

## SUMMARY OF PURPOSE AND NEED – DRAFT

February 19, 2015

### Introduction

This memo describes the methodologies utilized by the Pennsylvania Department of Transportation (PennDOT) District 1-0 to establish the purpose and needs associated with the Bayfront Parkway Study located in Erie, PA. The needs analysis has been prepared in accordance with Title 23 Code of Federal Regulations (CFR) Part 771, as well as PennDOT Publication 319, *Needs Study Handbook*, and Publication 10, Design Manual 1, *Transportation Program Development and Project Delivery Process*.

### Study Area Description

The study is located along the Bayfront Parkway in the City of Erie, Erie County, Pennsylvania. **See Figure 1, Project Location Map.** The Bayfront Parkway (State Route (S.R.) 4034) begins at Interstate 79 on the west side of Erie, PA and connects to the Bayfront Connector and Interstate 90 on the east side of the city. The study area starts generally at W. 12th Street and follows the Bayfront Parkway to E. 12th Street. The corridor varies from 4 lanes to 2 lanes; however, the majority of the study area consists of 2 through lanes with a center left turn lane. There are approximately twenty intersections, with eleven (11) that feature traffic signals, within the study corridor. A series of bicycle trails, hiking trails, and railroad tracks run along the length of the Bayfront Parkway. Some of the trails are interconnected with each other while others only serve a small section of the Parkway. Additionally, there are currently five proposed developments along the corridor that could potentially affect the number of people traveling to and from the Bayfront in the coming years.

### Study Purpose

The purpose of the study is to complete an extensive analysis of the corridor (S.R. 4034), utilizing traffic data and involving stakeholders, to identify future projects that will improve safety, improve congestion, increase compliance with applicable current design standards, improve mobility throughout the corridor, and support existing and future economic development initiatives.

The identified needs of this study are:

#### 1. Safety concerns exist in the study area.

There were 246 crashes within the study corridor over a 5-year period from January 1, 2009 to December 31, 2013. 80% of the crashes were located at an intersection. Crashes occurring at the intersections primarily consisted of angle and rear-end type of crashes. The crash rate between the Niagara Pier and the Boat Launch is approximately three (3) times the state average for similar types of roadways. Four (4) fatalities or major injuries occurred between East 6th Street and East 12th street. Reducing the number of documented crashes and increasing safety at pedestrian crossings was determined to be important to stakeholders.

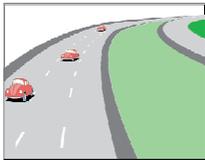
According to the MetroQuest survey results obtained as part of this study, the majority of those taking the survey did not feel safe walking/biking across the Bayfront Parkway.

## 2. There are congestion concerns in the study area.

Currently, traffic analyzed in the 2014 based year is experiencing Level of Service (LOS) D during the existing AM peak hour at the intersection of Bayfront and State Street. Future 2034 no-build traffic projections with anticipated development along the Bayfront increase delays to LOS F for the Bayfront and State Street intersection and increase travel times throughout the corridor.

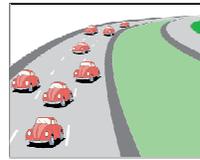
LOS is an informal way to understand how well the transportation system functions given current land configurations and traffic volumes. LOS A indicates free flow operations with little interference from other vehicles, and LOS F indicates extremely congested conditions where travel demand exceeds the capacity of the facility (See Photo 1).

### LOS A



Represents the best operating conditions and is considered free flow. Individual users are virtually unaffected by the presence of others in the traffic stream.

### LOS D



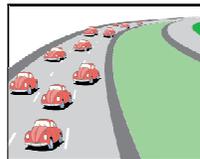
Represents traffic operations approaching unstable flow with high passing demand and passing capacity near zero, characterized by drivers being severely restricted in maneuverability.

### LOS B



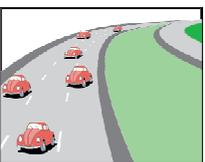
Represents reasonably free-flowing conditions but with some influence by others.

### LOS E



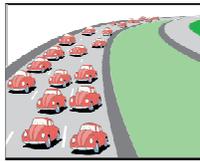
Represents unstable flow near capacity. LOS E often changes to LOS F very quickly because of disturbances (road conditions, accidents, etc.) in traffic flow.

### LOS C



Represents a constrained constant flow below speed limits, with additional attention required by the drivers to maintain safe operations. Comfort and convenience levels of the driver decline noticeably.

### LOS F



Represents the worst conditions with heavily congested flow and traffic demand exceeding capacity, characterized by stop-and-go waves, poor travel time, low comfort and convenience, and increased accident exposure.

Photo 1: Level of Service

The Bayfront Place Concept Plan Report, April 2012, prepared by the Erie County Convention Center Authority states that the Bayfront Parkway is congested during peak hours. This report is available on this study's website [www.bayfrontparkwaystudy.com](http://www.bayfrontparkwaystudy.com) for review. The report identifies a realistic plan for redevelopment of the former GAF Erie property (Bayfront Place) located along Sassafras Street and the Bayfront Parkway. The report says that this congestion may make access and egress to the Bayfront Place site difficult.

MetroQuest survey results that were obtained as part of this study show that, the majority of those taking the survey felt that traffic flow/congestion during peak and non-peak hours on the Bayfront Parkway and adjacent alternative routes could be improved.

### **Future Projections**

The congestion problems are only anticipated to worsen due to economic development initiatives. Future traffic projections were based upon a background growth rate and the use of development plans and the resulting projected traffic growth from the ITE Trip Generation Manual (9th Edition). The 2034 Build year projections with anticipated development show increased traffic volumes and delays at each intersection within the corridor..

### **3. There are operational concerns in the study area.**

The intersection at Bayfront and W 8th Street heading north merges to one lane with the right lane only able to turn onto W 8th Street. Traffic has been observed stacking on the through lane with vehicles using the right lane to merge ahead of this queue and not making the required right turn. This queue has been contributing to a bottleneck at this intersection and increasing delays heading northbound and for turns onto W 8th Street. Project stakeholder and interviewees revealed a number of concerns about the function of this intersection and the right turn lane not being an effective way to move traffic through this intersection.

Signals at Bayfront, State Street, and Holland Street have left turn lanes along the Bayfront Parkway, though not separate signal phases for the left turn movement. The observations of these signals and input from the stakeholders has indicated this is an issue during the peak hours with traffic not being able to make a left turn with limited gaps in the opposing traffic.

According to MetroQuest survey results obtained as part of this study, the majority of those taking the survey felt that improvements to existing traffic signals are needed to improve access. The respondents also felt that there is a lack of bicycle storage options.

It is likely that future economic development initiatives will worsen the exist traffic operations of the corridor. As traffic volumes associated with the development increase, the ability to efficiently travel through the corridor will be difficult at intersections with current operational concerns. This will result in greater delays throughout the corridor.

Interviewed stakeholders have concerns that future economic development will limit access to convenient and affordable parking within the central Bayfront Parkway corridor, especially near the hospital.

### **4. Alternative modes are lacking parallel to the Bayfront (east/west).**

Stakeholders have indicated that there is a lack of pedestrian/bicycle connection and access points from Holland Street to 6th Street and from State Street to Cranberry Street. They also noted that pedestrian access at State Street needs improved.

According to the Erie Waterfront Master Plan Summary Report, March 2009, prepared by the Erie-Western Pennsylvania Port Authority, “Many of the well-used public, civic and recreational spaces and facilities along the Bayfront are difficult to reach or are disconnected from other areas.” The report also stated that, “East to west connections to either side of State Street are poorly designed and confusing at best.” The report describes that the under-developed areas of the Bayfront lack proper pedestrian and even vehicular circulation options. The report is available on this study’s website at [www.bayfrontparkwaystudy.com](http://www.bayfrontparkwaystudy.com) for review.

The Bayfront Place Concept Plan Report, April 2012, indicated that, “There are limited vehicular and pedestrian access points between the Site and the Bayfront Parkway that will influence internal site circulation and may prompt signalization modifications along the Bayfront Parkway”.

Destination Erie’s, Regional Vision, *Unlocking the Bayfront’s Full Potential*, developed 10 principles to guide the successful development of Erie’s Bayfront. This report lists connecting the Central Bayfront to the East and West Bay and implementing connections within the Central Bayfront as important to the successful development of the Bayfront. They believe that a “Bayfront Loop” is missing, water routes are missing, and there are “gaps” at the Presque Isle hinge, State Street, Bayfront, and at the Channel Gap.

According to MetroQuest survey results obtained as part of this study, the majority of those taking the survey felt that bicycle and pedestrian connections from the Eastside neighborhoods to the Bayfront were not adequate. The majority of those taking the survey also felt that more emphasis should be placed on alternative means to move people within the Central Bayfront area, as related to parking and facilities.

## **5. Transportation connections for all modes between Downtown Erie and the Bayfront (north/south) are lacking.**

The Bayfront Parkway currently acts as a barrier for pedestrians and bicyclists between the City of Erie to the south and the Bayfront area along the north. There is a desire from the stakeholders to make the Bayfront area a connected part of downtown for vehicles, pedestrians, and bicycles.

The Erie Waterfront Master Plan Summary Report, March 2009, prepared by the Erie-Western Pennsylvania Port Authority, notes that “Neither pedestrian nor vehicular circulation routes have convenient north-south connections between the city and the Bayfront.” The report goes on to say, “Pedestrian safety is also a concern between the city and the surrounding neighborhoods on the bluff and the Bayfront due to the heavy vehicular use of the Bayfront Parkway and the lack of well-designed cross-walks.” The Erie Waterfront Master Plan Summary Report is available on this study’s website at [www.bayfrontparkwaystudy.com](http://www.bayfrontparkwaystudy.com) for review.

Destination Erie’s, Regional Vision, *Unlocking the Bayfront’s Full Potential*, lists connecting the Central Bayfront to Downtown as important to the successful development of Erie’s Bayfront. They believe that all connections could be improved, especially at State Street.

The MetroQuest survey results that were gathered by this study showed that the majority of those taking the survey felt that bicycle and pedestrian connections from the downtown to the Central Bayfront area were not adequate.

**References:**

**Erie County Convention Center Authority, April 2012, *Completing the Bayfront, Bayfront Place Concept Plan Report***

**Domokur Architects, March 2009, *Erie Waterfront Master Plan Summary Report*, Erie-Western Pennsylvania Port Authority**

**Destination Erie's, *Regional Vision, Unlocking the Bayfront's Full Potential***

**Bayfront Parkway Corridor Study, September 2014, *Stakeholder Interview Notes*, Pennsylvania Department of Transportation**

**Bayfront Parkway Corridor Study, January 2015, *MetroQuest Survey Results*, Pennsylvania Department of Transportation**