

INTRODUCTION

The purpose of this chapter is to identify the technical basis used to determine when improvements will be needed, and how they will be funded given the level of transportation funding available to the Erie MPO. Much of the discussion in this chapter will focus on the highway and bridge program, since they are the primary elements the Erie MPO must demonstrate fiscal constraint on. The implementation and funding of the other modes' projects discussed in this plan, such as transit, airport, port, or rail projects, are primarily the responsibility of the individual mode operators, such as the transit, airport and port authorities, and independent railroad operators. Costs are expressed in thousands of dollars in the tables of this chapter.

IMPLEMENTATION SCHEDULES

The improvements described in the preceding chapter are not all needed today. Some improvement locations will not degrade to unacceptable levels of service for a number of years. It is on this basis that the needs are prioritized, since in reality, transportation agencies progress projects when the need is truly evident to the motoring public. The Erie MPO has divided the highway improvement program into three implementation periods for prioritization and funding analysis purposes: the **A** period, covering the years 2007-2010, the **B** period, covering the years 2011-2020, and the **C** period, covering the years 2021-2030. The costs in each period have been adjusted for inflation. The **A** period project costs reflect the most recent cost estimates provided by PennDOT in the 2009 TIP. The **B** and **C** period costs have been inflated at a rate of 4% per year as required by State and Federal guidelines. Considering that the **B** and **C** periods are each 10-year increments and the difficulty of determining the exact start date for each project in the later years of the plan, a median year for each period was used for calculating inflation. Projects in the **B** period are inflated up to 2015. Projects in the **C** period are inflated up to 2025.

To determine when a particular transportation project should be implemented over time, the travel projection model was used to identify when the Level of Service would reach the E/F threshold. This is typically the LOS at which traffic operations are severely congested, and capacity enhancing projects are considered. The Erie MPO reviewed the results, and using fiscal constraints and other considerations, made the final determination as to which of the defined timeframes each of the projects belonged. The project recommendations from Chapter V indicate the proposed implementation period for each project based on this methodology.

COST OF IMPROVEMENTS

Chapter V details the list of major projects developed in this edition of the Erie County Long Range Transportation Plan. The overall highway and bridge improvement program needs include major projects such as new highway construction, with an estimated cost of \$101 million; highway widening and reconstruction, with an estimated cost of \$421 million; bridge replacement and rehabilitation projects totaling \$320 million; and existing system maintenance / improvements estimated to total \$688 million. The total cost of needed improvements in Erie County to the year 2030 is estimated at \$1.53 billion.

Table VI-1 shows the total project costs by program/project category:

Table VI-1

Improvement Type	Cost*
New Highway Construction	\$101,384,000
Highway Widening / Reconstruction	\$421,394,000
Interstate Highway Maintenance	\$343,243,000
Maintenance / Betterment Projects	\$247,501,000
Safety Improvements	\$34,778,000
Traffic Signal Improvements	\$17,198,000
Economic Development Projects	\$8,834,000
Community Enhancement Projects	\$24,261,000
Rail/Highway At-Grade Crossings	\$12,483,000
Bridge Replacement / Rehabilitation	\$320,023,000
Total Cost:	\$1,531,099,000
*Cost estimates inflated at a rate of 4% per year	

Table VI-2 shows the total project costs separated into three implementation periods.

**Table VI-2
Highway / Bridge Program Costs (\$000's)**

IMPROVEMENT TYPE	PERIOD A 2007-2010	PERIOD B* 2011-2020	PERIOD C* 2021-2030	TOTAL COST TO 2030
MAJOR HIGHWAY PROJECTS				
NEW CONSTRUCTION	\$ -	\$ 12,385	\$ 88,999	\$ 101,384
WIDENING / RECONSTRUCTION	\$ 47,322	\$ 157,664	\$ 216,408	\$ 421,394
SUB-TOTAL	\$ 47,322	\$ 170,049	\$ 305,407	\$ 522,778
MAJOR BRIDGE PROJECTS				
STATE-OWNED REPLACE/REHAB	\$ 29,696	\$ 101,337	\$ 137,068	\$ 268,101
EXISTING SYSTEM MAINTENANCE / IMPROVEMENT COSTS				
HIGHWAY RELATED	\$ 80,467	\$ 273,689	\$ 334,142	\$ 688,298
BRIDGE RELATED	\$ 5,827	\$ 21,095	\$ 25,000	\$ 51,922
SUB-TOTAL	\$ 86,294	\$ 294,784	\$ 359,142	\$ 740,220
HIGHWAY SUB-TOTAL	\$ 127,789	\$ 443,738	\$ 639,549	\$ 1,211,076
BRIDGE SUBTOTAL	\$ 35,523	\$ 122,432	\$ 162,068	\$ 320,023
TOTAL	\$ 163,312	\$ 566,170	\$ 801,617	\$ 1,531,099

*Inflated at a rate of 4% per year to the median year of the period

PROGRAM FUNDING ESTIMATES

As previously indicated, the highway and bridge improvement program was developed to be fiscally balanced and reflect anticipated funding levels. **Table VI-3** illustrates the total estimated funds (including the funding for the line items) available to the MPO for project implementation.

Table VI-3 - Erie MPO Estimated Funding (\$000's)

IMPROVEMENT TYPE	ANNUAL FUNDS*	PERIOD A** 2007-2010	PERIOD B*** 2011-2020	PERIOD C*** 2021-2030	TOTAL FUNDS TO 2030
HIGHWAY FUNDS					
INTERSTATE MAINTENANCE	\$10,000	\$42,465	\$140,454	\$207,907	\$390,826
MAINTENANCE / BETTERMENT NATIONAL HIGHWAY SYSTEM (NHS)	\$4,500	\$19,109	\$63,205	\$93,558	\$175,872
SURFACE TRANSPORTATION PROGRAM (STP)	\$3,499	\$14,214	\$49,145	\$72,747	\$136,106
STATE HIGHWAY SAFETY AND MOBILITY INITIATIVE (SAMI)	\$3,575	\$14,120	\$50,212	\$74,327	\$138,659
CONGESTION MITIGATION / AIR QUALITY (CMAQ)	\$3,502	\$13,975	\$39,781	\$46,167	\$99,923
TRANSPORTATION ENHANCEMENTS	\$1,046	\$4,269	\$14,692	\$21,747	\$40,708
RAIL / HIGHWAY CROSSINGS	\$2,597	\$10,551	\$36,476	\$53,993	\$101,020
HIGHWAY TOTAL	\$29,646	\$122,504	\$406,985	\$589,719	\$1,119,209
BRIDGE FUNDS					
FEDERAL BRIDGE	\$4,301	\$17,485	\$60,409	\$89,421	\$167,315
STATE BRIDGE	\$2,132	\$8,516	\$24,218	\$28,106	\$60,840
BRIDGE TOTAL	\$6,433	\$26,001	\$84,627	\$117,527	\$228,155
ACT 44 FUNDS					
ACT 44 TOTAL	\$6,149	\$18,912	\$74,187	\$94,965	\$188,064
HIGHWAY, BRIDGE, and ACT 44 TOTAL FUNDS					
TOTALS	\$42,228	\$167,417	\$565,799	\$802,211	\$1,535,428

*Annual Funds based on FFY 2007 Allocation levels except Act 44 Funds (based on 2008 allocation)

** The Total Funds in Period A are determined by 2007 Financial Guidance provided by The Pennsylvania Planning Partners except Act 44 Funds (adjusted for inflation at a rate of 2.5% per year using Annual Funds as base)

*** Inflation adjustments as per YOE Expenditure Guidelines: Federal lines adjusted at a rate of 4% per year; State lines adjusted at a rate of 1.5%; ACT 44 adjusted at a rate of 2.5%

The annual levels of funding currently available to the Erie MPO were identified for each program area, and those annual levels were assumed for future funding estimates.

FISCAL CONSTRAINT

The fiscal constraint analysis considers the total project costs versus the total available funding through 2030, and additionally, the fiscal balancing of each of the three-implementation periods. Overall there is a projected surplus of approximately \$4.3 million during the course of the plan. The figures are shown in **Table VI-4**.

Table VI-4
Erie MPO Fiscal Constraint Analysis

(\$000's)	PERIOD A 2007-2010	PERIOD B 2011-2020	PERIOD C 2021-2030	TOTAL TO 2030
HWY	\$122,504	\$406,985	\$589,719	\$1,119,209
BRDG	\$26,001	\$84,627	\$117,527	\$228,155
ACT 44	\$18,912	\$74,187	\$94,965	\$188,064
TOTAL FUNDS	\$167,417	\$565,799	\$802,211	\$1,535,428
HWY	\$127,789	\$443,738	\$639,549	\$1,211,076
BRDG	\$35,523	\$122,432	\$162,068	\$320,023
TOTAL COSTS	\$163,312	\$566,170	\$801,617	\$1,531,099
BALANCE	\$4,105	(\$371)	\$594	\$4,329

As is demonstrated in Table VI-4, the highway and bridge improvement programs are generally balanced during all three planning periods and overall, with ACT 44 funding covering the difference. It is intended that as time progresses other project needs will be identified and refined, and they will be accounted for in the future editions of the transportation program.

INNOVATIVE FINANCE

The fiscal constraint analysis is based on the assumption that traditional financing resources will be available in the future. Should gaps between highway infrastructure investment needs and the traditional funding sources develop, SAFETEA-LU includes provisions for encouraging private sector investment:

- § **Private Activity Bonds** – SAFETEA-LU adds highway facilities and surface freight transfer facilities to a list of activities eligible for exempt facility bonds. Qualified projects, which must be receiving Federal assistance, include surface transportation projects eligible under Title 23, and facilities for the transfer of freight from truck to rail or rail to truck. The bonds are subject only to a National annual volume cap, and not to a State cap.
- § **Transportation Infrastructure Finance and Innovation Act (TIFIA)** – Establish under TEA-21, SAFETEA-LU encourages broader use of the TIFIA financing by lowering the threshold required for total project cost to \$50 million (\$15 million for ITS projects), and eligibility is expanded to include public freight rail facilities or private facilities providing public benefit for highway users, intermodal freight transfer facilities, access to such freight facilities and service improvements to such facilities including capital investment for intelligent transportation systems (ITS).
- § **State Infrastructure Banks (SIBS)** - SAFETEA-LU establishes a new SIB program which allows States to enter into cooperative agreements with the Secretary to establish infrastructure revolving funds eligible to be capitalized with Federal transportation funds authorized for fiscal years 2005-2009. This program gives States the capacity to increase the efficiency of their transportation investment and significantly leverage Federal resources by attracting non-Federal public and private investment.