

FUTURE TRANSPORTATION SYSTEM

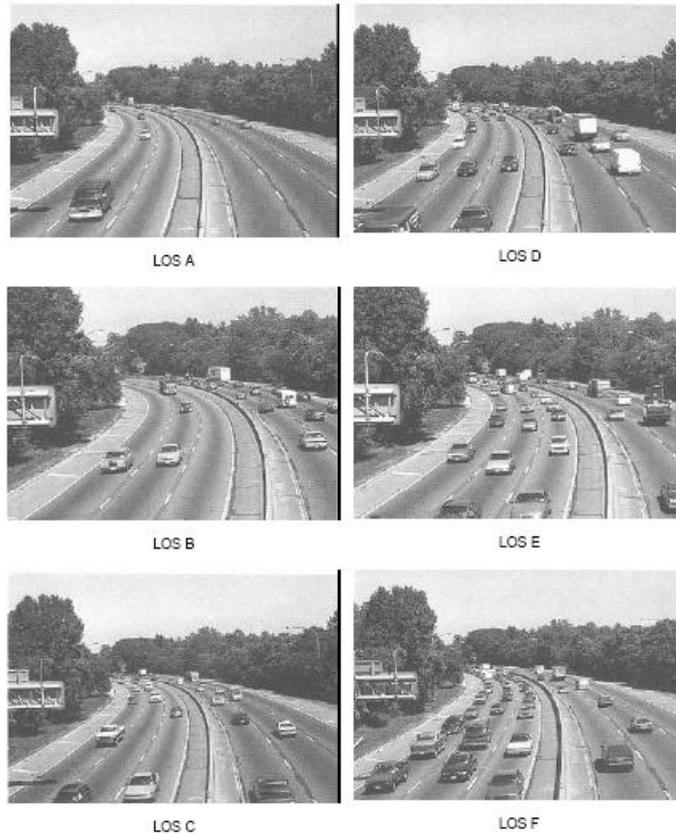
7.1 Overview: This chapter summarizes the analysis of the year 2040 conditions and identifies future year issues within the MPO.

7.2 Changes in Vehicle Travel (2010-2040): The traffic flow relationships developed in the travel demand model using base year (2010) data are applied with forecasted future land uses and additional roadway projects identified in this Plan to estimate future levels of traffic volume and congestion for identifying locations of concern for the planning process. The process incorporates vehicle saturation flow rates for roadways and their “free-flow” operating speeds (as a function of roadway classification, lanes, width, and posted speed limits), intersection delays based on traffic control using the methods of the national Highway Capacity Manual (HCM), roadway curvature that reduces travel speed, and at-grade rail crossings, so that projects that have an impact on any of these features can be gauged for their impact on traffic flows and delays.

Congestion can be measured in two quantitatively different ways. The first, as briefly described in Chapter Five, is in terms of the absolute amount of delay, speed or vehicle density, which are then assigned Level of Service (LOS) grades (A thru F) as outlined in the HCM and illustrated on the next page. (Roadway design guides typically suggest a target LOS threshold depending on the type of roadway and surrounding area.) The second way of measuring congestion is in relative terms- how much is it forecast to increase or decrease from what it is at the present time? The series of figures located in the “LOS and Traffic Volume Maps” appendix, indicate forecasted levels of traffic volumes and congestion by location, based on the growth in population and employment discussed in the previous chapter and the impact of the projects proposed in this Plan.

Roadway capacity is the maximum number of vehicles that can pass a given point during a specified period under prevailing roadway, traffic and control conditions. The congestion can be defined as the delay experienced due to slow moving or stopped vehicles on the roadway. The congestion can be quantitatively estimated using the Level of Service (LOS) concept. Level of Service takes into consideration speed, density, travel time, and the ratio of traffic volume to roadway capacity. There are six levels of service ranging from A to F. LOS on a freeway is shown in the Figure on the next page. Each level is associated with a specific traffic flow condition. LOS A represents free flow conditions with low volumes and high speeds. LOS F on the other hand characterizes stop and go conditions with high volumes, low speeds and very little maneuverability. LOS C is generally accepted because at this level acceptable operating speeds can be achieved and reasonable freedom of maneuverability exists. LOS E often characterizes conditions at capacity and extended delays are inevitable. LOS D, E, and F are associated with congested conditions. Congestion can be categorized as recurring or non-recurring. Recurring congestion will occur on the facilities that handle near capacity or over capacity traffic volumes repeatedly. Non-recurring congestion can be unpredictable and can occur due to an obstruction to the normal traffic flow. A traffic accident, a disabled vehicle or roadway maintenance can cause non-recurring congestion. Potential future recurring congestion spots can be identified by analysis using typical or “design hour” traffic conditions. Traffic control devices (e.g. signals) can contribute to congestion. The dividing line between LOS C and D has been set in the HCM as 35 seconds at signalized intersections, 25 seconds for unsignalized (stop control) intersections, 50% of free-flow speed for urban arterial streets, and roughly 70% of carrying capacity for freeways and rural multi-lane highways.

ILLUSTRATIVE LEVEL OF SERVICE (LOS) BASED ON FREEWAYS



Source: Transportation Research Board. Highway Capacity Manual, 2000 edition.

Most travel time represents a cost. The cost of travel is higher when travel is congested or unreliable. Changes in Vehicle Miles and Hours Traveled are frequently used as a measure of benefit or time cost savings due to a transportation improvement. Primary results from the alternative analysis are net changes in vehicle-miles of travel and vehicle-hours of travel. **Table 7-1** summarizes the vehicle miles traveled as related to the LRTP recommended roadway improvements for the year 2040. Car and truck trip growth rates for the year 2040 were derived from the model trip matrices based on growth between the base year and 2040 population and employment.

Table 7-1: Daily Vehicle Miles Traveled

Roadway Classification	No Build 2040	Improve 2040
Freeway	3,950,774	3,905,326
Arterial	1,066,436	1,072,675
Collector	651,340	686,620
Local	375,986	377,005

7.3 Forecasted 2040 Average Daily Traffic On The Existing Plus Committed Network: The TDM is used to forecast traffic volumes on roads within the MPO region. Year 2040 congestion levels were determined using the year 2040 projected traffic volumes with no roadway improvements assumed. Estimates of future delays were compared to standards from roadway design guides and the Highway Capacity Manual to identify potential areas of congestion. The projected Average Daily Traffic and Level

of Service Maps are located in the appendix and display the results of the analysis for future conditions within the MPO if no improvements are made to the existing roadway system. Also, note that the level of service maps generated from the travel demand model may not totally reflect site specific conditions, as such, forecasts of future congestion patterns should typically be followed up with site-specific studies before specific improvements are proposed by the MPO's member jurisdictions.

7.4 Transit: The Sandusky Transit System (STS) is the most developed transit system in the County and serves the urbanized area of Erie County. In the Sandusky Comprehensive Plan, several short-to mid-term strategies are identified for transit. These include:

- ✚ Supporting transit funding initiatives for sustaining and expanding the Sandusky Transit System
- ✚ Supporting the establishment of commuter or light rail transit service to Toledo and Cleveland.
- ✚ Developing a multimodal facility using the Amtrak station for rail, bus and taxi
- ✚ Encouraging expansion of water taxi/cruise ship/ferry services

Future growth in the city and the increase in destination points in the Downtown and Bayfront areas will support the expansion of these services. Additionally, recommendations from the 2013 Erie County Coordinated Public Transit-Human Services Transportation should continue to be implemented. For example, as a result from the Coordinated Plan, the Sandusky Transit System (STS) was able to apply for funding through the Job Access and Reverse Commute Program. STS was awarded a total of \$496,614 for the years 2013 and 2014. With the awarded funding, STS was able to sustain a one- hour deviated route service called SPARC (Sandusky Perkins Area Ride Connection) with stops in the City of Sandusky and south in Perkins Township along the US 250 corridor. SPARC is a program that offers job access and reverse commute services to provide transportation for low income individuals who may live in the city core and work in suburban locations. The vehicle can deviate up to three miles in any direction from the designated route in order to pick up passengers along the way. Deviations must be scheduled ahead of time with the STS Dispatch Office. The SPARC Routes provide affordable daily transportation for individuals needing to travel from the City of Sandusky to their places of employment in the suburban neighboring community of Perkins Township. The point deviation routes incorporate a number of neighborhood and downtown stops within the City of Sandusky and commercial establishments in Perkins Township along the Milan Road U.S. Route 250 corridor. The route has become so popular rides on the system were up to 190,000 in 2013 which was a 12 percent increase from 2012. Passenger fares are \$1.00 per person for a one-way trip operating on a one-hour loop basis Monday through Saturday between the hours of 6:00 a.m. and 10:00 p.m. The SPARC has grown from one to three routes covering between 20 and 23 stops on each route.

7.5 Bicycle/ Pedestrian Facilities: In future years, Erie County and its political subdivisions will continue to face the challenge of providing a comprehensive and thorough bicycling and pedestrian network, for both recreation and as an alternative means of transportation. Although the County has made progress in this endeavor, a deficiency of the current trail system is there are segments that have not been linked into the existing system and do not provide continuity. This compromises the effectiveness of the system.

The 1999 Erie County Bicycle and Pedestrian Plan outlined several goals and strategies for developing a safe bicycle and pedestrian pathway system across Erie County. The idea was that this system would provide connections between political subdivisions within the County, major County traffic generators, and bikeways and pedestrian routes in adjacent counties. The plan was recently updated in 2014 and approved in early 2015.

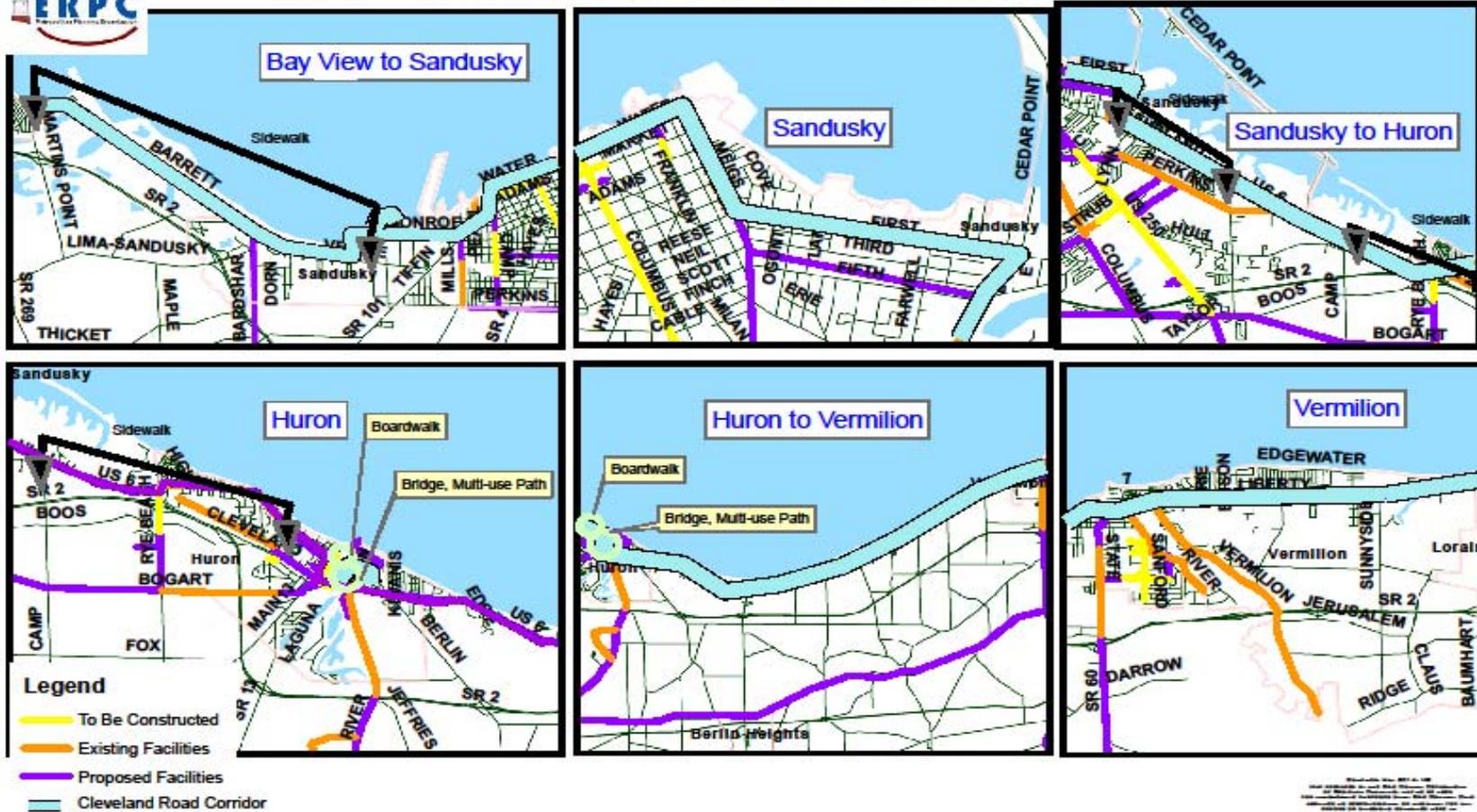
Erie County Bicycle and Pedestrian Existing Facilities



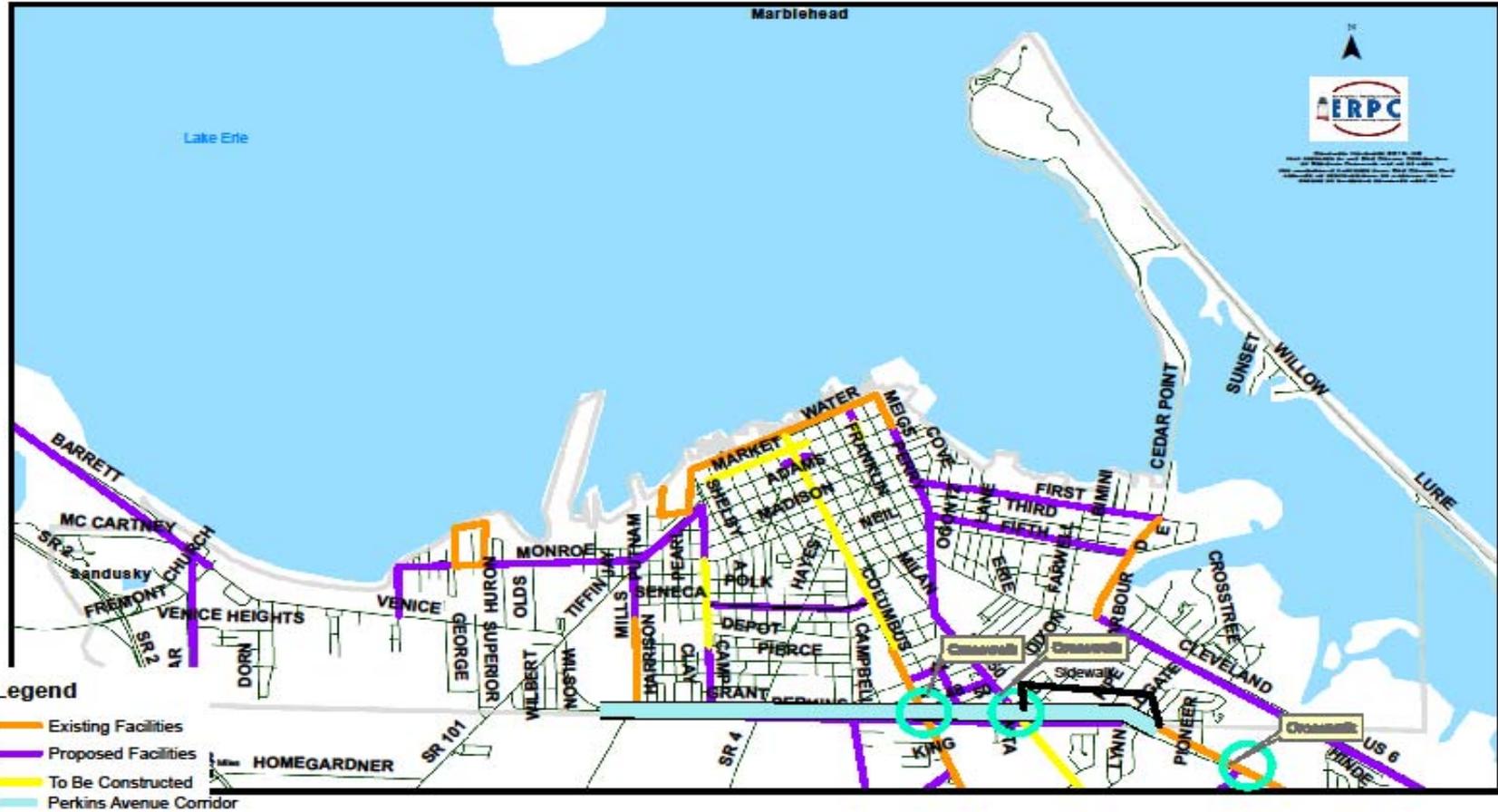
Map 7-1: Existing Bicycle and Pedestrian Facilities Map
From the 2014 Bicycle and Pedestrian Plan



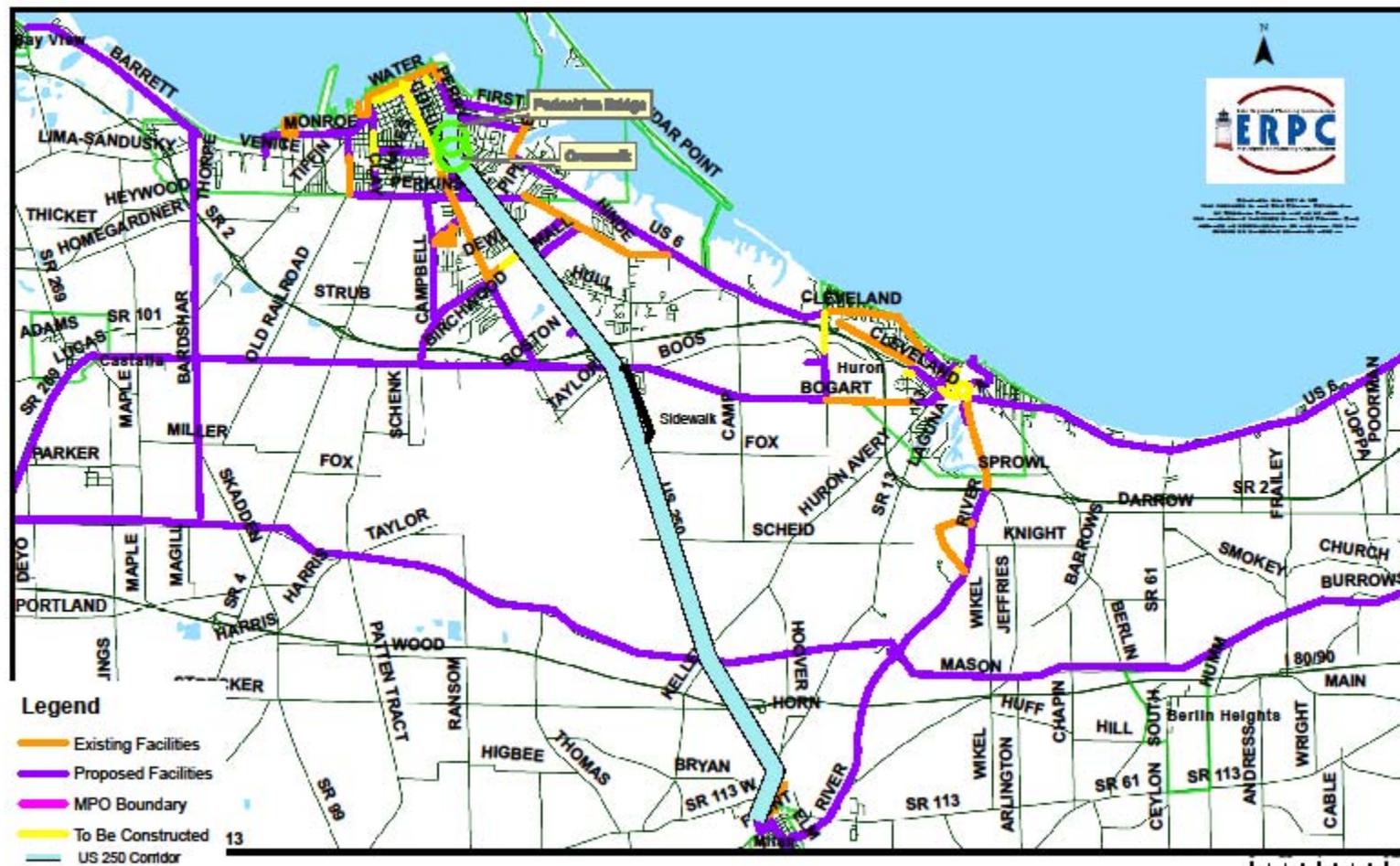
Proposed Cleveland Road Corridor Going West to East Across the ERPC MPO Region



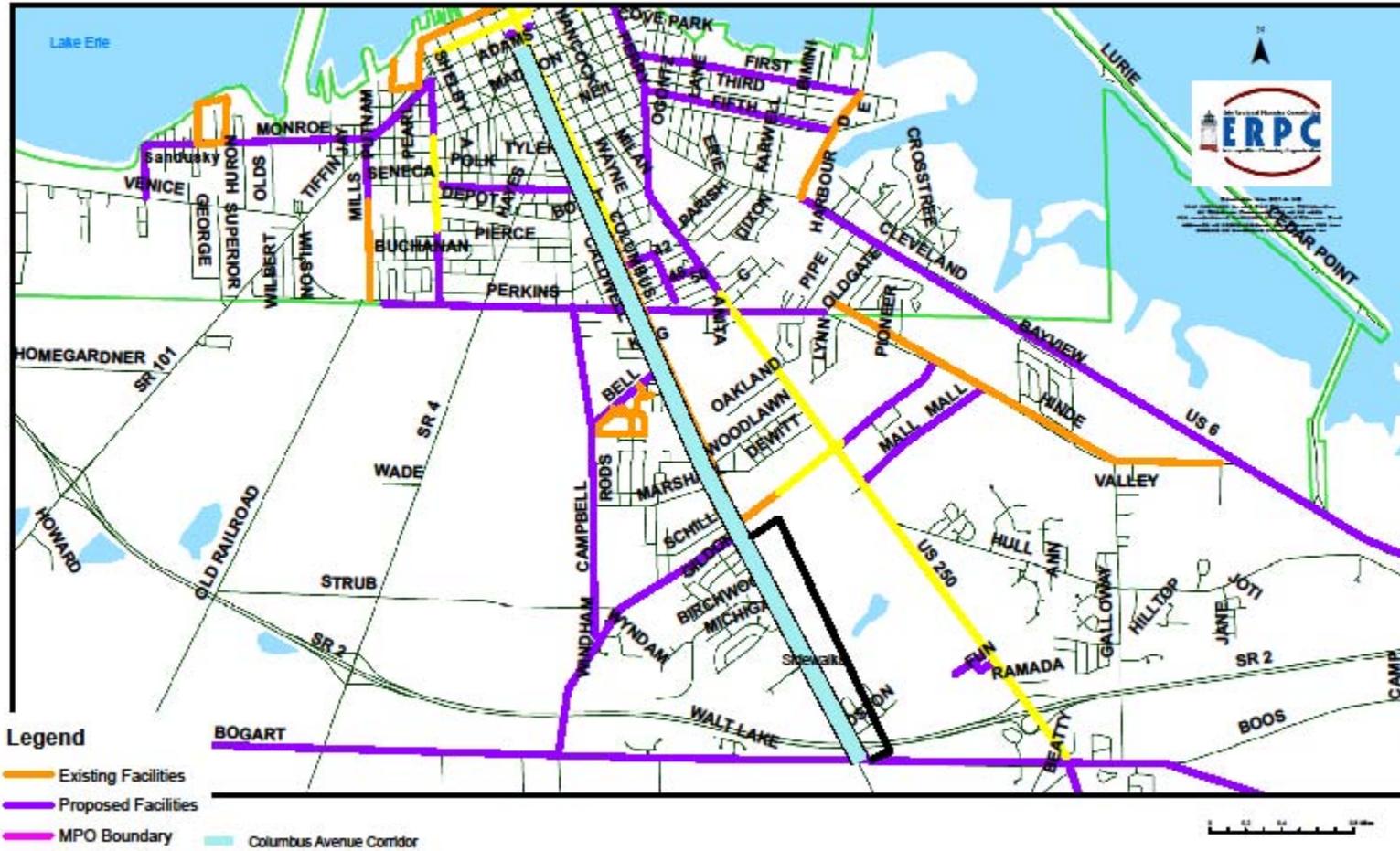
Proposed Perkins Avenue Corridor



Proposed US 250 Corridor



Proposed Columbus Corridor



The key to accommodating any new bicycle and pedestrian facilities, especially those that interface with other modes of transportation, is safety. This includes managing the number of conflict points for bicyclists, such as driveways and intersections, and accommodating a consistent typical section throughout the connecting bicycle facilities. All new bicycle and pedestrian facilities should follow the recommendations offered in the US DOT Policy Statement on Bicycle and Pedestrians.

7.6 Regional Passenger Services

Aviation: Griffing Sandusky Airport in Sandusky has relocated since the last long range plan update was completed in August of 2010. The outfit relocated to the Erie Ottawa International Airport that is in Port Clinton, which is in neighboring Ottawa County. The flying service provides charter flight services to anywhere in the United States but in particular to the Lake Erie Islands, including Pelee Island which is in Canadian waters.

Also important to note are efforts that Erie County has put forth to secure funding for engineering and construction of an intermodal loading dock that will include a 9,000-foot runway and associated infrastructure improvements. The project location is at the National Aeronautics and Space Administration's (NASA) Plum Brook Station in Erie County, Ohio. Erie County sees this project as a catalyst for change; a chance for Ohio to draw upon its roots in manufacturing to transition to leadership in aerospace, alternative energy, and other growth sectors of 21st century economy. The existing 6,400-acre site is strategically located adjacent to US 250. An Ohio Turnpike interchange is a few miles south. SR 2, a limited access highway is a few miles north. SR 4 is a few miles to the west. Major rail lines crisscross the region including the largest rail distribution center in Ohio. Not only is the site strategically located to transportation facilities but also to Ohio's greatest natural resource, Lake Erie.

Essentially, this proposed runway would act as an intermodal loading dock for equipment. The proposed infrastructure improvements will complement the movement of materials throughout the facility. Those improvements will include an enhanced roadway network and the resurrection of existing rail at the site. Locating this runway at Plum Brook would complete the existing logistics infrastructure and enable the expansion of the aerospace industry and research in alternative energies in these one-of-a-kind facilities.

Railroads: Norfolk Southern Corporation has had several expansion and improvement projects in Ohio in recent years; however, no projects are proposed for the Sandusky area at this time. The Bellevue Yard Expansion is the closest project to the MPO area, located south of the region in Huron County. The project is designed to transform the facility into one of North America's largest rail-car classification and switching yards. The \$160 million expansion will double the yard's size to accommodate more traffic, and add about 38.5 miles of track and 145 miles of underground cable for communications and signaling systems.¹ With the improvements, the classification yard will be able to double their current traffic and transit times of commodities to customers will improve by one to nearly 2 days. It should be noted that in the past there has been various derailments on the west end rail network in Sandusky. Since the 2035 LRTP a grade separation project has occurred on the west end of Sandusky.

¹ http://www.progressiverailroading.com/norfolk_southern/article/Construction-advances-on-NS-Ohio-yard-expansion-project--40115

In 2008, Triple Crown Services a division of Norfolk Southern railroad announced an environmental initiative to promote and improve fuel conservation and emissions reduction. The company's initiatives focus on the environmental advantages of its hybrid RoadRailer® trailer technology. With the RoadRailer® system, each trailer is a unique combination of an on-the-road trailer and an over-the-rail car. Truckload freight is picked up from shippers and driven to Triple Crown terminals where the trailers are set on railroad wheels, called bogies. The assembled trains then travel to destination terminals where the trailers are reconnected to tractors and delivered.

AMRTAK ridership numbers in Ohio have increased from 108,000 passengers in 2007 to 160,000 in 2013. Two Amtrak routes service the ERPC MPO area. The Capitol Limited runs daily between Washington DC and Chicago and the Lake Shore Limited travels daily between Chicago and New York City. No additional service is planned to include the Sandusky Station. The Sandusky station, which is City owned, saw a 64% increase in ridership over the past five years. Almost 61% of passengers traveling to or from the Sandusky station are completing trips that are within 200 to 300 miles. The top city pair by ridership in 2008 was Sandusky – Chicago, Illinois followed by Sandusky – New York, NY.

The Sandusky rail station was built in 1892 and was renovated in 1996 by the City. AMTRAK completed an ADA compliance report that showed \$956,000 worth of ADA compliance and state of good repairs were needed at the station. Detailed planning has yet to occur for the improvements. The City of Sandusky has identified a project involving the Amtrak station in its comprehensive plan. The city wishes to develop a multimodal transit facility using the existing Amtrak station. Although there are no funds dedicated at this time, the City has identified this as a short-term goal.

In 2014, the ERPC MPO, Toledo Metropolitan Area Council of Governments (TMACOG), and the Northeast Ohio Areawide Coordinating Agency (NOACA) entered into a Memorandum of Understanding to create the Northern Ohio Rail Alliance (NORA). The Alliance aggregates Ohio's four busiest passenger AMTRAK rail stations (Toledo, Sandusky, Elyria, and Cleveland) into a single rail corridor, the Toledo-Cleveland Rail Corridor. The alliance creates a unity of purpose and shared responsibility in the visioning of a transportation mode and job generator in Northern Ohio. The group has identified that improvements along the line and its stations are needed to ensure better trip times and ADA compliance for passengers.

Ferry: In summer 2005, a new ferry service began in Sandusky, since the Island Rocket ferry closed in 2004, and the City has had numerous requests for an additional ferry service from Sandusky to Cedar Point, Erie Lake islands, or both. The Jet express ferry makes seven daily round trips between Sandusky, South Bass Island, and Kelleys Island with additional round trips on Fridays, Saturdays and holidays through Labor Day. Boats will leave Sandusky every two hours. Currently, there are no plans for the ferry to stop at Cedar Point; however, Jet Express is prepared to increase operations as demand rises.

Also there is passenger ferry service to and from Downtown Sandusky to Pelee Island, Ontario, Canada. The ferry service is operated by the Canadian company; Owen Sound Transportation Company. The Sandusky dock is located at the foot of Jackson Street. The ferry, MV Jiimaan, can transport 400 passengers and 40 vehicles. There has also been discussion about ferry service out of Vermilion to the Islands. The ferry would be docked at the City owned dock behind the Vermilion Waterworks plant. Also, an application has been submitted by a local company to the Ferry Boat Discretionary Fund for a ferryboat that would run from Marblehead to Sandusky and Kelleys Island.

7.7 Freight: Ohio's business and industry depend on effective freight transportation to reach state, regional, national and global markets. Trucks carry 68% by weight of Ohio freight. According to the *Access Ohio 2040 (November 2013)*, Erie County generates about 1.26 to 2.94 trucks per acre and has one of the busiest through routes (I-80/I-90) in the State of Ohio for truck travel.

7.8 Land Use: Overall, residential development is the greatest growth segment in the County, However, according to the Erie County Farmland Preservation Plan (2001), a relatively small amount of farmland will be consumed on an annual basis. This is due to current levels of population growth, vacancy rates, and a generous residential development density of two units per acre.

Although there is not a large degree of land consumption expected from residential uses, there are larger implications of the existing development patterns. As development in Cleveland and Toledo increases, suburban and exurban growth will enter Erie County, and sporadic or leapfrog residential and commercial development may surround large agricultural areas. There may be additional issues associated with the urban/rural interface.

Specific areas of growth in Erie County include Route 250 near the Turnpike, and the Route 4 corridor. Limited retail development may occur and existing commercial structures may be replaced or retrofitted near the Turnpike. The Route 4 corridor may experience increased highway-oriented development over the long term if the market demands change and infrastructure is put in place to support new development. Goals of the Sandusky Comprehensive Plan are focused around the revitalization of the downtown and Bayfront areas, as well as encouraging and managing new growth in the western part of the city. The city wishes to strengthen commercial, residential, and recreational uses in the downtown area, including adding destination points to the downtown and Bayfront areas. The western growth is to include new residential and industrial uses. These plans will increase the demand for transportation services.

7.9 Port Facilities: The Vermilion City and Huron-Joint Port Authorities has no major future improvement or expansion projects planned at this time.

7.10 Environmental: In order to complete the environmental analysis, ERPC prepared a series of maps of the region with environmental layers, these maps are located in the Environmental Maps Appendix. Five categories environmental categories were looked at:

- ✚ Streams and Wetlands (includes wetlands and 11 Digit Hydrologic Unit Code Number (HUC) maps)
- ✚ Threatened and Endangered Species (includes threatened/endangered species map)
- ✚ Mitigation (includes conversation/park areas map, deciduous forest map, and national register sites map)
- ✚ Cultural Resources (includes conservation/park areas map, deciduous forest map, and national register sites map)
- ✚ Other Mitigation (includes superfund, however no sites currently exist in ERPC region)

There are a total of 95 recommended projects in this transportation plan. From the compiled maps, as outlined above, an analysis was completed to identify the projects that could have potential impacts on the environmental issue locations. This part of the analysis was completed to illustrate how often a project

may have environmental implications and the need for assessment and mitigation measures to be employed as projects move from the LRTP to the Transportation Improvement Program (TIP).

To complete the summary of the number of recommended projects near the environmental issue location, maps were created for each environmental issue layer. If projects were located in or near (within ½ mile) of an identified environmental area it was counted as a project with potential impacts specific to that environmental issue. A summary is provided below showing the total number of projects near each environmental issue location.

Environmental Issue	Number of Projects Near Environmental Issue Location
Potential Wetland	33
Conservation Areas	21
Archeological Inventory Sites	15
National Register Sites	30
Deciduous Forest	60
Threatened or Endangered Species	34
Superfund Sites	0

This analysis provides a beginning step in ensuring projects in this plan are environmentally responsible. All projects are required to minimize, avoid and/or mitigate environmental impacts as outlined in the existing conditions section of this plan. This plan also supports energy conservation initiative with special emphasis on those being taken in the MPO region related to wind energy, biofuels, and other alternative fuels.

7.11 Security: In the event of an incident, Evacuation Policies and Procedures provide a mechanism for assessing the problem and determining resources available to address those problems. The Chemical and Emergency Response Preparedness plan has outlined such policies and procedures. Activities associated with the evacuation focus not only on residential areas but provides procedures for evacuation of those facilities that may require special consideration (schools, nursing homes, day care centers, shopping and manufacturing centers). Additionally, procedures are outlined for those special population sub-groups that may require special consideration in evacuation planning. Those individuals who are elderly have a tendency to resist evacuation, and it will be important to stress that degree of perceived risk to this group. Individuals who are physically handicapped, as well as those individuals who are blind, may require additional assistance during evacuation. Individuals who are deaf or non-English speaking may require interpreters or other arrangements for the delivery of warning messages. General procedures for evacuation as follows:

1. The incident Commander determines if, and when, an evacuation will take place.
2. Law enforcement will have the responsibility of executing the evacuation.
3. The Erie County Emergency Management Agency (EMA) and the Firelands Chapter of the American Red Cross will assist with special evacuation needs.
4. The Firelands Chapter of the American Red Cross will provide shelter for evacuees.

5. The Erie County Health Department will work with the Ohio Environmental Protection Agency and with the Incident Commander to determine when the evacuees will be permitted to return.²

Guidance is also provided on the process for dissemination of warning information from response agencies to the general public in the event of an incident. “Public notification is accomplished by either the Emergency Alert System, cable television break in, regular media broadcasts, and/or door-to-door notification. The information will be disseminated in a timely manner, dependent upon the circumstance and size of the incident.

- a. Personal Notification – In the event of an incident that requires an evacuation, a means of notification is to go door-to-door with a personal message. The law enforcement will not be utilized if they must work in a plum and/or hot zone.
- b. Cable Television Break-In – The Erie County EMA or Erie County Sheriff is capable of activating this system.
- c. Emergency Alert System (EAS) – The Erie County EMA or Erie County Sheriff is capable of activating the EAS. The EAS can be activated to broadcast warnings over local radio and cable stations.
- d. Media Broadcast – The Public Information Office on scene will follow Annex D procedures.”³

In conclusion, efforts regarding security are sensitive in nature. However, this plan supports efforts that coordinate local efforts with those at regional and state levels. Additionally, the MPO will continue its support of training initiatives to insure efficient emergency response by the transportation interests. Lastly, the MPO will continue to network with emergency management authorities and transportation agencies in developing security implementation initiatives for the transportation system.

² 2002 Chemical Emergency Response and Preparedness Plan, p. O-24

³ 2002 Chemical Emergency Response and Preparedness Plan, p. O-14