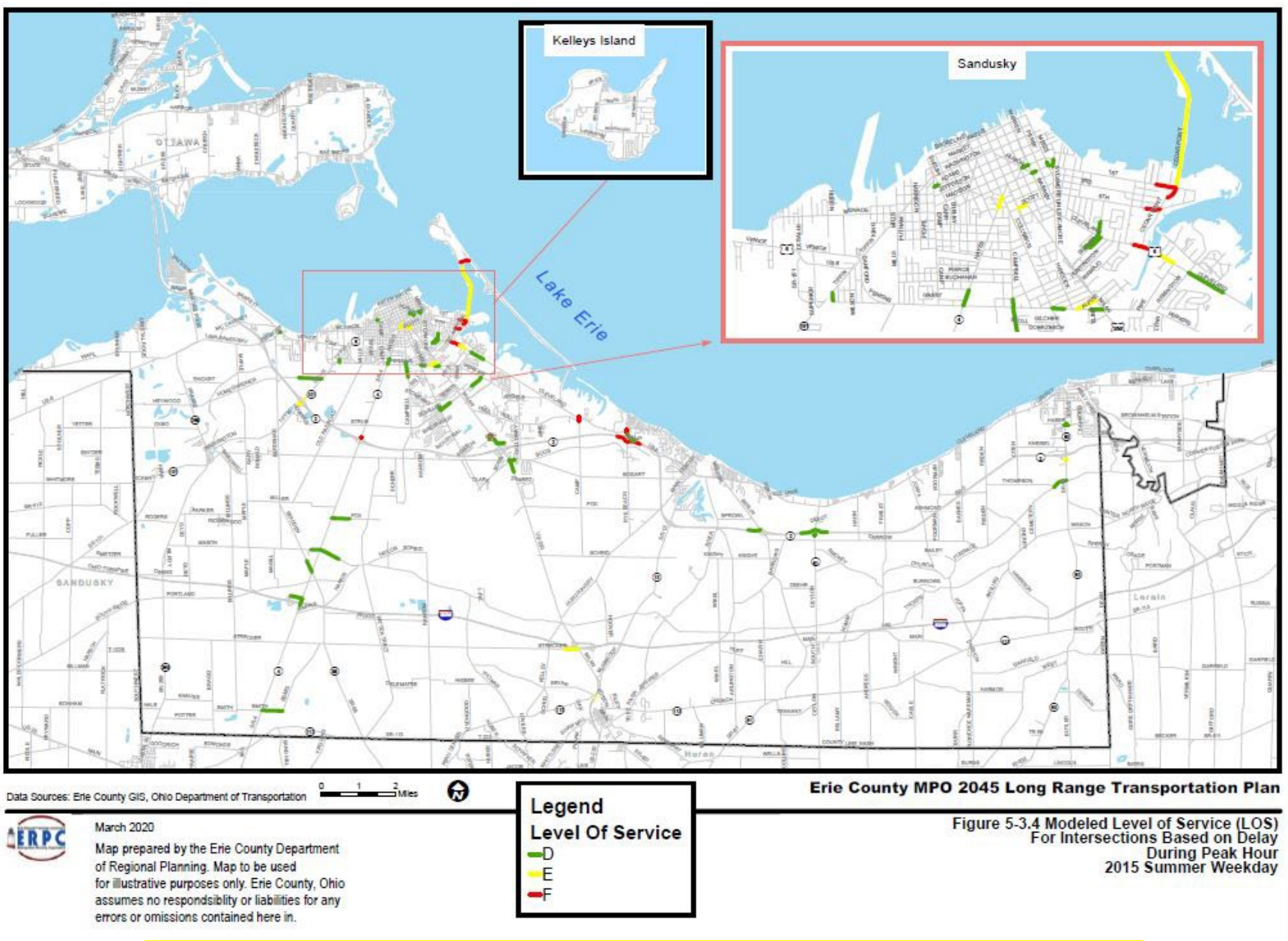


Figure 5-3.4 Existing Intersection Level of Service (LOS) NEEDS UPDATED FOR MODEL OF REGION

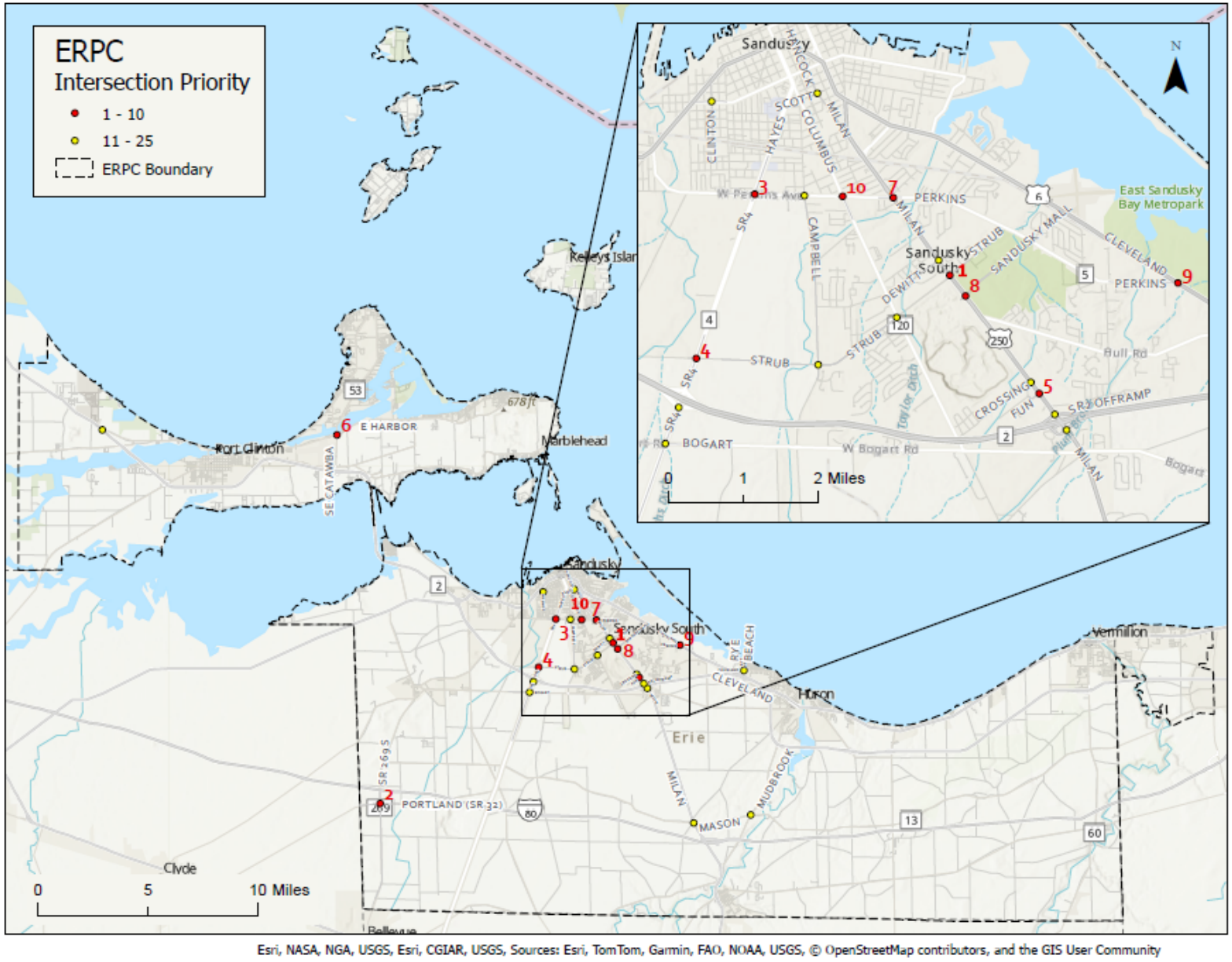


Figure 5-3.5: High Crash Frequency Intersection Locations

Pavement Conditions: A major element of a transportation plan is to maintain the system. Pavements deteriorate for a variety of reasons. In northern Ohio, weather, road deicing salts, lack of maintenance, and traffic are the principal causes. Heavy trucks, both by size and numbers, also have a significant effect on road deterioration. In addition to fixing rough pavements (cracks, patches and disjointed pavement slabs) for comfort, safety, and to prevent future problems, it is also important to eliminate wheel ruts, which hold water and result in hydroplaning or slippery conditions when the water freezes.

There is no formula for estimating the need for pavement maintenance as pavement conditions reflect how the pavement was constructed, the amount and kind of traffic, and weather conditions. Therefore, larger agencies responsible for roadway maintenance have a pavement management system and regularly rate pavement conditions on the streets and roads under their jurisdiction. The general practice is to rate pavement on a scale of 1 to 100 based on observed conditions and some testing. Lower values mean poorer pavement conditions. ODOT classifies roads into one of three policy systems: the priority system, general system or urban system.

Priority Systems: There are three priority systems including: 1.) All interstate routes, excluding the Turnpike 2.) All divided National Highway System routes (NHS) routes inside incorporated areas with populations of 5,000 or more that have a functional class of 12 (other urban freeways and expressways) and 3.) All divided NHS routes outside of incorporated areas with populations of 5,000 or more. ODOT considers priority system pavements to be in or approaching poor condition if the pavement condition rating (PCR) is less than 65.

General System: Includes all non-priority routes outside of municipalities with populations of 5,000 or more. ODOT considers general system pavements to be in or approaching poor condition if the PCR is less than 60.

Urban System: Includes all non-priority routes within municipalities with populations of 5,000 or more. ODOT considers urban system pavements to be in or approaching poor condition if the PCR is less than 55.

ODOT's pavement condition rating records were utilized in the evaluation of roads for the ERPC MPO region for this plan. ERPC MPO identified 9 segments across Erie, Ottawa and Lorain County that failed the criteria for general system and urban system PCR. The segments total 7.8 miles of roadway across the network. Out of 9 segments, 4 projects are part of various projects for roadway preservation over the next four years.

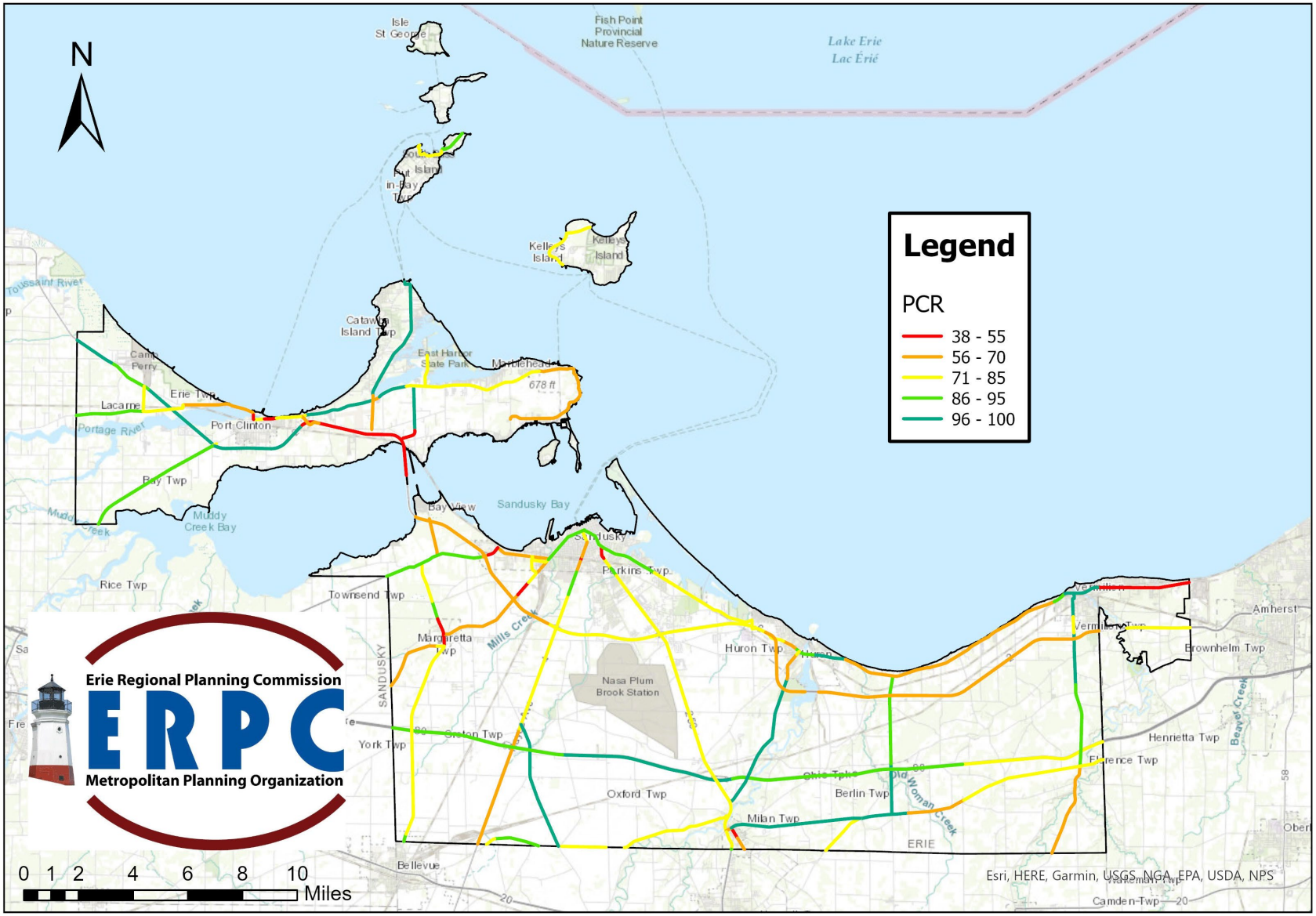


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Figure 5-3.6: Pavement Condition Rating (2024)

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Bridges: Bridges are structures over ten feet long, which carry a road way over an obstruction such as a river, railroad or another roadway. Bridges have different, usually longer, maintenance and functional lives than the roadways on either end. Therefore, bridge maintenance is often carried out at a different time than the adjoining roadway. When maintenance is required, however, the maintenance cost can be considerably higher than adjoining road repairs. The closure of bridges can greatly impact the traffic flow in an area and can limit access. The combination of the disruption to the transportation system the high cost for repairs/ maintenance have resulted in bridges have special funding categories.

There are 376 bridges in the MPO area. ODOT is responsible for 148 bridges; the Ohio Turnpike Commission, 30; Erie, Ottawa and Lorain (in the City of Vermilion) Counties (for county, township and village bridges), 178; larger municipalities, 18; and 2 by Ohio Division of Natural Resources (ODNR). These bridges are inspected annually, and the structures rated. The bridge is then appraised, based on the bridge rating, traffic, and other factors to determine a priority for maintenance. The bridge appraisals are on a ten-point scale with lower numbers indicating more serious structural deficiencies and high impacts to the traveling public should the bridge be closed, while larger numbers indicate bridges in good condition. **Table 5.3-4** lists the general appraisals for bridges in the MPO as of October 2025:

Table 5.3-4: Bridge Conditions

Bridge Condition	Appraisal Rating	Number of Structures
Critical	0 through 2	0
Poor	3 and 4	6
Fair	5 and 6	114
Good	7 through 9	256

The Federal Highway Administration (FHWA) Bridge Inventory manual provides ranking criteria on all bridges. There are three criteria by which bridge conditions are measured: 1.) The deck, 2.) The superstructure and 3.) The substructures. Below these criteria are shown as applicable to the planning area:

- The bridge deck condition describes the overall condition rating of the surface. Five in service bridges in the MPO area have a ranking of poor while the remaining are fair or better.

- The superstructure ranking criteria evaluates the condition of all structural components of the bridge. Six bridges in the region are listed as having poor superstructures.

- The substructure criterion describes the physical condition of the abutments, piles, piers and other base structural components. Three bridges in the area are listed as having poor substructures.

Each of the bridges with poor ratings on deck, substructure, or superstructure also have overall general appraisal ratings of poor. The six structures are located at the following: Harborview Drive in Huron; Vermilion Road and Jerusalem Road within the City of Vermilion; and the railroad underpasses at Tiffin Avenue (2) and Hayes Avenue in the City of Sandusky.[4]

[4] TIMS

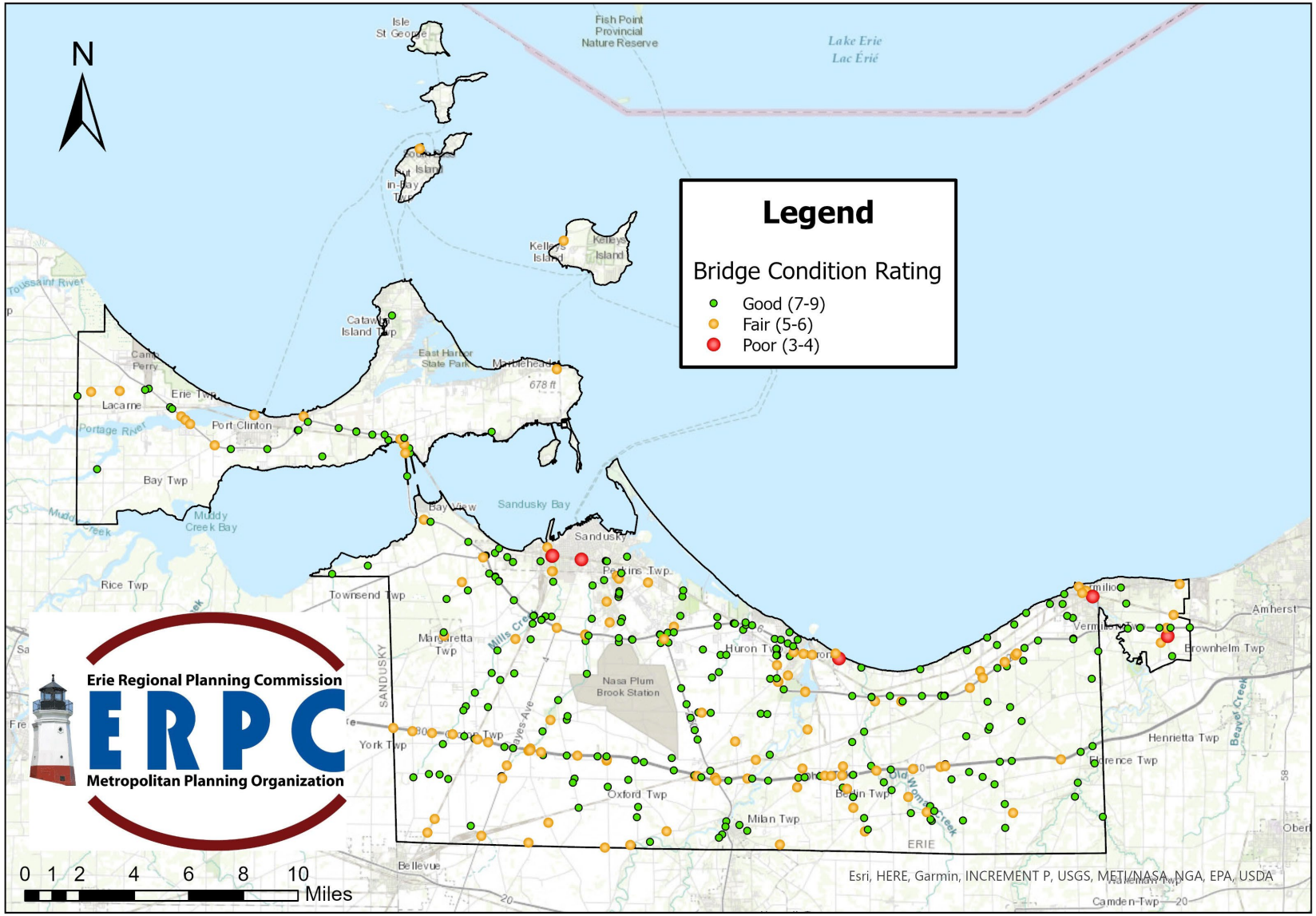

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Figure 5-3.7 Bridge Condition Rating (2025)

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Connectivity: Connectivity can be considered the global concept of access. It is the ability to move relatively directly and easily between one are and another. For the MPO, this includes external trips to the rest of the state and beyond, and internal trips, that begin and end within the MPO. There are as many connectivity issues as there are travelers with an origin (often home) and a destination (work, shopping and recreation). Some of the more important internal connectivity issues raised by stakeholders and the public include the following:

- **East-West Connectivity:** East-west connectivity through the MPO Region has typically been adequate thanks to State Route 2 and Interstate 80. The Sandusky Bay and Edison Bridge bottle neck, and certain land uses including the NASA Neil A. Armstrong Test Facility and quarries in Perkins and Danbury Township can cause internal connectivity issues for east-west travel in the region.

- **North-South Connectivity:** The main north-south routes into and out of the region have primarily been State Route 53, State Route 4, and US Route 250. The primarily two lane roadways provide adequate north-south connectivity to the surrounding area, but has been noted as lacking adequate access for connections through the rest of the state, that can impact freight movement and tourist flows during peak summer hours.

- **The Islands:** Although not completely a roadway issue, public access to the Lake Erie Islands, including Put-In-Bay and Kelley's Island, can pose connectivity issues within the MPO. Inclement weather, limited access points, and peak tourist travel congestion can all be possible issues for travel to and from the island. Ferry services are available in Port Clinton, Catawba Township, Danbury Township, and the City of Sandusky, with only Catawba and Danbury township ferries able to bring personal vehicles over. The Erie-Ottawa International Airport provides access to the islands, and are also accessible by personal boats. Current ferry services are important to maintain as a vital connection to the islands. However, the islands are known for their low stress network and recreational facilities for tourists, and reduced traffic patterns helps maintain this network for current residents.

- **Cedar Point:** This major traffic destination is difficult to reach because the route designated for visitors is highly congested both with visitors and local residents going to shopping facilities as well as traffic signal proliferation and spacing and lack of access management. Alternative routes and improvements to GPS mapping has increased traffic on alternative routes and neighborhoods not currently designed for the increased through traffic.

- **Waterfronts:** The Cities of Sandusky, Port Clinton, Vermilion, and Huron have marinas lake front access that encouraged the development of associated business including boat sales/repair and waterfront restaurants/motels developing in the old port areas. Reaching these destinations from neighborhoods, rural areas and SR 2 for longer distance users cross older urban streets which can be difficult. However; most users are engaged in recreational activities and therefore willing to accept longer and more difficult commuting patterns.

- **Downtown Sandusky:** The Sandusky Downtown business district can be difficult to reach although the principal arterial network functions to service this area. In addition, most of the roadways are narrow and are angled in way that makes them difficult to navigate.

- In addition to the connectivity issues listed above there were also more localized connectivity/access issues that were raised in the Public Involvement Summary. It is noted that many of these issues that were mentioned were identified as being unique to a specific area and therefor will need to be addressed locally. As specific improvements for these issues are developed the MPO is then able to include them in the LRTP update.

Another issue that emerged through thee public involvement phase was external connectivity. Unfortunately, these connectivity issues cannot be solved solely by the MPO Area, but with the assistance of other agencies such as ODOT, other MPOs or Small Urban Areas some of these issues may be collaboratively remediated and addressed. The more significant regional issues include:

- **Travel to the City of Cleveland:** Some residents in the eastern part of the MPO, particularly the City of Vermilion, work in the City of Cleveland. Improving travel, possibly with commuter rail, to Cleveland is a desirable undertaking as voiced through public input.

- **Travel to Central Ohio:** Currently east-west routes in the MPO area include I-80/90, SR 2 and to portions of US 20. These routes provide good east-west connectivity with roads constructed to interstate/freeway standards. US 20 for example utilizes a four-lane expressway with urban by-passes standards. When travelling south into Central Ohio from both Erie and Ottawa County, there are two lane rural arterials with at grade intersections that pass through small villages and towns. Improved routes would include avoiding travel through larger towns, reducing signalized intersections for north/south priority, and road widening when feasible.

- **Connections to I-71 and I-75:** This issue is a companion of the Central Ohio corridor addressed above. To reach one of these two north-south Interstate routes travelers must go east of west from the MPO area, or navigate rural roads to connections further south. Upgraded connections could save considerable time for travelers taking the Interstate System to destinations outside the state to the south.

Access Management: Access management is a means of organizing and designing access points along roadways to balance the movement function while still providing access to lowered classes of roadway or to property. Access management also includes the consideration of access to high-and low-class roadways. Access points are an important part of access management. Access points are "points of conflict" where vehicle movements are across or against each other. Remedies include drivers slowing down or traffic engineers installing stop signs, signal or other design elements to minimize the potential conflicts and crashes. These rrestrictions on traffic movement also reduce the carrying capacity of a roadway.

Currently there are three agencies with access management policies in the MPO area. The first agency is ODOT. ODOT has an access management policy for all roadways under its jurisdiction including all US and State Routes in unincorporated areas. The second agency is the Ohio Turnpike Commission. The Turnpike Commission manages access to the Interstate Routes in the MPO as the only designated Interstate Highways are under OTC jurisdiction. OTC access policies generally follow ODOT's policies for Interstate routes with the additional consideration the access points also must meet a revenue test. The

third agency is Erie County; which has prepared an access manual as authorized by the Ohio Revised Code for county and township roads. The manual, as adopted in by the County Commissioners and effective as of August of 2018; defines the general requirements for access such as the spacing of access points and access point dimensions. The regulation works in conjunction with County and township master plans and associated zoning regulations. It also includes the need for traffic impact studies for new developments generating high volumes of traffic. The cities in the MPO area do not have access management plans but have some control of access with zoning and building codes.

5.4 Transit Systems

Coordinated Transportation Plan Update: Since its inception the MPO staff has assisted STS and other transit providers in obtaining funds through the Erie County Coordinated Transportation Plan. In order to receive many of these supplemental state funds the planning area of the recipient must have a state approved plan. The plan contains information, analyses and findings compiled from an evaluation of community characteristics, a stakeholder assessment and an inventory of existing transportation services. It also provides a description of the unmet transportation needs in the Erie County Area determined by using various methods such as agency surveys, demographic research and ongoing stakeholder input.

Originally, ERPC staff had played a main role in writing the plan and keeping it up to date over the years. The first coordinated plan was completed in 2007, and representatives from the Sandusky Transit System (STS) and Serving Our Seniors (SOS) were key partners in its development. Since then the plan has been updated several times including 2010, 2013 and 2018. An official statewide plan template and annual review requirement was created by ODOT in 2018. Erie County completed their state approved plan using the new template in 2018 and their first annual review in 2019. Beginning in 2021, ERPC staff began working with Great Lakes Community Action Partnership (GLCAP) for plan updates and development utilizing the state template.

Mobility Management: The *Yes Express*, a feasibility plan, was conducted in 2013 with Local Government Innovation Funding. The study recommended the hiring a transportation coordinator. In 2018 that recommendation became a reality. A mobility manager was assigned to Erie County and the City of Vermilion through a transit grant from ODOT. The mobility manager is housed and employed by the GLCAP. Staff works with the mobility manager to implement strategies listed in the Coordinated Plan.

Small Scale Transit Providers: ERPC staff has assisted other local agencies (Lucy Idol Foundation, Serving Our Seniors, The Meadows etc.) in obtaining 5310 and other funds for supplemental transit services. Ability Works worked with ODOT on an experimental small scale transit option that was tried for a year in 2020 to provide service between New London and US 250 in Sandusky. .

Background of the Sandusky Transit System: The Sandusky Transit System (STS) is the main transit provider in the planning area. Services include demand response service county-wide including the entire City of Vermilion. STS shares their facility (dispatch center and vehicle parking/maintenance facility) with other local transit providers including both Greyhound and AMTRAK. The transit hub is located on Depot Street in the City of Sandusky.

The system was created in late 1992 and began providing demand response service in the city limits (Sandusky) and to 32 locations in the county. The next year, STS began operating a contract service with

the Erie County Board of Development Disabilities (ECBDD). In 1997, Erie County (as well as ODOT) began providing financial support to STS in order to expand the service area of STS beyond the Sandusky city limits. The expansion was incremental and by 1999 service was available to the entire county. In 1999, STS also began providing Saturday service, a US 250 corridor service and a summer weekend service.

Funding cuts at both the state and local levels beginning in 2001 led to a reduction in the size of the system's service area and hours or service. In 2002, the City of Sandusky and Erie County capped their contributions to the transit system. The result was that the system reduced its hours and raised its fares for the first time. In 2003, Erie County withdrew its financial support from the transit system after a sales tax levy with funding for transit failed to pass. The system further reduced its service area to the Sandusky City limits and a small area surrounding the city that became known as "Zone Two". "Zone Two" trips were required to start or end in Sandusky. Several bus shelters were added to the system from 2013-2019. In 2018 the system was rebranded, and the name SPARC was discontinued and renamed the Sandusky Transit System's fixed route. Also, during this time routes and stops were reorganized and expanded as well as private contracts with local agencies and organizations. STS continues to internally review operations and expenditures in order to maintain a state of good repair for the transit service, including route changes, fare increases and service hour changes. A 2023 study by HDR and STS was completed examining services and full SWOT analysis. Study outcomes are being used by local leadership to help bolster local transit as a sustained mobility option for the region.

Rural and Urban Transit Designations: The 2000 Census revealed that the densely populated area around the cities of Sandusky and Huron meets the definition of an "urbanized area." With the urbanized area designation, STS transitioned from being a rural transit grantee to a Federal Transit Administration Section 5307 Urban System. To assist with the transition and to help meet the needs of the service area, STS undertook a Transportation Development Plan (TDP) in 2003. Since February 2004, STS began working to implement the recommendations of the TDP. STS expanded the service area to include the entire urbanized area and lifted the requirements that trips in "Zone Two" must begin or end in Zone One. In 2005, STS re-structured its contract with MR/DD which created additional revenue that would be used as a local match for Federal grants. The local match allowed the system to receive more Federal funding and increase its hours of service. In 2005, STS extended its weekday hours and provides service on Saturdays. The 2010 Census revealed that there was a population decline within the urbanized area and that it no longer had enough population to be considered an urban system. The system was re-designated as a rural transit system around 2012. Following the 2020 Census, the region was redesignated as an urban transit system, and reverted back to the 5307 funding program. The transit system formally made the switch in July of 2024. STS in turn moved from an FTA Tier II agency to a Tier I agency. As part of the transition, STS has begun developing a Transit Asset Management (TAM) Plan to help assess the current condition of its capital assets. The plan is expected to be completed in 2025 during the development of the MPO long range plan.

NEW SCHEDULES EFFECTIVE JANUARY 1, 2025

OFF-SEASON SCHEDULE (NOVEMBER 1 - APRIL 30)

Line	Frequency	Days of Operation	Hours of Operation
Blue	30 Mins	7 Days/Week	6am-10:30pm
Red	60 Mins	7 Days/Week	6am-10pm
Yellow	60 Mins	Mon-Sat	6:30am-8:30pm
Purple	60 Mins	Mon-Sat	6am-8pm
Green	60 Mins	Mon-Sat	6am-8pm

Peak Season Schedule (May 1 - October 31)

Line	Frequency	Days of Operation	Hours of Operation
Blue	30 Mins	7 Days/Week	6am-10:30pm
Red	60 Mins	7 Days/Week	6am-10pm
Yellow	60 Mins	7 Days/Week	6:30am-10:30pm
Purple	60 Mins	Mon-Sat	6am-8pm
Green	60 Mins	Mon-Sat	6am-8pm

Figure 5-4.2: Sandusky Transit System Schedule

STS Fixed Route: By 2020, the fixed route system of STS expanded, and it now consists of five different intersecting routes. The fixed route system was previously called SPARC. Schedules for the routes are located online (**see Figure 5-4.2**). Other changes include additional signage at bus stops, shelters at some locations and online tracking capabilities for passengers. Fixed routes costs $2.00 per trip (or $1.00 for elderly/disabled). Time and service vary per route. Fare passes are available for up to 31 days, and available via EZfare app for mobile ticketing or at Sandusky City Hall or transit offices.

Paratransit: Paratransit is another service available through STS. It is available seven days a week from 5 AM to 12:30 AM. The service is available only to qualified individuals who apply. Applications are available online or by request. Eligibility for the program requires an assessment from both STS staff and a healthcare professional. Paratransit service allows eligible riders to be picked up to ¾ a mile in distance from an existing fixed STS route.

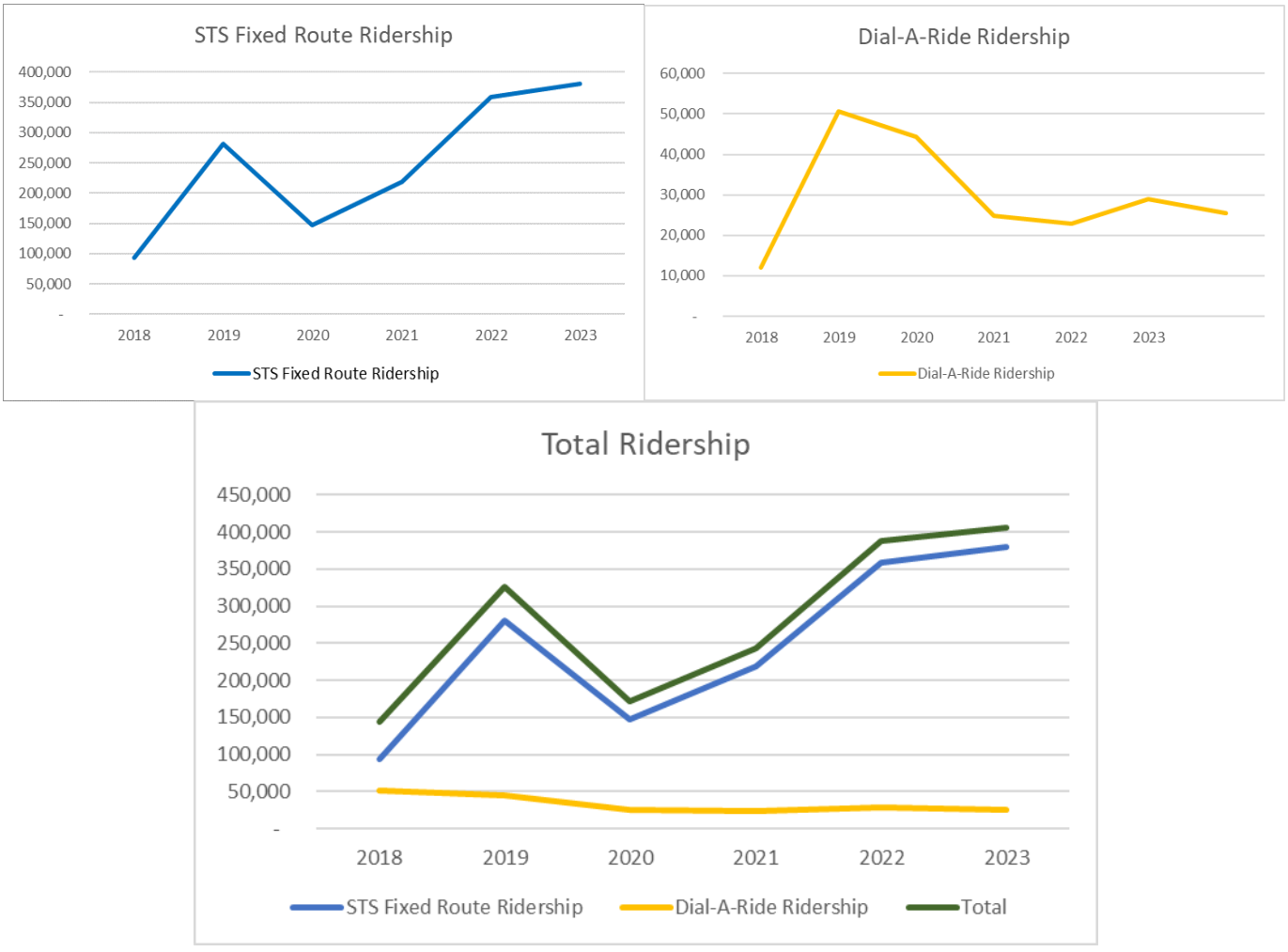
Contract Services: STS has entered into several contracts with local organizations such as Serving Our Seniors, the ECBDD, Erie County Job and Family Services, Cancer Services, Veteran Services, Cedar Point, and Sandusky City Schools.

Dial-A-Ride: STS currently provides a demand response service via reservations only. The service runs Monday through Saturday from 6:00 AM to 10:00 PM. It is open to the general public and there are no restrictions on trip purpose. Trips can be reserved up to two weeks in advance or reserved two days in advance if there is availability. The one-way fare for a trip within the county is $5.00.

Ottawa County Transit Agency (OCTA) provides additional curb-to-curb transportation service in Ottawa County as a 5311 Rural Transit program. OCTA services the area with advanced scheduling for rides and operates daily from 6:00 AM to 9:00 PM. Fares are $4.00 for trips within the county, and rates from $6.00 to $12.00 based on out of county trip distance.

Ridership Numbers: Ridership had been increasing prior to the Covid-19 Pandemic, but had seen a significant decrease in 2020. Ridership has since rebounded and grown past ridership numbers prior to the pandemic, growing from 325,559 rides in 2019 to 405,506 in 2023, primarily in the fixed route ridership. Fixed route ridership was 147,340 riders in 2020, and grown to 380,088 in 2023. Dial-A-Ride had actually decreased from a peak of 50,735 in 2018 to 25,418 in 2023.

Rolling Stock: As of 2023, STS vehicle inventory fleet consisted of 36 vehicles. The buses are mainly used for general public service and service contract service. The general public service is provided using a mixture of sedans and vans. The STS operator, First Transit also owns some of the vehicles that are utilized for transit service.



Figures 5-4.3: STS Fixed Route and Dial-A-Ride Ridership

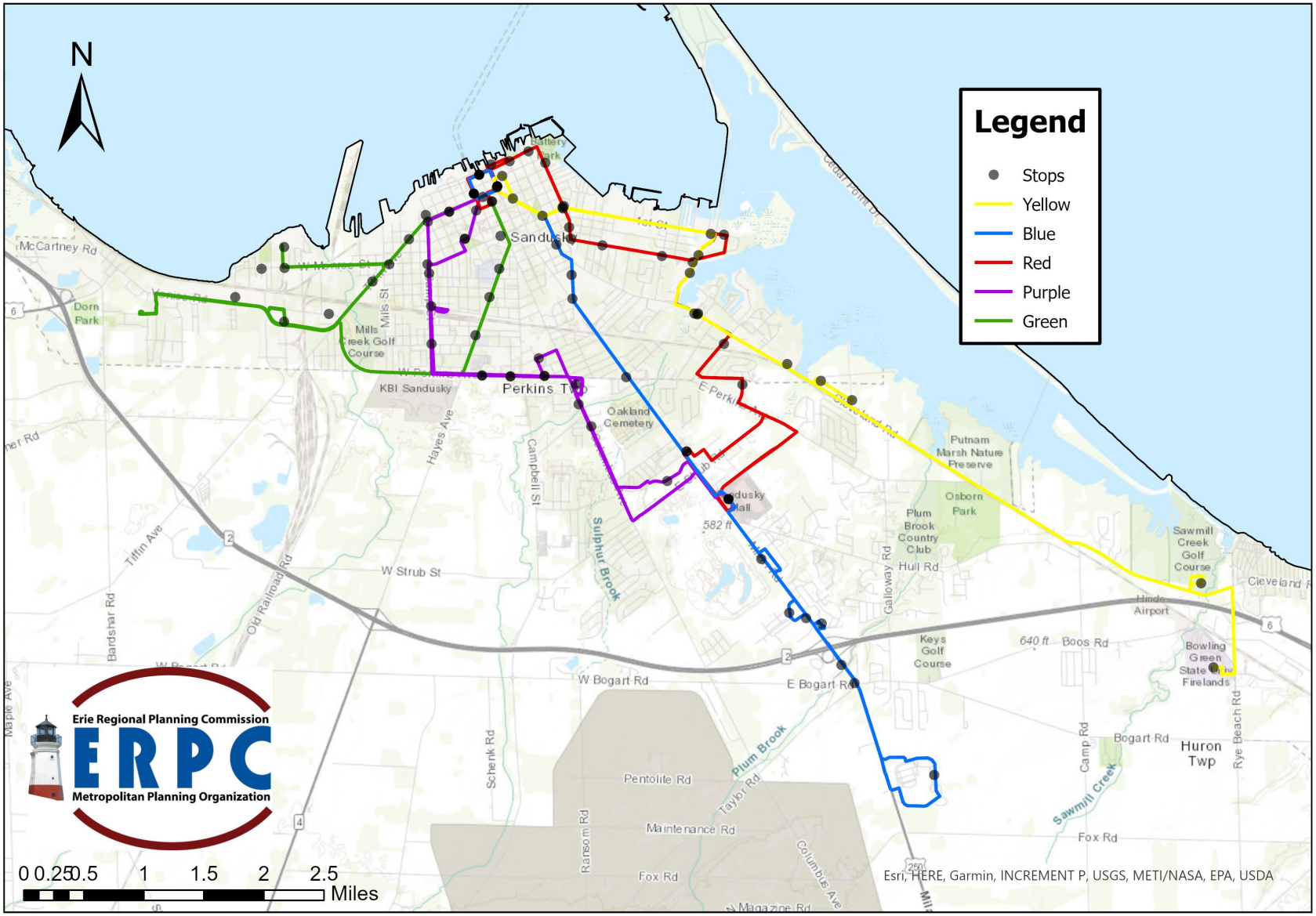


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Figure 5-4.4: STS Fixed Routes

ERPC MPO 2050 Long Range Transportation Plan

5.5 Bicycle/Pedestrian Facilities and Activities

Bicycle and Pedestrian Plan: Bicycle and pedestrian facilities and multi-use use trail systems are valuable community assets, which serve utilitarian transportation and recreational purposes. Over the last couple of decades, many communities around the country have been promoting the use of bicycles and walking as an important transportation component that also serves recreational purposes and encourages healthy living. Similarly, in 1999 ERPC developed a Bicycle and Pedestrian Plan that addressed bicycle and pedestrian education, safety and the creation of bicycle and pedestrian routes throughout the county. The plan has gone through several updates in 2010, 2014 and in 2020. The 2020 plan identifies seven consolidated goals in addition to the recommendation to establish a standing bicycle and pedestrian committee (2015). The committee has been involved in plan updates and other related activities since its inception and meets quarterly. With the addition of Ottawa County into the MPO, ERPC staff have been working with the Ottawa County MetroPark on adding their 2022 Ottawa County Active Transportation Plan into local planning efforts. This includes coordination on projects and funding opportunities to help implement their adopted plan. **Figure 5-5.3** details existing bicycle facilities in the MPO and any ongoing regional planning studies, along with a composite Active Transportation Needs analysis completed by ODOT's Walk.Bike.Ohio Active Transportation Plan in 2020.

Programs: ERPC also promotes active transportation through a variety of activities held throughout the year. ERPC staff has actively been growing its alternative transportation planning activities with events such as Active Transportation Month and active transportation website resources. Staff has also participated in educational outreach activities, and are always looking for new opportunities to promote active transportation locally.

Figure 5-5.1: Active Transportation Website

Safe Routes to School Program: Under the transportation bill SAFETEA-LU the Safe Routes to School (SRTS) program was established. This program has continued under Moving Ahead for Progress in the 21st Century, or MAP-21 which was passed in 2012. The SRTS program is designed to enable community leaders, schools and parents across the nation to improve safety and encourage more children to safely walk and bicycle to school. Locally, the jurisdictions of the Village of Milan, City of Sandusky, City of Huron, City of Vermilion and Perkins Township have developed school travel plans and have all applied for funding through the program.

State and National Bicycle Routes: The Ohio Department of Transportation has also been actively working on designating bicycle routes on both state and national levels. Locally two routes have been identified, including US Bike Route 230 (USBR) that is an alternative route to USBR 30 in Huron County, and the north/south State Bike Route 65.

Sandusky Bay Pathway: The regional trail network continues to grow through coordinated planning efforts between local partners. Beginning in 2018, Sandusky officials worked with Environmental Design Group on the Sandusky Bay Pathway vision that would span across the city of Sandusky. Since the plans

inception, Greater Sandusky Partnership (GSP) has grown the plan to a regional view for the shores and island regions. The updated plan includes connections from Vermilion to Port Clinton and Fremont, and ties in many of the coastal communities in the area. The regional routes are continuing to expand through current construction efforts and planning studies examining future connections.

Figures 5-5.2: ERPC staff conducting a safety training, 2016

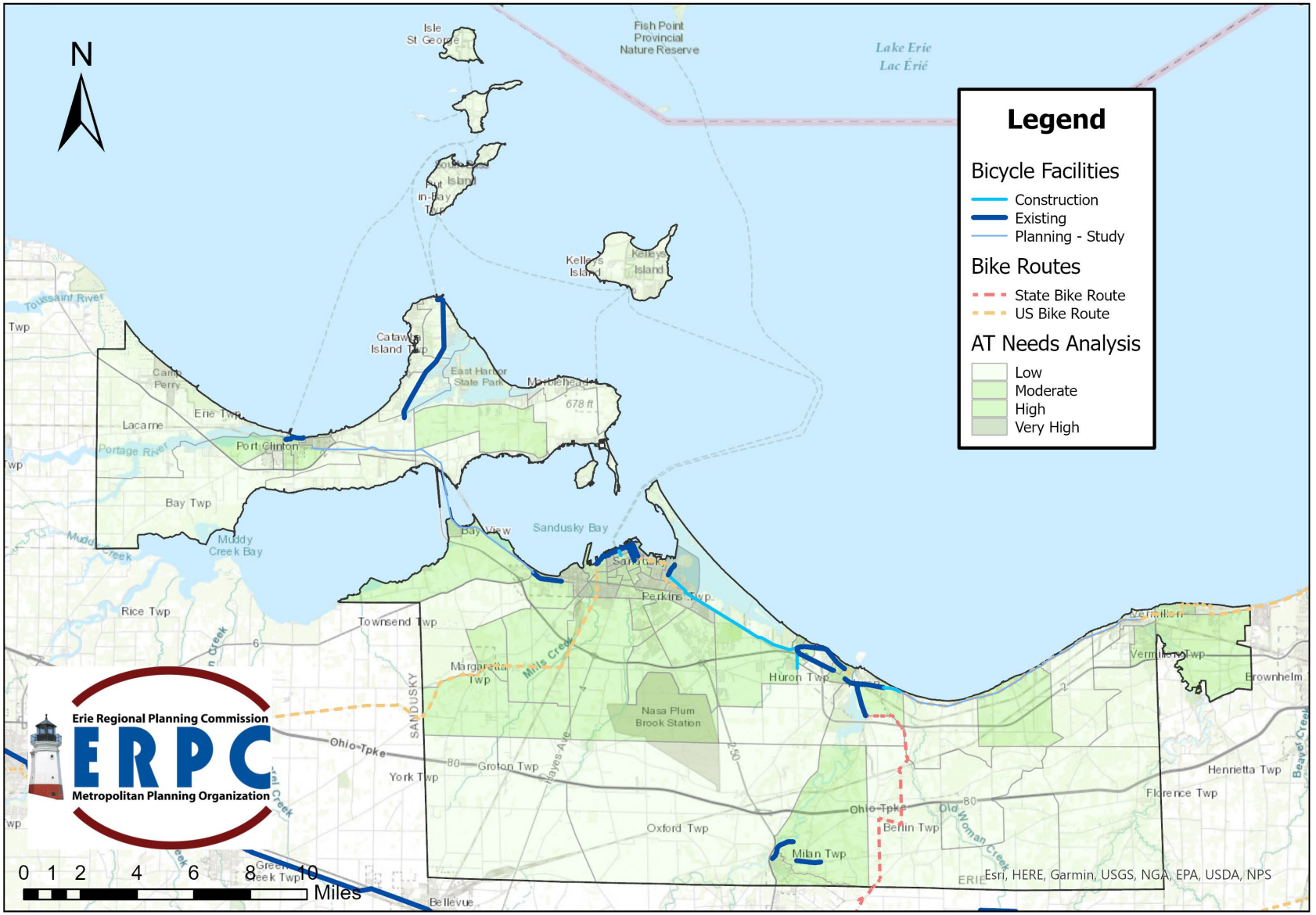

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Figure 5-5.3: Bicycle and Pedestrian Facilities

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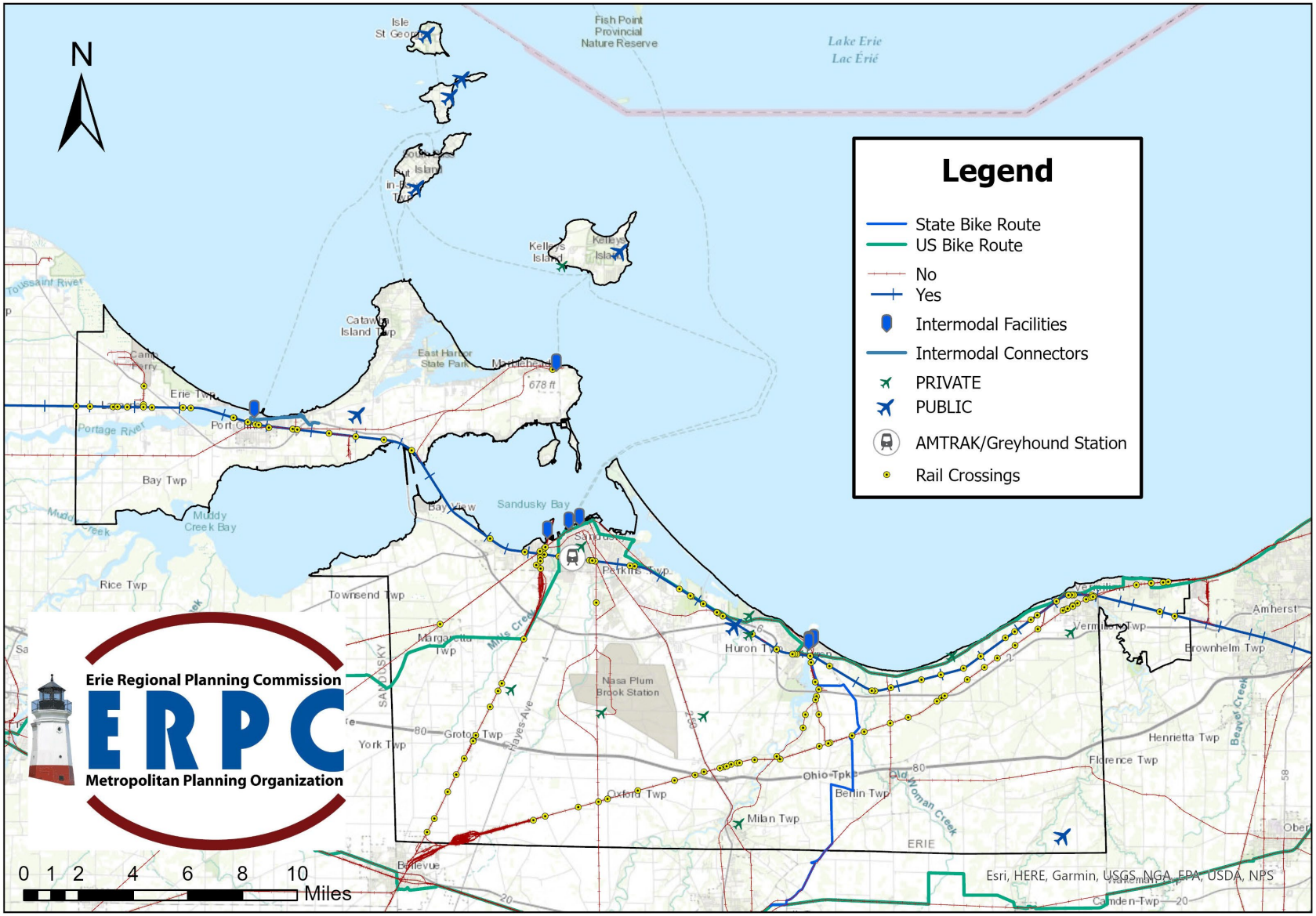

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Figure 5-5.6: Multi-Modal Facilities

ERPC MPO 2050 Long Range Transportation Plan

5.6 Freight and Regional Transportation

Freight: The MPO's freight system is made up of a variety of components including:

- Nearly 190 miles of strategic roads as part of Ohio's Strategic Freight System
- Three commercial ports linked to the world market via the Great Lakes and Norfolk Southern rail
- Three available truck parking facility with Interstate Access, with an additional facility under construction
- Over 552 miles of active rail line run through the planning region owned by Norfolk Southern or Wheeling & Lake Erie, and
- An international general aviation facility east of Port Clinton.

Freight Plan: In 2023, ERPC staff worked alongside with consultants from the Gannet Fleming to update the 2013 ERPC Freight Study. The study provided an assessment of existing conditions for elements of freight transportation and also provided recommendations for freight related improvements specific to Erie County. Group sessions and stakeholder interviews were conducted during the process, which provided additional insight into issues or concerns the freight community might have in regard to the current transportation system.

A survey was conducted during the 2023 study. Many of the surveyed companies not only found the roadway network critical to operations, but also their ability to access and utilize other modes such as rail, water, and air. Responses highlighted a need for improved land use and freight transportation planning, and to promote the region's unique multimodal and intermodal capabilities. Transport Ohio, Ohio's State Freight Plan identified 1,500 freight-reliant businesses, employing over 19,000 individuals in Erie and Ottawa County. Industry data has revealed that the freight industry composition is such that over 35% of the region's total output is generated by freight-oriented industries.

Table 5-6.1: Freight-Oriented Percentages of Total Output

Location	Percentage of Total Output From Freight-Oriented Industries[6]
Erie County, Ohio	42.1%
Ottawa County, Ohio	23.1%
Combined Erie/Ottawa Counties	35.9%

Freight travels in and out of the MPO region by road, rail, air, and water. Though the 2023 freight study did not directly include the updated planning boundaries, similarities in GDP growth and a smaller overall share of the freight reliant industries were used to assume the findings of freight's role in the regional economy would be relatively consistent across the expanded planning area. From the 2023 freight plan, advanced manufacturing, agriculture, construction materials and energy are leading freight commodities in the MPO region. The region is largely a net importer primarily by rail, and trucking is the primary export mode. Below is an overview of the existing transportation facilities that serve the freight industry.

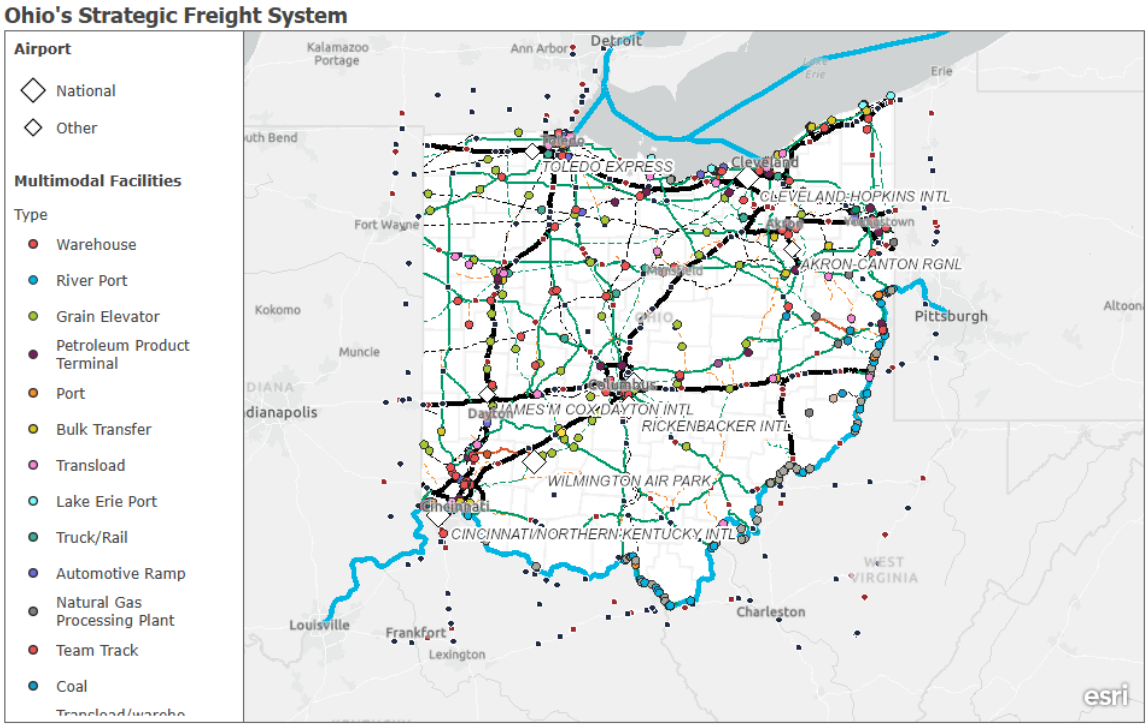
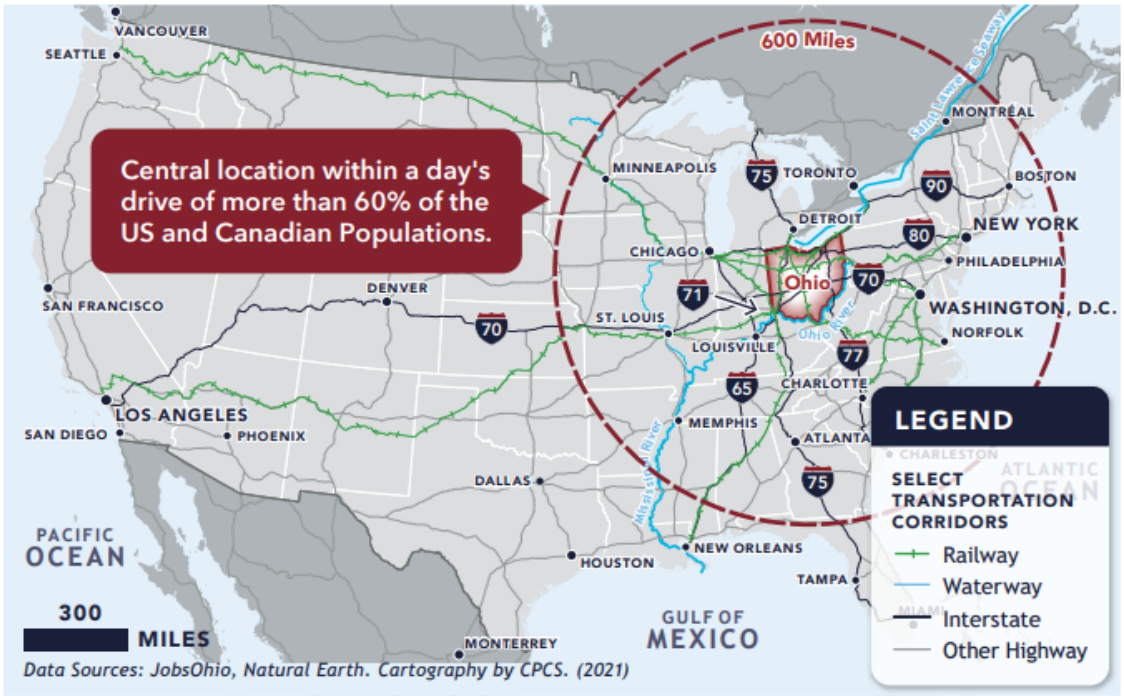


FIGURE 15: FREIGHT MARKET PROXIMITY TO OHIO



Source: CPCS adapted JobsOhio, Logistics and Distribution for a Real-Time Economy (Logistics and Distribution Brochure), 2020

Figure 5-6.1: Ohio's Freight Network[7]

Rail Freight: All active rail lines in the region are owned by Norfolk Southern Corporation (NS)[5] and provide service to major employers in the MPO including the ports of Sandusky and Huron. As of the 2023 Freight Plan, 83% of Erie County rail lines are capable of double-stack clearance. Multiple lines provide support for Amtrak passenger rail service. On average, there are 80 trains per day on the NS rail lines through the study region.

At-grade Rail Crossing: Within the planning area, there are 89 public at-grade rail crossings, with 75 in Erie County, 9 in Ottawa County, and 5 in Lorain County. Rail crossings can be a significant source of traffic delay depending on the number of trains that operate per day across a particular intersection.

Table 5-6.2: Highest Train Traffic at Public At-Grade Rail[6]

Maintaining Agency	Location	Total Daily Through Trains	Annual Average Daily Traffic (AADT)
BAY VIEW	S. Danbury Station Road	96	103
SANDUSKY	Old Street	55	921
VERMILION	Main Street	48	3140
VERMILION	Vermilion Road	48	2558
VERMILION	Adams Street	48	870
VERMILION	Grand Street	48	560
VERMILION	Sunnyside Road	47	725
GYPSUM	Gypsum Road	45	1727
PORT CLINTON	Lightner Road	45	155
SANDUSKY	Edgewater Avenue	44	3054
GYPSUM	Plasterbed Road	43	583
PORT CLINTON	Harbor Road	42	1850
OAK HARBOR	Tettau Road	42	401
OAK HARBOR	Camp Perry Road	42	276
OAK HARBOR	Carroll-Erie Road	42	200

Highway-Rail Grade Crossing Safety Summary: The Public Utilities Commission (PUCO) is responsible for the Rail Grade Crossing Safety Program and allocating the federal funds for rail crossing improvements in Ohio. The level of safety for an individual railroad/roadway crossing is calculated using a Hazard Index. The Hazard index uses data such as at-grade rail accident information, vehicle traffic at the crossing, and number of trains crossing daily and crossing sight distance. Crossings are compared against each other based on the index and assessed for accident risk by PUCO to determine the need for additional rail grade crossing protection.[7]

[8] TIMS, PUCO
[9] TIMS, PUCO
[7] TIMS, PUCO

Airports: ERPC is home to numerous private airfields and eight public airfields. Of the public airfields, five are on the Lake Erie Islands including North, Middle and South Bass, and Kelleys Island. Hinde Airport in Huron and Ortner Airport in Wakeman both are public airports in Erie County. The largest airport in the planning region is the Erie-Ottawa International Airport in Port Clinton, with an asphalt runway at 5,646 feet that can accommodate up to large business jets. A total of 98 aircraft are based at the airport, including 80 single engine, 11 multi engine, and 7 jets. **Figure 5-6.3** details the airport locations below.

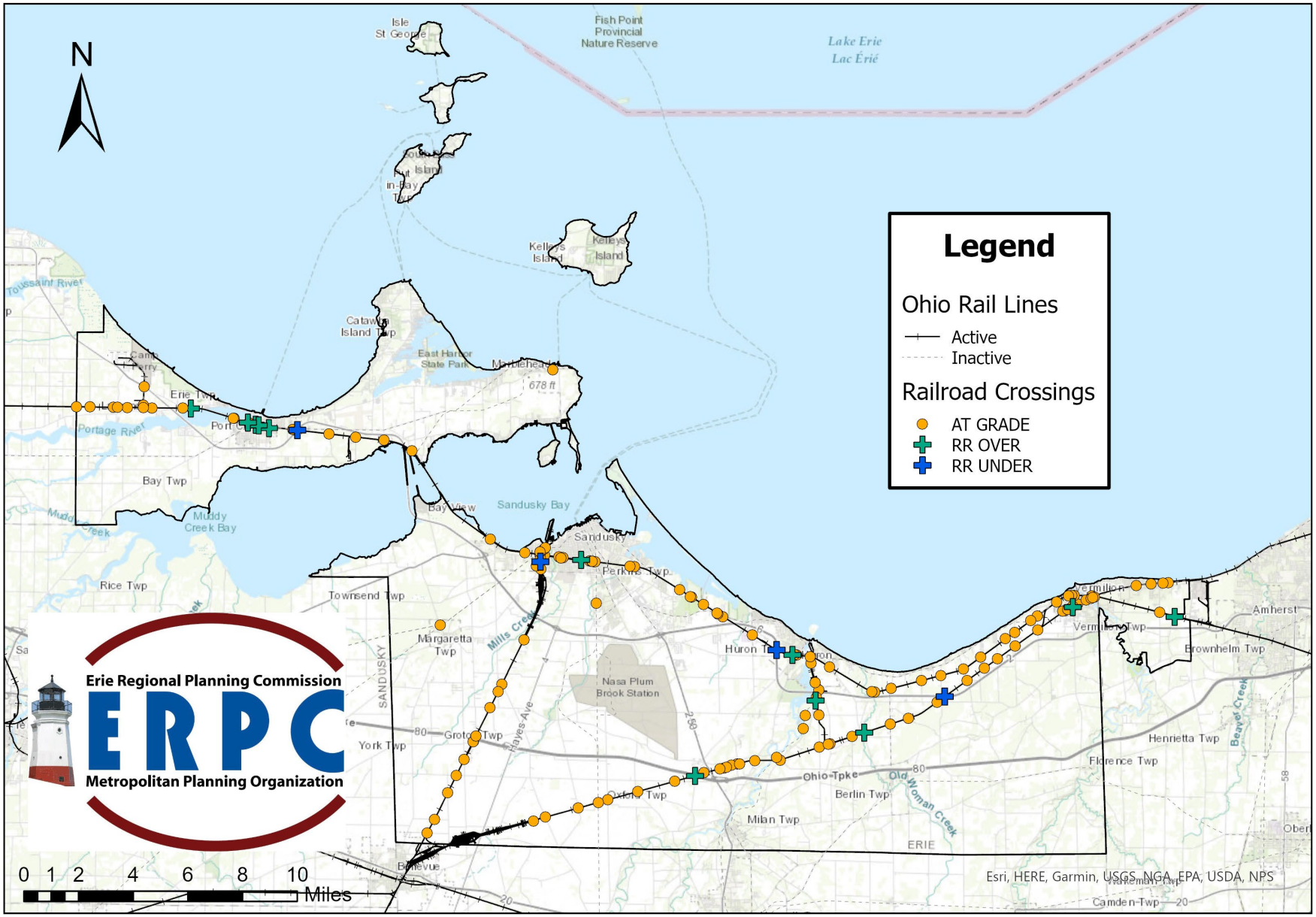


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Figure 5-6.2: Rail Crossings

ERPC MPO 2050 Long Range Transportation Plan

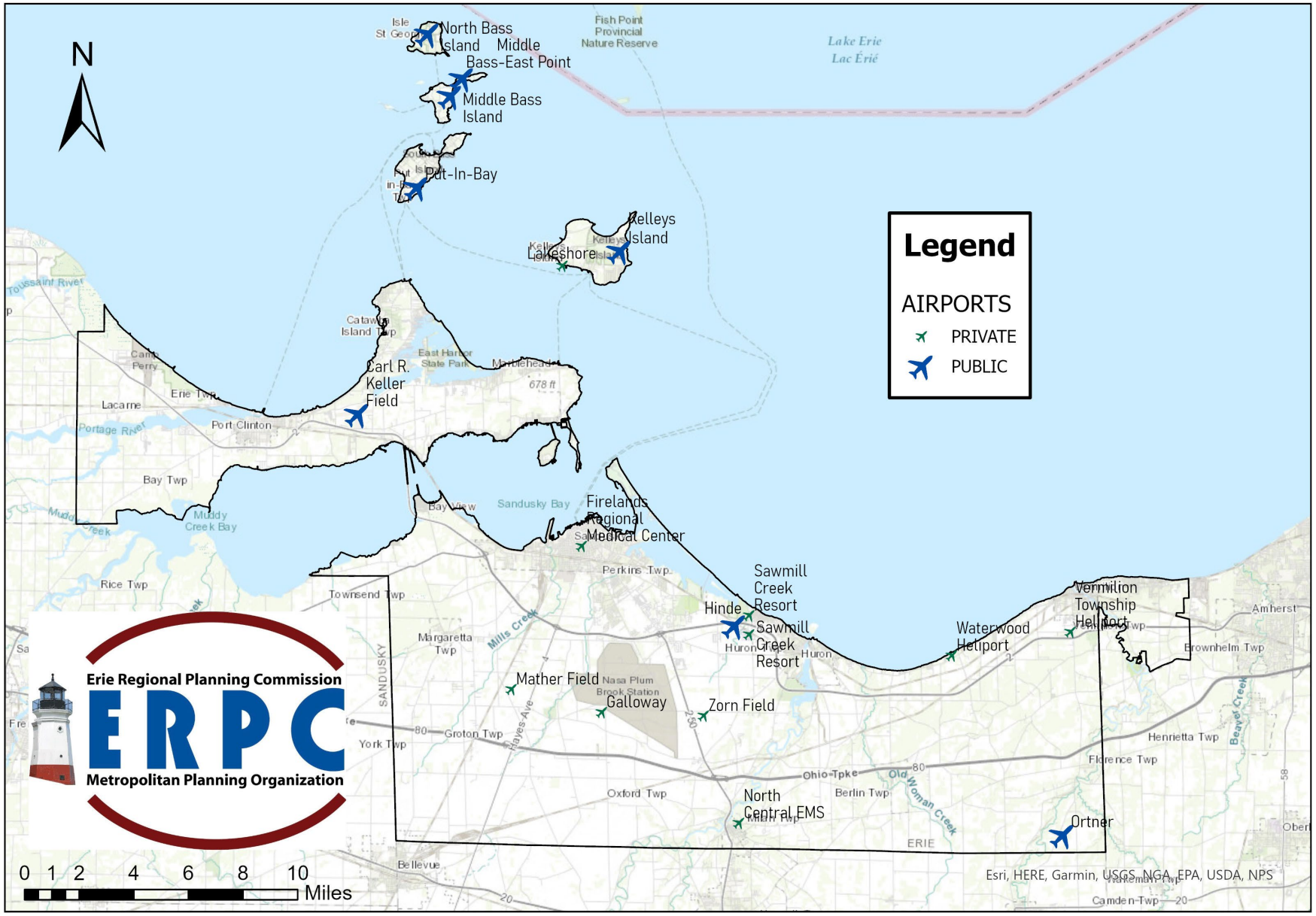

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Figure 5-6.3: Airports

ERPC MPO 2050 Long Range Transportation Plan

Accident History and Prediction: Accident prediction is based on the findings from the Grade Crossing Accident Prediction Report (GXAPS) for Public at-grade highway rail crossings as provided by the Federal Railroad Administration (FRA) Office of Safety Analysis. The accident prediction formula is based on two independent factors: (1. the crossing's physical and operating characteristics and (2. five years of accident history at the crossing. The prediction report highlights potential hazards and indicates conditions that might be dangerous. The results of the accident prediction formula are not extensive enough to use it as a standalone measure of whether a crossing needs additional equipment. Other data is needed for a full evaluation on the safety of a crossing include sight distance, traffic operations, and topography and passenger exposure levels. The top 10 at grade predicted rail accident locations in the ERPC MPO region are listed below according to their rank based on accident prediction values across the state.

Table 5-6.3: Top Ten Predicted Rail Accidents Locations[8]

Predicted Accident Rank, MPO Planning Area	Average Predicted Accidents	City	Street	Total Trains	AADT
1	0.331972	SANDUSKY	PERKINS AVENUE	40	4867
2	0.319651	PORT CLINTON	HARBOR ROAD	42	1850
3	0.120238	SANDUSKY	CAMPBELL STREET	40	5548
4	0.116252	VERMILION	VERMILION ROAD	48	3412
5	0.112614	HURON	WILLIAMS STREET	40	1497
6	0.109727	SHINROCK	CEYLON ROAD	40	2220
7	0.10631	PORT CLINTON	CAMP PERRY ROAD	42	276
8	0.103371	BERLIN HEIGHTS	JOPPA ROAD	16	285
9	0.011118	HURON	MAIN STREET	40	7529
10	0.010448	VERMILION	MAIN STREET	48	3140

Table 5-6.4: 2021-2023 ERPC MPO Grade Crossing Crashes[9]

Crossing Number	RR	City	Highway	Date	Fatalities	Injuries
509271S	NS	Port Clinton	Harbor Road	12/23/2023	0	0
509271S	NS	Port Clinton	Harbor Road	11/4/2022	0	0
524067F	NS	Sandusky	Campbell Street	8/26/2022	1	0
509274M	NS	Port Clinton	Camp Perry Road	6/14/2022	0	0
524037N	NS	Vermilion	Vermilion Road	11/9/2021	0	0
472318B	NS	Berlin Heights	Joppa Road	10/8/2021	0	0
524057A	NS	Huron	Williams Street	10/5/2021	1	0
524062W	NS	Sandusky	Perkins Avenue	6/25/2021	0	0

[8] Grade Crossing Accident Prediction System (GXAPS), Federal Railroad Administration, Accessed 2024
[9] Grade Crossing Accident Prediction System (GXAPS), Federal Railroad Administration, Accessed 2024

Table 5-6.5: 2014-2024 Grade Crossing Crashes Railroad Accident History[10]

Year	Total Crashes	Fatal Crashes	Injury Crashes	Total Fatalities	Total Injured	Crossing Number(s)	Location of Fatal Crashes
2014	3	-	2	-	2	524037N	
2015	4	2	-	2	-	524059N, 524063D, 524051J, 524054E	Rye Beach Road (Huron Township), Berlin Road (Huron)
2016	0	-	-	-	-	-	-
2017	0	-	-	-	-		
2018	2	1	-	1	-	481665W, 524070N	Bogart Road, (Perkins Township)
2019	2	1	-	1	-	524053X, 509271S	Ceylon Road (Shinrock)
2020	2	-	-	-	-	524062W	-
2021	4	1	-	1	-	524057A, 524037N, 472318B, 524062W	Williams Street (Huron)
2022	3	1	-	1	-	509274M, 524067F, 509271S	Campbell Street (Sandusky)
2023	1	-	-	-	-	509271S	
2024	1	1	-	1	-	524070N	Mills Street (Sandusky)
Totals	**22**	**7**	**2**	**7**	**2**		

Regional Passenger

The regional passenger transportation system consists of Greyhound and Amtrak rail services.

Passenger Rail: AMTRAK provides daily passenger rail service to the MPO area. The AMTRAK station is located at the transit hub on Depot Street. This hub also houses STS and Greyhound. AMTRAK station services in Sandusky include access to restrooms and payphones during station hours. Two routes run through Sandusky, including the Capitol Limited Route from Washington D.C. to Chicago, and the Lake Shore Limited Route between New York City, Boston, and Chicago.

[10] Grade Crossing Accident Prediction System (GXAPS), Federal Railroad Administration, Accessed 2024

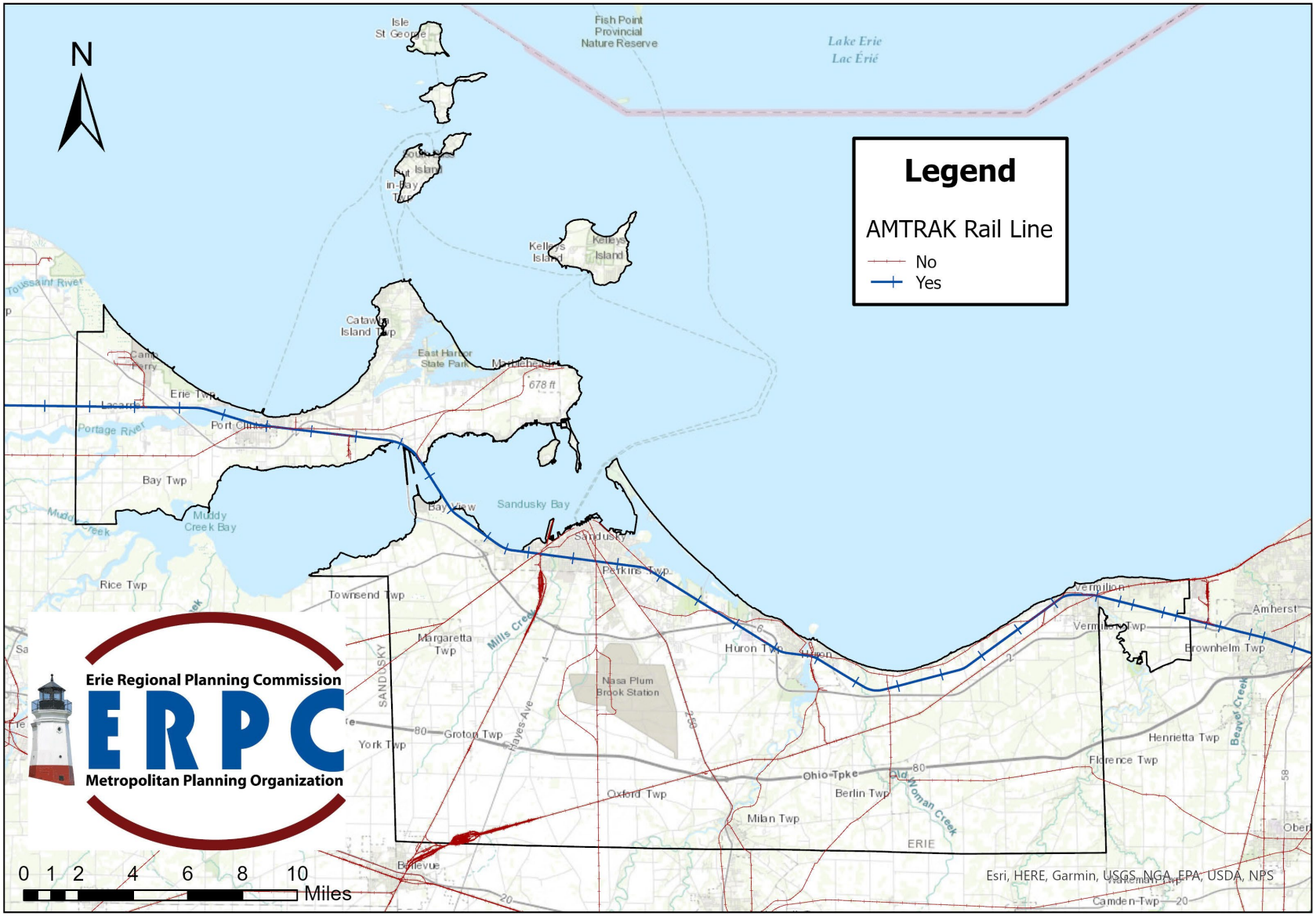

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Figure 5-6.2: AMTRAK RAIL

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Bus Service: The Greyhound Bus Corporation provides regional bus service to the MPO area. The Sandusky Greyhound bus terminal provides full-service ticketing and package express service. Two lines operate through Sandusky daily, including from Detroit to New York, and Chicago to Washington D.C. The intercity bus terminal is located at the transit hub on Depot Street with STS and AMTRAK.

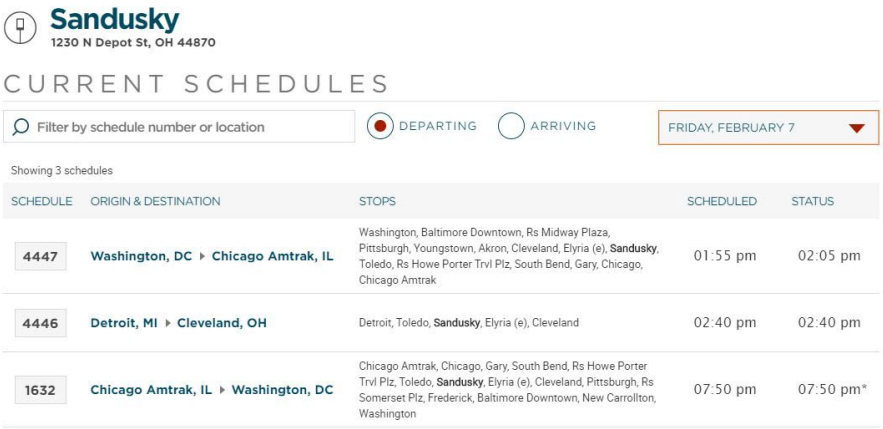

Figure 5-6.3: Greyhound local bus schedule[11]

Intermodal Facilities and Connectors: The US Department of Transportation permits the designation of intermodal connectors, or roads, leading to intermodal terminal facilities, where freight is transferred between modes. These intermodal connectors are critical components to the National Highway System (NHS), and provide for the efficient mobility of goods and products vital to the national, state, regional and local economies. The planning region has eight multimodal facilities, including Standard Slag Co. in Marblehead and Triple Crown facility in Sandusky. Five facilities have been identified by FHWA as active Intermodal Facilities, which are listed below:[12]

FHWA Name	Facility	Type	Address	City
OH 12P	Norfolk and Southern, Sandusky Coal Docks	Port Terminal	2705 W. Monroe Street	Sandusky
OH 13P	Geo Gradel Salt Dock	Port Terminal	931 W Walter Street	Sandusky
OH14F	Port of Sandusky/Jackson Pier	Ferry Terminal	101 W. Shoreline Drive	Sandusky
OH15P	Huron Limestone Co.	Port Terminal	105 E. Cleveland Road	Huron
OH9F	Port Clinton Jet Express Terminal	Ferry Terminal	3 N. Monroe Street	Port Clinton

Figures 5-6.4: Intermodal Facilities

[11] http://bustracker.greyhound.com/stops/250954/Sandusky_OH/departing
[12] Transport Ohio, Strategic Freight System Dashboard, Accessed 10/24

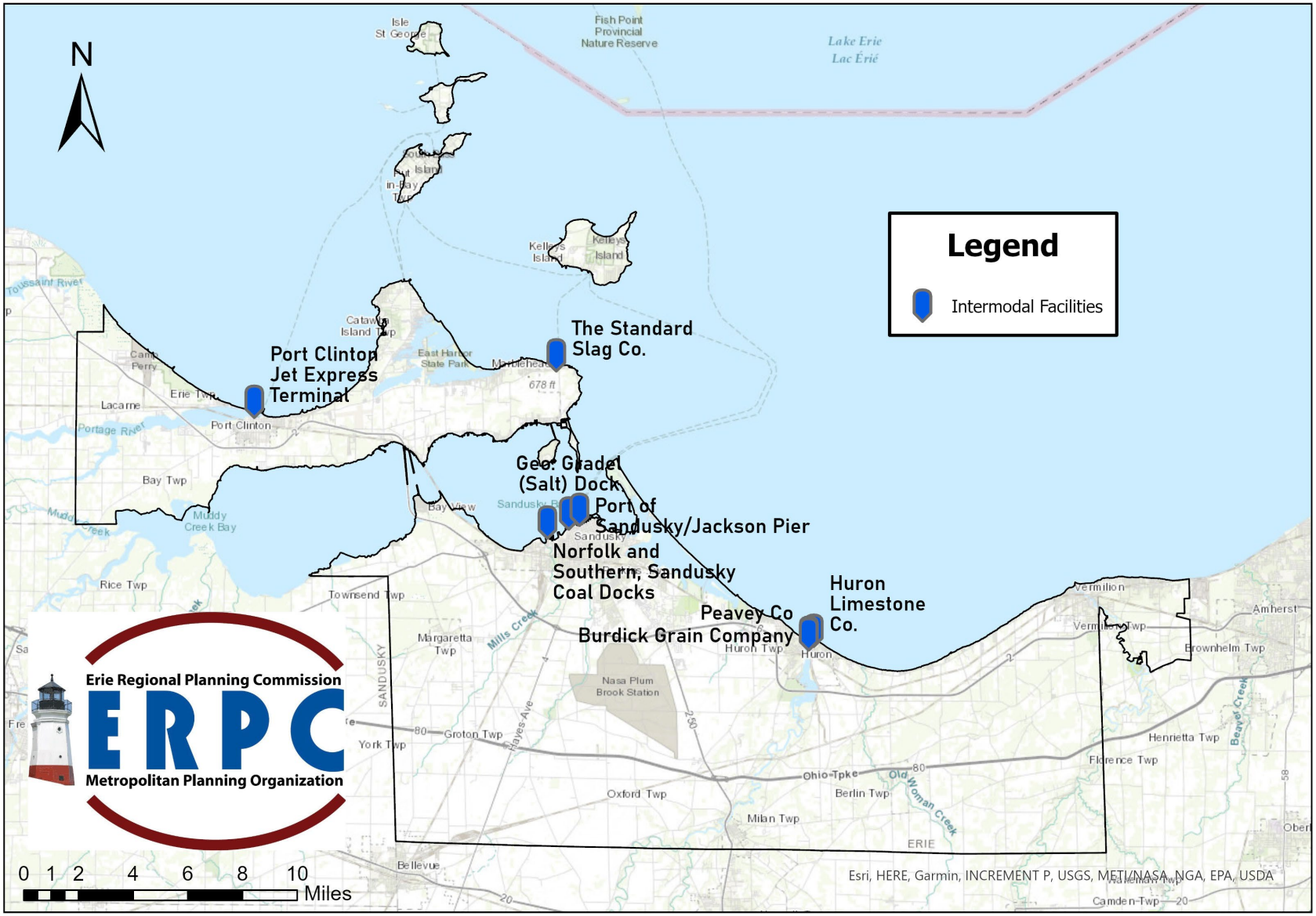

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Figure 5-6.4: Intermodal Facilities

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5.7 Land Use

Land Use Changes: Existing and future land uses of each community within ERPC MPO are an important consideration in determining transportation needs. Transportation systems and land use patterns have a well-documented reciprocal relationship. As communities have grown, the demands for transportation system improvements have also grown. However, these transportation improvements have also provided more convenient access to land farther out, thus spurring further growth. More than any other transportation system, it has been the road network and the prevalence of the automobile that has impacted land use patterns over the past half-century. For example, the transportation demands of US 250 have changed tremendously since 1958. The corridor has undergone a dramatic change from a rural route to an urban hub as seen in the photos below. This has occurred in many different portions of the planning area (see **Figure 5-7.1**).

US 250 in Perkins Township

1958

2025[13]

US 6 in Sandusky and Perkins Township

2001

2025[14]

[13] Erie County Auditor's Office
[14] Erie County Auditor's Office

SR 53 in Catawba Township

2002

2023[15]

US 6 and SR 2 Interchange in Huron

2001

2019[16]

Figure 5-7.1: Land Use Changes Over Time

5.8 Port Facilities

Local Ports: Of the 13 ports along Lake Erie in Ohio, 7 ports exist within the ERPC planning region. Each port provides different level services including freight capacity and passenger service. Of the 7 ports in the region, 6 are designated by legislation, and therefore categorized by the United States Army Core of Engineers as principal ports.[20]

Figure 5-8.1: Port tonnages (2022)[17]

[15] Ottawa County Auditor's Office
[16] Erie County Auditor's Office
[20] Ohio Maritime Plan, 2024

The following ports are all categorized as primary passenger ports, providing ferry services and cargo handling to the various islands in Lake Erie's western end. The Put-In-Bay Harbor offers cargo handling and passenger service, and provides a crucial connection to the largely tourist populations on the Lake Erie Islands. The Port Clinton Harbor offers passenger service to and from the Lake Erie Islands as well. The Port of Kelley's Island had previously handled freight for the Kellstone Quarry located on the island, but after the quarry ceased operations in the early 2000's, the port now only provides passenger service. The Port at Lakeside is a legislatively designated port, but provides no services for passengers, freight or cargo.

The following three ports, Huron Harbor, Marblehead, and Sandusky, are all freight ports on Lake Erie that have legislative designations, currently or have previously handled freight, and continue to have active freight docks. The US Army Corps of Engineers (USACE) maintains these harbors to a depth of typically 28 feet. Bulk cargoes such as **coal**, iron ore and stone make up more than 90% of Ohio's Lake Erie port traffic.

- The **Port of Huron** is a deep draft commercial harbor that has largely reduced its operations, and has been reduced in Port Category to a Secondary Freight Port. Although the harbor still has one active freight dock, cargo handling has diminished over the years, with no commercial tonnage recorded beginning in 2021. USACE has reduced the dredge depth of the harbor to 14 feet, and continues to support the harbor as the city of Huron continues to reshape its waterfront away from commercial freight handling.

- The **Marblehead Port** is primarily limestone shipping port with one active freight dock that will occasionally hand other types of cargo from nearby Lake Erie ports. The port and its docks are operated by Holcim. The facility is largely shipping outbound materials to the St. Lawrence Seaway and other regional ports, with limited imports ever occurring at the port. The USACE waterborne commerce statistics center reports 2.3 million tons of freight handled in 2022, with 2.6 million tons averaged over the last 10 years due to domestic market fluctuations in limestone pricing.

- The **Sandusky Port** is one of Ohio's key ports for movement of Appalachian coal and minerals. The primary freight dock is the Sandusky coal dock, owned and operated by the Norfolk Southern Corporation. Two additional freight docks The port handles large volumes of bulk commodities. Sandusky's major commodity is coal, representing over 95% of the volume handled at the port. In 2015, Norfolk Southern scaled back its operations in the City of Ashtabula and consolidated them with Sandusky's. The domestic-international split, by volume, for 2022 was 52% domestic and 48% international. The port primarily serves as an exporting port; in that approximately 88% of the volumes of goods handled are exported.[18] The facility has an average loading capacity of 2,600 tons per hour and accommodates vessels with a maximum length of 1,000 feet. The channel depths range from 21to 26 feet. The facility is in operation April through December, 24 hours a day, seven days a week. The harbor ships upwards of 1.5 million tons of coal outbound annually, and

[17] Ohio Maritime Plan,
[18] USACE Waterborne Commerce Statistics Center: Tonnage for selected U.S. ports in 2022

totals 1.8 million of short tons handled in 2022. Over the last ten years, the port has handled 2.4 million tons on average.[19]

In 2023, ERPC worked with Gannet Fleming to update the regional freight plan for the Erie County planning area. The following were potential freight priority investments identified in the planning process.

P-1: Improve private shipping and intermodal connectivity at the Port in Sandusky Bay
P-2: Designate land uses clearly along the waterfront areas. Incorporate environmentally sensitive standards as well as aesthetic and design standards.
P-3: Create clear and safe wayfinding signage for freight traffic. Identify the port areas that would benefit from good signage.
P-4: Upgrade the two unused docks in the City of Sandusky to safely accommodate active freight services.

5.9 Intelligent Transportation Systems (ITS)

Intelligent Transportation Systems: As a thriving tourist area, visitors to Port Clinton across to Vermilion may be unfamiliar with the layout of the cities. For example, the largest numbers of visitors are trying to find their way to the Cedar Point amusement park on the north end of the city of Sandusky, but revitalization efforts in the downtown region is starting to create the need for an overall system to help provide visitors with accurate directions and information about events taking place within the city. Addressing these needs can be accomplished through careful planning and placement of Intelligent Transportation System (ITS) technology throughout the region's transportation infrastructure.

The region is continuing to expand its deployment of ITS technology. This provides a great opportunity to ensure that all future deployments fall under an overall system plan. Through planning, each piece of hardware or software can be utilized to its fullest potential because careful thought was put into the purpose and placement of the technology. The needs of traveler information and way-finding directions to drivers while en-route suggests the use of permanently mounted Variable Message Signs (VMS) as the main piece of ITS technology deployed. For example, in the past, the City of Sandusky had completed a study investigating the overall signage used to direct visitors throughout the Sandusky area. The study examined the signage that existed and also investigated what deficiencies existed in the current system. The three types of signs highlighted by this report (gateway, directional, and seasonal festive banners) can be replaced or supplemented by VMS at strategic locations.

Gateway signs are signs that welcome people into the region. Previously, it was typical for a municipality to only use green highway signs that define jurisdictional boundaries. Larger gateway signs that make the entrance to an area continue to supplement these signs to aid in wayfinding. These structures are distinguished from other types of signs through aesthetic materials, colors, and design that establishes a brand for the area. While static signage exists, larger signs can display more seasonally appropriate messages

Figure 5-9.1 US 250 at SR 2 Gateway Sign

[19] Ohio Maritime Plan, Accessed October 2024

about current events or festivals. Area townships, including Perkins and Huron, have electronic billboards with contextually local aesthetics to help define the municipality for tourist traffic. Gateway signage has been utilized at the interchange between US 250 and SR 2, a heavily trafficked area for tourists, welcoming them to the "Shores & Islands" region.

Directional signs help travelers get to a particular destination. Static, retro-reflective signs can easily blend into the background of all other street and business signs along the roadside. Instead, mounting smaller VMS on light poles or traffic lights would stand out much more while performing multiple functions. These signs could display words and arrow directions to assist drivers towards multiple destinations. The same sign could be used to show the direction of the amusement park and the downtown district by simply alternating between the messages displayed. Visitors would recognize these directions more easily than small static signs. A select number of VMS could be added at strategic locations to inform visitors to the amusement park of additional destinations within the region. At stoplights or other key locations, the messages could be alternated to provide more information than could be displayed on a static banner.

In addition to their main purpose, all these VMS signs can be used to provide additional traveler information beyond the route guidance function. These signs can be used to announce closures or delays due to incidents, detours because of construction, or Amber Alerts to the community. Controlling these signs does not require a significant investment in technology. Advances in technology over the last few months now allow signs to be controlled via a webpage. All that is required to update the messages displayed on the sign is the username and password to a secure webpage. The convenience and multiple uses of VMS make them a great ITS technology to begin building an overall traffic management system.

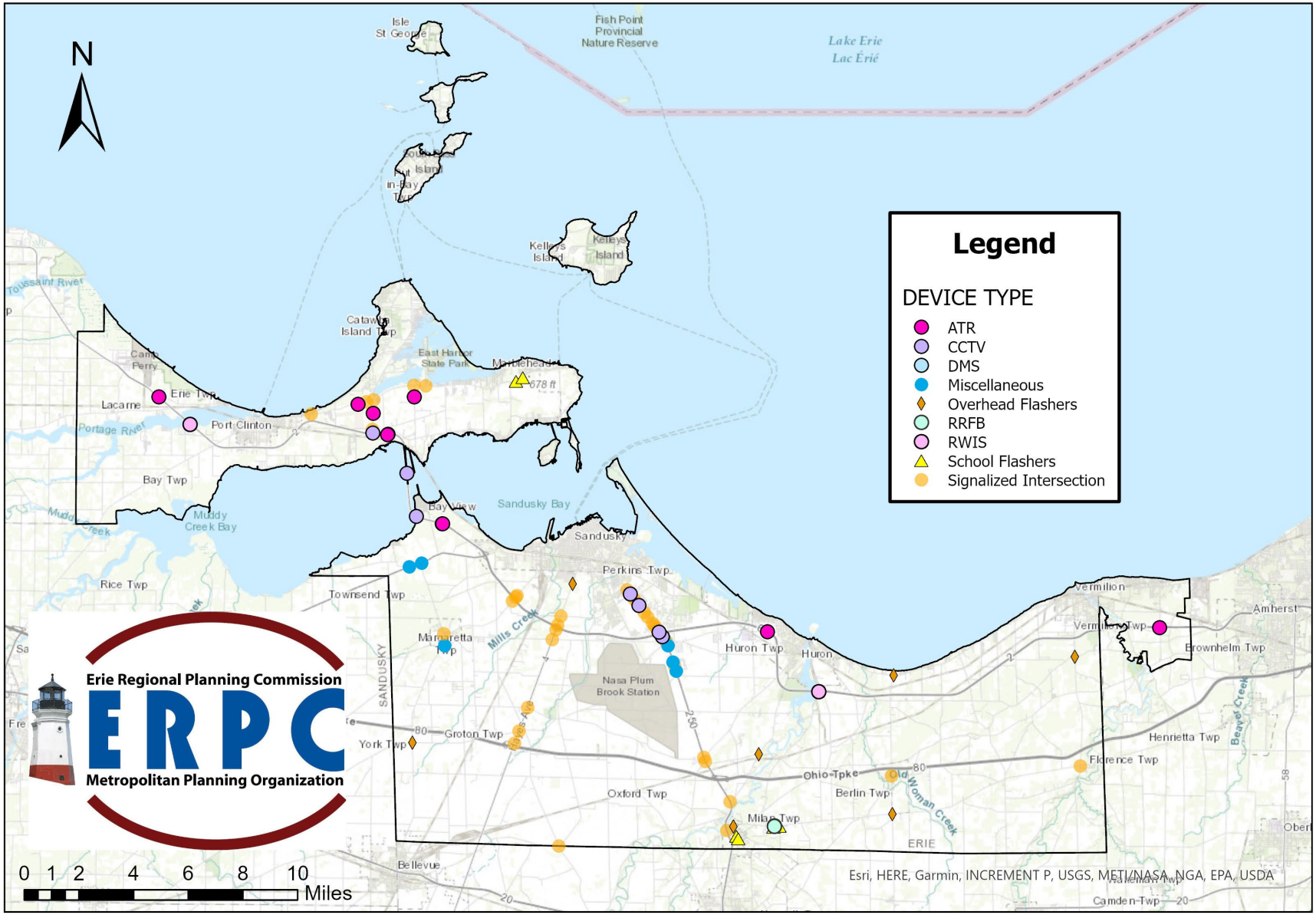

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Figure 5-9.2: ODOT Intelligent Transportation System Inventory

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Autonomous Vehicles: Although there are currently no autonomous vehicle structures in place yet in the planning region, it is expected that there will be in the future. Previous testing included truck platooning on the Ohio Turnpike, resulting in a nearly $1.5 million infrastructure investment. Ohio Turnpike for truck platooning with over $1.46 million already being invested in infrastructure.[20] Platooning involves creating pairs of semi-autonomous commercial trucks. Vehicle-to-vehicle communication allows the vehicles to travel close together, which reduces fuel burn and cuts wind resistance. In 2024, DriveOhio's Rural Automated Driving System (ADS) utilized USDOT grant funds to study automated vehicles in rural settings in 32 Ohio counties. The study was crucial in recording and analyzing data and transportation systems analysis to help inform future development and improvement of ADS technologies.[25] Extensive and ongoing research is being conducted by ODOT, The Ohio State University, and at the Transportation research Center 4,500 acre research complex in East Liberty, Ohio.

Figure 5-9.3: DriveOhio Rural Automated Driving Systems, Accessed October 2024

Volkswagen Emissions Settlement and Alternative Energy: In 2016 the United States sued Volkswagen and associated companies for installing defeat devices on some diesel vehicles (2009-2016). It was estimated that 350 tons of excess nitrogen oxide which was emitted in Ohio as a result. The State of Ohio received $75 million over 15 years to install electric vehicle charging stations and diesel fleet replacements through select counties. Eligible applicants include public and private fleet owners of school and transit buses, medium and heavy-duty trucks, switcher locomotives, tugboats, ferries, and cargo handling equipment in airports and ports. The ERPC planning area was listed as a secondary priority for funding through the Diesel Mitigation Trust Fund. As of early 2020, several organizations were listed as having received funding though the program. The Erie County's Engineer's Office received funds to replace a diesel truck. The Ohio Turnpike has also received funds to replace truck that run within Erie County as well as the Ottawa County Transit Agency.

The first DSRC of the Connected Marysville project was installed on a traffic signal at the intersection of Fifth and Main Streets in Uptown Marysville in the Summer of 2017.

Figure 5-9.4: Dedicated Short-Range

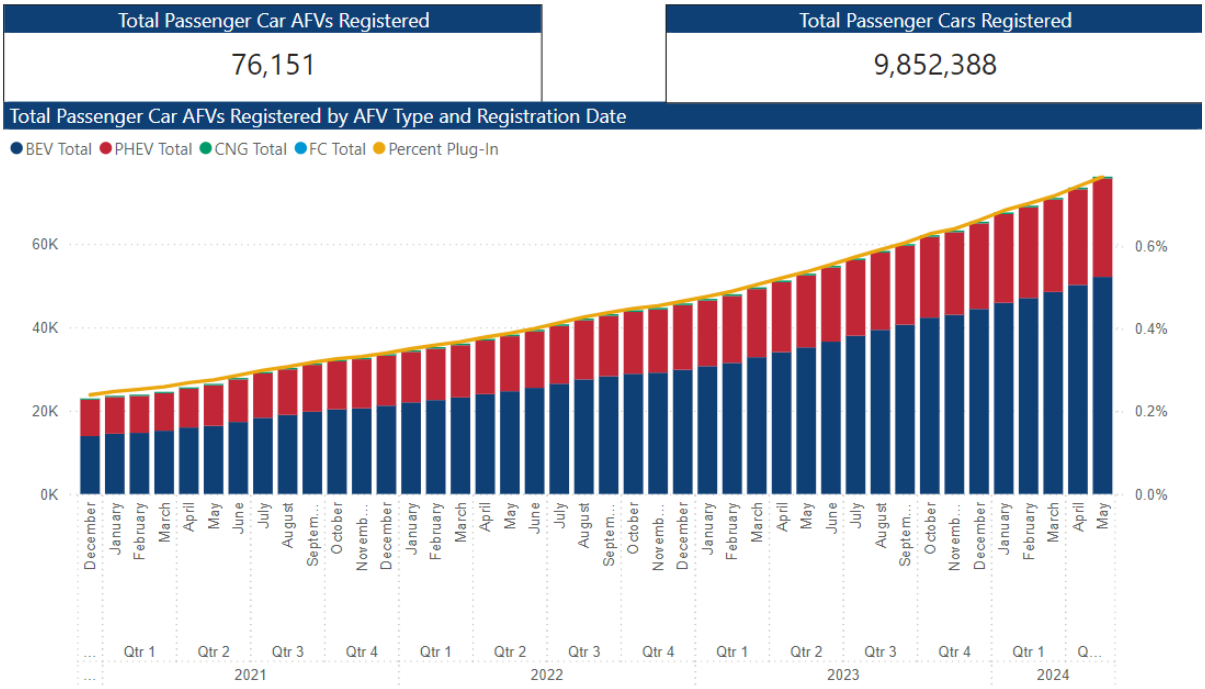
[20] https://www.govtech.com/fs/infrastructure/Ohio-Turnpike-OKs-Smart-Car-Network-Buildout.html
[25] https://drive.ohio.gov/about-driveohio/news/ruralads

Electric Vehicle Infrastructure: Ohio has been seeing an increased adoption rate and growth in alternative fuel vehicles (AFVs). With the growing number of electric vehicles (EV), the state of Ohio and ERPC has been working to expand its electric vehicle charging capacity. In 2019 the Ohio EPA opened up funding for electric charging stations, followed by ODOT staff speaking with ERPC planning area members about funding opportunities. Following its adoption in 2021, part of the Bipartisan Infrastructure Law was the National Electric Vehicle Infrastructure (NEVI) Formula Program. The goal of NEVI is to expand charging station access to 500,000 EV charges by 2030. The formula program allocated $140,000,000 to Ohio over the course of the 5-year program, and is being administered by DriveOhio and their Ohio Electric Vehicle Infrastructure Deployment Plan. With the MPO's access to I-80/I-90, an alternative fuel corridor, paired with the region's tourist destinations, access to electric vehicle charging stations are expected to grow over the next decade.

As of early 2020 there are currently fourteen EV charging stations in the planning region with Level 2 and Level 3 (DC Fast) charging.

Station Name	Street Address	City	Level 2 Charger	Level 3 (DC Fast)	EV Network
McDonald's	18 NE Catawba Rd	Port Clinton	1		Non-Networked
Meijer	4702 Milan Road	Sandusky		10	Tesla
Motel 6	601 Rye Beach Rd	Huron	2		Tesla Destination
Motel 6	11406 U.S. 250 N	Milan	4		Tesla Destination
Holiday Inn Express & Suites Sandusky	1515 Cedar Point Dr	Sandusky	2		Tesla Destination
Catawba Island Club	4235 Beach Club Road	Port Clinton	2		Tesla Destination
Milan Village - Village Charger	1 W Front St	Milan	2		ChargePoint Network
Valley Ford of Huron	55 Cleveland Rd E	Huron	1		Non-Networked
Port Clinton Ford	2155 Gill Road	Port Clinton	1		Blink Network
Friendship Kitchen 83	4024 Hayes Ave.	Sandusky		4	EV Connect
Friendship Kitchen 70	3800 E. State Rd.	Port Clinton		4	EV Connect
Foster Cadillac	2504 HAYES AVE.	Sandusky		1	EV Connect
Mathews Ford S7	610 East Perkins Avenue	Sandusky	2		Blink Network
Mathews Ford Sandusky DCFC's	610 East Perkins Avenue	Sandusky		1	Blink Network

According to DriveOhio, adoption rates for AFV continues to grow. Adoption rate is the percent of vehicles being sold that EVs. While the overall adoption rate remains low at less than 1%, the overall rate of growth is expected to continue as future electric vehicle infrastructure, including availability in models and charging facilities, continues to grow.



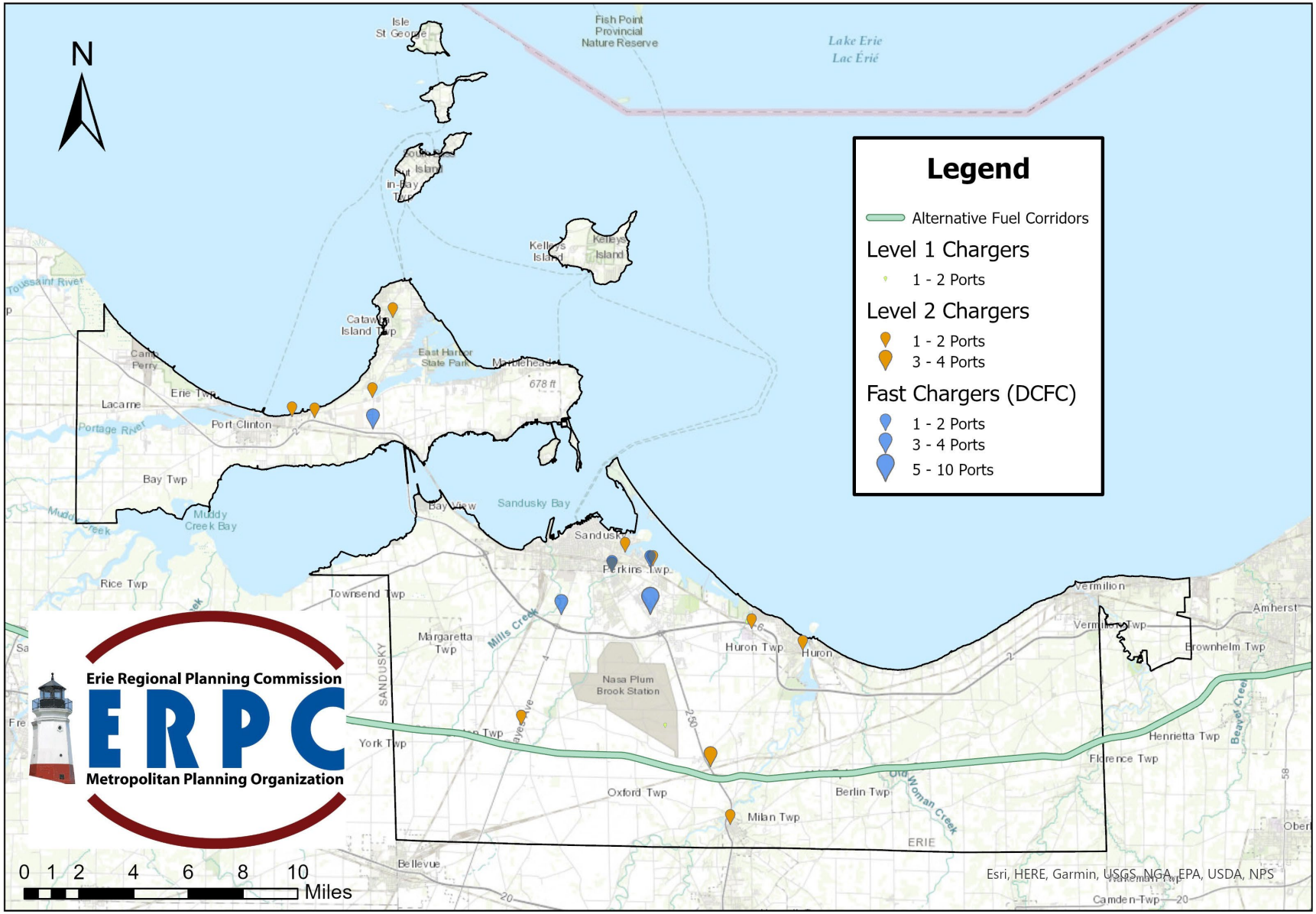


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Figure 5-9.4: Alternative Fuel Stations & Corridor

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Alternative Energy Sources: Alternative energy sources such as biofuels, solar and wind power and natural gas have advanced in the market with changes in technology and government regulations. There is increased attention to liquefied natural gas (LNG) and compressed natural gas (CNG) as power sources for freight transportation. This change has been slow because few fueling stations are available around the US. It may be years before a shift to alternative fuels is widespread. Locally, transit options for alternative energy sources have begun to appear in the transit system. OCTA in Ottawa County currently has a vehicle operating on LNG, with both STS and OCTA considering long term options for future alternative energy adoptions. However, with more energy efficient vehicles potentially fueled by energy sources other than diesel, less revenue may be collected via the motor fuel tax. This could result in less funding for transportation system infrastructure.[21] As of early 2020 the nearest alternative fuel stations have E85, NPG and Biodiesel stations are located in Huron County in Norwalk, just south of the Village of Milan.[22]

5.10 Environmental

Environmental Impact and Mitigation Practices: Although the ERPC MPO is not directly involved with projects, it does supports pro-environmental practices though the use of its project scoring sheets. Points are awarded favorably towards projects that demonstrate pro-environmental practices. Topics such as environmental justice, preservation and impacts are all considered during this process.

All ERPC MPO funded projects are required to follow the Ohio Department of Transportation's environmental review process. Once a project is funded through the MPO project selection committee, the project sponsors can choose to administer their project themselves or have ODOT administer it. If the project sponsor is conducting administering the project they would hire a pre-approved environmental consultant to complete the various environmental task and prepare a NEPA document for district review and approval. If ODOT is administering the program the district would complete the environmental studies or task them thru OES-Task Order Consultant and then the district would still review and approve the NEPA document. Regardless of who administers the project the same environmental items are required to be considered and reported. The following sections will describe ODOT's general mitigation process and any locally relevant MPO related processes. Due to the technical nature of environmental laws and regulations, it is noted that the specific processes differ depending on a project's scope and location and are not always applicable.

The ODOT environmental program (EP) staff ensures that any transportation project that affects publicly owned parks, recreational areas, wildlife/waterfowl refuges, or public and private sites using federal funds are formally investigated and documented according to the National Environmental Policy Act (NEPA). The EP staff also provides guidance and technical assistance, undertakes site investigations and directly communicates with the USEPA and Ohio EPA.

[21] http://www.dot.state.oh.us/Divisions/Planning/SPR/StatewidePlanning/Documents/ODOT_FreightPlan_Updated%203.7.19.pdf
[22] http://www.altfuelprices.com/station_map.php

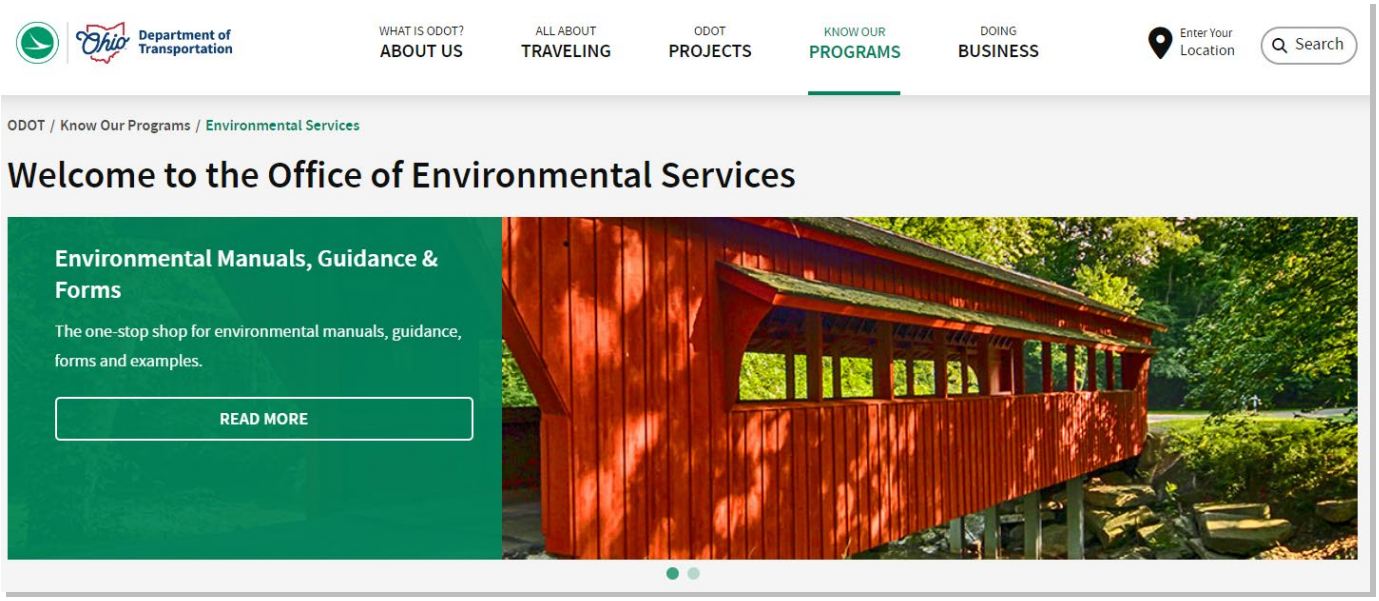


Figure 5-9.6: ODOT's Environmental Program Website[23]

The EP staff also ensures that land liabilities as listed in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Superfund Amendment and Reauthorization Act (SARA) are considered. If a property is found to be contaminated, the staff works to have those materials removed, properly identified and managed under the Resources Conservations and Recovery Act (RCRA) and the Hazardous and Solid Waste Amendments (HSWA). For sites requiring remediation, the EP staff conducts the necessary coordination with the US Environmental Protection Agency (USEPA), Ohio EPA and/or the Bureau of Underground Storage Tank Regulations (BUSTR) for the project. The EP staff also assists in keeping regulatory compliance of manmade and hazardous waste. The EP staff addresses ODOT's regulatory issues and is the points of contact for federal regulatory agencies.

Local notes: ERPC staff is aware of these requirements.

The EP staff ensures that all projects listed on the STIP and/or TIP contain the correct documentation required to have Mobile Source Air Toxics (MSAT), Particulate Matter (PM2.5) and Ozone (O3) as addressed under NEPA. The EP staff provides guidance that is necessary to ensure that transportation projects are in compliance with the Clean Air Act, Transportation Conformity, and NEPA relative to air quality issues. They also are responsible for coordinating air quality analyses with the FHWA, OEPA, and USEPA, as necessary and to advise local transportation project sponsors of the air quality analysis requirements of their projects. Local project sponsors are then required to conduct the required air quality analyses prior to NEPA approval.

Local Notes: Locally, the ERPC MPO is not within an Ohio EPA non-attainment area and, therefore, is not required to have any air quality testing done. The planning region does share a border with NOACA, which is within an Ohio EPA non-attainment area, so any work done in

[23] http://www.dot.state.oh.us/Divisions/Planning/Environment/NEPA_policy_issues/Pages/default.aspx

overlapping jurisdictions does require an assessment. Typically, NOACA's MPO sends over their conformity analysis for ERPC to consider and approve.

The ERPC staff is responsible for reviewing and providing oversight for projects with impacts to drinking water resources. Drinking water resources refer to ground water and surface water, drinking water source protection areas and sole source aquifers.

> **Local Notes:** The ERPC planning area has one federally-designated Sole Source Aquifer: the Bass Islands Aquifer located in Catawba Township. The designation limits certain land uses such as landfill facilities from being installed within the Sole-Source Aquifer area. The remainder of the region utilizes water from Lake Erie, which is designated as an exceptional warm water habitat, superior high-quality water, public water supply, agricultural water supply, industrial water supply and bathing waters, that exists along its northern border.

Staff works towards ensuring environmental justice and Title VI initiatives through the department's public involvement process. The process typically includes those that are potentially affected public in developing transportation projects. The goals are to have transportation projects fit harmoniously within their local communities without sacrificing safety or mobility of others.

> **Local Notes:** ERPC conducts an annually environmental justice report that examined how local projects impact traditionally underserved groups. ERPC also has a Title VI Plan and sends an environmental questionnaire (in coordination with the work plan) annually to ODOT. The Title VI and Public Involvement Plans were both updated in 2019.

Several laws and rules (including NEPA, Endangered Species Act, Fish and Wildlife Coordination Act, and the Clean Water Act) state that some federally funded projects may undergo studies to determine the degree and effect impacts resulting from projects have on the natural environment. For ODOT, these studies focus on the impacts resulting from transportation projects, whether it is new construction projects or maintenance activities.

Permits may also be required for projects involved in stream work, wetlands or significant amounts of new right-of-way. Ecological surveys are performed to inventory water quality, aquatic ecosystems, endangered species, wetlands and terrestrial ecosystem resources in the vicinity of the proposed project. This information is recorded in an Ecological Survey Report (ESR) and this report is coordinated with staff. Some projects may require separate reports for specific ecological resources such as mussels and endangered species. Special areas that ODOT is directly involved with are areas designated as Section 4 (f) and 6 (f).

> **Local notes:** In Erie, Ottawa and Lorain County, there are several endangered species and wetlands. There are no wild and scenic rivers listed in Erie, Ottawa and Lorain Counties, but are home to environmentally sensitive areas, including Magee Marsh Wildlife Area, the Lakeside Daisy Nature Preserve, and Old Woman Creek State Nature Preserve. Lake Erie does have a coastal management boundary zone and portions are listed in the coastal barrier system which is managed by the Ohio Department of Natural Resources, Office of Coastal Management. Staff will coordinate this office when projects are located within the coastal management boundaries. There are also numerous floodplains within the planning area. ERPC is the floodplain administrator for

the unincorporated areas of Erie County, and the Ottawa County Building Department is the floodplain administrator for the unincorporated portions of Ottawa County.

5.11 Security

Security: Since the 9/11 terrorist attacks, the Federal Highway Administration and many other organizations have been looking closely at homeland security and institutional strategies for providing metropolitan level coordination of transportation system operations. "A comprehensive national approach to incident management, applicable at all jurisdictional levels and across functional disciplines, would further improve the effectiveness of emergency response providers and incident management organizations, across a full spectrum of potential incidents and hazard scenarios".[4] Such an approach would also improve coordination and cooperation between public and private entities in a variety of domestic incident management activities.[5] In order to satisfy this planning regulation, ERPC staff continues to coordinate locally with the Erie County Emergency Management Agency (EMA) and Ottawa County Emergency Management Agency.

The Erie County EMA and Ottawa County EMA are responsible for planning, mitigation, response, and recovery for both natural and man-made disasters in their respective counties. This includes nuclear attack, terrorism, weather phenomena, nuclear power plant accidents, hazardous materials accidents, and any other occurrence deemed a disaster or emergency. With mutual aid agreements, both county EMA's have also responded to situations in surrounding counties when requested.

Figure 5-9.7: Local disasters[24]

[4] Homeland Security Act of 2002, Section 2(6)
[5] Homeland Security – National Incident Management System
[24] https://sanduskyregister.com/news/412060/train-derailment-cleanup-continues/

911 Call Center: Both the Ottawa County and Erie County agencies insures their Emergency Operations Center (EOC) center which is operational 24 hours a day, seven days a week. The center provides emergency communications, radio and telephone, along with other features designed to allow EOC members to help manage any disaster that may befall our country. The County's Emergency Response Vehicle is also outfitted with communications, and other response type equipment, allowing for the capability of a mobile EOC.

Both agencies are tasked with maintaining the 9-1-1 service, although in Ottawa County the City of Port Clinton and Village of Oak Harbor have their own dispatch centers. The first 9-1-1 systems were called Basic 9-1-1 systems. All 9-1-1 calls were directed to one Public Safety Answering Point (PSAP) per telephone office. 9-1-1 dispatchers only received the caller's telephone and had to ask the caller for name, address and county location. Advances in computer systems and telephone company technology combined to create ENHANCED 9-1- systems. Today, 86 of 88 Ohio counties have Enhanced 9-1-1 systems on line, including Erie and Ottawa County. Enhanced systems allow 9-1-1 calls to be routed to the proper Public Safety Answering Point (PSAP) within each county. Also, each 9-1-1 call displays the caller's telephone number, name, and address, as well as the correct police, fire, and emergency medical response agency for each citizen within the county. In March of 2011, Erie County also completed the installation of Phase II Wireless 9-1-1, which will help locate where cellular 9-1-1 callers are calling from utilizing a mapping system.

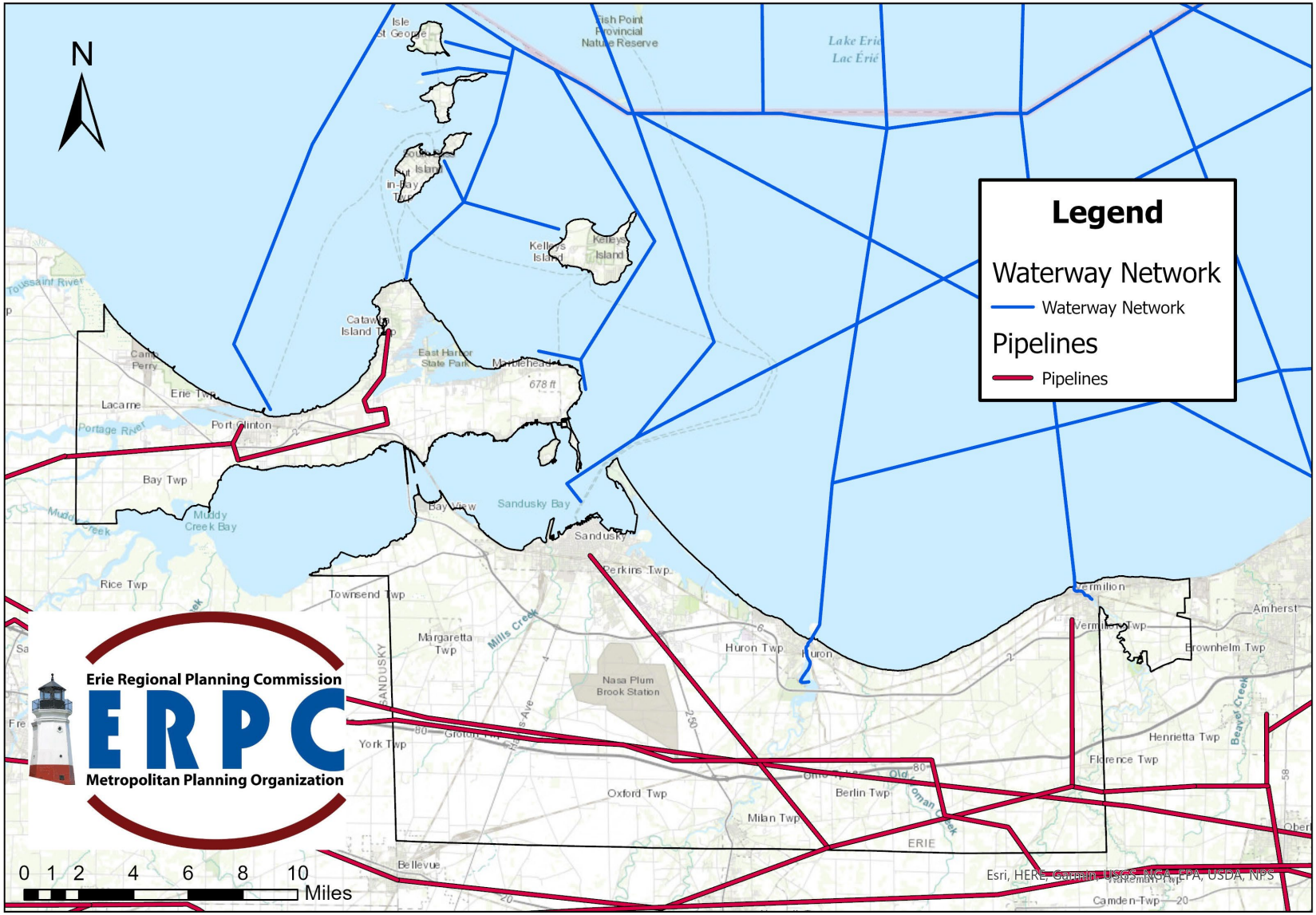
The agencies have responded to calls covering hazardous materials spills, flooding, disposal of household hazardous materials, and mercury recovery/recycling. The Ottawa County EMA responded to less than 6 calls asking for assistance in 2024, while Erie County responded to 30. Erie County updated their Chemical Emergency Response and Preparedness Plan in October of 2024. Erie County does have Emergency Response Plans in place that provides procedures of incident management as developed by the Erie County Local Emergency Planning Committee (LEPC), and Ottawa County also maintains an Emergency Operations Plan as maintained by the Ottawa County LEPC. Ottawa County also regularly shares Emergency Preparedness Information for residents in Ottawa and Lucas County for emergency actions at the Davis-Besse Nuclear Power Station in Ottawa County. From the Chemical Emergency Response and Preparedness Plan, ERPC was able to identify possible areas of vulnerability across the region's transportation network.

Transportation Risks: The main routes for transportation are the Ohio Turnpike, State Routes 4, 6, 13, 53, 113, 250, and 269, all of which are commonly used for transportation to and from the planning area. Also, three rail routes exist in the county. Transportation incidents have the potential for posing the highest risk to both citizens and property within in the planning area. In addition, seasonal variations exist that will affect accidental releases and subsequent hazards. During the recreation months, the populations across lakefront communities, including Catawba and Danbury Township, tend to spike due to regional tourism. This population increase may have a large effect on response operations.

Pipeline Risks: ERPC MPO has (4) pipelines traversing, starting, or stopping within its borders. This includes 1 interstate pipeline in Ottawa County operated by Columbia Gas. Erie County has three pipelines, including the intrastate East Ohio Gas Co., pipeline, and two interstate pipelines, operated by Columbia Gas and the NEXUS Gas transmission line that was installed in 2018. These pipelines carry natural gas on a regular basis.

Navigable Waterway Risks: The planning area has numerous navigable waterways upon which hazardous materials may travel. These waterways are primarily on Lake Erie, although they may impact the Sandusky Bay and Huron River.

Nuclear Risks: The Davis-Besse Nuclear Power Station is in Carroll Township in Ottawa County. Although the station is technically outside of the MPO Planning Area, relevant emergency planning impacts the MPO portion of Ottawa County as part of its 10-mile emergency planning zone. Ottawa County Emergency Management Agency's staff hosts a State Resident Radiological Analyst and power station utility liaison to ensure emergency monitoring and preparedness, and makes potassium iodide (KI) available to residents within the emergency planning zone to help reduce the risk of thyroid disease.



Map prepared by Erie Regional Planning Commission, and is intended for illustrative purposes only. Erie County, Ohio assumes no responsibility or liabilities for any errors or omissions contained here in.

Figure 5-9.8: Pipelines and Navigable Waterways

ERPC MPO 2050 Long Range Transportation Plan

Geographic Specific Risks

Specific areas in the region considered vulnerable per the LEPC Hazard Analysis Committee:

City of Sandusky: The City of Sandusky is the County Seat of Erie County and was incorporated in 1824 and is in northwest portion of the County bordering Lake Erie. The city is comprised of 10.0 square miles of land area. As of the Census of 2020, there are 25,095 people, 11,191 households and 6,626 families residing in the city. The population density is 2,509.5 people per square mile. There are 13,351 housing units at an average density of 1,335.1 units per square mile. The City of Sandusky is the largest municipality in Erie County. The city is unique in that it has a summer time population that more than doubles due to the influx of tourists. Main State Routes include 250, 6, 4, and 101. All of these routes are used to transport hazardous materials. The Norfolk & Southern Railroad operates north and south, as well east and west through the city. It has also had derailments within the city, including a derailment and spill in 2022 that closed the Columbus Avenue underpass, a major access point for the city. The east/west line especially hauls hazardous materials. The city also has numerous marinas and has forty-one (41) facilities reporting hazardous materials to the LEPC.

City of Vermilion: The City of Vermilion is located in both Lorain County and Erie County. It is located on the western border of Lorain County and the eastern border of Erie County. The City has a total land area of 10.8 square miles. According to the Census of 2020, the population of the City is 10,659. There are 4,473 households and 2,845 families residing in the city. The population density is 986 people per square mile. There are 5,134 housing units at an average density of 475.4 units per square mile. The City of Vermilion is the second largest municipality in Erie County. The Vermilion River runs through the city, empties into Lake Erie, and is used primarily for recreational boating. Marinas on the river hold over 7,000 boats each summer. There have been numerous fuel spills on the river. State Routes 6, 2, and 60 enter, or run close to the city, and the Norfolk and Southern Railroad runs through downtown Vermilion. All these routes are used to haul hazardous materials. Vermilion has thirteen (13) facilities reporting hazardous materials to the LEPC. The City of Vermilion participates in Lorain County's Hazard Mitigation Plan.

City of Huron: The City of Huron is also located in the north center portion of the county, on the south shore of Lake Erie. The population of the city is 6,922 and can double in the summer due to tourists. The city has a total land area of 7.7 square miles. According to the 2020 Census, there are 3,112 households and 1,796 families residing in the City. The population density is 899.0 people per square mile. There are 3,847 housing units at an average density of 499.6 units per square mile. State Routes 6, 13, and 2 run in or near the city, and the Norfolk and Southern Railroad runs through the city. The Huron River also runs through the city, emptying into Lake Erie, and has numerous marinas. Although the Huron River is used primarily for recreational boating, there have been fuel spills on the river, as well as on the state routes and railroad. Huron has fourteen (14) facilities reporting hazardous materials to the LEPC.

City of Port Clinton: The City of Port Clinton is located in the eastern portion of the county at the start of the county peninsula, and is the county seat of Ottawa County. The population of the city is 6,025 and can double in the summer due to tourists. The city has a total land area of 2.1 square miles. According to the 2020 Census, there are 2,942 households and 1,493 families residing in the City. The population density is 2,827 people per square mile. There are 3,670 housing units at an average density of 1,747 units per square mile. State Routes 2 and 53 bypass the city to the south, State Route 163 runs through the city, along with the Norfolk and Southern Railroad line. The Portage River also runs through the city,

emptying into Lake Erie, and has numerous marinas primarily utilized by recreational boaters. The presence of recreational boating does lead to fuel spills on the river, as well as on the state routes and railroad. Huron has fourteen (14) facilities reporting hazardous materials to the LEPC.

Village of Berlin Heights: The Village of Berlin Heights is 18 miles southeast of Sandusky and comprises a total land area of 1.6 square miles. As of the Census of 2020, there are 651 people, 247 households and 181 families residing in the village. The population density is 406.9 people per square mile. There are 290 housing units at an average density of 181.3 units per square mile. The village has the Ohio Turnpike, as well as State routes 61 and 113 running through the village; all of which are used to haul hazardous materials. The village also has two nature preserves in close proximity, with creeks draining into them.

Village of Kelleys Island: Kelleys Island, which is the largest freshwater American island, is located in Lake Erie, 11 miles northwest of Sandusky, and has a land area comprising 4.6 square miles. As of the Census of 2020, there are 256 people, 117 households and 74 families residing in the village. The population density is 55.6 people per square mile. There are 913 housing units at an average density of 198.5 units per square mile. During the summer months the population increases significantly. The island has one facility reporting hazardous materials to the LEPC. There are also numerous marinas and transient dockages available, all of which could produce hazardous materials spill. Of particular concern is the fact that during the winter, the only way on and off the island is by aircraft.

Village of Put-In-Bay: The village is located on South Bass Island in Lake Erie, 15 miles northwest of Sandusky, and has a land area comprising 0.6 square miles. As of the Census of 2020, there are 154 people, 32 households and 14 families residing in the village. The population density is 256.7 people per square mile. There are 327 housing units at an average density of 545 units per square mile. Similar to Kelley's Island to the west, the population increases significantly during summer months. Marinas and transient dockages can produce hazardous materials spill, and during harsh winters, the island is only accessible by aircraft.

Village of Marblehead: The village of Marblehead is located at the eastern end of the Danbury peninsula in Ottawa County, and is 5.0 miles north of Sandusky. The village comprises 3.2 square miles of total land area. As of the Census of 2020, there are 865 people, 421 households and 298 families residing in the village. The population density is 270.3 people per square mile. There are 1129 housing units at an average density of 352.8 units per square mile. The village is home to the Lakeside Daisy State Nature Preserve, protecting the federally threatened plant species for which it was named after. The village is surrounded by water along its peninsula, and bordered to the west by the LaFarge Quarry.

Village of Bay View: The Village of Bay View is in northern part of Margaretta Township, 8 miles west of Sandusky, and comprises 0.3 square miles of land area. As of the Census of 2020, there are 608 people, 299 households and 155 families residing in the village. The population density is 2,026 people per square mile. There are 351 housing units at an average density of 1,170 units per square mile. State Route 269 dead ends in the village, and the Norfolk and Southern Railroad runs east and west through the village. There have been train derailments in the past near the village due to a bridge over Sandusky Bay and high winds associated in that area. There is one marina in the village with numerous private docks. The village has no facilities reporting to the LEPC.

Village of Castalia: The Village of Castalia is in central Margaretta Township, 7.5 miles southwest of Sandusky, and comprised of 1.0 square mile of total land area. As of the Census of 2020, there are 774 people, 373 households, and 250 families residing in the village. The population density is 774 people per square mile. There are 362 housing units at an average density of 362 units per square mile. State Routes 101 and 269 meet in the village. Castalia has one reporting facility within the village. Of particular concern in this area is a State Wildlife Area, and a state managed trout farm within a mile of the village. Cold Creek, runs through the village, empties into Sandusky Bay.

Village of Milan: The Village of Milan is located in the south-central part of the county and straddles both Erie and Huron County. It has a land area of 1.2 square miles. Milan is 13 miles south of Sandusky. According to the Census of 2020, there are 1,371 people, 590 households and 463 families residing in the village. The population density is 1,141.7 people per square mile. There are 556 housing units at an average density of 463.3 units per square mile. The village has five facilities reporting hazardous materials to the LEPC. Two of these facilities are near a creek that runs into the Huron River. State routes 250, 113, 601 and 13 runs through or near the village and are known to carry hazardous materials. The Huron River also runs through Milan but is too shallow for any kind of boat traffic.

High Traffic Areas: Transportation routes within Erie County that are considered vulnerable to a hazardous material accident include the Ohio Turnpike, State Routes 2, 4, 6, 13, 53, 60, 61, 113, 250 and 269, and the east/west line of the Norfolk and Southern Railroad. These routes transect areas of differing populations, which present a risk for transportation related hazardous materials incidents. US 250 in Perkins Township can see congestion during peak hours during the summer months due to an influx of tourists visiting Cedar Point. Additionally, weekend to traffic to the shores and islands region can experience bottlenecks at interchanges in Ottawa County along SR 53 and Catawba and Danbury Township.

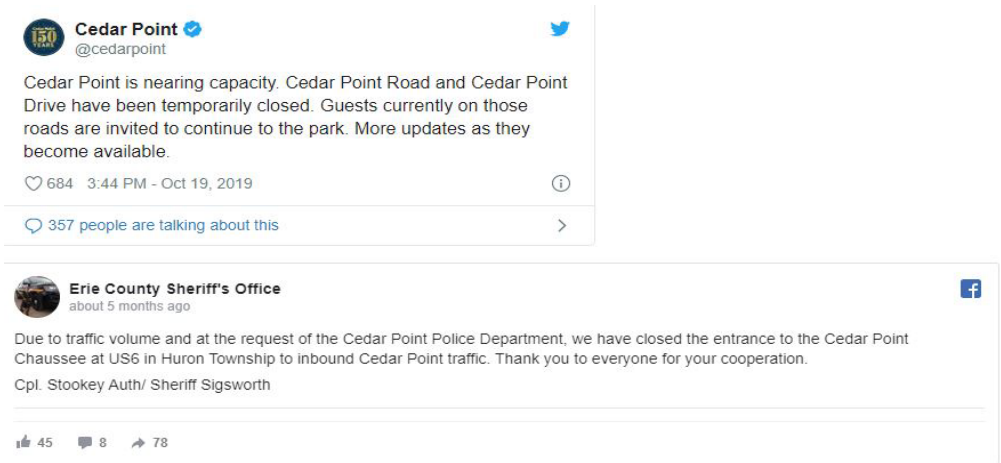


Figure 5-9.9: Social media postings from Cedar Point in 2019

In conclusion, the plan provides for a coordinated response between state/federal agencies and local response forces. ERPC MPO staff has worked with the Erie County EMA to aid in security initiatives through completing various mapping activities and served on the steering committee for the recent update to the Erie County Hazard Mitigation Plan. MPO staff will look to assist coordinated responses in Ottawa and Lorain County as requested as well.