Chapter 7. Future Transportation System

7.1 Overview

This chapter summarizes the analysis of the year 2050 conditions and identifies future year issues within the MPO.

7.2 Changes in Vehicle Travel (2020-2050)

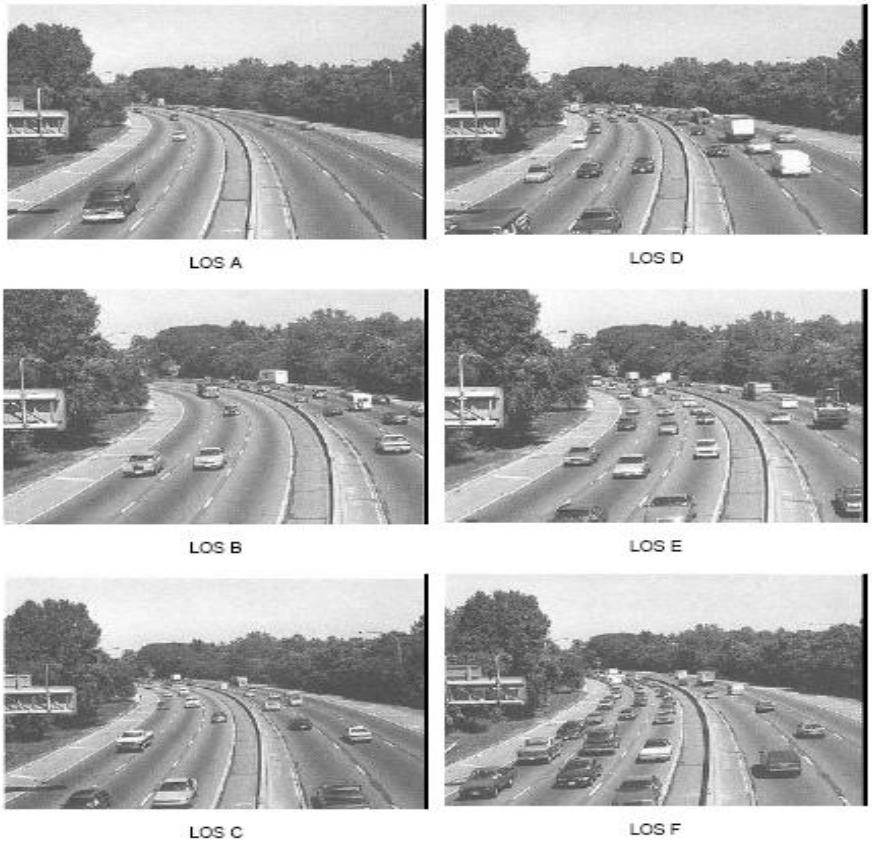
The traffic flow relationships developed in the travel demand model using base year (2020) data are applied with forecasted future land uses and additional roadway projects identified in this Plan to estimate future levels of traffic volume and congestion for identifying locations of concern for the 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.

Figure 7-2.1: Level of Service

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 7-2.1** summarizes the vehicle miles traveled as related to the LRTP recommended roadway improvements for the year 2050. Car and truck trip growth grates for the year 2050 were derived from the model trip matrices based on growth between the base year and 2050 population and employment.

Table 7-2.1: Daily Vehicle Miles Traveled (Pending Modeling)

Roadway Classification	No Build 2050	Improve 2050
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 2050 Average Daily Traffic on the Existing Plus Committed Network

The TDM is used to forecast traffic volumes on roads within the MPO region. Year 2050 congestion levels were determined using the year 2050 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 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 field 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 MPO region and serves the urbanized area of Erie County. Over the years the Sandusky Transit System has grown. There are now five routes that cover the City of Sandusky and portions of Perkins and Huron Townships. In the Sandusky Strategic Vision Plan, several short-to mid-term strategies are identified for transit. These include:

- Regionalizing Public Transportation
- Develop a regional taskforce to explore the feasibility of a regional transit system that improves service and financial sustainability
- Explore Seasonal Transit Opportunities
- Hub Creation and Fixed Bus Routes out of Downtown Sandusky (implemented)

Future growth in the city and the increase in destination points in the Downtown and Bayfront areas will support the expansion of these services.

Ottawa County is serviced by Ottawa County Transit Agency (OCTA) and provides dial-a-ride services. Conversation on the peninsula of the county has centered on seasonal transit opportunities, connecting downtown Port Clinton to businesses along SR 53 in Catawba Township and Village of Marblehead.

Additionally, recommendations from the 2022 Erie County Coordinated Public Transit-Human Services Transportation should continue to be implemented.

7.5 Bicycle/Pedestrian Facilities

In future years, the ERPC MPO and its political subdivisions will continue to face the challenge of providing a comprehensive and thorough bicycling and pedestrian network as an alternative means of transportation. Although the region 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. Plans were developed by both Erie and

Ottawa County on how to implement a regional trail network. The Ottawa County Active Transportation Plan was adopted in 2018, and the Erie County Bicycle and Pedestrian Plan was updated in 2020. Both plans contain recommendations for future, current and to be constructed infrastructure projects in the MPO planning area. In addition to the county plans, the Greater Sandusky Partnership (GSP) has launched a plan to continue building out the Sandusky Bay Pathway through the MPO region, creating a 100-mile regional trail network spanning from Vermilion through Port Clinton and South to Fremont in Seneca County. The cumulative routes from these plans are depicted on the following page and excludes current sidewalk inventories. **(Fig. 7-1.1)**. Since the expansion of the MPO, partners in Erie County, Ottawa County and GSP have begun to review the regional planning of the trail network considering how these plans overlap and what changes have occurred since the plans original development, presented in Chapter 8. ERPC does not have a formal Complete Streets Policy, but encourages local project considerations based on context sensitive design. Each project looks to incorporate elements for safe access for all road users, and prioritize projects expanding bicycle and pedestrian facilities and increasing local access.

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 7-1.1 Existing and Planned Bicycle & Pedestrian Facilities

ERPC MPO 2050 Long Range Transportation Plan

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 had relocated to the Erie Ottawa International Airport that is in Port Clinton in Ottawa County. The airport is located in Danbury Township and is a crucial connection to the Lake Erie Islands. The flying service does provide charter flight services to anywhere in the United States, including Pelee Island which is in Canadian waters. 74% of flights are general aviation, with the remaining 26% of flights being air taxi.

Important to note are efforts that Erie County had put forth to secure funding for engineering and construction of an intermodal loading dock that would 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. The existing facility is well positioned with nearby access to local railroad connections and interstate and highway access. The engineering and construction did not move forward from the original effort, but conversation continues on securing connections to the facility through intermodal means.

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 in Huron County. The project was designed to transform the facility into one of North America's largest rail-car classification and switching yards. The $160 million expansion doubled 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 has been 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.

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. Unfortunately, Triple Crown announced in 2015 it was scaling back and would only be operating one line to carry automotive parts from Kansas City to Detroit. As a result, operations at the Sandusky Triple Crown facility were idled. However, Norfolk Southern was able to leverage the facility and in 2016 worked with Watco Transloading LLC to begin

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

origin and destination transload operations of commodities such as chemical, plastic, steel, and agricultural products.

Amtrak ridership numbers in Ohio have decreased from 163,000 passengers in 2012 to 124,000 in 2022. Two Amtrak routes service the ERPC MPO area, with boardings at the Sandusky station growing from 2,340 in 2005 to 8,400 in 2022, peaking near 10,000 in 2017. 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. 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, and at the time of the development of the 2050 LRTP, the station is undergoing renovations for drainage and ADA compliance updates. 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. Beginning in 2022, FRA began studying four proposed routes in Ohio, including a new route from Cleveland to Detroit, servicing Sandusky and Toledo. Study and future development is ongoing at the time of this plan.

Ferry: The ERPC MPO region is home to numerous ferry services providing transit options to the Lake Erie Islands. Following the closure of the Island Rocket in 2004, the Jet Express began offering regularly scheduled ferry services. The Ferry provides passenger service to Cedar Point, Kelley's Island, and Put-In-Bay, with larger harbors in Sandusky and Port Clinton, both with available parking lots for tourists. The Kelleys Island Ferry Boat Line offers auto/passenger service daily to Kelley's Island out of Marblehead village. Miller Ferries provides daily auto/passenger ferry services to Put-In-Bay and Middle Bass Islands out of Catawba Township. Future improvements may occur at the ferry, as the roadway network crosses vehicle loading stations and heavy pedestrian traffic during peak summertime hours, and port facility upgrades would improve congestion and safety at the ferry terminal. The ferry service providers would increase service as demand rises, but has no current intentions for expansion.

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. Sandusky has noted interest in expansion of water taxi service in Sandusky Bay to help connect communities Danbury Township and Marblehead to downtown Sandusky and Cedar

Point. The growing residential communities along the bay front includes condominium communities that would provide close access to the port in downtown Sandusky.

7.7 Freight

Ohio's business and industry depend on effective freight transportation to reach state, regional, national and global markets. Trucks move 65.7% of the total tonnage of Ohio freight, accounting for 70% of the total value. Erie County has one of the busiest through routes (I-80/I-90) in the State of Ohio for truck travel, and includes two interchanges in the MPO region along SR 4 and SR 250. SR 2 is a limited access highway that moving east-west through Erie and Ottawa County that is on the statewide strategic freight system. ERPC continues to encourage improved north-south connections to the MPO region by improving freight routes along SR 4 and SR 250. The 2025 Strategic Transportation & Development Analysis (STDA) identified these two corridors from Sandusky to Columbus as crucial connections to to reduce congestion and improve access regionally.

7.8 Land Use

Overall, residential development is the greatest growth segment across the MPO region. According to the Erie County Farmland Preservation Plan (2001), a relatively small amount of farmland was expected to be consumed on an annual basis due to stagnant population growth, limited vacancy residential development density occurring largely along municipal peripheries. Since that Plan, rural development in Erie County has largely been frontage development, lacking a significant number of subdivision developments. Ottawa County, particular the peninsula, has seen increased residential development in rural areas. Numerous subdivisions have occurred in Catawba and Danbury Township, and former residences of smaller cottages have upgraded to larger homes based on the proximity to lakefront development. Inland from the waterfront is still largely agricultural land, but Catawba Township and available land along the lake and bay front continue to see residential development of single-family homes and condominiums.

Although there is not a large degree of land consumption expected from residential uses, there are larger implications of the existing development patterns. Vermilion has seen increased interest in growth in development patterns from a sprawling Cleveland, and Ottawa Counties peninsula continues to develop with vacation and senior retirement homes. Both areas expect future suburban and exurban growth to continue, with sporadic commercial development leapfrogging agricultural areas based on the region's car centric design and high vehicle ownership. There may be additional issues associated with the urban/rural transects.

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, including impacts from the STDA implementation.

Specific areas of growth in Ottawa County include SR 53 in Danbury and Catawba Township, where commercial development continues to fill in formerly agricultural land. The growing residential homes and peak tourism season to the Shores and Islands region will drive future commercial and retail demand

on the peninsulas. Development of improved infrastructure is expected as the county ensures roadway facilities can handle increased volumes, including for vehicles hauling boats and weekends with peak congestion.

Goals of the Sandusky Comprehensive Plan continue to focus 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 MPO region is home to seven legislative ports on Lake Erie. Marblehead, Sandusky, and Huron are primarily freight ports, with Put-In-Bay, Port Clinton, Lakeside, and Kelleys Island being passenger service. In 2024, it was announce Put-In-Bay Harbor would receive $10.4 million for port upgrades that include a second dock and stone breakwater to bolster safety and resiliency at the terminal, and improve long term access to South Bass Island. Huron Harbor has largely became inactive in cargo handling and is expected to redevelop surrounding land uses for residential and commercial accommodations, primarily serving recreational boaters.

The Sandusky Harbor has three separate docks, but primarily uses its main dock for coal and salt export, with limited inbound goods and the other two docks. Current trends are for heavy coal exports to continue from the docks, but future expanded port operations are available at the other docks. No projects are planned at this time.

An additional challenge Lake Erie port facilities face includes handling dredged materials from the US Army Core of Engineers (USACE). State law prevents the USACE from returning dredged materials to Lake Erie, forcing ports to develop new options for storing the dredged sediment. Sandusky, in partnership with OEPA, ODNR, and USACE developed the Cedar Point Causeway Wetland Restoration Project in 2022, utilizing dredged material from Sandusky Bay to develop and restore a wetlands that creates new habitats and improves water quality while also repurposing dredged material. Additional in-water wetlands are planned as part of the Sandusky Bay Initiative. Huron Harbor has also began dredging less material for a depth of 14 feet as it no longer needs to accommodate large freighters as port services continue to change.

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 10 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)

The universe of alternatives includes a total of 106 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	104
Conservation Areas	29
Cultural Resources	34
Deciduous Forest	93
Threatened or Endangered Species*	106

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.

*The entire MPO Planning Area is within numerous endangered species ranges, including the Salamander Mussel and Northern Long-Eared Bat.

7.11 Security

ERPC has no direct role in responding to emergencies. In the event of an incident, Evacuation Policies and Procedures provided by local county agencies including Erie County Emergency Management Services (EMA) and Ottawa County EMA provide a mechanism for assessing the problem and determining resources available to address those problems. Local plans have 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 energy facilities). 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. Emergency Management Agency (EMA) and the Firelands Chapter of the American Red Cross will assist with special evacuation needs.

4. The American Red Cross will provide shelter for evacuees.

5. Local Health Departments will work with the Ohio Environmental Protection Agency and 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 EMA or County Sheriff is capable of activating this system.

c. Emergency Alert System (EAS) – The EMA or 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. ERPC Staff will continue to assist with the Local Emergency Planning Committee (LEPC). 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